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1983-1990

Volume II: First author Gaertner to Keil

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Gaertner, G.H., & Baxter, S. (1987). A preliminary analysis of the message content of active Army video and print advertisements. WP MPPRG 87-34.

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A PRELIMINARY ANALYSIS OF THE MESSAGE CONTENT OF ACTIVE ARMY VIDEO AND PRINT ADVERTISEMENTS

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A PRELIMINARY ANALYSIS OF THE MESSAGE CONTENT OF ACTIVE ARMY VIDEO AND PRINT ADVERTISEMENTS

Introduction

This brief working paper presents a preliminary analysis of the message content of active Army print and video advertisements based on mall intercept interviews of 2,795 youth between the ages of 16 and 24. The working paper will describe the relative emphases of the 13 video and 11 print active Army advertisements in terms of the list of the Army's communications objectives developed in connection with ACOMS.

The results should be considered preliminary in several senses. First, the analyses are based on a subset of the total number of interviews to be conducted--at this writing, several hundred cases remain to be processed. Second, we have not yet conducted analyses to determine whether there are substantial sub-groups seeing a set of ad-specific messages different from those provided in this paper. Third, the message content data provide several ways of assessing the message content and main messages of Army advertisements. We have not yet conducted the analyses which will integrate these various content measures.

Thus, these results should be treated as preliminary, but instructive. They are presented in the interests of prompt dissemination of interim results.

Data and Methods

The message content analyses presented in this paper are based on mall intercept interviews with 2,795 youth. Youth

were selected in part to mirror the Primary Analytic Samples of ACOMS. Thus, the sample consists of males and females between 16 and 24 years of age who have not served nor been accepted for service in the military, who are currently enrolled in high school or have received a high school diploma and who have not completed more than two years of college. The mall intercept interviews were conducted at shopping malls in four metropolitan areas--Atlanta, GA, Moorestown, NJ, Chicago, IL, and Los Angeles, CA.

Quotas were established for sex (25% Female, 75% Male), ethnicity (75% White, 15% Black, 10% Hispanic), age (35% ages 16-18, 65% ages 19-24).

Respondents were randomly assigned to view either a print or video Army advertisement. In the case of print advertisements binders were prepared containing 11 sets of stimulus advertisements. Each set included two clutter ads, one Army print ad, and two more clutter ads. Clutter ads were identical in all sets, and were selected to reflect a mix of advertisements leaning toward large purchases or commitments. Each set contained a different Army advertisement. In the case of video ads, tapes were constructed containing 13 sets of stimulus advertisements. As with the print ads, each set included four clutter ads identical in all sets surrounding the Army ad in the third position. Each of the sets contained a different Army ad.

For either print and video ads, any respondent would view only one set of advertisements. The interviewers proceeded through the sets in order, to ensure roughly equal numbers of respondents for each Army advertisement.

The respondent was asked for screening information in the mall to ensure eligibility for the study. Eligible

respondents were escorted to the research center where the interview would take place. Before viewing ads, the respondent was reminded of the confidentiality of the interview data and administered the ACOMS unaided intentions questions to determine the respondent's likelihood of enlisting in the military, further education and civilian employment in the next few years. After viewing the ads a first time, the respondent was asked to recall the sponsors of the ads, asked whether he/she recalled the ad for the Army (if unable to name the Army as an ad sponsor unaided) and asked the main and other messages of the ad.

After viewing the Army ad a second time (and an optional third time for video ads), the respondent was asked the "extent to which the Army ad [he/she] just saw conveyed" the set of 14 messages comprising the Army's communications objectives. These were worded exactly as presented in the ACOMS youth interviews, but the means of eliciting the ratings took advantage of the face-to-face interviewing situation. The respondent was given a shuffled deck of cards on which were printed the 14 perceptions measures applying to the active Army. The respondent was shown a large board upon which were printed five boxes labelled (1) "not at all," (2) "to a little extent," (3) "to a medium extent," (4) "to a considerable extent," and (5) "to a great extent." After explanation of the procedure, the respondent was asked to sort each of the perceptions cards into the boxes based on the extent to which the ad just viewed sent that message. The respondent was then asked to review the sorting and revise it if desired, and the results were recorded. Respondents were then asked the aided intentions to enlist questions from the ACOMS youth CATI interview, and thanked for their time. All questions in the interview were (except as noted above) worded exactly as in the main ACOMS youth interviews to ensure comparability of results.

Results

Table 1 presents results from the mall intercept interviews relevant to determining the message emphases of Army video and print advertising. The table is divided into two panels--the top panel refers to video advertisements, the bottom to print advertisements. The two panels are organized identically. The first 14 rows in each panel list the set of 14 active Army attributes. Cell entries directly to the right of the attributes are the proportions of youth viewing that advertisement who rated it as sending that attribute message to a considerable or great extent. Thus, 37% of the youth viewing ad number 1 ("The Letter") rated it as sending the message that the Army offers "the chance to work with the latest high-tech equipment" to a considerable or great extent. A numbered key to the video and print advertisements can be found on the page following the table.

The right hand side of the table presents summary statistics for the attribute across video (top panel) and print (bottom panel) ads. Statistics presented include the average, the rank of the attribute in terms of the average, the maximum, minimum, range, standard deviation, and the number of ads seen as emphasizing the attribute to a considerable or great extent by more than 60% of the respondent viewers. Thus, the Army video advertisements in general were seen as emphasizing hi-tech equipment to a considerable or great extent by 66% of the respective respondent viewers.[1] Further, the high-tech equipment message has the highest average emphasis across video ads of the 14 attributes. The attributes are presented in rank

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[1] The average is a simple average of the percentages for each ad. Thus, we do not weight to correct for the possibility that some ads were viewed by more respondents or are aired more frequently than others. To the extent that some ads are aired more frequently, the simple average is not representative of the message weight of the attribute in the population.

order for video average emphasis in the top panel and print average emphasis for the bottom panel. Looking across the first row in the top panel, one can see that ad #10 (MLRS) had the highest emphasis on high-tech equipment (MLRS), with 86% of viewing respondents rating it as emphasizing high-tech to a considerable or great extent. The minimum emphasis on high-tech in any ad was in ad #6 (Lightfighters) with only 36%. The range of ratings on the high-tech message suggests that it is more likely than other attributes to be either highly emphasized or relatively unimportant. This is also reflected by its comparatively large standard deviation. However, the final column indicates that the message was found in 9 of the 13 video ads tested by more than 60% of respondent viewers.

While the statistics to the right of the panels refer to the attributes, the statistics below the panels refer to each ad and the component messages it was perceived as conveying. Thus, 43% the viewing respondents on average rated Army attributes as being emphasized to a considerable or great extent in ad #1 ("The Letter"). As with the attributes, maximums, minimums, ranges, and standard deviations are presented for the advertisements. Finally, in the lower right corner of each panel, we present summary statistics for the ads by medium. These statistics, while useful, can be difficult to interpret. Thus, the 50% under the average video column means that the mean of the average message emphases across advertisements was 50%--the average attribute in the average video ad was seen by 50% of respondent viewers as being emphasized to a considerable or great extent. The column also presents the average maximum, minimum, range and standard deviation across advertisements.

The table allows for extensive interpretation. For purposes of this working paper, we limit our remarks to several overview comments.

- Some of the attributes are highly emphasized in both video and print advertising. Messages strongly emphasized in both media include:

  - having experiences to be proud of (greater than 60% rating in 10 of 13 video and 3 of 11 print ads),

  - developing one's potential (greater than 60% rating in 5 of 13 video and 2 of 11 print ads), and

  - obtaining training in useful skill areas (greater than 60% rating in 5 of 13 video and 2 of 11 print ads).

  These messages rank 2 through 4 in average emphasis in both media. They seem to form the background of most Army advertisement, either print or video.

- Some attributes receive little emphasis in both print and video. Messages weakly emphasized in both media include Army offers of:

  - a great value to civilian career development,

  - an advantage over going straight from high school to college, and

  - a wide variety of opportunities to find a job you can enjoy.

  Only one of the three is ever rated as conveyed by more than 60% of viewing respondents. It should be noted that these career oriented attributes (especially civilian career development and wide variety of job opportunities) are frequently judged as highly important by youth respondents in the ACOMS CATI interviews.

- Some messages differ greatly in emphasis between media.

  - Money for college or vocational education messages tend to be informational intensive, and much more likely to be seen as emphasized in print than video ads.

  - Chances to work with high-tech equipment are more likely to be rated as emphasized in video ads, perhaps because they are more visually distinctive.

- Some advertisements appear to be seen as focused on particular messages. In terms of the attributes focused on:[2]

  - Civilian career development is heavily emphasized in Promises Kept and Computer Expert among video ads and Promises Kept (4 year) among print ads. However, the rating of these ads on civilian career development is still low compared with other attributes.

  - Money for education is emphasized heavily in The Letter and Promises Kept among video ads, and in several of the print ads, most especially the two versions of Promises Kept.

  - Becoming more mature and responsible is heavily emphasized in Visibility Poor and Ranger Pride among video ads.

  - An advantage over going straight from high school to college is heavily emphasized in The Letter and Flight school among video ads. However, the rating of these ads on this attribute is still low compared with the emphasis of other attributes.

  - A chance to develop one's potential is heavily emphasized in Visibility Poor and 9AM among video ads, and Father-Daughter among print ads.

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[2] The criterion for attribute focus was that emphasis for the attribute in the advertisement was more than 1.5 standard deviations above the mean for that attribute across all advertisements.

- Working with highly trained people is heavily emphasized in High-tech Aviation among print ads.

A table of Z-scores, expressing each attribute/advertisement pair as a deviation from the mean for that attribute divided by the standard deviation of that attribute is presented as Table 2.

- Video and Print ads differ slightly in terms of the extent to which they are seen as emphasizing the average attribute. The average attribute-advertisement pair emphasis is 50% for video and 47% for print. It appears further that video ads have higher maximum emphases and lower minimum emphases than print, resulting in a higher average range of emphasis for video than print. Print ads have a flatter, more balanced attribute profile on the average.

Summary and Discussion

This working paper presents a preliminary analysis of the message emphases of Army print and video advertising. The analysis should be considered preliminary because the data do not include all of the interviews conducted for the message analysis, because we have not yet integrated the various measures of ad content available in the data, and because contingent factors in message perception have not yet been assessed. Extensive data analysis will take place in the next months.

There appear to be several messages which are pervasive in Army advertisements These include messages that the Army offers an experience to be proud of, an opportunity to develop one's potential, and to obtain training in useful skill areas. Several other messages receive relatively little emphasis in either print or video advertising--these include messages that the Army is a great value in civilian career

development, an advantage over going straight from high school to college, and that it offers a wide variety of opportunities to find an enjoyable job. The fact that youth do not see these attributes as present in Army advertising is troubling for two reasons. First, these attributes are generally rated as highly important by youth respondents in ACOMS. Second, interviews with Army advertising managers conducted under ACOMS suggest that these career-oriented messages are considered important to the Army's overall marketing strategy.

The results also suggest that certain ads are available to cover these shortfalls to some extent, since some of the ads are directed to specific messages. Unfortunately, even the existing executions which focus most directly on career-oriented messages (e.g., Computer Expert) do not appear to communicate these messages forcefully, based on the message content analyses.

TABLE 1: PERCENT REPORTING AD CONVEYED ATTRIBUTE TO A CONSIDERABLE OR GREAT EXTENT BY AD MEDIUM AND SPECIFIC EXECUTION

ATTRIBUTE	VIDEO ADS 1	2	3	4	5	6	7	8	9	10	11	12	13	MEAN VIDEO	(rank)	Max	Min	Range	SD	Number > 60%
Hi-Tech Equip.	37	61	83	70	38	85	36	81	72	86	80	80	53	66	1	86	36	50	18	9
Proud Experience	47	49	70	69	72	65	60	61	65	70	62	59	71	63	2	72	47	25	8	10
Dev. Potential	57	54	56	72	62	55	65	50	59	62	60	59	76	61	3	76	50	26	7	5
Skill Training	46	66	76	63	42	60	43	45	63	60	71	72	48	58	4	76	42	34	11	6
Physical Env.	29	34	31	40	83	52	81	69	56	60	63	62	82	57	5	83	29	54	18	6
Self Confidence	39	41	43	69	67	52	75	58	59	53	50	45	60	55	6	75	39	36	11	3
High Quality	33	46	66	57	47	64	35	55	63	56	70	64	52	54	7	70	33	37	11	5
Mental Challenge	36	33	53	63	55	59	59	47	52	53	49	59	59	52	8	63	33	30	9	1
Become Mature	41	36	44	56	56	44	47	46	48	46	46	42	53	47	9	56	36	20	6	
Leadership	28	35	40	53	50	41	42	53	37	53	49	39	47	44	10	53	28	25	8	
Money for Educ.	87	87	35	34	33	33	22	39	37	28	25	38	35	41	11	87	22	65	28	2
Wide Variety	30	44	46	50	38	36	30	36	30	27	34	37	37	37	12	50	27	23	7	
Stepping Stone	50	50	27	27	22	21	15	29	61	23	22	21	13	30	13	61	13	48	15	1
Civilian Career	35	45	47	35	27	22	22	28	25	28	20	27	21	29	14	47	20	27	8	
Average	43	49	51	54	49	49	45	50	52	50	50	50	51	50		54	43	11	3	
Maximum	87	87	83	72	83	85	81	81	72	86	80	80	82	81		87	72	15	5	
Minimum	28	33	27	27	22	21	15	28	25	23	20	21	13	23		33	13	20	5	
Range	59	54	56	45	61	64	66	53	47	63	60	59	69	58		69	45	24	7	
Standard Deviation	15	14	16	14	17	17	20	14	14	10	10	17	19	16		20	14	6	2	
N	123	111	105	131	103	110	105	105	99	105	102	100	99	1398						

ATTRIBUTE	PRINT ADS 1	2	3	4	5	6	7	8	9	10	11	MEAN PRINT	(rank)	Max	Min	Range	SD	Number > 60%
Money for Educ.	79	88	85	80	42	36	41	39	84	78	39	63	1	88	36	52	22	6
Skill Training	59	57	59	72	49	58	56	65	51	57	48	57	2	72	48	32	8	2
Proud Experience	41	55	46	46	75	68	55	54	48	52	63	55	3	75	41	34	10	3
Dev. Potential	42	58	52	57	66	65	52	53	58	44	42	54	4	66	42	24	8	2
Hi-Tech Equip.	53	46	38	61	37	79	74	76	38	44	33	53	5	79	33	46	16	4
Physical Env.	36	58	48	53	58	51	58	48	54	48	53	50	6	58	36	22	8	
Become Mature	42	49	39	39	55	49	46	39	60	40	40	45	7	60	39	21	7	
Self Confidence	41	51	36	38	65	46	49	39	49	35	44	45	8	65	35	30	8	1
High Quality	41	39	38	50	42	50	49	65	34	42	36	44	9	65	34	31	8	1
Mental Challenge	38	43	38	43	55	51	51	51	42	31	43	43	10	55	30	25	8	
Wide Variety	46	52	43	44	32	42	29	48	38	43	25	40	11	52	25	27	8	
Leadership	32	36	36	41	40	40	47	39	39	39	47	40	12	47	32	15	4	
Stepping Stone	47	51	49	40	42	26	22	25	45	45	28	38	13	51	22	29	10	
Civilian Career	29	36	42	39	32	32	26	28	32	29	25	32	14	42	25	17	5	
Average	44	51	46	50	49	50	47	48	48	44	40	47		51	40	12	3	
Maximum	79	88	85	80	75	79	74	76	84	78	63	78		88	63	25	6	
Minimum	29	36	36	38	32	26	22	25	32	29	25	38		38	22	16	5	
Range	50	52	49	42	43	53	52	51	52	49	38	40		53	38	15	5	
Standard Deviation	13	13	13	13	13	14	13	14	13	12	10	13		14	10	4	1	
N	133	132	128	127	134	121	123	127	128	124	120	1397						

Table 2

Z-Scores for Video and Print Advertisement/Attribute Pairs

	VIDEO ADS												
ATTRIBUTE	1	2	3	4	5	6	7	8	9	10	11	12	13
Hi-Tech Equip.	-1.59	-0.29	0.90	0.20	-1.53	1.01	-1.64	0.00	0.31	1.07	0.74	0.74	-0.72
Proud Experience	-2.09	-1.83	0.90	0.77	1.16	0.25	-0.40	-0.27	0.25	0.90	-0.14	-0.53	1.03
Dev. Potential	-0.51	-0.95	-0.66	**1.66**	0.21	-0.80	0.65	-1.53	-0.22	0.21	-0.00	-0.22	2.24
Skill Training	-1.05	0.69	**1.57**	0.43	-1.40	0.17	-1.32	-1.14	0.43	0.17	1.13	1.22	-0.00
Physical Env.	-1.53	-1.26	-1.42	-0.93	1.41	-0.28	1.30	0.65	-0.06	0.16	0.32	0.27	1.36
Self Confidence	-1.45	-1.27	-1.00	1.32	1.14	-0.25	**1.00**	0.31	0.40	-0.16	-0.43	-0.90	0.49
High Quality	-1.93	-0.76	1.04	0.23	-0.67	0.06	-1.75	0.05	0.77	0.14	1.40	0.06	-0.22
Mental Challenge	-1.05	-2.20	0.11	1.26	0.34	0.00	0.00	-0.59	-0.01	0.11	-0.35	0.00	0.00
Become Mature	-1.00	-1.90	-0.46	**1.71**	**1.71**	-0.46	0.00	-0.10	0.26	-0.10	-0.10	-0.02	1.17
Leadership	-2.05	-1.13	-0.48	1.23	0.04	-0.34	-0.21	1.23	-0.07	1.23	0.71	-0.61	0.45
Money for Educ.	**2.20**	**2.20**	-0.30	-0.35	-0.40	-0.40	-0.94	-0.10	-0.20	-0.64	-0.79	-0.15	-0.30
Wide Variety	-1.00	1.14	1.45	**2.06**	0.22	-0.00	-1.00	-0.00	-1.00	-1.46	-0.39	0.07	0.07
Stepping Stone	**1.04**	1.32	-0.19	-0.19	-0.52	-0.59	-0.90	-0.06	**2.04**	-0.45	-0.52	-0.59	-1.11
Civilian Career	0.67	**1.06**	**2.10**	0.67	-0.20	-0.00	-0.00	-0.16	-0.52	-0.16	-1.12	-0.20	-1.00

	PRINT ADS										
ATTRIBUTE	1	2	3	4	5	6	7	8	9	10	11
Money for Educ.	0.75	1.17	1.03	0.00	-0.96	-1.24	-1.01	-1.10	0.90	0.70	-1.10
Skill Training	0.30	0.05	0.30	**1.94**	-0.97	0.17	-0.00	1.06	-0.71	0.05	-2.11
Proud Experience	-1.41	0.02	-0.90	-0.90	**2.07**	1.35	0.02	-0.00	-0.70	-0.29	0.04
Dev. Potential	-1.45	0.56	-0.19	0.43	**1.56**	1.44	-0.19	-0.07	0.56	-1.20	-1.45
Hi-Tech Equip.	0.02	-0.41	-0.09	0.51	-0.96	1.61	1.31	1.43	-0.09	-0.53	-1.20
Physical Env.	-1.04	1.07	-1.31	0.41	1.07	0.14	1.07	-0.25	0.54	-1.31	0.41
Become Mature	-0.47	0.54	-0.91	-0.91	1.41	0.54	0.11	-0.91	2.13	-0.76	-0.76
Self Confidence	-0.46	0.75	-1.07	-0.02	**2.44**	0.14	0.51	-0.70	0.51	-1.19	-0.10
High Quality	-0.30	-0.62	-0.73	0.69	-0.26	0.69	0.57	**2.47**	-1.21	-0.26	-0.97
Mental Challenge	-1.72	-0.06	-0.70	-0.06	1.40	0.96	0.96	0.96	-0.19	-1.59	-0.06
Wide Variety	0.73	1.49	0.35	0.40	-1.03	0.23	-1.41	0.90	-0.27	0.35	-1.91
Leadership	-1.01	-0.06	-0.06	0.32	0.09	0.09	**1.74**	-0.15	-0.15	-0.15	**1.74**
Stepping Stone	0.06	1.25	1.05	0.10	0.37	-1.19	-1.50	-1.20	0.66	0.66	-0.99
Civilian Career	-0.55	0.02	**2.01**	1.41	0.04	0.04	-1.15	-0.75	0.04	-0.55	-1.34

KEY TO VIDEO AND PRINT ADVERTISEMENTS

Video Ads

1 "The Letter"
2 "Promises Kept"
3 "Computer Expert"
4 "Visibility Poor"
5 "Ranger Pride"
6 "Apache"
7 "Lightfighter"
8 "Alpha Team"
9 "Flight School"
10 "MLRS"
11 "Tac Sat" (Male Voice)
12 "Tac Sat" (Female Voice)
13 "9 A.M."

Print Ads

1 "The Letter"
2 "Promises Kept - 2 Years"
3 "Promises Kept - 4 Years"
4 "Get Technical"
5 "Father-Daughter"
6 "Black WOFT"
7 "Hispanic WOFT"
8 "Hi-Tech Aviation"
9 "College Prep-Black G.I. Bill"
10 "We Were There"
11 "2+2+2"

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RECALL OF ARMY ADVERTISING FOR ACOMS DATA

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RECALL OF ARMY ADVERTISING IN ACOMS DATA

Introduction

This working paper addresses levels of recall of Army and other military advertisements. Previous analytic reports on advertising recall in ACOMS (especially the Quarterly Reports) have shown that the Army enjoys high levels of top-of-mind awareness, but that R.O.T.C. and reserve component advertising lags behind active Army. We will review these analyses to begin the results section of this working paper.

The main purposes of this working paper are, however, to expand and extend the previous ACOMS analyses of recall. Thus, the paper expands previous recall segmentation results by including analyses of ethnic differences in recall. The paper also includes analyses of recall of the media source of Army advertising and how source recall affects recall of advertising. We extend previous analyses by examining the associations among levels of recall of the advertising of various services and components to determine patterns of military advertising recognition. Perhaps most importantly, the analysis relates recall of service-specific and joint services advertising on the one hand, and perceptions of services and of the military on the other, as a preliminary test of the effectiveness of military advertising. We conclude with discussions of potential future directions for research on Army advertising recall.

The results should be considered tentative and preliminary since they are based on only the first two quarters of ACOMS data collection. Additional quarters will provide larger samples to promote more definitive interpretation. Further, in the interests of prompt dissemination of interim

findings, significance tests are not performed in this draft. Significance testing will be incorporated in a subsequent draft.

Data and Methods

The analyses which follow are based on the Primary Male Analytic Sample (PMAS) of youth interviewed during the first two quarters of ACOMS data collection. The PMAS is a subset of the youth interviewed for ACOMS consisting of males in the continental United States between the ages of 16 and 24 who have not served nor been accepted for service in the military, who are either in high school or have a regular high school diploma, who have never taken a college ROTC course and who have not yet completed their sophomore year in college. Interviews utilized in this working paper were conducted between October 13, 1986 and March 31, 1987, the first two quarters of ACOMS data collection. All results are reported on the data set weighted to represent a cross-section of American 16-24 year olds. Unweighted N's are also reported in tables of results.

ACOMS youth respondents were asked, "Thinking about all forms of advertising, for <u>which</u> military services do you recall seeing or hearing advertising?" Responses were categorized in terms of Air Force, Army, R.O.T.C., National Guard, Reserve, Coast Guard, Marine Corps, Navy, and one ad for all services, and as many responses were coded as were offered by the respondent. Only if the respondent could recall <u>no</u> military advertising was "none" recorded. Respondents mentioning R.O.T.C., Reserve or National Guard were asked "For which military service or services was this advertising?" Thus, Army R.O.T.C. and reserve component advertising recall is measured by responses indicating both the component and identifying the Army as the service. The set of variables created in this fashion represent measures of <u>unaided</u>

recall, since the respondent was not directly asked whether he recalled advertising for a particular service.

Aided recall was assessed by asking whether the respondent recalled advertising for a particular component or service. This was operationalized by asking, for each Army component or other service which was not recalled unaided, "Do you recall seeing or hearing any advertising for [the component/service]?" The starting point in the list was rotated so that all services/components had an equal chance of heading the list. Aided recall was not ascertained for reserve components of other services.

Respondents who recalled seeing an Army advertisement (or the advertising of any Army component) were also asked where they saw the advertisement. Responses could include any, some or all of the following: television, radio, magazines, newspapers, billboards, mail, posters, brochures or pamphlets or yellow pages.

Results

Table 1 presents proportions of PMAS having varying levels of recall of military advertising by component and service. Three kinds of recall are displayed:

- **Unaided Recall.** Respondent offered the name of the component when asked whether he recalled having seen military advertising;
- **Aided Recall.** Youth responded positively when asked whether he had seen advertising for this component; and

- **No Recall.** Respondent didn't offer the name of a component or service and could not recall ads for that service/component when asked directly.

As is clear, recall of Active Army advertising is extremely widespread--more then 4/5 of PMAS respond that they have seen Army advertising when asked whether they have seen any military advertising, and an additional 10% respond positively when asked whether they had seen any Army advertising in the past year. Other services' levels of unaided recall are much less (between 61 and 66%), and combined aided and unaided recall levels are less than those of the Army.

Unaided recall of JRAP (Joint Recruiting Advertising Program) advertising was assessed by coding responses which indicated "all services" or some equivalent response as JRAP. Aided recall was ascertained by asked whether respondents recalled advertising for "all the services in one ad". Both unaided and aided recall of JRAP advertising lags far behind service-specific advertising.

Recall of Reserve components, also, lags behind the Active Army and other services. A majority of PMAS youth have no recollection of R.O.T.C. advertising, and more than a quarter have no recall ARNG or USAR advertising. Further, unaided recall of ROTC advertising is offered by less than 1 in 20 PMAS, and only one in seven recall USAR advertising unaided.

The manner in which the questions on recall of R.O.T.C. and reserve component advertising were asked allows us to test brand recognition among service-specific R.O.T.C. and reserve components. The results (not presented in Table 1) suggest that the recall of Army R.O.T.C. and reserve components predominates among services. For example, among those remembering advertising for the Reserve without prompting, 93.0% further recalled the

advertising was for the Army Reserve, while only 23.7% recalled Air Force Reserve, 18.8% Navy Reserve, and 14.2 % the Marine Corps Reserve. Of those recalling National Guard advertising, 81% recalled Army National Guard, and 25.8% recalled the Air National Guard. Finally, for R.O.T.C., 86.9% recalled Army R.O.T.C. Advertising, 24.4% recalled Air Force R.O.T.C., and 29.4% recalled Navy R.O.T.C.

Recall by Market Segment

Table 2 presents the proportions of ACOMS youth respondents in various groups showing no recall of advertising for the various components and services, aided recall, or unaided recall. The respondent groups are defined by education and educational aspiration, recruiting brigade, age and ethnicity.[1] To aid interpretation, most comparisons will focus on unaided recall.

As the first panel of Table 2 suggests, the high levels of recall of Army advertising are found across various educational groupings. Differences in recall by educational groups are not strong. The higher levels of recall of Army advertising than other services' is present in all education groups. Unaided recall of military advertising is generally lowest among the work-oriented, and highest in college-oriented and college freshmen and sophomores. Further, the comparatively lower levels of recall (both aided and unaided) of R.O.T.C., USAR and ARNG advertising are found in all educational groups.

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[1] With the exception of the ethnic breakdowns, the market groups are defined as in the ACOMS Quarterly Analytic Reports. Ethnic breakdowns of recall are not presented in the ACOMS Quarterly Analytic Reports, owing to the small quarterly totals for non-white ethnic groups.

There do not appear to be strong differences in recall by recruiting brigade, consistent with the Army's advertising strategy which emphasizes national television advertising. One exception is a lesser level of recall of active Army advertising (and military advertising generally) in the 6th Brigade Region (Far West). We return to this point below.

Age differences in recall are likewise consistent with the Army's advertising strategy -- unaided recall is generally highest in younger groups, and decreases with age. Reserve component unaided recall shows some tendency to peak in the 18-21 year old group, but differences are inconsistent and weak.

Unaided recall of military advertising tends generally to be less among Black and Hispanic PMAS than among white PMAS.[2] Black PMAS unaided recall is very close to white for most military services -- the differences are consistently less than five percent (with the exception of the Navy). Hispanic PMAS unaided recall of active Army and component advertising is likewise close to that achieved for white PMAS, but lags white PMAS for the Air Force and the Marines.

Recall of Advertising Medium

Youth able to recall Army advertising (aided or unaided) were also asked whether they recalled seeing or hearing

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[2] Race and Hispanic ethnicity are determined by responses to two questions. Respondents were asked "Do you consider yourself white, Black, Asian or Pacific Islander, American Indian or Alaskan Native?" White and Black ethnicities were determined using this response. Then youth were asked "Are you Hispanic?" Responses to this question determined Hispanic ethnicity. Thus, respondents might be categorized as either white or Black by the first question and Hispanic by the second.

the advertising in a number of different media.[3] Table 3 presents the proportion of PMAS youth recalling various sources of Army advertising they had seen and heard in the previous year.

The most frequently remembered source of advertising was television, recalled by 96.1% of PMAS youth. TV is followed by magazines (83.3%) as the second most frequently mentioned source of Army advertising. The next best remembered source is recruiting posters, recalled by 71%, followed by mail (68%), pamphlets (67%), billboards (66%), radio (61%), and yellow pages (11%). The comparatively low recognition of radio advertising is somewhat surprising. We return to this point below.

Recall of Advertising Medium by Segment

Table 4 presents the proportions recalling an Army advertising source in terms of respondent market groups of interest for those respondents who could recall any Army advertising, either unaided or aided.

Roughly the same rank order of source recall is present in each of the education groups -- television is the predominant source of recall, and magazine advertising is second. However, the effects of targeted direct mail and other advertising become clearer when respondents are broken out by subgroup. There are strong differences in recall of mail advertising by education group -- a bit less than 80 percent of college freshmen and sophomores recall direct mail advertising (probably from their senior years in high school), compared with about 65 percent of

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[3] This question set was asked only of those who recalled advertising for any Army component, and did not ask the respondent to differentiate among components. The questions were not asked with respect to other services' advertising.

other PMAS youth. For high school students (both college- and work-oriented), poster advertising gains relatively high levels of recall, while for work-oriented and H.S. graduates not currently enrolled, billboards seem comparatively well remembered. The recall of radio again is consistently moderate.

Perhaps the most intriguing differences among regions are found in comparing the results for the 6th Recruiting Brigade (Far West) to the other regions. These youth tend to have lower recall of direct mail, pamphlets, billboards, newspapers and radio than other youth. In part, this might be explained by the fact that California does not release lists of students for use by recruiters, probably inhibiting the use of direct mail, pamphlets and posters. As shown in Table 2, PMAS in the 6th Recruiting Brigade region had generally lower levels of recall overall. While Table 4 is limited to those having recall of Army advertising (thus, the source attributions would not necessarily be less for the 6th Brigade Region), the pattern of both low and diffuse recall in the Far West seems consistent.

The capacity of advertising to produce top-of-mind awareness in targeted segments is reflected in the differences by age group. Thus, recall of sources generally tends to be highest among the key younger groups. However, some media are better able to target their prospect markets. Thus, direct mail advertising shows strong age differences (more than 85% of 18-19 year olds recall direct mail advertising, compared with 56% of 22-24 year olds and 61% of 16-17 year olds. Posters, pamphlets and magazines show similar strong age differences.

Other media seem to target the key younger segments less reliably. Billboards, for example, gain recall generally among the older age groups, and radio advertising shows a similar bulge among the older segments. Television and magazine

advertising, in spite of their uncontrolled distribution, seem to target age groups reasonably well, owing probably to efficient media buying patterns.

Several ethnic differences in source recall are interesting but difficult to explain. Black and Hispanic youth are more likely to recall newspaper, mail, poster and yellow page Army advertising than white youth. One potential explanation for some of these differences is a stronger high school recruiting presence in minority areas (or urban areas). There is little ethnic difference in source recall of broadcast media.

Relationships between Medium and Advertising Recall

One crude measure of the effectiveness of advertising in a particular medium is the association between recall of the medium and unaided recall of the component. It seems plausible to argue that if unaided recall of Army advertising is associated with the recall of a particular medium, exposure to that medium is probably associated with the recall of advertising. Table 5 presents data relevant to this argument, by reporting the level of unaided recall of various components among respondents naming and not naming the various sources of Army advertising.[4]

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[4] Several factors impede a strictly causal interpretation of this association. First, recognition of advertising in a particular medium is not really a measure of exposure, but rather recall of exposure. Thus, we are really associating two different recall measures, rather than exposing youth to advertising and then assessing resultant recall. This latter approach is taken in our analysis of the message content of Army advertising. Second, we did not ask where the respondent saw the advertising of various components, but rather where the respondent saw general Army advertising, so that these results should not be interpreted as assessing the efficacy of the advertising of particular components. Nevertheless, the results, while crude, are instructive.

By the logic of this argument, television advertising is the most compelling form (in terms of recall) for the Active Army--87% of those citing TV advertising have unaided recall of Army advertising, while only 66% of those not citing television as a source recalled Army advertising without aid. No other Army advertising medium seems quite as effective at producing unaided recall. Magazine and radio advertising both have small but non-negligible effects in producing unaided recall of active Army advertising.

While television advertising is a comparatively minor part of the overall Reserve advertising strategy, respondents citing recognition of Army television advertising are more likely to recall the Reserve without aid. Magazine and radio advertising for the Reserve are similarly associated with unaided advertising recall.

Television recall seems less associated with unaided recall of Guard advertising than of other components. Of course, Guard television advertising is limited to public service announcements. Rather, advertising placements in magazines seem more closely associated with unaided recall. Other media are not generally associated with increased levels of unaided recall of ARNG advertising.

Unaided recall of R.O.T.C. advertising is about equally distributed among the eight sources of advertising, although the difference in unaided recall was greatest between those who did and did not mention television as a source. Obviously, many sources of advertising (e.g., television, radio, yellow pages) are not relevant to the R.O.T.C. advertising effort at this writing. The fact that television exposure appears to lead to R.O.T.C. recall despite the absence of R.O.T.C. television

advertising may have to do with the strong college funding orientation of much active Army television advertising.

Relations Among Levels of Advertising Recall

Table 6 presents intercorrelations among levels of recall of advertising for Army components and other military advertising. The variables are scored as '0' for no recall, '1' for aided recall, and '2' for unaided recall. The order of services and components in rows and columns is designed to reflect the clustering of the correlations.

The levels of recall of service-specific advertising are fairly strongly interrelated -- that is, respondents recalling Air Force advertising, for example, also tend to recall Marine and Navy advertising as well, and to a lesser extent, Army advertising. Interestingly, this "umbrella effect" does not extend to advertising for "all services in one ad". Recall of this JRAP advertising, in fact, is not correlated with any other military advertising recall, either active or reserve.

A second cluster of advertising recall seems to include the Army R.O.T.C., USAR and ARNG. There are relatively high levels of intercorrelation for the recollection of Reserve and National Guard advertising, and to a lesser extent, both of these with R.O.T.C. advertising. In this respect, a brand image of Army components is supported. However, the association between recall of Army advertising and R.O.T.C. and reserve component recall is not stronger than that between any service-specific advertising and Army R.O.T.C. and reserve component recall. Thus, recall of Army advertising does not apparently lead directly to recall of Army R.O.T.C. and reserve component advertising.

A factor analysis of this correlation matrix, presented in Table 7, supports this clustering of recall levels. Two factors were extracted using principal components. The first factor (Eigen value = 2.42) corresponds to recall of service-specific advertising. The second factor (Eigen value = 1.13) corresponds generally to R.O.T.C. and reserve component advertising. Note, that JRAP advertising seems more closely linked to R.O.T.C. and reserve component than service-specific advertising. However, given the examination of the correlation matrix above, we suspect that recall of JRAP advertising is most closely associated with neither type.

These results raise questions regarding the role of JRAP advertising in the total military advertising effort. JRAP advertising has comparatively low unaided recall overall, and the levels of recall the ads do achieve seems unassociated with recall of service-specific advertising. The fact that recall of JRAP advertising is not closely associated with recall of Army advertising militates against the view that JRAP advertising is mistaken for Army or any other service's advertising. If this were so, there would be a stronger association between JRAP and Army advertising recall, but in fact, this association is nearly zero (r=.042).

Making the same point a slightly different way, if actual JRAP recognition were being mistaken by respondents initially as Army recognition, then a comparatively frequent sequence of responses would be unaided recall of Army advertising and aided recall of JRAP advertising ("oh, that was actually all the services in one ad"). In fact 55.4% of respondents displaying unaided recall of Army advertising also recall JRAP advertising when prompted, and this pattern is far more likely than displaying aided or unaided recall of JRAP while not

recalling Army advertising -- only 22.2% of PMAS respondents exhibit this pattern. However, 43.4% of respondents with aided recall of Army advertising also have aided recall of JRAP advertising, a proportion not very different from the 55.4% unaided-Army, aided-JRAP. Thus, we would conclude that it is not terribly frequent for Army and JRAP advertising to be confused.

Effects of Recall on Perceptions of Services

One measure of the effectiveness of advertising relates levels of recall of advertising to perceptions of the product. In this case, whether the respondent recalled service- or component-specific advertising can be correlated with the respondent's perceptions of that service.

In Table 8 we present the proportion agreeing or strongly agreeing that the Army offers the set of 14 benefits drawn from the Army's communications objectives. The results are reported in terms of three groups -- those with no recall of active Army advertising, those with aided recall, and those with unaided recall of active Army advertising. The last column reports the differences in proportion agreeing between those who have unaided recall and those having no recall at all of Army advertising.

Recall is sometimes strongly associated with perceptions, other times weakly associated. The strongest associations between recall of active Army advertising and perceptions of the Army are found with agreement that the Army offers "an excellent opportunity to obtain money for college or vocational school", "a physically challenging environment", "an opportunity to develop self-confidence", "an experience you can be proud of", "a mentally challenging experience", and "many

chances to work with highly trained people". These attributes are also seen as having high levels of emphasis in Army print and video advertising according to the message content analyses conducted for ACOMS.[5] Further, the attributes for which the correlation between recall and perception are low tend to be less strongly conveyed in Army advertising. For example, the beliefs that the Army offers "an advantage over going right from high school to college" and "a wide variety of jobs you can enjoy" two perceptions only weakly associated with recall, are also messages not generally conveyed in Army print and video advertisements based on the message analyses. Thus, the results suggest that those attributes most heavily advertised by the Army are more frequently seen as being offered by the Army among those recalling the advertising than among those who do not. The reverse is also true -- attributes not generally featured in Army advertising are not closely associated with recall. In this sense, then, Army advertising is effective in communicating the Army's communication objectives.

By way of summary, Table 9 presents Pearson's product moment correlations between recall of service- or component-specific or JRAP advertising and perceptions of the services and Army components. Recall is coded as "0" for no recall, "1" for aided recall, and "2" for unaided recall. Perceptions are responses to questions on whether the service (Army, R.O.T.C. etc.) offers the benefit described, on a scale ranging from 1 (strongly disagree) through 5 (strongly agree). Blank cells indicate that this perception was not asked for this service or component.

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[5] These message content analyses involved mall intercepts of more than 2,600 youth aged 16-24. Respondents were asked to view video and print Army advertisements and rate the extent to which they thought the advertisement sent each of the same 14 attributes. The message analysis is presented in a subsequent paper in greater detail.

The correlations between levels of recall of active Army advertising and perceptions of the Army are consistent with the differences shown in Table 8 -- strong effects on perceptions of offers of money for education, opportunities to work with high-tech equipment and a physically challenging environment. The apparently lower sizes of the correlations may be due to the limited variability of the perceptions variables.[6] Also, recall is limited to only three levels, both reducing variability and making deviations from linearity more likely. As Table 8 shows, however, these comparatively small correlations can describe situations where differences in recall imply large differences in perceptions.

Recall of Reserve advertising seems to be fairly strongly associated with beliefs that the Reserve offers "an excellent opportunity to develop self confidence", to "develop leadership skills", to "serve America while living in your own hometown" and to obtain training in useful skill areas and money for college or vocational school. While we have not conducted content analyses of the Reserve advertising, these are clearly important communications objectives and seem fairly closely associated with advertising recall.

Recall of Army National Guard advertising seems relatively less associated with the Guard's communications objectives. None of the correlations is greater than .075 in absolute value, and most are negative (i.e., favorable perceptions are more likely to be found among those with less recollection of the advertising).

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[6] This feature of the perceptions of the Army (i.e., that the basically strong favorable responses limit variability in the perceptions measures) is addressed more extensively in another analytic working paper.

Recall of R.O.T.C. advertising seems most associated with the belief that the R.O.T.C. offers a "wide variety of opportunities to find a job you can enjoy", and "an opportunity to develop self-confidence".

The ACOMS interview also allows us, for smaller random subsets of respondents, to assess the associations between service-specific and JRAP recall and service-specific and general military perceptions. Random subsets of respondents[7] were asked "To what extent does <service> offer..." the same attributes as the active Army, but eliciting responses for the Air Force, the Marine Corps, the Navy and military service, more generally. The last four columns correlate these perceptions with the recall of, respectively, Air Force, Marine Corps, Navy, and JRAP advertising.

For these common attributes, Air Force and Army advertising recall levels seem about equally associated with favorable perceptions of the respective services. To the extent that this association is a measure of advertising effectiveness, these two services' advertising seem equally effective. The associations between Navy and especially Marine advertising, however, seem a bit larger, and by this argument these advertisements appear rather effective. While we have not examined the contents of other services' advertising in any systematic way, the patterns of correlation further appear to mirror their respective communications objectives. Thus, for example, the strong recall-perceptions associations for the Marine Corps center around physical challenge, pride, potential

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[7] See the ACOMS Survey Design for details of the allocation scheme.

and maturity, and the Navy's around physical and high-tech opportunities.

The last column of Table 9 displays intriguing findings with respect to JRAP advertising. The associations suggest that if anything, respondents recalling JRAP advertisements have less positive perceptions of military service than those not recalling seeing all four services in one ad. In some cases (e.g., high tech equipment, training opportunities, an advantage over going straight from high school to college) these associations are nearly as strong as the positive effects associated with service-specific advertisements.

The results suggest that JRAP advertisements are not effective in communicating positive images of military service generally. It could be argued, however, that recall of JRAP advertising would be positively associated with perceptions of specific services. This hypothesis, using perceptions of the active Army, is examined in Table 10.

Table 10 presents the proportions agreeing or strongly agreeing that the Army offers the attributes which comprise the Army's communications objectives for three groups of respondents; (1) those having no recall of JRAP advertising, (2) those with aided recall, and (3) those with unaided recall of JRAP advertisements. The table shows that in general, those not recalling JRAP advertisements have more favorable perceptions of the Army than those who recalled JRAP advertisements without prompting. For some attributes (e.g., "an advantage over going straight from high school to college", "opportunities for training in useful skill areas") these findings are fairly strong. These findings are, by and large, the opposite of the positive effects observed for active Army advertisements. Further, in analyses not presented here, we found that

correlations between JRAP recall and perceptions of other services are also generally weak or negative.

We have no ready interpretation for the apparent negative effects of JRAP advertising recall. We are currently exploring several potential avenues of interpretation, an issue we address in next.

Summary and Discussion

This working paper has been directed to an analysis of recall of Army and other military advertising, and recall of sources of military advertising. We can summarize the results in terms of the effectiveness of Army and other military advertising, assessed several different ways. The analysis should be considered tentative and preliminary since it is based on the first two quarters of ACOMS PMAS interviewing. Nonetheless, the data suggest the following interpretations:

- The Army's advertising has been effective in producing high levels of top-of-mind awareness compared with other services measured in terms of aided and unaided recall. However, recall of R.O.T.C. and reserve component advertising lags. Levels of advertising recall are surprisingly consistent across educational, regional, age and ethnic groups, although some differences exist suggesting lower recall among youth in the 6th Recruiting Brigade region (Far West).

- There are strong differences in source recall -- television and magazine advertising are recalled more frequently and tend to be associated with unaided rather than aided recall. However, focused print advertising (e.g., direct mail, posters, pamphlets) seems better able than broadcast advertising to effectively target age and educational groups of interest. Radio advertising lags in terms of source recall,

production of unaided ad recall and targeting of key market segments.

- Fairly strong "umbrella" effects for ad recall are noted for service-specific and component-specific advertising. However, JRAP advertising recall is both low and not associated with the recall of either service-specific or R.O.T.C./reserve-component recall.

- Recall of active Army advertising is associated with favorable perceptions of the active Army, most strongly for messages which are heavily emphasized in active Army advertising, less strongly for messages less heavily emphasized (emphasis measured in terms of the message content analyses). More generally, service-specific and component-specific advertising recall is associated with positive perceptions of the service or component advertised, and especially for messages apparently receiving high emphasis. By this measure, Marine Corps advertising seems particularly effective. JRAP advertising recall seems only weakly associated with positive images of the military, and if anything negatively associated with perceptions of the Army.

The analysis suggests several directions for additional research. First, the weak recall and top-of-mind awareness of Army radio advertising seem puzzling. In other analysis (not presented here) we found that some radio vehicles (e.g., Metal Shop, the King Biscuit Flower Hour) do seem to lead to high levels of unaided recall of Army advertising. Since these vehicles do not receive wide distribution, a narrow-cast strategy may be appropriate for radio exposure. This hypothesis can be explored further.

Second, the capacity of focused print advertising to target desired market segments can be analyzed in terms of additional market segments. It may be, for example, that key R.O.T.C. and reserve component market segments (perhaps defined differently than those used here) can be effectively targeted using focused print advertising. Additional research can also be

directed to the comparatively low levels of active Army ad and source recall observed in the Far West.

Third, the general finding that top-of-mind awareness of advertising results in favorable perceptions for attributes most heavily emphasized is backed by systematic evidence only for Army advertising. Some content analysis of other service advertising might provide a more systematic basis for this finding. Further, we do not yet know whether other factors of youth background or media habits may condition this relationship. We also do not know why Marine Corps advertising seems more effective than other services' in terms of the association between recall and perceptions.

Fourth and finally, the puzzling low recall and negative effects of JRAP advertising might be examined more closely. While this study primarily concerns itself with Army advertising, the apparent negative effects of joint services advertising on Army image seem troubling. We have, as we have noted, no ready explanation for these results.

Table 1

Percent No Recall, Aided and Unaided Recall of Military Advertising by Service and Component for PMAS Youth

(Q1, Q2 Weighted; Unweighted N=2,482)

	ARMY	ROTC	USAR	ARNG	USAF	USMC	USN	JRAP
NO RECALL	6.5	54.5	26.5	29.8	12.8	13.9	18.9	39.3
AIDED RECALL	10.5	41.4	59.3	45.8	21.5	19.5	20.5	51.8
UNAIDED RECALL	83.1	4.1	14.1	24.4	65.7	66.6	60.6	8.9

Table 2

Percent No Recall, Aided and Unaided Recall of Military Advertising by Service and Component for Market Segments of PMAS Youth

(Q1, Q2 Weighted)

		ARMY	ROTC	USAR	ARNG	USAF	USMC	NAVY	JRAP	UNWEIGHTED BASE N
MARKET SEGMENTS										
EDUCATION										
College Freshmen & Sophomores	No recall:	8.7	45.0	28.2	29.2	12.5	10.8	17.3	38.2	475
	Aided recall:	9.3	49.5	52.5	45.8	17.6	21.2	17.3	53.2	
	Unaided recall:	82.0	5.4	19.3	25.0	69.9	68.0	65.5	8.6	
HS College-Oriented	No recall:	4.1	55.0	26.9	30.0	9.8	11.1	13.9	36.0	932
	Aided recall:	10.7	40.1	60.2	45.3	20.4	17.6	21.0	57.5	
	Unaided recall:	85.3	4.9	13.0	23.9	69.9	71.3	65.1	6.6	
HS Work-Oriented	No recall:	8.3	48.4	27.7	32.3	15.0	18.5	19.6	49.7	235
	Aided recall:	11.9	50.1	62.1	45.4	23.8	21.4	20.4	46.4	
	Unaided recall:	79.8	1.5	10.2	22.3	61.2	60.0	60.0	3.9	
HS Grads Not Enrolled	No recall:	5.5	59.2	24.0	27.9	13.3	15.7	22.4	39.6	840
	Aided recall:	11.8	37.4	63.0	47.2	25.4	20.8	22.7	48.7	
	Unaided recall:	82.7	3.4	13.1	24.9	61.3	63.5	54.9	11.8	
BRIGADE										
1st	No recall:	5.5	52.1	22.3	28.0	9.8	11.7	13.1	35.2	538
	Aided recall:	9.4	43.8	60.8	47.1	22.2	17.7	19.5	58.9	
	Unaided recall:	85.1	4.1	16.9	24.9	68.0	70.6	67.4	6.0	
2nd	No recall:	4.1	51.0	23.7	21.8	9.7	10.0	21.5	44.9	461
	Aided recall:	10.6	43.6	64.3	55.1	20.1	21.3	19.7	46.1	
	Unaided recall:	85.3	5.5	12.0	23.1	70.2	68.7	58.7	9.0	
4th	No recall:	6.3	50.4	27.8	29.3	15.9	14.8	15.3	37.5	727
	Aided recall:	11.7	45.9	57.2	42.6	20.6	21.6	24.8	52.1	
	Unaided recall:	82.0	3.7	15.0	28.1	63.5	63.6	59.9	10.4	
5th	No recall:	4.9	60.2	29.5	33.9	9.9	13.5	21.4	40.8	412
	Aided recall:	13.8	37.2	18.6	41.2	24.4	19.3	17.6	49.6	
	Unaided recall:	81.3	2.6	13.2	24.9	65.7	67.2	61.0	9.6	
6th	No recall:	9.6	58.6	27.1	35.2	16.0	18.1	23.1	36.4	344
	Aided recall:	8.9	36.4	59.6	45.1	23.7	19.7	22.4	53.9	
	Unaided recall:	81.5	5.0	13.2	19.7	60.3	62.2	54.5	9.7	
AGE										
16-17	No recall:	4.1	52.9	27.3	30.4	10.6	13.8	15.2	38.8	1014
	Aided recall:	10.1	43.0	59.1	44.9	20.6	18.4	20.6	54.5	
	Unaided recall:	85.8	4.1	13.7	24.7	68.8	67.9	64.3	6.7	
18-19	No recall:	6.3	51.6	25.4	28.6	12.5	11.4	15.2	37.7	643
	Aided recall:	10.6	43.7	57.6	45.2	20.2	19.7	19.2	54.8	
	Unaided recall:	83.1	4.7	17.0	26.1	67.2	68.9	65.6	7.5	
20-21	No recall:	7.4	57.9	27.5	30.6	14.6	17.1	26.4	43.4	390
	Aided recall:	8.7	37.4	59.6	49.5	21.2	18.6	18.8	48.9	
	Unaided recall:	83.9	4.7	12.9	19.9	64.2	64.3	54.7	7.7	
22-24	No recall:	7.0	55.5	23.9	27.9	12.2	12.6	20.8	37.3	435
	Aided recall:	14.2	41.3	63.4	46.3	26.7	23.5	24.6	48.4	
	Unaided recall:	78.9	3.1	12.6	25.8	61.0	63.9	54.6	14.3	
ETHNICITY*										
White	No recall:	5.8	54.5	26.6	28.6	12.1	12.8	18.1	36.6	2121
	Aided recall:	10.9	41.9	58.4	46.2	21.7	19.8	20.2	54.4	
	Unaided recall:	83.3	4.0	15.0	25.2	66.2	67.4	61.7	9.0	
Black	No recall:	6.1	51.9	21.4	28.2	12.1	11.8	20.9	51.7	258
	Aided recall:	12.0	42.7	66.6	47.7	23.0	23.0	25.4	41.6	
	Unaided recall:	81.9	5.4	12.0	24.1	64.8	65.2	53.7	6.7	
Hispanic	No recall:	7.5	56.8	31.6	35.8	13.7	15.1	17.0	44.5	262
	Aided recall:	11.4	39.5	54.0	42.3	27.6	24.3	25.8	43.5	
	Unaided recall:	81.1	3.7	14.4	21.9	58.7	60.6	57.2	12.0	

* Hispanic group overlaps with white and Black; see text.

Table 3

Percent Identifying Source of Army Advertising Among PMAS with Aided or Unaided Recall of Any Army Advertising

(Q1, Q2 Weighted; Unweighted N=2,387)

Source	Percent
TV	96.1
Magazines	83.3
Poster	70.6
Mail	68.3
Pamphlets	67.4
Billboard	66.0
Radio	61.5
Newspaper	29.0
Yellow Pages	10.6

Table 4

Percent Identifying Source of Army Advertising Among PMAS Market Segments for Those with Aided or Unaided Recall of Any Army Advertising

(Q1, Q2 Weighted)

	TV	RADIO	MAGAZINE	NEWS-PAPER	BILL-BOARD	MAIL	POSTERS	PAMPHLET	YELLOW PAGES	UNWEIGHTED BASE N
PMAS										
College Fr. Soph.	94.4	62.3	84.4	29.1	63.7	79.5	69.4	70.8	9.8	457
HS College-Oriented	96.4	60.4	86.5	23.9	62.1	65.1	75.9	72.3	10.7	908
HS Work-Oriented	96.8	58.2	85.0	24.1	78.8	63.3	78.9	70.7	11.8	225
HS Grads Not Enrolled	95.6	62.5	80.0	33.6	69.2	65.9	65.8	61.4	10.7	817
BRIGADE										
1st	97.3	62.9	86.3	32.1	66.8	69.1	75.2	69.8	6.0	528
2nd	94.7	66.8	83.4	32.7	72.3	64.3	72.4	70.3	15.2	445
4th	96.1	60.3	82.8	26.2	67.1	74.5	70.4	70.1	9.3	707
5th	95.9	60.9	81.3	30.8	67.6	70.6	66.6	66.5	13.4	401
6th	96.4	55.4	82.4	22.1	53.1	60.4	67.1	57.5	9.0	326
AGE										
16-17	96.6	60.1	86.2	24.4	63.4	61.3	76.0	72.3	9.5	981
18-19	95.3	60.5	87.5	30.8	64.0	85.9	72.1	73.5	11.3	622
20-21	96.9	64.9	78.8	31.3	68.4	72.8	68.2	67.4	10.1	376
22-24	85.6	61.9	78.0	31.6	69.8	56.2	63.5	54.0	11.4	425
ETHNICITY*										
White	96.2	61.8	82.8	26.2	64.2	68.1	69.7	65.8	8.8	2058
Black	94.6	65.1	86.0	43.6	79.8	73.6	78.7	79.1	20.6	255
Hispanic	96.2	62.7	83.7	35.5	63.0	73.6	78.1	67.0	12.4	249

* Hispanic overlaps with white and Black; see text.

Table 5

Percent Unaided Recall by Source of Ad Among PMAS with Aided or Unaided Recall of Any Army Advertising

(Q1, Q2 Weighted)

Source of Ad	Percent Unaided Recall of:											
	ACTIVE ARMY Advertising			USAR Advertising			ARNG Advertising			ROTC Advertising		
	Among Those Who:			Among Those Who:			Among Those Who:			Among Those Who:		
	Mentioned Source	Did Not Mention Source	DIFF.	Mentioned Source	Did Not Mention Source	DIFF.	Mentioned Source	Did Not Mention Source	DIFF.	Mentioned Source	Did Not Mention Source	DIFF.
TV	86.7	66.1	19.6	15.1	1.9	13.6	27.2	22.2	5.0	4.4	.6	3.8
Magazine	86.4	82.9	3.5	15.6	9.2	6.4	26.8	17.6	9.2	4.7	3.7	1.0
Poster	86.0	85.6	.4	15.9	11.1	4.8	27.0	21.0	6.0	4.5	3.6	.9
Mail	86.4	84.6	1.8	15.8	11.9	3.9	26.9	21.5	5.4	4.6	3.5	1.1
Pamphlets	86.3	84.8	1.5	16.0	11.5	4.5	26.2	23.0	3.2	4.8	3.0	1.8
Billboard	86.5	84.8	1.7	15.2	13.0	3.2	25.8	23.9	1.9	3.9	4.9	-1.0
Radio	87.3	83.6	3.7	17.0	10.3	6.7	27.2	22.2	5.5	4.8	3.4	1.4
Newspaper	86.3	85.6	.7	20.4	12.0	8.4	27.8	24.0	3.8	6.7	3.2	3.5
Yellow Pages	85.7	85.9	.8	17.1	14.2	2.9	32.2	24.4	7.8	5.3	4.1	1.2

Table 6

Intercorrelations of Levels of Recall of Advertising for Services and Components Among PMAS*

(Q1, Q2 Weighted; Unweighted N=2,482)
(Cell Entries are Pearson's r's)

	1	2	3	4	5	6	7	8
1) ARMY	--	.236	.254	.239	.042	.091	.228	.217
2) USAF		--	.361	.335	.018	.121	.226	.233
3) USMC			--	.344	.032	.222	.250	.218
4) USN				--	.004	.126	.222	.212
5) JRAP					--	.073	.085	.133
6) ROTC						--	.188	.250
7) ARNG							--	.328
8) USAR								--

*Recall is scored as 0 = no recall, 1 = aided recall, and 2 = unaided recall.

Table 7

Factor Analysis of Levels of Recall of Services and Components Among PMAS*

(Q1, Q2 Weighted; Unweighted N=2,482)

	Rotated Factor Matrix	
	FACTOR 1	FACTOR 2
ACTIVE ARMY	.528	.173
USAF	.694	.071
USMC	.701	.089
USN	.717	.005
JRAP	-.199	.643
ROTC	.113	.596
ARNG	.414	.492
USAR	.332	.631
Eigen Value	2.423	1.131

* Principal components, varimax rotation.

Table 8

Percent Agree or Strongly Agree that the Active Army Offers Attributes Across Levels of Army Ad Recall

(Q1, Q2 Weighted)

Percent "Agree or Strongly Agree" that Army offers...	Among PMAS With: (1) No Recall Army	(2) Aided Recall Army	(3) Unaided Recall Army	(3) − (1)
ATTRIBUTE				
1) a wide variety of opportunities to find a job you can enjoy	53.6	56.8	58.0	4.4
2) a physically challenging environment	64.8	76.7	83.2	18.4
3) an experience you can be proud of	53.3	68.9	68.6	15.3
4) an advantage over going right from high school to college	47.6	48.7	44.6	-3.0
5) an opportunity to develop leadership skills	64.1	68.1	71.9	7.1
6) a chance to work with the latest hi-tech equipment	70.1	74.6	79.0	8.9
7) a great value in your civilian career development	43.5	51.5	53.3	9.8
8) an opportunity to develop self-confidence	56.5	67.9	72.0	15.5
9) an opportunity to develop your potential	60.9	67.4	68.8	7.9
10) a mentally challenging experience	50.5	66.3	65.7	15.2
11) an opportunity to become more mature and responsible	66.9	71.8	76.4	9.5
12) many opportunities for training in useful skill areas	65.4	68.3	73.6	8.2
13) many chances to work with highly trained people	59.0	70.2	74.2	15.2
14) an excellent opportunity to obtain money for college or vocational school	60.1	72.7	79.2	19.2
Unweighted Base N's	130	279	2,073	

Table 9

Correlations Between Recall of Advertising of Services and Components and Perceptions of Corresponding Service/Component Among PMAS*

(Q1, Q2 Weighted)
(Cell Entries are Pearson's r's)

	ARMY	USAR	ARNG	ROTC	USAF	USMC	USN	JRAP
ATTRIBUTE								
1) a wide variety of opportunities to find a job you can enjoy	.046	.036	-.070	.145	.057	.071	.012	-.079
2) a physically challenging environment	.126				.085	.184	.175	.104
3) an experience you can be proud of	.081	.089	-.063	.080	.155	.136	.069	.014
4) an advantage over going right from high school to college	-.020				-.081	.148	-.018	-.119
5) an opportunity to develop leadership skills	.046	.126	.009	.052	.121	.101	.138	-.057
6) a chance to work with the latest hi-tech equipment	.112				-.028	.111	.145	-.102
7) a great value in your civilian career development	.053	.115	-.075		.077	.130	.002	-.005
8) an opportunity to develop self-confidence	.103	.195	-.016	.103	.098	.054	.061	-.057
9) an opportunity to develop your potential	.077	.115	-.019		.060	.171	.090	-.084
10) a mentally challenging experience	.102	.113	-.009		.064	.134	.197	-.051
11) an opportunity to become more mature and responsible	.097	.082	.001		.086	.211	.027	-.058
12) many opportunities for training in useful skill areas	.080	.124	-.019		.066	.105	.014	-.120
13) many chances to work with highly trained people	.104	.038	-.004		.029	.068	.069	-.083
14) an excellent opportunity to obtain money for college or vocational school	.116	.124	-.019		.104	.070	.072	-.028
15) a chance to serve America while living in your own hometown		.184	.008					
16) interesting and exciting weekends		.092	.029					
17) a college elective that can be taken together with other college courses				.012				
18) an officers' commission in the Active Army, Army Reserve, or the Army National Guard				.013				
19) The opportunity to use your college-acquired skills				.070				
20) the opportunity to make changes and use your own judgment				.043				
Unweighted Base N's	2,336	378	350	661	227	230	226	231

* Blank cells indicate attribute not asked for that service/component.

Table 10

Percent Agree or Strongly Agree that the Active Army Offers Attributes Across Levels of JRAP Ad Recall

(Q1, Q2 Weighted)

Percent "Agree or Strongly Agree" that Army offers...	Among PMAS With: (1) No Recall JRAP	(2) Aided Recall JRAP	(3) Unaided Recall JRAP	(3) − (1)
ATTRIBUTE				
1) a wide variety of opportunities to find a job you can enjoy	60.1	55.6	58.0	-2.1
2) a physically challenging environment	80.0	82.4	82.9	-2.9
3) an experience you can be proud of	69.6	66.4	67.6	-2.0
4) an advantage over going right from high school to college	52.4	40.7	40.9	-11.5
5) an opportunity to develop leadership skills	69.6	71.2	76.3	5.7
6) a chance to work with the latest hi-tech equipment	79.1	77.4	76.9	-2.1
7) a great value in your civilian career development	54.8	51.4	49.6	-5.2
8) an opportunity to develop self-confidence	74.3	68.2	69.3	-5.0
9) an opportunity to develop your potential	69.6	67.5	66.2	-3.4
10) a mentally challenging experience	66.0	64.2	64.4	-1.6
11) an opportunity to become more mature and responsible	76.7	74.6	73.9	-2.8
12) many opportunities for training in useful skill areas	74.5	72.8	63.0	-11.5
13) many chances to work with highly trained people	74.6	72.6	67.2	-7.4
14) an excellent opportunity to obtain money for college or vocational school	75.0	79.4	76.0	-1.0
Unweighted Base N's	891	1,314	205	

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Manpower and Personnel Policy Research Group

Working Paper MPPRG 89-04

THE CHANGING RECRUITING ENVIRONMENT: FY86 - 89

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The U.S. Army is currently facing the most difficult recruiting environment since the "hollow Army" years of 1978-79. Recent cuts in recruiting resources have made it very difficult for the Army to compete in the youth labor market in the face of both the continued decline in the youth population and the growth in the national economy. Unless our competitive position can be remedied, end-strength will be met only by taking a large number of less qualified youth. The repercussions of this will be higher costs in the future due to lower performance and increased turnover and a reduction in Army readiness.

The Army has voiced concern about the state of recruiting over the past several years. Enlistment forecasts issued by the Army Research Institute projected significant shortfalls beginning in 1987 as unemployment began to fall. These projections were born out by events. Figure 1 illustrates the drop in net contracts for "high quality" (high school graduates scoring in the top 50th percentile on the AFQT) males, plotted against male youth unemployment from 1986. The close link between Army enlistments and youth unemployment is clearly evident. With youth unemployment at its lowest level in over 10 years, considerable pressure has

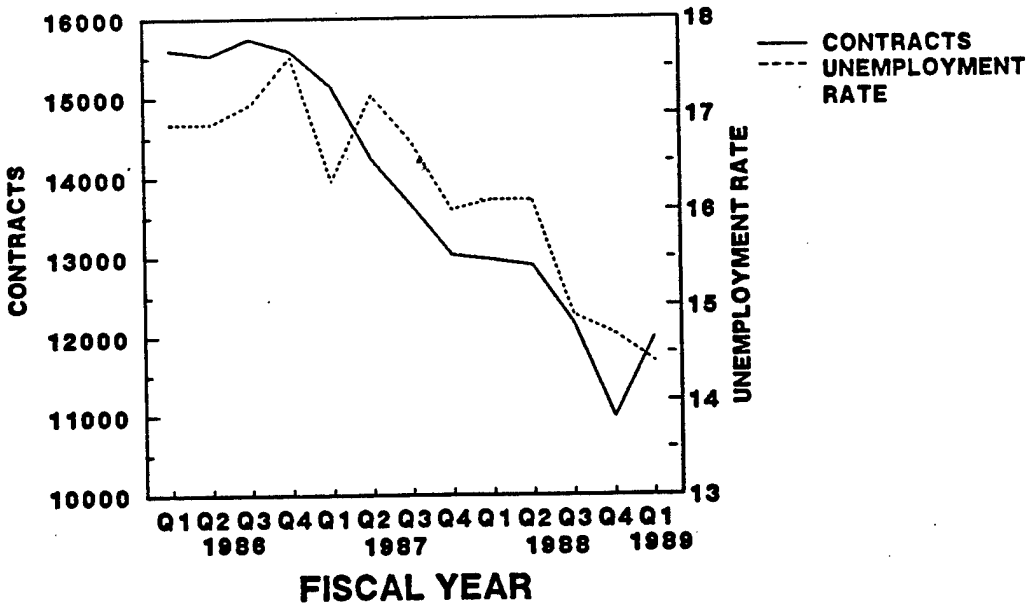

Figure 1. High Quality Male Enlistment Contracts and Male (16-21) Unemployment Rates.

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been placed on the Army's recruiting force. As a result high quality male enlistments have fallen from 60,500 to 49,000 (or 19%) between FY86 and FY88, while total contracts have fallen from 134,100 to 110,900 (or 17%) over the same period. **For the first quarter of FY89, we missed our accession goal -- the first time since 1980.**

Another important indicator of recruiting difficulties is the size of the Army's Delayed Entry Program (DEP). This program, which functions as a kind of manpower inventory, consists of recruits who have signed enlistment contracts and are waiting for their accession date. At the beginning of FY86, the size of Delayed Entry Program was 34% of the recruiting goal. By the first quarter of FY89, the program had fallen to 27% -- the lowest in six years. This downward trend has serious implications for Army recruiting.

- The inventory is being reduced in an attempt to meet accession goals, a circumstance that cannot continue much longer.

- The decline in the program affects recruiter behavior. There is greater pressure on recruiters to find individuals for immediate shipping. Recruiters must spend less time generating contacts and visiting schools, activities that are more conducive to recruiting bright, highly motivated individuals.

Manpower quality, as reflected in AFQT scores and numbers of high school graduates, is also falling. The percent of recruits scoring below 31 on the AFQT (category IV recruits) has risen from 4% in 1986 to nearly 11% as of December 1988, and shows no signs of abating (figure 2).

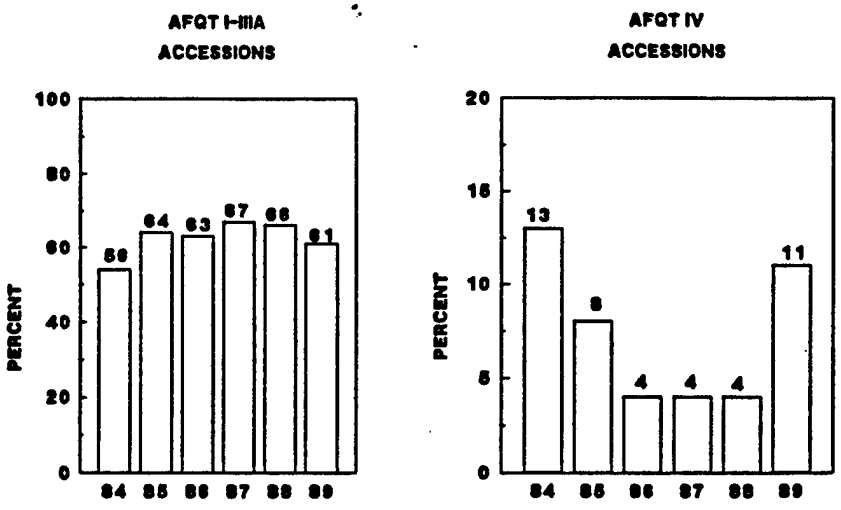

Figure 2. Army Accessions by AFQT Score.

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The reduction in manpower quality imposes large costs in the long run.

- Lower quality soldiers have higher attrition rates. Recruits without a high school diploma experience attrition rates double that for high school graduates.

- Soldiers with lower AFQT scores receive lower grades in advanced individual training and also perform relatively less well in the field. Reduced soldier quality not only decreases combat-effectiveness of the fighting force, but is also likely to result in higher systems maintenance costs.

- Our research shows that lower quality soldiers will perform up to 18% poorer and experience attrition rates up to 25% higher than their higher quality counterparts.

Although strong growth in the economy and the continued declines in youth population appear largely responsible for the downturn in Army recruiting, several policy changes have exacerbated the problem. Funding for the Army College Fund fell from $130M in FY86 to $60M in FY88, while the number of two-year seats has been cut from 11,400 to about 5,000 over the same period (Figure 3). The Army is no longer permitted to offer the two-year enlistment option for noncombat specialties, which severely limits our ability to compete successfully in the labor market.

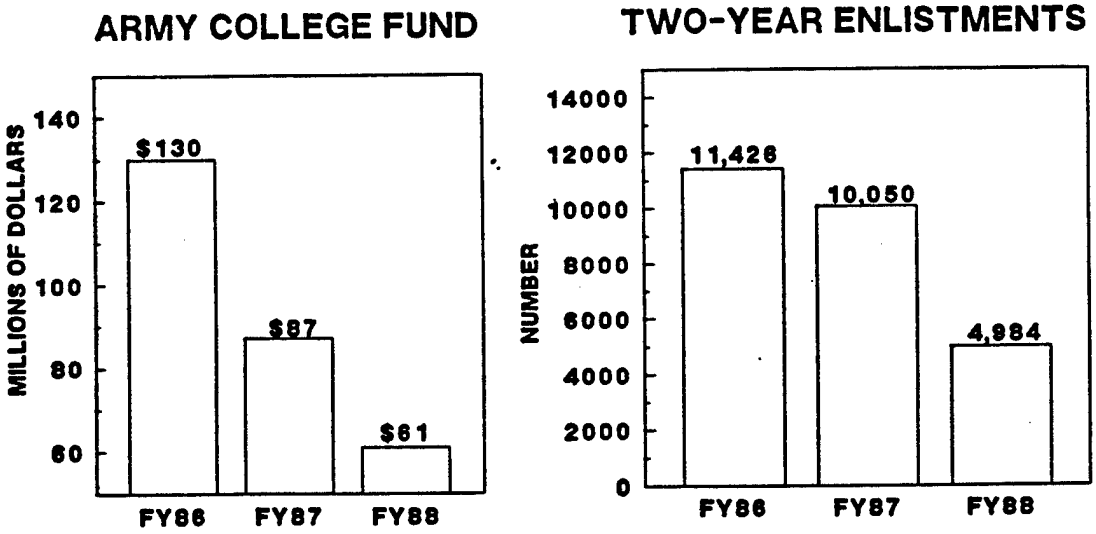

Figure 3. Army College Fund Budget and Number of Two-Year Enlistments.

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It is precisely at times like this -- when the youth labor market is tight -- that the Army must be resourced adequately and have at its disposal countercyclical policy options. The Army needs special consideration to give it a competitive edge.

Recall that the Gates Commission in 1973 recognized that the Army would have the most difficulty in the All-Volunteer Force era because

> "... nonmonetary conditions of service are less attractive in the Army than the other three services".

Even Rand argued a decade later that

> "... the special problems faced by the Army should be recognized ... [And] one means of assisting the Army is to build more generous educational benefits into the Army Program".

Two specific options designed to offset the Army's competitive recruiting disadvantage include the Army College Fund and the two-year enlistment option.

In 1982, the Army developed its "Dual Market" strategy for recruiting. It was recognized that **work-oriented** youth were very much inclined to join the Army for job security, competitive pay, and skill training. But for a large and growing segment of the population, these traditional benefits had less appeal. This segment, **college-bound** youth, is more interested in educational benefits -- to offset the interruption in their career plans and the disamenities of military service. Because college-bound youth are reluctant to enlist for long tours, a two-year enlistment option was offered in selected occupational specialties.

The notion was that we would offer an Army-specific educational benefit **(Army College Fund)** over and above the military-wide benefit. This would act like a "monetary" increase in incentives to increase recruit supply. Offering a **short tour**, a non-monetary incentive, also expands the market, but without increasing costs.

The Dual Market strategy hypothesis was supported by two national surveys. Data from the Department of Labors' National Longitudinal Survey suggested the major reason why youth did not join any military service (before there was an Army College Fund) was because they wanted more schooling. And an Army survey of new recruits (after the Army College Fund was instituted) consistently shows that the most important reason for enlisting among highest quality soldiers was "money for a college education"; the most important reason among lower quality enlistees was "skill training" (Figure 4).

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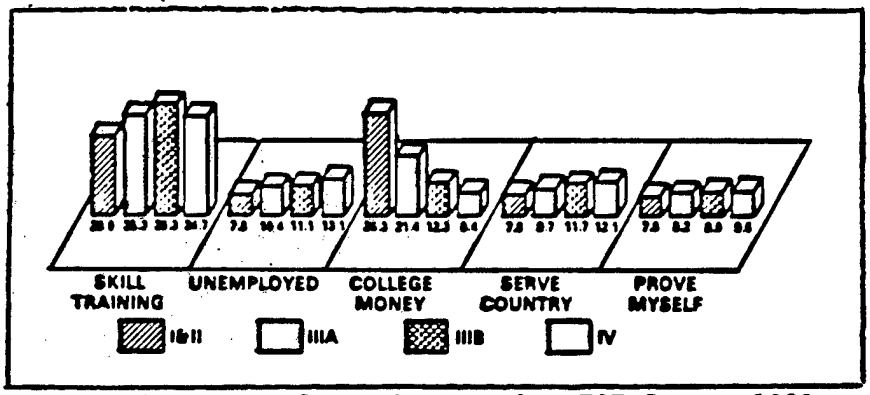

Figure 4. Reason for Enlisting by AFQT Score, 1982
(Male High School Degree Graduates)

This survey also told us that a large number of two-year recruits would not have joined the Army if there were no two-year enlistment option. In each of the last three years, between 60% and 65% said they would not have enlisted in the service if a two-year option were not available.

But, unfortunately the two-year/Army College Fund program has been cut back considerably, and is a major factor in our inability to make our high quality recruiting goal. The estimated shortfall will be about 4,000 high quality recruits for FY89.

If the Army is to meet **both** approved quality goals and required manpower end-strength levels, the means must be provided to increase quality enlistments, not only by an amount sufficient to alleviate the shortfall, but also to increase the manpower inventory in the Delayed Entry Program.

One option to alleviate the shortfall is to increase recruiting resources; but budgets are tight. Another is to lobby for an increase in military compensation; but that takes time and does not help the Army specifically. The Army has already instituted measures to enhance recruiter productivity and we are recruiting individuals for longer tours. One option, however, which is not only one of the least costly but the most effective is an expansion of the two-year Army College Fund program. In addition to remedying the recruiting shortfall, it provides a number of other benefits.

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- The two-year option generates a large pool of trained reservists that can be mobilized with little preparation. Soldiers who participate in the selected reserve component save both recruiting and training resources that are required for non-prior service soldiers.

- Educational benefits are socially beneficial. The programs provide opportunities for further education that perhaps could not be financed otherwise, or which would have required educational loans from other government agencies. Education itself yields returns to the Nation in terms of future productivity.

- The lower retention associated with a short tour ensures a younger fighting force required for a combat-intensive organization.

- The resulting lower grade structure will cost less because basic pay is lower, fewer dependents are claimed, and retirement benefits are less likely to be collected.

- The two-year program is also useful for allocating recruits to shortage occupational specialties.

The two-year option appears to be an efficient means of attracting college-bound youth to the Army. This is a cost-effective strategy because as market penetration of the non-college-bound market increases, the marginal cost of recruiting rises sharply. Diversification into alternative markets expands the supply of potential recruits.

The importance of educational benefits -- particularly the Army College Fund -- to Army recruiting in the AVF era is evident in Figure 5. The Army is clearly dependent upon an educational benefits program. But coupled with the two-year enlistment option

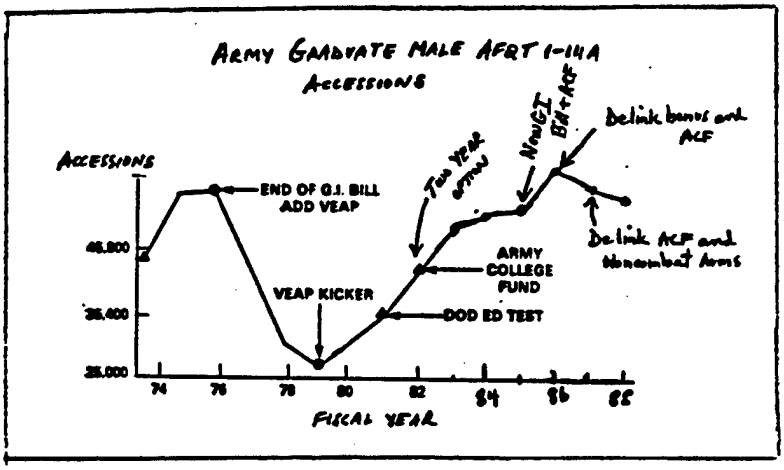

Figure 5. Army Graduate Male AFQT I-IIIA Accessions

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instituted in FY82, this joint incentive has been an even more significant factor in enriching the quality of enlisted accessions. The detrimental effects on high quality accession of the constraints imposed on the two-year/ACF program in FY87 are also clearly shown in Figure 5. The Army made its FY88 accession mission only by drawing down the DEP to a dangerously low level.

If current recruiting trends continue, Army readiness will be negatively affected by the decline in both total numbers of recruits and the quality of new enlistments. Constant end-strength cannot be maintained in the face of a declining youth population and a tight youth labor market if Army recruiting resources are simultaneously reduced as they have been since FY86 (Figure 6).

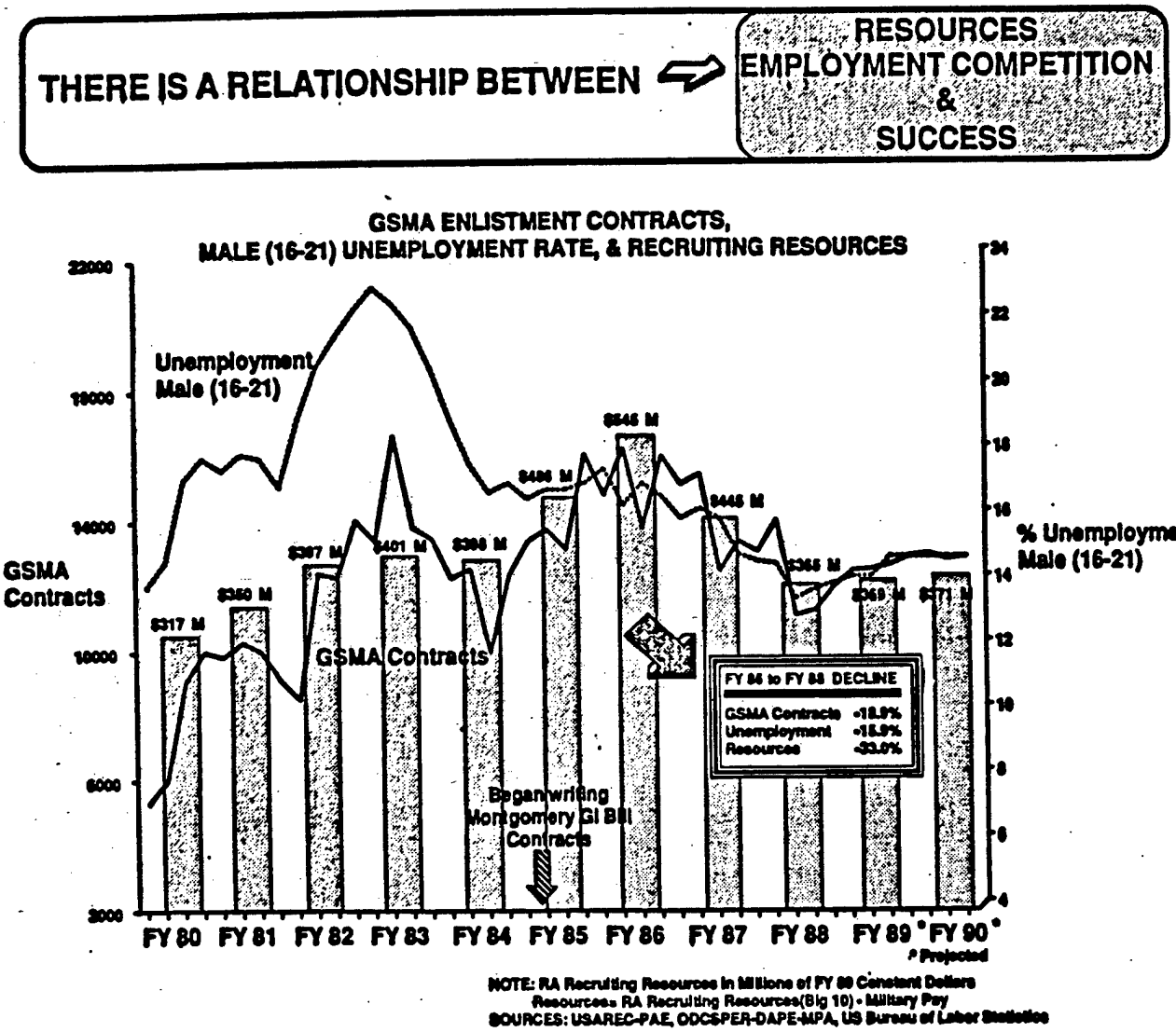

Figure 6. High Quality Enlistment Contracts, Male (15-21) Unemployment Rate, and Recruiting Resources.

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The link between enlistments aand recruiting resources is very close. The Army needs the **resources** to remain competitive in the youth market and the **flexibility** to provide attractive enlistment options to potential recruits.

Last year the Army asked the Congress to restore the two-year/ACF program to non-combat occupational specialties. Because the benefit package can be offered only to enlistees in the combat arms, it does not appeal to as many potential recruits. Although the program was not restored at that time, doing so now will reverse the serious downtrend in Army recruiting. Based on past experience we know the market is there. So we ask for your help as competition becomes even more intense for quality youth from the business sector, the academic community, and the other services.

Revision

Working Paper MPPRG 86-40

ENLISTMENT MOTIVATION AND RETENTION IN THE U.S. ARMY:

A PRELIMINARY ANALYSIS

by

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ENLISTMENT MOTIVATION AND RETENTION IN THE U.S. ARMY: A PRELIMINARY ANALYSIS

DAVID K. HORNE*

Economic reenlistment models are derived from an assumption that an individual who is eligible to reenlist chooses between civilian and military alternatives on the basis of the economic and nonpecuniary aspects associated with each alternative. The individual is assumed to exhibit optimizing behavior given the information about each alternative.

One weakness of this approach is that the original enlistment decision should also be considered a result of optimizing within the same framework. Individuals who enlist, for example, may do so in order to accumulate educational benefits for school and are likely to separate after completing the first term. Alternatively, individuals who enlist with the intention of following a career in the military may be more likely to reenlist following the initial term. The reasons individuals enlist, we expect, can have an impact on whether they reenlist or not.

The hypothesis that reenlistment behavior will be a function of enlistment motivation which varies across individuals

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does have implications for how retention behavior is modeled. The taste for the military will vary, not only across individuals, but also over cohorts. If the economy enters a recession and youths cannot find employment, enlistment are expected to increase. However, this cohort will have less of a preference for military service. Therefore, the cohort may be relatively insensitive to reenlistment bonuses, for example. A pay elasticity based on other cohorts may not be directly applicable.

Thus studies which model reenlistment over time, particularly using longitudinal or panel data, should consider the impact of particular cohort effects. Some of the cohort effect may be captured to the extent that standard test score and educational variables are included in the analysis, since these will change over time. However, additional information on cohorts might improve the estimation of the relevant policy parameters within the framework of retention models.

This paper utilizes several Army data sources to model reenlistment behavior. The source of motivational data is the Army Survey of New Recruits. This data has been collected annually by the Army Research Institute (ARI) since 1982. The 1982 survey data has been matched with the latest personnel files available (the 1985 Cohort data) to allows matching enlistment motivations and plans for future army participation with the actual reenlistment behavior for the recruits. The two- and three-year recruits will have already made the decision to leave

or to stay. This research will continue to track recruits into the future for a larger sample.

Model specification is also considered in this paper. The recent trend has been to model retention as a trichotomous choice: separate, extend, and reenlist. However, it appears that retention behavior may be more appropriately modeled as a dichotomous choice. We also analyze the eligibility data. However, since some soldiers are declared ineligible to reenlist, grouping these individuals with soldiers who choose to leave may introduce serious biases into the regression equations.

MODEL SPECIFICATION

Eligibility Requirements

When an soldier in the Army reaches the expiration of the term of service, reenlistment eligibility is determined. Individuals are rated as either eligible to reenlist, ineligible to reenlist without a waiver, or ineligible to reenlist. Soldiers may be ineligible to reenlist for a number of reasons. For example, test scores on the skill qualifications test may be too low, soldier evaluations may not be sufficiently high, or the soldier may have experienced some disciplinary difficulties. There are several potential problems associated with the eligibility criteria in retention models. These are discussed below.

The reenlistment equations represent models of occupational choice. Grouping ineligible soldiers with those who choose to separate may create serious biases in the estimation since the separation category does not reflect individual choice. It is likely that the group of soldiers who are determined to be ineligible is not representative of the entire sample. The eligibility category itself, however, is unlikely to be completely policy-determined. Soldiers who have no intention of remaining in the Army may have little incentive to meet performance standards towards completion of the term. It is possible that some of the soldiers who are ruled ineligible could have met reenlistment standards had they desired to enlist. However, the importance of this source of self-selection is unknown.

Another problem concerning the eligibility criteria is that the criteria themselves change over time in response to manpower requirements of the Army. When retention is too low, eligibility requirements (such as minimum test scores) may be lowered to retain additional soldiers. Alternatively, when retention is good, raising the standards not only limits the flow of second-term soldiers but may also increase the quality of the career force. This policy tool is another reason why cohort effects may be significant over time. However, the changes in eligibility standards over time cannot be measured in this research which uses a single cohort.

Eligibility codes are determined when an individual reaches the point of reenlistment. In the sample of 2698 males used for this study, eligibility codes are generally consistent with reenlistment status. The status of soldiers who still remain in their first term (including those who extended) are unknown. Those who have reenlisted are all rated as eligible (with the exception of a single unknown case). Soldiers who separated upon completion of their tour are generally eligible to reenlist in the sample, although 17 percent would have needed a waiver to reenlist. Very few soldiers, in fact less than two percent, were rated as ineligible, and most of these had left the service before completion of term of service. Only one observation that was listed as separated upon completion of service actually was coded as ineligible to reenlist.

The category which is difficult to deal with is that for which a waiver is required for reenlistment. Almost 29 percent of the sample falls into this category. Of these, 84 percent have attrited, and 15 percent have separated. Not a single soldier in this category reenlisted. This suggests that, at least in 1985 (when the tape was created), reenlistments were sufficiently high and waivers were not easily obtained. For the purposes of this analysis, it would appear that this group was not given the option of reenlisting. Therefore the retention analysis was limited to the sample rated as fully eligible to reenlist, excluding those that required a waiver.

Retention Choices

When soldiers reach the end of the enlistment term of two, three or four years, they may choose to separate from the Army, extend their tour for up to 36 months, or reenlist for three to six years. The extension alternative, however, is dissimilar to the other alternatives. To understand how extensions should be modeled, it is necessary to understand why soldiers extend.

The majority of extensions is for relatively short periods. Soldiers extend for a number of reasons. Soldiers sometimes extend before reenlisting in hopes that the reenlistment bonus will increase. This is particularly true when enlistment bonuses are temporarily discontinued near the end of the fiscal year because the bonus funds have been depleted for the year. Soldiers also extend to meet requirements for specific assignments. For example, the Army will not assign soldiers to a European tour if they have less than eighteen months remaining in their tour. After training or other assignments, a soldier may not have the full eighteen months left in their tour but may desire to be stationed in Europe. The soldier may extend his or her tour in order to qualify. Additional time in service is required for authorization to have a family accompany the soldier. Another reason soldiers may extend is to attend an Army school when twelve months of duty may be required upon completion of the training. These are a few of the reasons soldiers may choose to extend their initial tour.

The decision to extend is substantially different from the decision to reenlist or separate. The extension decision generally made in the framework of a short planning horizon on the basis of considerations such as assignment or training requirements or reenlistment bonuses. Alternatively, the decision to reenlist or separate is assumed to be made in reference to a much longer time horizon on the basis of relative (life-cycle) earnings, taste for military service, and other considerations. Including extension decision as a separate choice, when the extension is often made conditional on reenlistment plans, may create a potential for serious bias in the estimation of policy parameters. The period of time for most extensions is so short, it may be more logical to follow the soldiers until they have made the decision to either separate or reenlist. The observations may then fit into a dichotomous framework. This latter approach is taken in this analysis.

Another problem with modeling extensions as a separate group is that Army personnel data does not facilitate identification of all extensions. Personnel data such as the enlisted master file or COHORT data are essentially snapshots of the enlisted force. No longitudinal data is available. Identification of reenlistment status is based on comparisons of expected time of separation (ETS) dates, because this is a relatively reliable field. There are two primary ETS fields in the COHORT data: an original ETS date and a second updated ETS date. If the second ETS date is greater than the first, it is

assumed that the individual either extended or reenlisted, or both. Lakhani and Gilroy (1986) used the 1981 Enlisted Master File to identify soldiers who were approaching the reenlistment window and obtained the status for each soldier from the 1982 Enlisted Master File on the basis of whether the soldier was still in the Army. Extension or reenlistment status was identified by whether the new ETS date was less than three years (extension) or three to six years (reenlistment).

The weakness with this approach is that only a specific subset of extensions are identified. Some soldiers who extend for several months and then leave will not be included on the new personnel file (technically they are included on a loss file, but not on the gain file). This group will be categorized as separatees. Other soldiers who extend for a few months and then reenlist will have new ETS dates in excess of three years, and are counted as reenlistees. The only extensions which are identified as extensions are those that are of sufficient length of time or close enough to the when the second file is created that no further action has been taken.

The COHORT file used for this research provides somewhat more information on extensions because the final status of all individuals originally in the cohort are kept. Both the original and secondary ETS dates are kept for individuals who eventually separate, for example, so those who had extended can be identified. In addition, the pattern of ETS dates can be

compared with the "separation program designator" codes to verify separation and reenlistment status information.

The proportions of individuals in each retention category for the sample can be seen from Table 1. The largest proportion is for those who left service before completion of service: 27 percent. Approximately 25 percent are still in their first term, while 25 percent have separated. To date, almost 13 percent have reenlisted, and 8 percent have extended and are still in the service.

TABLE 1

REENLISTMENT STATUS OF SAMPLE

Status	Enlistment Tour		
	2	3	4
Extend: In	4	134	82
Reenlist	30	304	10
First tour	0	7	666
Separate	155	516	0
Extend: Out	8	2	0
Attrite	26	389	319
Unknown	10	27	9
Total	233	1379	1086

Source: 1982 New Recruit Survey matched with COHORT (1985) tape

These numbers can be compared with the reenlistment status of the entire 1982 male cohort (of 103,351 individuals). Approximately 12 percent of this cohort had reenlisted, 8 percent remained in the extension period, and just less that 1 percent

had extended and then left. Thirty three percent of the males in the cohort had attrited by 1985.

The comparison of the numbers from the entire COHORT file with the Survey of New Recruits demonstrates that the smaller recruit sample reenlistment, separation, extension and attrition rates are representative of the larger population. We now turn to the career intentions of the new recruits.

Retention Intentions and Behavior

In a world with no uncertainty and perfect foresight, recruit intentions and actual behavior would correspond exactly. However, the majority of recruits are just out of high school and have a good deal of uncertainly as to their career plans. Moreover, they may have little idea what to expect from military duty. It would be very useful to follow recruits over time in their military career to obtain information on their experiences, perceptions and changes in attitudes. Unfortunately, such data is unavailable.

Even given the uncertainty of the new recruits, one would expect a positive relationship between intentions and actual behavior. Recruits were asked about their plans following this enlistment tour: did they plan to separate, reenlist, make the Army a career, or don't know. The responses were compared to actual subsequent behavior. This relationship is quantified in Table 2. The numbers demonstrate a logical pattern. For

example, of those recruits who planned to leave after the first tour, 11.7 percent reenlisted while 26.5 percent separated. For recruits who planned to reenlist, 27.Ø percent actually reenlisted while only 15.8 percent separated. The extension numbers are also interesting. Of those who planned to leave, 4.5 percent are still in the extension mode. However, of those who planned to reenlist, 1Ø.6 are in the extension mode. The numbers for those who planned to retire are similar to the rates for those who planned to reenlist. A larger number of those in the group that planned a career in the Army remain in the first term, so comparisons in the other categories are slightly misleading. Interestingly, the attrition rates across the intention categories are quite similar. The higher attrition in the group planning an Army career may be due to longer tours or perhaps variations in the distribution of education or other variables.

TABLE 2

REENLISTMENT INTENTIONS AND SUBSEQUENT BEHAVIOR

	Reenlistment Intentions			
Status	Leave	Reenlist	Career	Unknown
Extend: In	21	53	52	91
Reenlist	4Ø	92	79	13Ø
First tour	86	112	167	3Ø6
Separate	177	1Ø6	93	293
Extend: Out	3	2	1	4
Attrite	129	127	157	317
Unknown	8	6	3	28
Total	464	498	552	1169

Source: 1982 New Recruit Survey matched with COHORT (1985) tape

The numbers in Table 2 illustrate a positive relationship between intentions and subsequent behavior, but the relationship is weak. For example, of those who planned to leave, 13.1% have either extended or reenlisted with 18.5 percent still in the first term. Of those who planned to reenlist, just over 29 percent have extended or reenlisted with 22.5 percent still in the first term. Of the group that responded "don't know" to the intention question, 18.9 percent have reenlisted with 26.2 percent remaining in the first term. The aggregate numbers show a different perspective. Altogether, 39.1 percent of the sample planned to reenlist at least one term, but less than 13 percent had reenlisted by 1985 (with 25 percent of the sample remaining). Currently only about one third of those who intended to reenlist actually have implement their intentions. The reasons for this tendency is not known.

Another way to measure the strength of the relationship between intentions and subsequent behavior is to calculate the correlation between the two variables. The intention choices were collapsed between staying or leaving. The behavior choices were categorized similarly, except that attrition and separation at ETS were combined into a leaving group. The correlation between the two categories was Ø.17, positive but unexpectedly low. The low correlation is an additional indication that the

plans of recruits are a poor predictor of retention behavior at the end of term.

It appears that intentions have a significant influence on retention behavior. The relationship between enlistment motivation and actual enlistment behavior is illustrated in Table 3. The simplest way to begin the analysis is too look at a simple tabular description of the most important reason for enlisting, and reenlistment status. This is instructive because it gives the relative frequencies of the reasons chosen, and we can visually inspect large differences in behavior across the categories.

TABLE 4

ENLISTMENT MOTIVATION AND REENLISTMENT STATUS

Most Important Reason	Attrite	Separate	Reenlist
Avoid Unemployment	90	59	46
Away From Home	50	27	14
To Travel	30	25	10
To Get Away	17	12	4
Serve My Country	72	58	33
More Money	39	20	17
Family Tradition	10	7	5
Prove I Can Make It	74	58	25
Skill Training	246	200	129
Money For College	100	200	59
Total			

Source: 1982 Army New Recruit Survey

It is interesting to note that, in 1983, the most popular of the nine reasons for enlisting is skill training, with 34 percent of the total responses. Next came educational benefits, with 19 percent. To get away from unemployment comes next with 11 percent, and to serve my country next with 10 percent.

As one looks across the frequencies by behavior, several points are useful to stress. However, the college-bound soldiers have by far the lowest attrition, and the highest separation rates. Surprisingly, those who joined for skill training have a higher attrition rate. Many of these are still in, however, so it is difficult to make comparisons. Reenlistment is lowest for those who joined to : (a) get away from home, (b) get away from a personal problem, or (c) travel. This suggests that recruits who viewed military service as a break from civilian life are less likely to want to serve additional time in the military. Reenlistment appears to be highest for those who joined because it was a family tradition. Reenlistment was relatively high for those who: (a) couldn't find a job, (b) wanted more money, (c) enlisted as a family tradition, and (d) wanted skill training. The 'economic' reasons (money, unemployment, skill training) all work in the same direction, suggesting that the soldiers who are most interested in improving their economic condition are those who have perceptions of the least opportunities in the civilian labor market.

Modeling the Retention Decision

Standard reenlistment equations generally include education (high school diploma status) and an ability proxy (score on the Armed Forces Qualifications Test), reenlistment bonus, and other socioeconomic variables such as race and gender. We modeled the decision only for males, for two reasons. First, given a relatively small sample, the sample for females was even smaller. Secondly, there is good reason to believe that the decision on whether to reenlist is considerable different for males and females, and a dummy variable for gender may not reflect the true differences.

The other socioeconomic variables that were tried but not found to be significant were marital status and hispanic status. The variable for black is statistically significant and positive; blacks are more likely to reenlist than are non-blacks (see equations in Table I). The education and AFQT variables also have the expected signs. More education (having a high school diploma) and higher AFQT score are associated with a higher opportunity cost of remaining in the service. The regression equations support this hypothesis; education and AFQT score are negatively related to reenlistment. It is interesting to point out that Lakhani and Gilroy (1986) found a negative effect for AFQT score and report that "we have no acceptable rationale for explaining the positive sign" (p. 240).

Other variables included in the equations include region (south), age (at the time of enlisting), and whether the MOS is combat or noncombat. Again the signs are as one would expect. The south has long appeared to demonstrate a relatively higher taste for military service. This may be due to either preferences for military, or perhaps because of lower relative wages or fewer job alternatives. In any case, South is positively associated with higher reenlistment rates. Age at enlistment is not as clear, although we should expect that those who enlisted when older may be reenlisting because they had already participated in the civilian labor market and had difficulty finding employment, or in finding jobs that paid sufficiently. Thus we would expect that individuals who enlisted at an older age should have higher reenlistment rates. This was born out by the data. Finally, the combat MOS are probably perceived as less desireable. Enlistment bonuses and shorter tours are used by the Army as enlistment incentives. As expected, the combat-specific MOS are associated with lower reenlistment rates.

Bonuses are the primary reenlistment incentive available to the Army. In this version of the paper bonuses are included (as in other studies) as a simple independent variable. This approach may generate useful information on the impact of reenlistment bonuses. However, there are several problems with the standard approaches. The first problem involves faulty bonus information. Previous studies have generally obtained the amount

of the reenlistment bonus from personnel files. These bonuses have been used as the independent variable. However, this approach mixes two decisions: whether to reenlist, and how long to reenlist. The bonus amounts are calculated as a reenlistment multiplier times the number of years that the soldier has reenlisted. Thus soldiers in the same MOS who have reenlisted at the same time may have very different reenlistment bonuses because one soldier reenlisted for four years while another has reenlisted for six years. The policy variable which is the same for both is the multiplier, and this is the appropriate variable for estimating the cross-sectional impact of the selective reenlistment bonuses. The use of total bonuses reflects not only the decision to reenlist, but also the time. However, the independent variable in these studies is not the duration of service but the discrete reenlistment choice itself. This problem becomes even more serious when MOS-specific bonuses are imputed to individuals who have separated. Almost a third of the soldiers who reenlist change MOS (Daula and Baldwin, 1986), indicating that the foregone bonus for those who do not reenlist cannot be accurately imputed.

The second problem with using reenlistment bonuses as simple independent variables is that the bonuses are one element of the equilibrium price of labor that results from the interaction of supply and demand forces. A high bonus may reflect (a) a high demand in the Army, or (b) a weak supply because the MOS is unpopular or because the opportunity cost of

remaining is high. Thus a negative sign for the bonuses would reflect the policy of increasing bonuses where reenlistment has not been sufficiently high to meet Army personnel requirements. We hope to address this simultaneity issue in a later analysis.

For the purposes of comparison with earlier studies, and as a base for future work, we calculate the bonus elasticities. The equations generate a bonus elasticity of approximately .Ø4, much smaller than has been previously found in the cross-sectional studies. This is particularly surprising given the absence of a civilian wage equation. There are several possibilities which might explain this. The small sample size may be a factor: only about 2ØØ soldiers appear to be eligible for a bonus in this sample. The bonus information was taken from bonus eligibility tables, and it will be interesting to check against personnel files. The 1986 update of the 1982 cohort it will also provide more cases of eligibility and reenlistment. Without the personnel files, we also have no information on bonuses for individuals who signed up in a different MOS. The number of changes in MOS is known to be fairly high so more individuals are actually eligible for bonuses than would be inferred from the bonus eligibility table.

The novel part of this analysis is the ability to use enlistment motivation factors as independent variables into the analysis. It would be reasonable to assume, for example, that individuals who enlist in order to accumulate educational benefits would then be more likely to separate at the end of the

tour. The policy implications of this analysis will be discussed below.

The 1982 New Recruit Survey contains information on recruit enlistment motivation. Recruits were asked to rate the importance of 15 reasons for enlisting on a scale of 4 (from "not at all important" to "I would not have enlisted but for this reason.") These were originally reduced to four items using factor analysis. However, the factor loadings were not satisfactory because of the limited number of items. Previous work on expanded number of items from the 1983 New Recruit Survey gave five well-defined factors. The results from the 1983 survey provided information on how items were related, and a limited number of non-overlapping items were included in some of the regression equations. The original factors suggested that the economic motives and another factor which included desire to be a soldier and serve the country were significant at the 10 percent level. Because of the problems with the factors, however, we put in a limited number of selected items. The scales are ordinal, not cardinal, so the interpretation of the coefficient and even the standard errors are not well-defined. However, we did find several interesting findings.

The desire for educational benefits did not enter the equation as statistically significant. However, three other items did. These include: to serve my country, to earn more money, and skill training. All three have positive signs. The first item might be expected. This is one of the items which

could be considered to reflect Moskos' Institutional orientations towards the military. Those who respond that this is a relatively important factor in enlisting tend to reenlist at higher rates. The second item, to earn more money, is reflective of an economic factor. Another item in the economic factor in the 1983 analysis is to avoid unemployment. This was also significant, but with a slightly lower level of significance. This appears reasonable again since the individuals who had difficulty finding jobs, or finding jobs that paid reasonable wages, would find the job security of the military attractive and would have at least the perception of lower alternative wages.

The final item is somewhat surprising. Those who responded that they were motivated to learn a skill which would help them in the civilian market were more likely to reenlist, despite their intention to return to the civilian labor market. There are several possible explanations for this. Much of the training in the military is firm- (or military-)specific training. Many of the skills learned in the military cannot be transferred to the civilian market. Some recruits may find that the skills that they learned in the military may be more marketable in the military sector than in the civilian sector. Or, this could be a variation of the previous reason; recruits who desire training have found that they are not competitive in the civilian market without training, and perceive fewer job opportunities outside the military.

LOGIT REGRESSION EQUATIONS

Variables	Equation 1	Equation 2
Intercept	-Ø.291(.685)	-1.875(.812)*
High School Grad	-Ø.814(.236)*	-Ø.885(.288)*
Combat MOS	-Ø.638(.179)*	-Ø.603(.186)*
South	Ø.293(.153)*	Ø.328(.155)*
Black	Ø.364(.172)*	Ø.407(.178)*
AFQT Score	-Ø.Ø14(.ØØ4)*	-Ø.Ø11(.ØØ4)*
Age At Accession	Ø.Ø58(.Ø33)	Ø.Ø73(.Ø34)*
Bonus Multiplier	Ø.149(.Ø76)*	Ø.16Ø(.Ø77)*
Serve Country		Ø.195(.Ø92)*
More Money		Ø.169(.Ø82)*
Skill Training		Ø.158(.Ø81)*
Model Chi-square	66.47/7 df	8Ø.16/1Ø df
R	Ø.2Ø9	Ø.225
Fraction of concordant probs. and responses	Ø.647	Ø.667
Rank Corr: predicted probs. and response	Ø.314	Ø.353

Notes: All vars significant at .1Ø level, .Ø5 significance denoted by (*).

The equation 2 demonstrates that the enlistment motivations can be a significant determinant of first-term reenlistment behavior. This is not surprising, since individuals often enlist with certain goals in mind. It is surprising that the importance of money for a college education does not appear to be a significant determinant of reenlistment behavior. Moreover, those who enlist to obtain skills for the civilian labor market tend to exhibit relatively higher reenlistment rates. However, those who rate serving their country and earning more money as

important determinants of the enlistment decision are more likely to reenlist.

Summary and Conclusions

The previous analysis is incomplete. We intend to extend the analysis to include civilian wages adjusting for sample selection bias. This variable should have a significant impact on reenlistment and may also affect the coefficients of the other variables. In addition, the reenlistment status currently only available for the two- and three-year tours. The 1986 update of the 1982 cohort will be released soon and will provide more observations and a more complete sample for analysis. However, this preliminary analysis on the 1985 data has produced some interesting results.

The actual reenlistment behavior has been compared with the stated reenlistment intentions of recruits who have just enlisted in the Army. The intentions appear to be quite poor predictors of subsequent behavior. Recruits who report that they are likely to separate after the first term generally do separate. The recruits who intend to reenlist, on the other hand, are also more likely to separate. The findings have implications for research on survey data which often use intentions as a substitute for behavior. Apparently the experience in the military is a strong influence on desire to reenlist. Unfortunately, the recruits are not resurveyed for additional attitudinal information. Such a source of panel data would be invaluable to the Army to analyze determinants of retention behavior.

The enlistment motivation has also been related to actual reenlistment behavior. The importance of the reasons for enlisting are assumed to be proxies for underlying motivational factors, but the factors do not appear to be well defined in the 1982 survey as they are in the 1983 survey. This is likely to be a consequence of the much smaller number of items in the 1982 survey. Therefore the items included in the regression may be more properly interpreted as indicators for the underlying factors analyzed elsewhere. Evidence of this hypothesis is supported by the fact that different items which determine the factors in earlier analysis appear to have similar effects on retention. Thus, desire to serve one's country (and to be a soldier) is positively associated with reenlistment rates. Desire to earn more money (and to avoid unemployment) is also associated with higher reenlistment. The desire to accumulate money for college was not statistically significant, while the skill training effect was related with more reenlistment despite the stated intention of applying the skills to the civilian market.

The importance of the significance of the enlistment motivation variables in the retention equation is twofold. First, this suggests that recruiting policies will have a secondary impact on retention. The manner in which the Army appeals to youths is likely to have an effect on reenlistment rates. However, the correlation between intentions and behavior

is small, suggesting that the Army experience is a major determinant of reenlistment behavior.

Secondly, the empirical analysis has implications for the way retention is modeled. We should expect that when unemployment in the civilian labor market is high and youths have problems finding jobs, the retention rates of this cohort may be higher than for cohorts who enlist when the economy is robust. The perception of a difficult labor market may remain with recruits through the first term and influence the reenlistment decision. Cohort effects have generally been excluded from consideration in previous retention models.

Working Paper MPPRG ~~87-14~~ 86-45

THE OPTIMAL SIZE OF THE ARMY'S TWO-YEAR

ENLISTMENT OPTION

A COMMENT

by

David K. Horne

December 1986

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THE OPTIMAL SIZE OF THE ARMY'S TWO-YEAR ENLISTMENT OPTION: COMMENT

David K. Horne*

This paper addresses the issue of the optimal size of the two-year enlistment option. The optimal size is not easily determined because the program involves an inherent trade-off of the quantity of accessions against the length of the tour of duty. By offering a two-year option the Army appeals to a segment of the youth population that might not enlist if a longer commitment were required. Alternatively, some two-year tours are taken by persons who would have enlisted for a longer tour if no short tour were available. Moreover, to the extent that the recruiting mission is attained, some potential three- and four-year recruits may be displaced by two-year recruits. We discuss several issues which are associated with the two-year option.

Utility of Two-Year Recruits

One of the major considerations in determining the optimal size of the two-year enlistment option is whether two-year soldiers can be effectively assigned in the Army. Changes in personnel policies will have an impact on the Army's ability to

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*Economist, US Army Research Institute. I am indebted to LTC Frame for institutional background on the two-year program. The views expressed in this document are those of the author and should not be construed as the official position of the Department of the Army.

use these soldiers. For example, at present many two-year recruits are stationed in Europe. The minimum tour length required for a European tour is eighteen months. If that minimum tour length increases to twenty-four months as has been proposed, the value of having two-year recruits may fall substantially. Force requirements may determine an upper limit to the size of the two-year option independent of any cost-benefit analysis.

Potential Market for Three- and Four-Year Recruits

There is no question that it is more efficient, other things constant, for the Army to recruit for three- and four-year tours than for two-year tours. Given the desired force structure, a given manpower strength maintained with soldiers on longer tours will require: (a) fewer accessions, (b) less training resources, and (c) lower PCS costs. Longer tours contribute to a more experienced force and may be associated with enhanced unit cohesion. Two-year tours appear to be justified, however, when the number of three- and four-year accessions recruited will not meet Army manpower quality requirements. In this circumstance, the two-year option appears to attract a number of recruits who would not otherwise enlist in the Army or any other of the services. The latest (1986) Army New Recruit Survey data suggest that 64% of the two-year recruits accessing in 1986 would not have enlisted in the Army without the two-year option.

Leaving cost-effectiveness aside, two questions must be answered to determine the optimal size of the two-year program.

First, how many three- and four-year soldiers can be recruited? If the Army recruitment mission can be met with three- and four-year accessions, the Army may not need two-year soldiers. Second, if an accession shortfall can be identified and the two-year option is the only policy variable that can be used to meet the shortfall, how many two-year accessions would be required to meet the shortfall? These questions are addressed below.

Forecasting Accessions for FY-1987

The ARI forecasting model is used here and is a model of contracts, not accessions. Contracts are considered the appropriate dependent variable for two reasons. First, the model is derived from a behavioral model, an individual decision model in which the enlistment decision is a function of both economic and nonpecuniary considerations. The use of contracts is consistent with this model, since the decision to enlist is first made at the time the contract is signed. Second, the actual number of accessions depends on a variety of policy variables that are difficult to model. The number of accessions in a particular year depends upon the scheduling in the delayed entry program (DEP) as well as DEP attrition. The number of accessions in a particular year equals the number of contracts minus DEP attrition plus (or minus) the net change in the size of the DEP. Accessions may fall despite a rise in contracts if the size of the DEP is increasing.

The ARI model has been fairly accurate in forecasting fiscal year (FY) contracts. For example, the October 22 GSMA

forecast for the FY86 was 61,345 contracts. The actual number of GSMA contracts was 62,393, resulting in a forecast error of less than 2 percent (see Table 1). However, we should note that the forecast model is an aggregate model. Changes in policy such as the "delinking," changes in education benefits, etc. that may influence accessions in FY87 are not easily incorporated into the model.

TABLE 1

ARI FORECASTING MODEL: GSMA CONTRACTS

FY Quarter	Forecast	Actual
86Q1	15,343	15,379
86Q2	16,541	16,836
86Q3	14,119	14,260
86Q4	15,342	15,918
1986	61,345	62,393
87Q1	14,612	
87Q2	16,131	
87Q3	13,408	
87Q4	15,304	
1987	59,455	

The ARI GSMA forecast for FY87 is 59,455, down about 2,900 contracts from the previous year. Whether this translates into a shortfall depends upon DEP management. The DEP in FY86 fell overall, but the number of AFQT category I-IIIA's increased from 24,000 to 31,200. It appears that the projected number of GSMA contracts is not only sufficient to sustain the current goal of 56,600, but allows for a growth in the GSMA DEP, although the

growth would be somewhat more modest for FY87 than for FY86. This scenario would suggest that no increase in the size of the two-year option program is warranted at present. However, this depends upon (a) whether the forecasts hold up over time, which can be determined by constant monitoring of the enlistment information, and (b) the desired DEP policy for FY87.

Meeting Immediate Accession Requirements

If the Army plans to continue building the DEP inventory at the rate that occurred in the previous year, we can calculate the additional number of two-year slots that would be required to make up the shortfall of 1,900 GSMA's. For each 100 additional two-year enlistments, the Army loses 36 longer tours. This number is derived from the 1986 New Recruit Survey; 36 percent of the two-year recruits say they would have enlisted in the Army even if the shorter tour had not been available. This suggests that, to meet the desired number of accessions for FY87, an additional 2,969 two-year accessions must be recruited over last year's two-year accession level.

Meeting Long-Run Accession Requirements

The above analysis focuses only on immediate accession requirements. However, in the long run, substitution towards the shorter tours leads to an increased accession requirement (and additional recruiting and training costs). Two-year recruits provide less time in service than three- and four-year recruits and therefore more two-year accessions are needed each year to maintain a specified level of manpower. Our calculations (see

Enlistment Option, Dec. 1986 WP 87-12), suggest that only 26.5 percent of the foregone two-year accessions need to be replaced by three- and four-year accessions to maintain the same manpower strength in the Army. For example, if the two-year program were cut by 1,000, manpower would be gained as some of the two-year recruits sign up for longer tours. Only 265 additional GSMA's (in addition to those two-year recruits who would take longer tours) need be recruited for the longer tours. Our analysis is not complete because force requirements are not a direct input into the model. Theoretically, ELIM-COMPLIP could be used to estimate the net change in accession requirements which would result from longer tours. LTC Frame has informed us that ELIM-COMPLIP results imply no change in accession requirements: the additional service and substitution effects just offset the manpower loss from eliminating two-year slots. We do not know how the assumptions in the ELIM-COMPLIP model differ from our assumptions. If these results are robust, the two-year option would not be cost-effective under present circumstances even though the program may be a net market expander. Our analysis suggests that in the long-run the service yielded by a 2,969 increase in two-year tours would be equivalent to that generated by 795 more three- and four-year accessions. Alternatively, the ELIM-COMPLIP results suggest that the additional two-year enlistments will yield no additional manpower service over time.

Summary

The analysis suggests that there may be a shortfall of some 1,900 GSMA contracts for FY87, but this depends upon a number of factors. If the high quality DEP is allowed to grow at a slower rate than had occurred in FY86, a sufficient number of accessions should be available to meet FY87 accession goals. If the DEP growth of FY86 is continued, an additional 2,969 two-year slots over the FY86 number would be required to meet short-run accession goals.

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Working Paper

MPPRG 87-23

ARI FY87 GSMA CONTRACT PROJECTIONS

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April 1987

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The number of FY 1987 GSMA contracts reported by USAREC to date is 15,044 for the first quarter and 15,367 for the second quarter, for a total of 30,411 for the first half of the fiscal year. This acheivement is good given the most recent movements in the civilian labor market, although somewhat less than the 32,215 contracts written over the same period last year(see Table 1).

The civilian youth labor market exhibited increasing strength in recent months. The youth (16-21) unemployment rate reached 15.9 percent for the first quarter and 16.0 percent for the second quarter, well below the 17.3 and 16.8 percent unemployment rates for the last two quarters of FY 1986, respectively. Reported increases in civilian earnings also increase the attractiveness of the civilian labor market.

Given this background, the updated ARI forecasting model predicts an additional 28,311 GSMA contracts over the remaining two quarters: 13,123 for the third quarter and 15,188 for the final quarter of FY 87 (Table 1). This prediction lies close to the current mission of 13,725 for the third quarter and a tentative fourth quarter mission of 15,500. The prediction for the FY 87 is 58,722 contracts, down some 733 contracts from the forecast produced at the beginning of the fiscal year, largely due to improvements in the civilian labor market. These forecasts assume, of course, that there will be no significant recruiting policy changes at USAREC for the remainder of the year. Experience has demonstrated, however, that changes in policy do and should occur and may offset some or all of this projected decline in contracts.

TABLE 1

GSMA CONTRACTS

	FY 86@	FY 87
Q1	15,379	15,044
Q2	16,836	15,367
Q3	14,260	13,123*
Q4	15,918	15,188*
	62,393	58,722

@ All quarters reflect recalibrated data
* ARI Projections

The original FY 87 forecast of 59,455 made at the beginning of the year has been revised downward in this latest forecast. However, the original forecast projected 30,743 GSMA contracts by mid-year. To date, the original forecast exhibits an error of 332 contracts against a total of 30,411, an error of 1.1 percentage point over the half year.

PB88 1 8

Manpower and Personnel Policy Research Group

Working Paper MPPRG 87-49

THE COST-EFFECTIVENESS OF MILITARY TRAINING:

MEASURING MANPOWER COSTS

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November 1987

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PB88 1 8

The Cost-Effectiveness of Military Training:

Measuring Manpower Costs

There are a number of ways to approach the issue of the cost-effectiveness of training. To determine the optimal quantity of training, the value of military training must be ascertained. That approach is problematic because the value of such training is difficult to measure objectively.

A more narrowly defined but potentially valuable approach is to compare the cost-effectiveness of various kinds of training. Training programs can be compared solely in terms of the costs required to obtain a given level of proficiency. For example, computer-assisted training may be compared against instructor-only training. In this case the inputs (such as instructor hours, amount and type of equipment, etc.) are varied subject to the output constraint. The desired mix of inputs, or the preferred training method, would be that which could be obtained at the lowest cost. Thus, the cost-effectiveness problem may be posed as a cost-minimization application. The value of increases or decreases in output need not be evaluated because output is assumed not to vary.

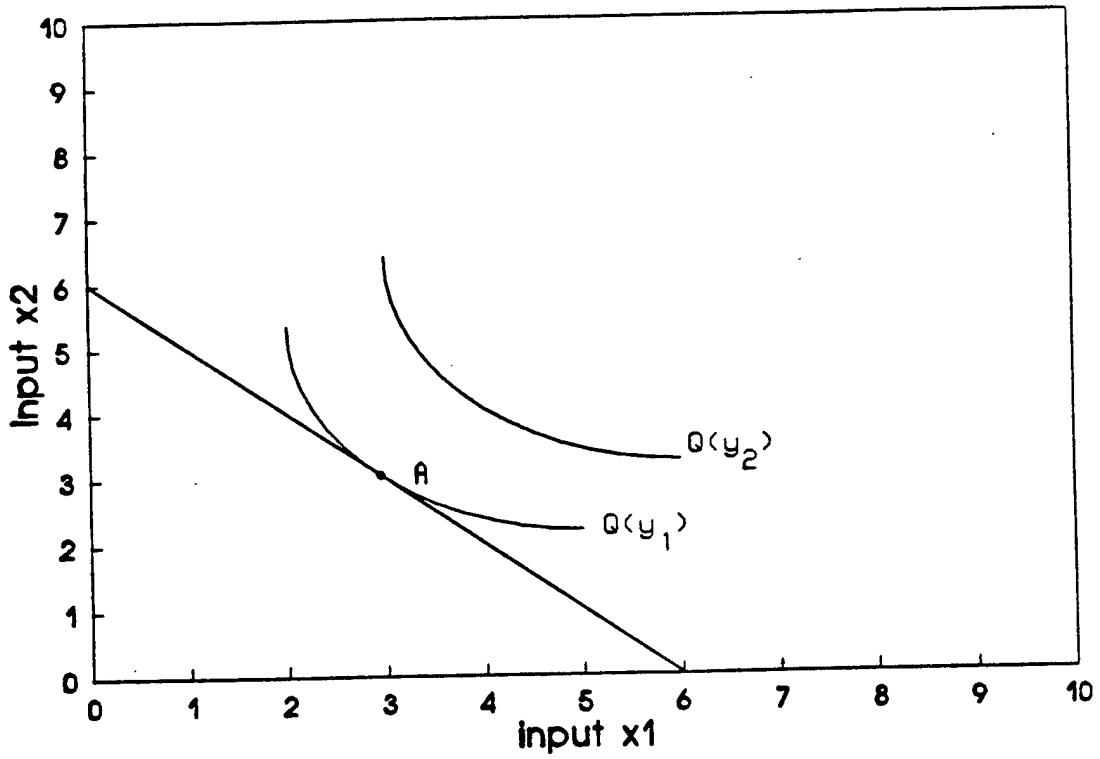
A formal statement of the problem is helpful to derive the conditions associated with a cost-minimizing solution. A given level of output y is produced with two inputs (x_1, x_2), by the production function $y = f(x_1, x_2)$. Given a constant level of output y, the cost of production is the product of the prices of the inputs and the amounts of inputs, such that $C = p_1x_1 + p_2x_2$. The problem, mathematically, is to minimize $\mathbf{px}$ (denoting the product of the price and input vectors) subject to the constraint that output is held constant ($f(\mathbf{x}) = y$). The cost-minimization requires as a first order condition that the ratio of the prices of the inputs equal the ratio of the

marginal products of the input factors:

$$p_1/p_2 = df(\mathbf{x})/dx_1 \;/\; df(\mathbf{x})/dx_2 \;.$$

This condition is illustrated below in Figure 1. An isoquant Q(y) shows the combinations of the two inputs required to produce a fixed level of output; different isoquants correspond to various output levels. $Q(y_1)$ is defined by the various combinations of inputs required to produce the level of output designated y_1. The second isoquant $Q(y_2)$ is further from the origin because $y_2 > y_1$, and more inputs are required to produce the additional output.

FIGURE 1
Production Functions



.The constant cost line (which is a ratio of the prices) shows the combination of inputs that correspond to a fixed cost. The cost minimization occurs graphically at the point where the constant cost line (of slope $-p_2/p_1$) is tangent to the isoquant Q(y). This intersection represents the minimum cost combination of input factors for a given level of output.

As the relative costs of x_1 and x_2 change, the slope of the line changes and a different combination of inputs are required to produce the same level of output (adjusting total costs for the price change). This is illustrated in Figure 2. As the price of x_2 increases, less output can be produced given the same level of resources. The constant cost line now falls below $Q(y_1)$.

FIGURE 2
Production Functions

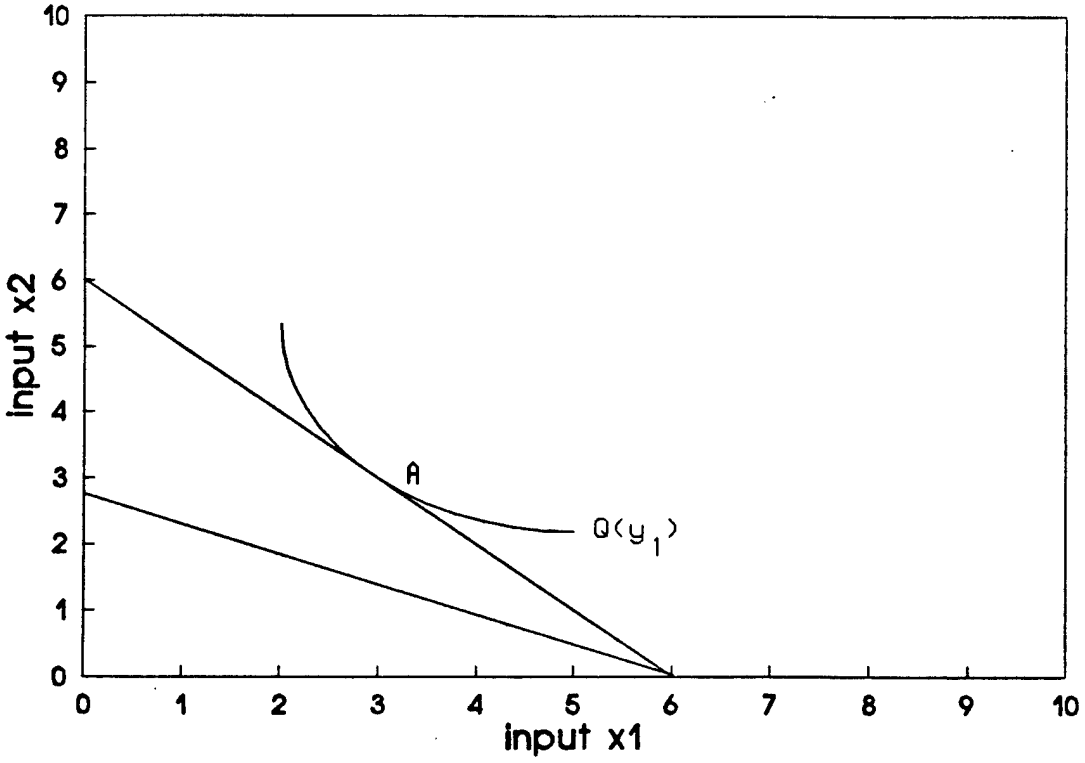
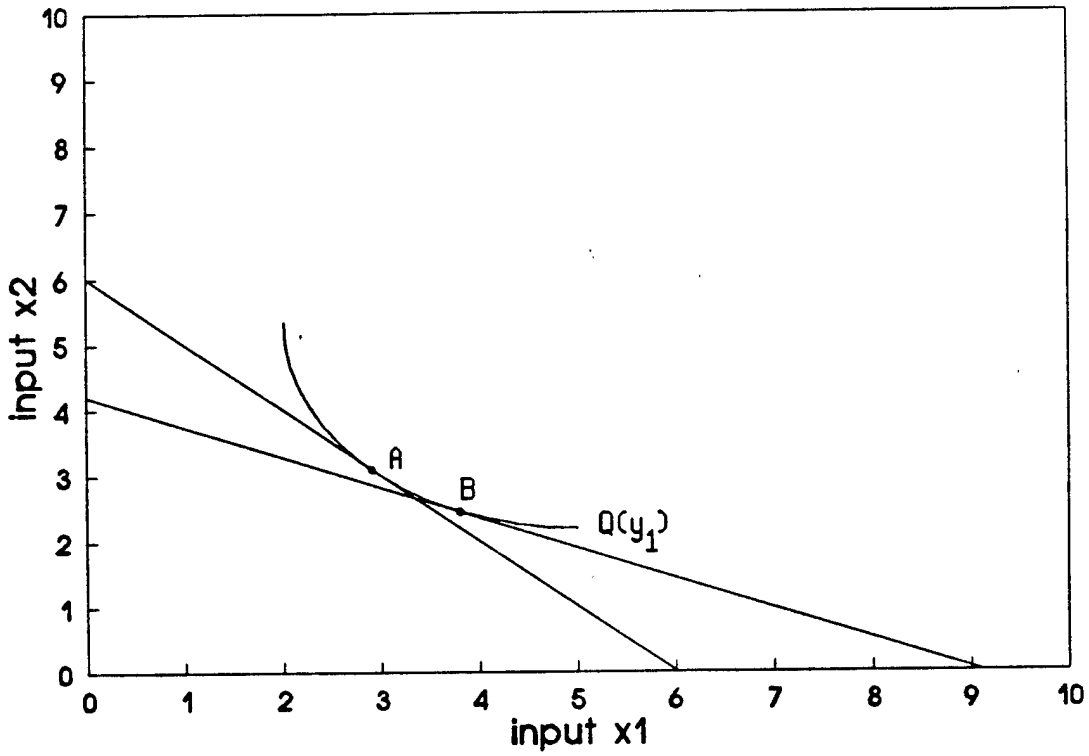


Figure 3 illustrates the substitution effect. If resources are increased such that the previous level of output (y_1) can be produced, it becomes clear that relatively less of x_2 and more of x_1 is required to produce y_1 at minimum cost, and we move from point B to point A. Point A is associated with the same level of output as point B as they are both on the same isoquant. However, point A is associated with more x_2 and less x_1 than point B.

FIGURE 3

Production Functions

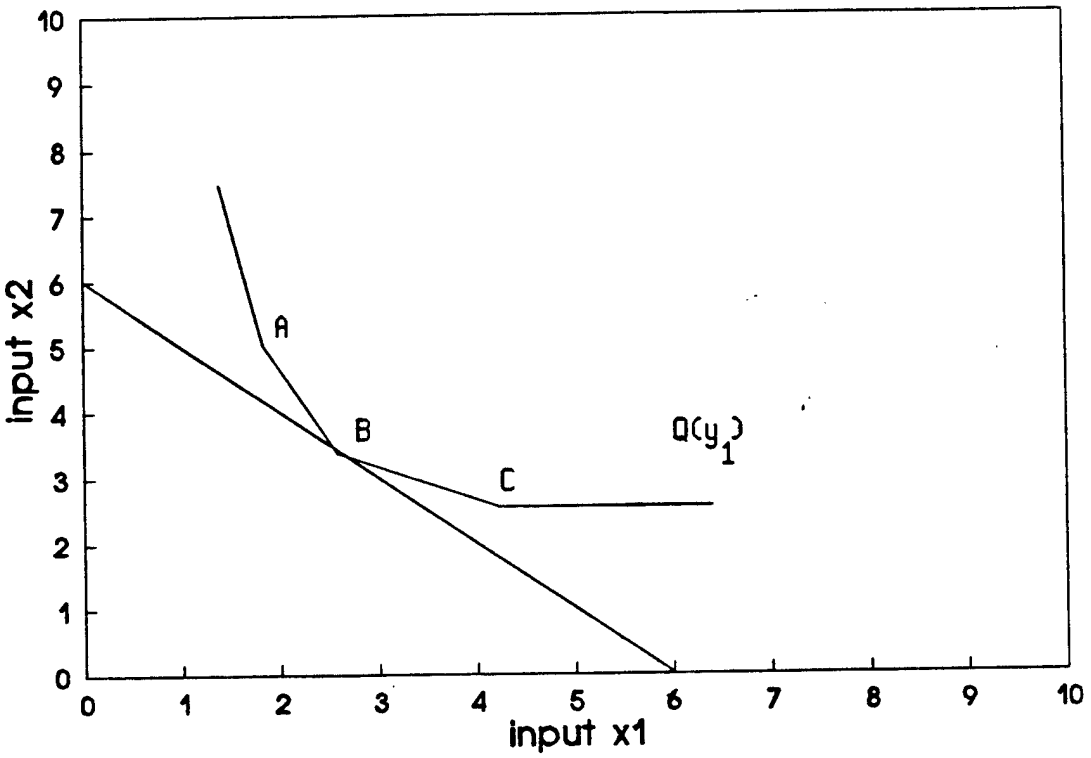


The above discussion, although somewhat technical, may provide some insight into the training cost-effectiveness issue. In order to minimize costs, information is necessary on both the costs (or prices) and the marginal products of the factors of production. Complete information is not necessary

on the marginal products, however. In reality, the production function is generally not continuous, and the isoquants will be kinked as shown in Figure 4. This might be the case if, for example, only three possible training methods were to be compared, with the inputs fixed for each method. The cost-minimization approach would be similar as before, choosing that method that costs least given output is held constant. In Figure 4, point B corresponds to the minimum cost solution, given the relative prices of the inputs.

FIGURE 4

Production Functions



When the relative costs of the inputs are not known or are incorrectly calculated, the incorrect training decision may be made. An efficient allocation of resources depends upon accurate cost information. A number of

potential cost issues are relevant to the discussion of the cost-effectiveness of training. Some of these issues are discussed below.

One issue is that expenditures on various training programs vary over time. Computer-assisted instruction, for example, may require a large initial investment but low costs in subsequent years. This method may be compared to training that requires more instructor time and a more even flow of expenditures over time. The problem in this case is what the appropriate discount rate should be for comparison purposes.

Another potential problem is a lack of cost information. This problem may be particularly significant when estimating manpower costs. A major source of savings that may be generated by new training equipment, for example, is due to potential decreases in training time. A more efficient training method could produce the same level of proficiency in less training time. However, if the manpower costs are systematically underestimated, the system will be biased against such new technologies despite the higher real costs associated with the new training methods.

For simplicity, manpower costs are often measured as a function of basic pay. Basic pay, however, is a relatively small proportion of the total personnel costs associated with a position. The military provides subsistence and quarters, distributes allowances for them. The value of such services should be included in the manpower cost estimates. Training is also associated with changes in station, which may vary across types of training and should also be included. Another cost associated with manpower is retirement benefits. Although not all soldiers retire and receive retirement benefits, the actuarial value of these benefits for any individual depends upon continuation rates which also vary with a number of factors.

upon continuation rates which also vary with a number of factors. Continuation rates vary across military occupational specialties, for example, and should not be assumed constant across all training programs.

Other less visible costs might also be included in the manpower cost estimates. Medical benefits, or expenditures on recreation facilities are examples. Soldiers may also be eligible for bonuses, educational benefits, and other recruiting or retention incentives.

Although full cost information is required for an optimal allocation of resources, or in this case to choose the optimal training alternative, obtaining such costs are often quite difficult and time-consuming. One option is to use the Army Manpower Cost System (AMCOS). AMCOS can be loaded on a personal computer (AT) and can be accessed instantly to provide detailed manpower cost estimates for each military occupational specialty in the Army, by each pay grade and budget appropriation category. AMCOS also includes data on training costs for existing courses.

The following example is taken from AMCOS. The basic annual pay for an Army infantryman (E1-E3 pay grade) is $8,733.74. However, when subsistence and housing allowances are added, the total is $14,274.99. The retirement pay accrual amounts to $1,829.25, while the average cost of training moves is given as $402.48. This example, used for illustrative purposes, demonstrates that basic pay is a small proportion of the manpower costs associated with a soldier. Yet many of these costs are not easily obtained without access to a system such as AMCOS, which ensures that in most cases the costs of manpower will be more accurate and comprehensive. In the specific application of training effectiveness, the under-estimation of manpower costs will result in a bias towards training programs that are longer, although investments in

training equipment and material could reduce total costs by decreasing the training times required to reach a prespecified level of proficiency.

The costs of training, then, should consider not only the course costs, which include such elements as instructors, equipment, and supplies, but also the costs of the students' time. These costs include: pay, housing benefits (or allowances), subsistence (or allowances), and other forms of compensation such as bonuses and educational benefits. The retirement pay accrual is another important source of compensation. In some cases special pays may also be a factor. There are also other military expenditures on items such as clothing allowances, FICA tax, and family separation allowances. Other costs associated with manpower (for training cost purposes) would include the costs of permanent changes of station (or training moves), medical support, and morale, welfare and recreation benefits.

Comparisons of various training methods in terms of cost-effectiveness may in some cases yield significant savings in resources. This paper has outlined some of the issues involved with cost-effectiveness analysis, with particular attention on the need to obtain accurate manpower cost information. For training methods in which the training times are identical, manpower costs may be of little consequence. However, in cases where new technologies may produce a fixed level of proficiency with a reduction in training times, manpower cost information may be more important. Accurate and detailed manpower cost estimation, such as found in the AMCOS system, can facilitate accurate comparisons of different training methods.

Manpower and Personnel Policy Research Group

Working Paper MPPRG 88-13

ARMY GSMA FORECAST:
FY 88 (APRIL UPDATE)

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April 1988

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ARMY GSMA FORECASTS: FY 88 (APRIL UPDATE)

The economy continues to grow, and this growth is reflected in a strong civilian labor market. Despite a slight increase in the youth (16-21 year olds) unemployment rate, the rate for the second quarter of the fiscal year was 14.6%, down from 14.7% the previous quarter. The tight civilian labor market pressure appears to be having the expected negative effect on Army recruiting. Recruiters missed their second quarter recruiting goal of 14,880 GSMA (high school diploma males with AFQT scores in the top 50th percentile) by 501 contracts.

The updated forecasts are provided in Table 1 below. The one-quarter ahead forecasts (documented in ARI working papers MPPRG WP 87-48 and MPPRG WP 88-1) are shown for the first two quarters along with actual GSMA net contracts. The fourth quarter and the fiscal year total are two-quarter ahead forecasts.

TABLE 1

FY 1988 FORECASTS

Quarter	Forecast	Actual	Error	% Error
Q1	12,960	12,949	11	0.0
Q2	14,379	13,902	477	3.4
Q3	11,679			
Q4	13,560			
Total	52,090			

The January update overpredicted second quarter (actual) contracts by 477. Thus the current April forecasts for the next two quarters have been revised downward. The current forecast for the fiscal year total (using actual contracts from the first two quarters) is 52,090, down substantially from the 53,910 predicted in January and the 54,809 predicted at the beginning of FY 88. The current prediction implies that recruiters may not make their recruiting goal of 12,279 for the third quarter, but might exceed their fourth quarter mission of 13,500 net contracts by a small amount.

Manpower and Personnel Policy Research Group

Working Paper MPPRG 88-1

ARMY GSMA FORECASTS: FY88 (JAN UPDATE)

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January 1988

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AD A197 919

ARMY GSMA FORECASTS: FY88 (JAN UPDATE)

The youth (16-21) unemployment rate has continued to fall, as indicated by the numbers in Table 1 below. The drop in unemployment signals increased job opportunities in the civilian labor market and is expected to have a negative impact on Army recruiting. Indeed, youth unemployment may fall even further as the December rate fell to 14.2%.

TABLE 1
Youth (16-21) Unemployment Rate

FY86 Q4	16.7%
FY87 Q1	16.0%
FY87 Q2	16.2%
FY87 Q3	16.0%
FY87 Q4	14.9%
FY88 Q1	14.7%

The January predictions of the ARI GSMA Forecasting Model reflect the decrease in the youth unemployment rate to 14.7% in the first quarter of FY88. However, the predictions also reflect an assumption that the unemployment rate returns to 14.9% by the second quarter. Should the unemployment rate continue to fall, the actual number of contracts could be lower than currently predicted by the model.

The actual number of net GSMA contract in the first quarter was 12,949. The model predicted 12,960, thus overpredicting contracts by a total of 11. The model appears to be on track at this point.

The January forecast differs slightly from the October forecast. Both are provided in Table 2 for comparison purposes. The impact of the decrease in the unemployment rate is reflected in lower projections for the next three quarters. The FY88 forecast falls to 53,910 from the October projection of 54,809.

TABLE 2
FY 1988 Forecasts

	Forecast Date		Forecast Error	
	OCT	JAN	Actual	Percent
Q1	12,960	12,949*	11	0.0
Q2	14,648	14,379		
Q3	12,624	12,305		
Q4	14,577	14,277		
	54,809	53,910		

* Actual Net Contracts

Manpower and Personnel Policy Research Group

Working Paper MPPRG 88-2

ENLISTMENT MOTIVATION OF ARMY RECRUITS

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January 1988

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I. INTRODUCTION

Many important career decisions are made as individuals approach completion of their high school years. The decision to pursue college, obtain vocational training, work in the civilian sector or enlist in the military can be modeled in varying degrees as investment in human capital. These experiences provide youths with skills and knowledge that may be associated with financial returns in the future. However, income-maximization motives may be less important at this stage of an individual's career than at a later point for several reasons. Youths may have little information on diverse occupation opportunities, job characteristics, or earning potentials associated with different career paths. Moreover, youths may be strongly motivated by nonpecuniary aspects of jobs such as desire for adventure or prestige. To the degree that nonpecuniary aspects may play a relatively important role in the career decisions of youths, the impact of changes in the financial incentives may be relatively smaller for youths than for older cohorts.

This paper investigates the occupational motives of a particular youth group: U.S. Army recruits. The group is of interest for a number of reasons. First, the group is large - approximately 130,000 youths enlist in the (active) Army each year. The size of the group is likely to ensure a broad (though not necessarily representative) cross-section of youths with a variety of career plans. Second, a random sample of recruits is surveyed each year on enlistment motives and on career plans following completion of the initial tour of duty. This information permits an examination of enlistment motivation with a long-run perspective. The survey data merged with personnel information provide a rich source of data. Third, substantial resources are devoted to recruiting these youths. Knowledge of enlistment motivation may be useful in developing efficient incentives to recruit youth to the military as well as to the civilian sectors. This is particularly relevant as the youth population declines and competition between the military, educational institutions and civilian employers for these youth increase.

This research provides information on specific economic and nonpecuniary motivational factors that influence the enlistment decision. In particular, how important is the desire to accumulate additional human capital. In addition, these motivational factors are related to the reenlistment intentions of recruits, thereby making explicit the relationship between short-run motivation and more long-run career intentions. The relationship between short-run motivation and future plans has specific implications for the personnel structure of an organization. The incentives that an organization uses to recruit personnel will affect not only the number of applicants but also the retention behavior of the labor force. It might be expected, for example, that the Army's use of educational benefits as an enlistment incentive would attract recruits who have no intention of reenlisting beyond the initial tour (for evidence of usage rates, see Tannen, 1987). An increased emphasis of educational benefits could therefore result in lower retention rates and an increased

recruiting requirement given a fixed force end strength. An analysis of enlistment motivation would therefore be incomplete without reference to retention intentions.

Section II provides a general discussion of enlistment motivation and a description of a unique survey data set. Section III contains details of the factor analysis used to reduce the numerous reasons for enlistment to a limited number of unobserved latent variables. The career plans of recruits, in particular the reenlistment intentions, are discussed in Section IV. The conclusion section completes the paper.

II. ENLISTMENT MOTIVATION

Military service yields immediate financial and nonpecuniary benefits to recruits. Recruits are gainfully employed with good job security and competitive pay and benefits. The Army offers competitive pay and a wide range of benefits, including enlistment bonuses and educational benefits. Yet future returns to current military service also play an important role in the enlistment decision. Military service may be viewed as a means of accumulating human capital. Skill training and on-the-job experience are investments that should generate higher income in future years (for a discussion of the role of military training, see Becker, 1967). The impact of military experience on civilian earnings of veterans has been estimated in a number of studies (e.g. Kim, 1982; Borjas and Welch, 1986; Daymont and Andrisani, 1986; Mangum and Ball, 1986).

The Army also markets itself as an opportunity for personal development. Recruits learn job skills which may be useful in the civilian labor market. This is the emphasis of advertisements that show soldiers learning or applying computer skills. The motto "Be all that you can be" implies a broader scope of personal growth, a learning experience that extends beyond job skills. Service in the Army may build character, generate leadership qualities and foster maturity. Youths have opportunities to make new friends and to travel to different regions of the country or the world. The Army also emphasizes the excitement and adventure that youths might find in the service. These less tangible benefits of military service are difficult to measure, but may be important considerations in the enlistment decision of youths. To the degree that the Army knows what motivates potential recruits, incentive programs and marketing campaigns can be structured to induce individuals to enlist.

The Army Research Institute (ARI) has conducted annual surveys of new Army recruits since 1982 (see Elig et al., 1984). Recruits are surveyed during initial entry processing at Army reception stations. The survey data are merged with accession data files to provide basic personnel information on recruits. The family of surveys referred to as the ARI New Recruit Surveys are designed to obtain information on the enlistment motivation of recruits, in addition to basic demographic and socioeconomic data. The merged data set thus provides a wealth of useful information particularly well suited to research on recruit motivation. This research uses the 1983 data set consisting of 8,605 active duty recruits, of which 5741 were surveyed on enlistment motivation. The 1983 data contains the most

extensive information on enlistment motivation for a relatively large sample.

The demographics of the 1983 sample are generally representative of Army recruits. The sample (of non-prior service recruits) consists largely of males (90%) and high school graduates (84%). Sixty-four percent of the recruits rank in the upper 50th percentile on the Armed Forces Qualifications Test. Information is also available on the age of the recruits at the time the enlistment contract was signed; actual accession may occur up to a year later. Forty percent of the recruits sign up at age 17, 22% of the sample are 18, 12% are 19 and the remainder are 20 or older.

Recruits in the sample were requested to rate the importance of twenty-eight reasons on their enlistment decision, on a scale of one to four (the full list of questions is included in appendix A). A one corresponds to "not at all important", two to "somewhat important", three to "very important", and four to "I would not have enlisted except for this reason." The reasons cover a wide range of possibilities. Recruits rated the importance of serving one's country and of being a soldier. Personal development motives were included on the survey, such as: importance of gaining respect, becoming more responsible, etc. Recruits were asked about various financial incentives as well: educational benefits, retirement benefits, fringe benefits and pay. Response frequencies to these and survey questions are contained in a tabular description volume (Elig et al., 1984).

One indication of the relative importance of these enlistment motives is the responses to the question: "which of these reasons is your MOST IMPORTANT REASON for enlisting?" Ten motivation responses are provided on the two survey forms administered. The two are similar, except that the response "I want to travel" on form 2 replacing "Chance to better myself" from form 1. Table 1 shows which enlistment motivations are chosen as being most important.

TABLE 1

On form 1 of the survey, 29.3 percent of the recruits choose skill training as the most important reason for enlisting, followed by money for college with 17.9 percent, unemployment with 11.5 percent, and to serve one's country at 11.1 percent. It is interesting to note that the responses on the second form suggest that skill training is less important (19.5 percent) than on form 1, while 24.3 percent on form 2 indicate that chance to better myself is the most important reason for enlisting.

III. MOTIVATION FACTORS

The 1983 ARI Survey of Army Recruits contains 28 questions concerning the importance of various enlistment motivations. These items can be considered indicators of underlying motivational factors that are unobserved. Measures of these underlying factors may be obtained by examining the correlations between the item responses using factor analysis. An oblique (promax) rotation has been generated to produce the most well-

defined factor loadings.

Exploratory factor analysis reveals that a five factor model appears to be optimal on two grounds. First, the five factor model produces a logical factor pattern. Second, statistical support for the five factor solution is established by the eigenvalues. Not only do the eigenvalues fall below unity after the fifth factor, but the decrease is relatively large. The scree test also suggests a five factor solution. The five factors explain 76 percent of total variance in the observed variables. The composition of the five factors are discussed in turn. The factor structure is illustrated in Table 2, including the factor loadings, the communalities (h^2) and the proportion of variance explained by the factors.

TABLE 2

The factors appear to be well defined. A single item, desire to travel, does not load on any factor and is not included as a separate factor, although it is included as a separate dichotomous variable in the career choice model. This item is excluded from the final factor analysis model.

The first factor is labeled personal improvement. A complete description of the items which load on this factor (and the other factors) are illustrated in the appendix. This factor includes many of the intangible personal goals such as to: improve myself, become responsible and mature, become more self-reliant. The response which perhaps best represents this factor is "I enlisted because the military will give me a chance to better myself."

The second factor appears to reflect an occupational orientation, a concern about the financial returns to serving in the Army. The important items here are: fringe benefits, retirement benefits, compensation, skill training, and also escaping unemployment. These are the considerations that would be important when evaluating any civilian job or occupation.

The third factor is labelled the institutional motive. This factor consists of desire "to be a soldier and "to serve my country," as well as "it is a family tradition" and "to shoot guns". The motives reflect a sense of duty or obligation, a commitment to the public interest rather than the self-interest expressed in the occupational factor. The correlation between the first two items suggests that these youths associate being a soldier with serving the public service. The loadings of the latter two items are relatively small.

Factor four reflects an escape motive: the desire to get away from home, escape personal problems, take time out to decide what to do, and join friends. Two items that unexpectedly load on this factor are: (a) to shoot guns and other weapons, and (b) family tradition. However, the significance of these items may be reasonable if this fourth factor is interpreted as demonstrating a lack of direction. These youths may be uncertain of their own personal goals and may be easily influenced to enlist by friends or

family. However, the loadings of these items on factor four is relatively small; these items also load on factor three as discussed above.

The final factor is the desire for educational benefits. The two items that load on the factor are money for college and money for a civilian vocational, technical or business school education. It is perhaps noteworthy that these items did not load upon the occupational factor. This suggests that education benefits are perceived differently from skill training and other economic incentives that define the occupational factor. Education appears to be desired for more than the economic returns associated with additional schooling.

The results of the factor analysis have interesting implications for the institutional/occupational debate in the military sociology literature. Moskos (1977) has emphasized the importance of institutional and occupational factors in the enlistment decision. These motives appear to be represented by the institutional and occupational factors generated from the survey data. Our research suggests that there are several additional underlying enlistment factors: a personal development factor, an escape factor, and educational benefits factor. Desire to travel may be considered a separate factor as well, although it cannot be identified empirically from the single item. Our empirical results suggest that the factors measure a number of different motivational dimensions. Soldiers may be motivated to serve by a combination of factors. The concept of pragmatic professionalism (defined by Segal 1987), which suggests that soldiers may be concerned about their occupational status without rejecting the institutional values of the military, is supported by this survey data.

In the next section the factor scores are combined with socioeconomic variables to explain variations in career plans.

IV. CAREER PLANS

The career plans of recruits are interesting from a number of perspectives. On one hand, the survey data indicate the degree to which recruits have well-defined, long-run plans. The data also have policy implications for retention of personnel. If Army advertising were to emphasize personal development and maturity and to reduce emphasis on skill training, for example, what is the likely consequence on retention? Are recruits motivated by the personal development factor more or less likely to plan to reenlist than those motivated by skill training? The incentives and marketing are likely to have an impact not only on recruiting but also on retention. The relationship between enlistment motives and career plans are investigated in this section.

Respondents are asked about their plans after completion of the enlistment term. Recruits may respond that they plan to leave to find civilian employment, attend college, obtain a vocational or technical education, reenlist (but probably not make the Army a career), stay in the Army until they retire, or that they do not know. The response frequencies are provided in Table 3.

TABLE 3

Relatively few recruits (12.7%) plan to return to the civilian labor market directly after completing the initial tour of duty. More intend to either attend college (19.4%) or obtain vocational training (4.4%). Note that more than half of the recruits in the two-year program plan to pursue additional schooling. Twenty-seven percent of the sample plan to reenlist at least once, although the two-year group is much less likely to have reenlistment plans (14%).

The motivational factors of the previous section are likely to be related to retention plans in a systematic manner. We expect, for example, that those enlisting in order to obtain educational benefits are more likely to plan to leave after the first term, and those motivated by the institutional factor are more likely to plan to reenlist or make a career of the Army. The relationship between the other factors and retention plans are less obvious. In some sense, the retention model can be considered a validation test of the motivation factors. Factors that are not well-defined would be unlikely to exhibit statistical significance in conventional hypothesis tests. However, the converse does not hold; factors may be well-defined and yet not influence career intentions as measured here.

For estimation purposes the responses are combined into: leave, stay, or don't know categories. These responses define a "future Army commitment" scale, such that the stay and leave choices are the extremes, and the recruits who are uncertain fall between the two. The observed scale is purely ordinal since the intervals on the commitment scale cannot be measured. The true, underlying dependent variable is assumed to be interval level data, but the observed data are considered to be incomplete due to inadequate measurement techniques. Higher values of the dependent variable are associated with intentions to leave the Army after one tour of duty. Given the ordered nature of the choices, the ordered probit method is appropriate for modeling Army career plans.

A number of variables might be expected to influence career intentions within the framework of human capital theory. These include ability, education, family income, unemployment experience, gender, and age when contract is signed. These variables could be considered to be standard socioeconomic variables in an earnings equation in the human capital framework. Ability and education are determinants of civilian earnings. As ability and education rise, civilian earnings also increase on average. True ability is not observed, but scores on the Armed Forces Qualifications Test (AFQT) are recorded for all personnel. AFQT score is more strictly interpreted as a measure of trainability. The education variable available from personnel files is years of schooling.

Race and gender may also influence career plans through civilian wages. Higher earnings are associated with being white (versus nonwhite) and male (versus female), as the variables are defined in this analysis. Better civilian labor market opportunities are associated with lower retention rates. Taste for the military can vary across these groups as well,

independent of the civilian wage effect. Family income may have several effects on career choice. Family resources may affect educational opportunities or other types of training and may also affect taste towards the military. Unemployment experience may influence the perception of opportunities in the civilian market. Recruits who enlist because they could find no civilian jobs may be more likely to entertain the possibility of remaining in the Army. Finally, age may be a determinant of career plans. Youths who enter the military directly out of school have less experience in the labor market than their older peers. Therefore, one might expect older recruits to have higher civilian wages. However, older recruits might be individuals who found limited opportunities in the civilian labor market. The net effect of age on career plans cannot be determined a priori. Factor scores complete the list of explanatory variables included in the career equations. Individual factor scores for each factor were generated for all individuals.

The result of the ordered probit equation is shown in Table 4. The dummy (explanatory) variables in the equation are defined as: gender (male = 1), race (white = 1), ease of securing a full-time job in hometown (difficult = 1), household income (above median = 1). The final sample size, excluding a substantial number of observations for which data were missing, is 3,611. The observations are distributed fairly evenly between the intention cells: 27% percent plan to reenlist, 37% are uncertain, and 36% plan to leave after the initial tour of duty.

TABLE 4

Most of the variables in the ordered probit equation are statistically significant. Positive coefficients indicate increased likelihood of having plans to leave, negative coefficients with plans to reenlist. The following groups are more likely to have plans to remain in the Army after the first tour: recruits with lower AFQT scores, non-white recruits, older recruits, those with less education, recruits with more difficulty finding jobs in the civilian labor market, and recruits coming from families with above average income. The gender variable is not statistically significant. The impact of the family income variable is contrary to our prior expectations. The effect may be generated because the sample is limited to Army recruits. Recruits with limited family resources may be more likely to view the Army as a means to obtain training, work experience and educational benefits which they could not obtain in the civilian labor market. It may be useful to emphasize that the negative coefficient on family income cannot be interpreted to imply that higher-income individuals from the general youth population are more likely to enlist or to make a career of the Army. The other coefficients are consistent with prior expectations.

The statistical significance of the factors is quite surprising. Factors 2 through 5 factors are highly significant, an indication that the factors do have meaningful and operational interpretation within the theoretical framework of this analysis. Neither the desire to travel nor factor 1 (personal development factor) are statistically significant. The negative coefficients of the second and third factors indicate that recruits

who score higher in these dimensions are more likely to remain with the Army after the first tour. Therefore, interpretation of the regression equations suggest the following. Recruits who are motivated to enlist by the occupational factor (factor 2) and the institutional factor (factor 3) are more likely to plan to reenlist or plan an Army career than are other recruits. Alternatively, those who enlist primarily for an escape or break (factor 4) or to accumulate money for school (factor 5) are less likely to plan to remain with the Army after the first term.

The effect of the factors appears to be reasonable. Recruits who enlist to obtain educational benefits must enroll in school to use those benefits. The escape factor is also associated with a single tour. Recruits motivated by this factor appear to want a change from their civilian life, but no long-term commitment. Desire to be a soldier and serve one's country would logically be associated with longer tours.

The occupational factor effect is particularly interesting. Economic incentives are often believed to attract recruits who are interested primarily in a short-term commitment to the Army. These recruits are expected to return to more lucrative jobs in the civilian labor market after receiving training and military experience. However, a different interpretation is suggested by this analysis. Recruits who score high on the occupational factor are those who perceive the Army as a better opportunity at the time of enlistment. These are likely to be youths who have fewer opportunities in the civilian labor market, who cannot find employment or who are not satisfied with the jobs they do find. This perception of the Army as a superior job opportunity appears to influence the retention plans as well. Recruits with limited civilian job opportunities at the time of enlistment appear to be relatively more attracted to the idea of a career in the Army.

V. CONCLUSIONS

The primary objective of this research has been to investigate the enlistment motives and retention plans of recruits. Twenty-eight motivational items were reduced to five factors (plus a single item that did not load on any factor) using factor analysis. The factors were then incorporated into an analysis of career goals on the grounds that enlistment, and the reasons for enlisting, could be considered an integral part of longer life-cycle career plans which may or may not be well-defined across individuals. In particular, if enlistment motivations are systematically related to retention intentions, recruiting policy changes may have consequences on the retention of personnel.

Five underlying factors are found to motivate the enlistment of recruits: (1) an institutional factor derived from desire to be a soldier and serve one's country, (2) an occupational factor based on economic incentives, (3) a personal development or self-improvement factor, (4) an escape factor, to get away from problems or to get time to decide on future plans, and (5) an educational benefits factor. Travel does not appear to be an important enlistment motive, does not load on the five factors, and does not constitute a separate factor. The five factors are well-defined and

represent separate motivational dimensions or orientations.

The most important reasons for enlistment appear to be consistent with the perception of military service as a way to invest in human capital. The responses that stand out are: get trained in a skill, chance to better myself, and money for further education. The expected returns are not solely financial; for example, chance to better myself loads upon such items as becoming more self-reliant, become a better individual, and experience discipline in the factor loading. The current economic benefits appear to be relatively less important: only 6% - 7% respond that "earn more money" is the most important reason for enlisting. However, it is clear that there are many important enlistment motives associated with such nonpecuniary characteristics as escape from home, serve my country, and desire for adventure.

The data on career plans show that, not surprisingly, the new recruits have considerable uncertainty with regard to future plans. More than a third (36 percent) appear to be uncertain as to their plans following the initial tour of service. A surprising number of recruits plan to reenlist or to make a career of the Army (27 percent of the total sample). Retention plans appear to vary as a function of a number of socioeconomic, demographic and motivational factors. Increased reenlistment intentions are associated with difficulty in finding civilian work, less education, lower AFQT scores and higher family income. Older recruits and non-whites are also more likely to plan to remain in the Army. The enlistment motivation factors also influence retention plans. Those scoring high on the occupational (economic) and the institutional factors are more likely to plan to reenlist. Those enlisting in order to escape problems or to accumulate money for school were more likely to plan to separate following the initial tour.

The analysis supports the view that military service is broadly perceived by youths (at least those who enlist) as a means to obtain some deferred benefits. To the extent that the goals are economic, this is consistent with the view that these youths are investing in human capital. However, many of the expected benefits are not economic. Many of the enlistment motives are based on the nonpecuniary benefits from military service. Furthermore, many of the career plans of these youths are not well-defined. The data on career intentions suggest that many of these recruits are interested primarily in general (rather than firm-specific) human capital, given the uncertainty over future plans.

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TABLE 1

MOST IMPORTANT REASON FOR ENLISTING

(Column Percents)

	FORM 1 N=5379	FORM 2 N=5402
I was unemployed	11.5	7.9
To be away from home on my own	6.7	5.2
I want to travel	4.3	-
Chance to better myself	-	24.3
I get away from a personal problem	2.1	2.0
To serve my country	11.1	8.9
Earn more money	5.8	6.6
Family tradition to serve	1.4	1.4
To prove that I can make it	9.7	7.2
To get trained in a skill	29.3	19.5
Money for college education	17.9	17.0
TOTAL	100.0	100.0

Source: 1983 ARI Survey of Army Recruits: Tabular Description of 1983 (Active) Army Accession, Vol. 1 (pp.214-218).

TABLE 2

Factor Pattern Matrix: FY 1983 Army Recruits (N=3907)

QUESTION	I	II	III	IV	V	h^2
1. MORE RESPONSIBLE	79*	3	5	0	-3	.60
2. MORE SELF RELIANT	75*	3	-7	1	0	.53
3. BETTER INDIVIDUAL	74*	2	7	-12	-4	.58
4. BETTER SELF	52*	7	8	-24	4	.35
5. DISCIPLINE	52*	-6	0	19	0	.31
6. PHYSICAL TRAINING	44*	-6	26*	8	5	.37
7. LEADERSHIP TRAINING	41*	2	31*	0	5	.38
8. PROVE I CAN MAKE IT	37*	3	12	26	2	.31
9. MAKE FRIENDS	34*	18	13	22	-1	.33
10. MILITARY LIFE	33*	7	13	29*	-2	.32
11. WANT RESPECT	32*	6	23	22	-3	.32
12. FRINGE BENEFITS	-2	58*	25	-2	5	.43
13. BETTER JOB	11	52*	-13	0	2	.31
14. RETIREMENT BENEFITS	-6	52*	40*	-8	0	.45
15. MORE MONEY	-1	42*	2	12	5	.22
16. SKILL TRAINING	23	38*	-21	-13	6	.25
17. UNEMPLOYED	-5	37*	-13	16	-7	.17
18. TO BE A SOLDIER	27*	-17	63*	0	-4	.58
19. SERVE COUNTRY	26*	-10	53*	-11	4	.42
20. FAMILY TRADITION	-5	2	30*	26*	0	.17
21. TIME TO DECIDE	11	-3	-6	42*	13	.21
22. JOIN FRIENDS	-9	5	12	41*	1	.19
23. ESCAPE PERS PROB	-3	1	-3	39*	-1	.15
24. AWAY FROM HOME	23	0	-2	34*	5	.19
25. SHOOTING GUNS	4	3	35*	34*	-3	.30
26. COLLEGE MONEY	-1	-5	1	0	95*	.87
27. MONEY FOR VOTECH/BUS	2	18	-1	10	50*	.34
Eigenvalues	9.9	6.7	2.1	1.7	1.4	

Total variance explained by factors .80

Note: Decimal points omitted for factor loadings and communalities.
Factors loadup above .26 are asterisked.

TABLE 3

POST-TOUR PLANS OF ARMY RECRUITS

BY TOUR LENGTH

CAREER INTENTIONS (COLUMN PERCENT)	TOUR LENGTH IN YEARS 2	3	4	TOTAL (COLUMN PERCENT)
Civilian Work	62 (9.8)	592 (12.9)	391 (13.2)	1045 (12.7)
College	319 (50.2)	807 (17.5)	466 (15.7)	1592 (19.4)
Vocational Training	27 (4.3)	214 (4.6)	117 (4.0)	358 (4.4)
Reenlistment	36 (5.7)	505 (11.0)	232 (7.8)	773 (9.4)
Army Career	52 (8.2)	810 (17.6)	600 (20.3)	1462 (17.8)
Don't Know	139 (21.9)	1679 (36.4)	1153 (39.0)	2971 (36.2)
TOTAL	635 (100.0)	4607 (100.0)	2959 (100.0)	8201 (100.0)

SOURCE: 1983 ARI Survey of Army Recruits.

TABLE 4

ORDERED PROBIT REGRESSION RESULTS

Log-Likelihood.....	-3546.7
Restricted (Slopes=0) Log-L.	-3940.9
Chi-Squared (13).....	788.51
Significance Level.....	.32173E-13

CELL FREQUENCIES FOR OUTCOMES

OUTCOME	FREQUENCY	PROPORTION	
0	1002.000	.277485	Reenlist
1	1301.000	.360288	Don't Know
2	1308.000	.362227	Separate

Variable	Coefficient	Std. Error	T-ratio (Sig.Lvl)	Mean of X	Std.Dev.of X
ONE	-.195987	.2615	-.750 (.45353)	1.0000	.00000
AFQT	.233427E-02	.1156E-02	2.019 (.04348)	59.113	19.048
RACE	.214587	.4710E-01	4.556 (.00001)	.76295	.42533
GENDER	.115614	.6881E-01	1.680 (.09292)	.90529	.29286
AGE	-.363770E-01	.7745E-02	-4.697 (.00000)	18.912	2.7738
ED	.103930	.2107E-01	4.932 (.00000)	11.993	.99386
UNEMP	-.941347E-01	.4278E-01	-2.200 (.02778)	.30075	.45865
INC	-.793094E-01	.4003E-01	-1.981 (.04757)	.48463	.49983
TRAVEL	-.711049E-01	.4456E-01	-1.596 (.11058)	.29770	.45731
FACTOR1	-.290686E-01	.2668E-01	-1.090 (.27591)	-.41592E-06	.93377
FACTOR2	-.140861	.2679E-01	-5.259 (.00000)	.19437E-06	.84354
FACTOR3	-.485606	.2717E-01	-17.874 (.00000)	.52600E-06	.86096
FACTOR4	.263141	.2497E-01	10.540 (.00000)	-.55419E-06	.79737
FACTOR5	.308203	.2337E-01	13.187 (.00000)	-.41483E-06	.93789
**MU001	1.08532	.2587E-01	41.947 (.00000)	.00000	.00000

Frequencies of actual vs. predicted outcomes
Predicted outcome has the highest probability.

		Predicted		
Actual	TOTAL	0	1	2
TOTAL	3611	833	1305	1473
0	1002	438	376	188
1	1301	293	556	452
2	1308	102	373	833

APPENDIX

ENLISTMENT MOTIVATION ITEMS

I. 1. I enlisted to be a responsible, mature person.
2. I enlisted to become more self-reliant.
3. I enlisted to become a better individual.
4. I enlisted because the military will give me a chance to better myself.
5. I enlisted because I need the discipline.
6. I enlisted for the physical training and challenge.
7. I enlisted because I want leadership training.
8. I enlisted to prove I can make it.
9. I enlisted to make new friends.
10. I enlisted to see what military life is really like.
11. I enlisted to get the respect of other people.

II. 1. I enlisted because I wanted the fringe benefits.
2. I enlisted to obtain a better job than the one I had.
3. I enlisted because I like the retirement benefits.
4. I enlisted because I can earn more money than as a civilian.
5. I enlisted to get trained in a skill that will help me get a civilian job when I get out.
6. I enlisted because I was unemployed and could not find a job.

III. 1. I enlisted because I want to be a soldier.
2. I enlisted because I want to serve my country.
3. I enlisted because it is a family tradition.

IV. 1. I enlisted to take time out before deciding what I really want to do.
2. I enlisted to join old friends.
3. I enlisted to get away from a personal problem.
4. I enlisted to give myself a chance to be away from home on my own.
5. I enlisted to shoot guns and other weapons.

V. 1. I enlisted because I can get money for a college education.
2. I enlisted because I can get money for a civilian vocational, technical or business school education.

Manpower and Personnel Policy Research Group

Working Paper MPPRG 90-02

Review and Implications of HumRRO Report:

Effects of Military Experience on the Post-Service Lives of Low-Aptitude Recruits: Project 100,000 and the ASVAB Misnorming

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REVIEW AND IMPLICATIONS OF HUMRRO REPORT: *EFFECTS OF MILITARY EXPERIENCE ON THE POST-SERVICE LIVES OF LOW-APTITUDE RECRUITS: PROJECT 100,000 AND THE ASVAB MISNORMING*

DAVID K. HORNE

The Office of the Deputy Chief of Staff for Personnel (ODCSPER) of the Army requested that the U.S. Army Research Institute (ARI) review a recent report on the impact of military experience on the post-service experiences of low-aptitude veterans. In particular, ARI was requested to address the implications of the report for current Army recruiting. Two questions were asked specifically: "Does this mean today's recruit also does not benefit?" "If questioned tomorrow on whether Army can accept lower quality in order that they may benefit from Army experience, can we use this report to say no?" The perspective of this review, therefore, focuses on a relatively narrow issue within the report: the implications for veteran earnings. It may be useful to emphasize that it was not the objective of the report to study the impact of military experience on earnings, and the report provides numerous and diverse measures of the impact of veteran status on subsequent civilian life. Because current Army recruiting emphasizes the marketability of military training and on-the-job experience in subsequent civilian employment, civilian earnings were deemed the appropriate factor of interest for the purposes of addressing the particular question posed by the ODCSPER.

A recent HumRRO report, *Effects of Military Experience on the Post-Service Lives of Low Aptitude Recruits: Project 100,000 and the ASVAB Misnorming,* suggests that military experience has a negative impact on subsequent civilian earnings for low aptitude youth: "Despite plausible explanations for the differences in the post-service experiences of Project 100,000 and Potentially Ineligible men relative to their nonveteran controls, the question remains: Why did service not expand their opportunities?" (Laurence et al., p. 168). This conclusion, if supported by the data, could have implications for Army recruiting. However, it is not clear that such a conclusion is warranted. The HumRRO analyses demonstrate **no significant earnings differences** between veterans and nonveterans for low-aptitude individuals in the post-Vietnam era. Furthermore, this result is subject to question because it is not clear that the analyses documented in the report are the most appropriate to test the effect of veteran status on civilian earnings or employment experience. The purpose of this paper is to review the methodological approach and discuss the implications of a particular portion of the HumRRO report.

It has long been recognized that the military services provide training that generalizes to some degree to the private sector. Much of the Army's advertising, for example, emphasizes the importance and availability of skill training. Military service provides soldiers with a variety of skills, through both formal and on-the-job training, that may be useful in the civilian labor markets. Two types of skills are commonly perceived to be relevant to the military experience. First, many soldiers receive technical or job-specific training, which develops skills that are directly marketable in the private sector. These benefits are most important in occupations such as electronics, mechanics, clerical, and other fields that have a clear counterpart in the private sector. The benefits of this technical training may vary with the aptitude of the soldier. Higher quality recruits may be more likely to leave the military to attend school, and may therefore be less likely to work in a related civilian job that utilizes the technical skills learned in the military.

Consequently the payoff to military skill training may be lower for high-AFQT soldiers than for soldiers with low AFQT scores entering the workforce.

The second type of skill likely to be learned in the military is more general and is related to job discipline. Military recruits learn to do a variety of tasks, meet specified standards, complete assigned tasks on time, follow directions, handle responsibility; in short, recruits learn a valuable work ethic. These skills will contribute to an individual's success in the labor market. In addition, the fact that a soldier has successfully completed a tour of service signals employers that this individual has characteristics that will be valuable to an organization. Such skills will be most important for individuals going directly to the civilian labor market. For individuals who leave the military to obtain additional schooling, the availability of their academic record will reduce the importance of the military service record in subsequent job search. The educational experience will provide additional information to employers about technical skills as well as motivation and discipline. Thus, the military experience is likely to be most valuable to veterans who enter the civilian labor market directly after separating from the service, and these veterans are more likely to have lower AFQT scores on average than veterans separating from the military service to pursue additional education.

Both high-aptitude and low-aptitude recruits will benefit from the training and on-the-job experience provided by military service, although perhaps not to the same degree. The reason that high-aptitude individuals are preferred for military service is not due to variations in the subsequent economic returns to service, but because of productivity differences. As soldiers, the higher-aptitude individuals perform better, are more likely to complete their tour, and are less likely to be involved with discipline problems. A high-quality personnel content is the most cost-effective means of meeting the total personnel requirements of the Army. This conclusion is supported by the Army Manpower Selection and Allocation Model, a personnel optimization model developed by the Army Research Institute (ARI) that incorporates the costs and benefits associated with different personnel characteristics. The increases in performance associated with higher manpower quality is documented by numerous research efforts such as the Soldier Performance Research Project (a joint project with RAND and ARI) and ARI's Project A.

Some interpretations of the report many have negative implications for Army recruiting. If the public perceives that low-aptitude veterans do not benefit from military experience, but rather encounter higher unemployment and lower earnings relative to similar individuals with no military service, this could impair the Army's ability to recruit in the youth market. If military training and experience do not provide either technical or general job skills that are marketable in the civilian labor market to the most disadvantaged youths -- those most likely to benefit from military training -- this could cast doubt about the Army's ability to provide marketable skills for any youth group. It would be counterproductive in the long run, from a recruiting perspective, for the Army to justify a higher quality content on the grounds that military service has a negative impact on the civilian career opportunities of low-AFQT individuals.

Given this possible interpretation of the HumRRO results on earnings, it is important to review the methodological approach. To be fair, previous research on this issue has not been conclusive. But for current policy purposes, the most relevant population to study would consist of cohorts in the post-draft era. Using these cohorts, Daymont and Andrisani (1986) find that, over time, veterans have a relative earnings **advantage** over nonveterans. Bryant and Wilhite (1989) find that veteran earnings increase with military training, but time in service has a negative effect on earnings. In an extension of that work, Bryant, Samaranayake and Wilhite (1989) demonstrate differential effects of military service. "In particular, whites have a larger wage penalty than non-

whites, and education is directly related to the size of the penalty" (p. 13). Results based upon pre-AVF cohorts are mixed (e.g. Crane and Wise, 1987; Angrist, 1989, 1990), but generally suggest a negative impact of military service on earnings. But the experiences of earlier cohorts are not generalizable to the current force, because the civilian earnings of those veterans are complicated by a number of factors: difficulties adjusting after experiences in Vietnam, the public's perception of Vietnam veterans, and the impact of the draft on labor market behavior.

The HumRRO report investigates the earnings experience of two veteran groups: veterans who participated in Project 100,000 between 1967 and 1970 when military aptitude standards were relaxed, and veterans who were Potentially Ineligible to enlist because they did not meet aptitude standards but who were accepted between 1976 and 1980 because of errors in scoring the enlistment screening test. This review will not address the labor market experiences of veterans from the Project 100,000 because their labor market experiences are of limited relevance to current circumstances. In the next section, a methodological review of the earnings analyses of the Potentially Ineligible sample is provided.

METHODOLOGICAL REVIEW

This review addresses the comparison of veterans from the Potentially Ineligibles (the low-aptitude individuals) who enlisted between 1976 and 1980, and the 1979 National Longitudinal Surveys (NLS) group of low-aptitude nonveterans. It is important to emphasize that the HumRRO analyses do not identify statistically significant differences between the civilian earnings of veterans and nonveterans. The median annual earnings for veterans, comparing across full-time workers, are slightly higher than earnings for the nonveteran sample ($13,000 for separated veterans compared to $12,252 for nonveterans), but the mean is slightly lower ($14,564 for veterans versus $15,181 for nonveterans) (Table 70). When military attritees are excluded, veteran status has a larger positive effect on earnings: $15,655 versus $15,582 for means, $13,360 versus $12,252 for median earnings (Table 72, full time workers). While these differences are not found to be statistically significant, this may be due to small sample size and inability to control for other relevant variables. An earnings premium of 9 percent for veterans (excluding attritees), based on median earnings, is not small from a policy perspective. That military service is as valuable in the civilian labor market as civilian experience suggests that recruits **do** accumulate valuable skills.

The empirical evidence in the HumRRO report suggests that there is relatively little difference in civilian earnings between the veteran and nonveteran comparison groups. More formally, on the basis of the t-test results, one cannot reject the hypothesis of no differences in the mean earnings of the two groups. However, it is not appropriate to conclude from the t-test that, for individuals who enlisted in the military, that service did **not** expand their opportunities, not only because of the lack of statistical significance, but because of some statistical issues not accounted for. The most important of these are detailed below.

Sample Selection. The enlistment decision is not independent of civilian opportunities. To the extent that the decision to enlist is influenced by economic factors, individuals who choose to enlist will be precisely those who have a relative disadvantage in the civilian labor market. If, in fact, there were no differences between the subsequent civilian earnings of veterans and nonveterans, this might be an indication that military training provided more marketable skills than civilian experience would have provided. There is no attempt in this study to address the self-selection issue, although this is a primary

methodological issue in recent econometric analyses of the returns to military service (e.g. Angrist, 1989, 1990).

Several other forms of self-selection issues exist. For example, an individual who attrits from military service after several weeks will have little interruption from the civilian labor market, and will not have received either technical or general on-the-job training in the military. It would not be appropriate to assume this individual's civilian earnings have been generated by military experience. These attritees may have lower earnings due to unobserved personal attributes (such as lack of motivation), and including them in the veteran sample would reduce veteran earnings, on average. On the other hand, excluding attritees also presents a selection problem. If military service screens out individuals with below-average performance (who attrit), those individuals who complete training will be above-average performers and will receive above-average civilian earnings. Self-selection is also an issue at the first reenlistment point. Individuals who separate from the service, on average, may have higher civilian labor market opportunities than those who reenlist. The effect of this non-random self-selection process is that the observed civilian earnings will be higher than expected on the basis of military service and other factors.

Estimation Technique. It is clear that numerous factors influence earnings. The more conventional way to control for these factors, in order to identify the contribution of military service on earnings, is to use a multivariate regression model. Some advantages of using the regression approach are the ability to: (1) estimate the effect of each variable, controlling for other variables, (2) include numerous explanatory variables, (3) generate the standard error associated with each estimated coefficient, (4) investigate potential sample selection problems, (5) test the model fit, and (6) test alternative model specifications.

The t-test is employed in this study to determine whether the means of two populations are statistically different. This is a limited test in the sense that no additional conclusions are warranted from the results. Because no statistically significant difference is found between veterans and nonveterans, one cannot conclude from this result that military service itself has no effect on subsequent civilian earnings, since the effect of this experience is not measured directly and other relevant variables are not considered.

A complex weighting scheme is used in an attempt to adjust for observed differences in the cell frequencies based on several characteristics (age, race, education and region). Because of the inherent limitations in interpreting the t-test result, sample weighting is used to attempt to control for a limited number of variables, so remaining differences would presumably be attributed solely to veteran status. But weighting may introduce a number of additional problems. Because only a limited number of discrete variables could be accommodated, continuous variables (e.g. age) are reduced to categories, resulting in a loss of information. Other variables (race/ethnicity, education, and region) were reduced to a limited set which can obscure their effects. For example, GED veterans were included with high school graduates. Despite the fact that their attrition experience is very similar to nongraduates, such behavior is likely to affect civilian wages. Furthermore, weighting introduces substantial methodological problems in estimating standard errors.

A more appropriate estimation method to use in estimating the impact of military experience on civilian earnings is a multivariate regression model. In the literature devoted to estimating earnings equations, empirical research is almost exclusively based on regression (e.g. Borjas and Welch, 1986; Daymont and Andrisani,1986; Crane and Wise, 1987; Bryant and Wilhite, 1989; and Angrist, 1989, 1990).

Model Specification. There are several factors that could cause model mispecification (although the t-test cannot be strictly considered to test a model of earnings). Of primary interest in this research is whether important variables expected to influence earnings are excluded from consideration. Numerous variables can logically be expected to influence civilian earnings, and these variables should be included in a model to prevent biased results. Additional categories should be added to control for ethnicity, education, and region, for example. Other factors that should be included in the analyses are excluded completely. Civilian experience, for example, influences earnings for both groups. Daymont and Andrisani (1986) find that veterans have relatively low earnings the first year after separation, but their earnings increase quickly with civilian experience and overtake the earnings of nonveterans. The HumRRO analysis does not allow for such a phenomenon (although the results are consistent with Daymont and Andrisani at the point of leaving the service). An individual who enlisted in September of 1980 for a four-year tour, for example, will have very little civilian experience when surveyed in 1985. In addition, although both HumRRO comparison groups consist of low-aptitude individuals, there is no control for possible differences in the distribution of AFQT score between the groups. Other determinants of earnings such as marital status are also excluded.

Data

Previous research on volunteers in the post-draft era has used the NLS Youth Cohort, surveyed first in 1979 and re-surveyed annually through 1985. Bryant and Wilhite (1979), for example, use a NLS sample consisting of 5,631 individuals who were full-time workers in 1985, including 337 veterans. The comparison of wages for veterans and nonveterans is direct: 1985 wages are analyzed. The disadvantage of the NLS sample is the relatively small number of low-aptitude veterans, although variables could be incorporated in a multivariate analysis to investigate the experience of different aptitude groups. In the HumRRO study, the 1979 NLS cohort was used as a control group. The study began with a random sample of approximately 1,400 individuals (identified from military personnel records), ultimately using 326 completed cases.

The HumRRO data, although very interesting, appear to be less appropriate than the more complete NLS data used by other researchers. The HumRRO veteran sample is slightly smaller, but includes a larger number of low-aptitude veterans. The NLS sample was interviewed each year, so there are more data available. The HumRRO veterans were surveyed over the 1986-1987 period, and their earnings had to be deflated to be comparable to the NLS 1985 earnings data. The deflation approach may introduce additional sources of error. In addition, an adjustment factor for the age differences also had to be introduced. The relatively low response rate of the veteran population suggests that the final sample may be subject to response bias. Veterans with relatively low labor force participation or job attachment are likely to be more mobile and hence more difficult to locate. Finally, differences in the composition of the NLS and HumRRO veteran sample, for purposes of the HumRRO analyses, required a complex weighting adjustment.

CONCLUSIONS

There are several conclusions that can be drawn from this review of that portion of the HumRRO report dealing with earnings of the Potentially Ineligible sample.

(1) The report suggests that military experience has a negative impact on subsequent civilian earnings of low aptitude youth. But one cannot arrive at this conclusion since, **in a statistical sense**, the empirical evidence provided in the report implies that earnings of the low-AFQT veterans, at worst, are **not any different** from

nonveterans. Given the findings of Daymont and Andrisani (1986) that the earnings of veterans rise relative to nonveterans **over time**, the data in this report are likely to understate the eventual benefits of military service on subsequent earnings over a longer period.

(2) In order to determine whether the earnings differences were statistically significant, one would want to reestimate using a multivariate procedure with appropriate statistical corrections to verify results and reconcile inconsistencies with the extant literature.

Given that the HumRRO research finds comparable earnings for veterans and nonveterans, it is not appropriate to conclude that the military service does not expand the opportunities of veterans. Rather, military service has **at least** as much contribution to future earnings as a comparable amount of civilian experience. There is no evidence provided in the HumRRO report that military service (in the volunteer force) generates an economic disadvantage for veterans. The purpose of the military services is national defense, not training. Therefore the fact that recruits receive training and experience of value in the civilian labor market is a beneficial by-product of military service. In addition, the educational benefits such as the Montgomery GI Bill and the Army College Fund also subsidize subsequent training in college or vocational schools.

Thus far, the analysis of Project 100,000 veterans has not been directly addressed, primarily because the effect of military service on the earnings of these veterans is not applicable to current military service. But the analyses of the earnings differential for this group are questionable as well, because (as for the Potentially Ineligible sample) only t-tests are utilized to compare the samples. However, even if negative earnings differentials could be identified for the veterans, such differentials cannot be attributed to military training. The HumRRO report cites psychological problems and subsequent adjustment difficulties, as well as a stigma associated with military service in Vietnam. These and other factors associated with service in Vietnam undoubtedly influence labor force participation as well as subsequent earnings for these veterans.

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ARMY INCENTIVES MANAGEMENT:
A COMMENT

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ARMY INCENTIVES MANAGEMENT

ENLISTMENT AND ALLOCATION EFFECTS

Enlistment incentives in the Army have several conceptually separate effects on force structure. The enlistment effect motivates individuals to enlist who would not have enlisted without specific incentives. Enlistment incentives have an impact on the allocation of personnel to the various military occupational specialties (MOS's). Some incentives such as enlistment bonuses and the Army College Fund (ACF) are available in a limited number of shortage MOS's to induce recruits to select these MOS's. A number of incentives vary with tour length, such that a longer tour results in greater ACF benefits or bonuses.

Enlistment incentives also have an impact on retention, reflected in differential attrition rates and reenlistment rates. The retention effects of enlistment incentives have generally received less attention, both from a policy and a research perspective. However, the Army has commenced research on the retention effects of these incentives, using improved data bases and statistical methodologies that have recently been developed to deal with the problems that have previously hindered such research.

The Army maintains numerous and diverse incentives to manage its recruiting and retention programs. By offering a variety of incentives, the Army appeals to different groups within the youth population and thereby reduces the cost of meeting total accession goals. Individuals enlist in the Army for many reasons. Some want skill training, others want to travel. Some recruits are primarily interested in educational benefits, while many recruits are more interested in economic incentives. This perception of recruit motivation has led to the "dual market" theory, suggesting the existence of two separate enlistment markets. One consists of individuals who are interested in pursuing a career in the short run, and would be more attracted by skill training and perhaps economic incentives. The other market consists of individuals who intend to obtain additional schooling, and are more concerned with financing college or vocational training than in learning specific job-related skills.

The dual market theory is perhaps a narrow view of enlistment motivations. Recent research using the Army New Recruit Surveys has found five enlistment motivation factors:

(1) personal improvement (to improve myself, become more responsible), (2) occupational orientation (training, financial benefits), (3) institutional motive (be a soldier, serve my country), (4) escape motive (get away from home), and (5) educational benefits (money for school).[1] A "segmented market" theory might be a more appropriate view of enlistment motivation. However, for recruiting purposes, the fundamental implication of both the dual market theory and the segmented market theory is that the recruiting market is not one homogeneous labor pool, and therefore a variety of incentives are needed to attract sufficient recruits to meet the personnel requirements of the Army. In particular, it appears that youth primarily interested in pursuing additional schooling beyond high school may consider enlisting in the Army if (a) they can earn educational benefits to defray the high cost of schooling, and (b) if the enlistment tour is relatively short.

The New GI Bill (with the college fund) is one incentive that may appeal to this college-bound market. The Army College Fund provides additional educational benefits to recruits who meet certain eligibility requirements: recruits must score in the top 50th percentile on the Armed Services Qualifications Test, must be high school graduates, and must enlist in particular shortage MOS's. Recruits must also participate in the New GI Bill program, contributing their own funds. Many of these ACF MOS's also offer a two-year tour.

There are several compelling reasons for the ACF program. Survey results suggest that these educational incentives, particularly when combined with a short tour length, appear to be reaching a segment of the youth labor market that would otherwise be closed to Army recruiting. Surveys of Army recruits (Summer 1987), for example, provide evidence that of those taking the Army College Fund, 41 percent would not have enlisted in the Army but for that particular option.[2] Of those signing up for the two-year enlistment option (generally offered in conjunction with the Army College Fund), 63 percent would not have enlisted in the Army but for this option.[3] These incentives allow the Army to penetrate a recruiting market that would otherwise be closed to all services; there is only a small substitution effect from other services. As a result, the Army has actually expanded the military recruiting market shifting the enlistment supply curve to the right (see Appendix). The program is also an important source of high-quality recruits. Moreover, the Army has always experienced a recruiting disadvantage relative to the other services, because of the perceptions of Army life, the types of skills required in the Army, and the large accession requirements. The ACF helps alleviate some of these recruiting disadvantages.

Econometric evaluations of educational benefit programs have also found that the ACF has expanded the number of high quality enlistments[4], and has done so without any significant impact on other service recruiting[5]. The direction has been positive in all econometric studies, although the magnitude of the enlistment effect has been found to range widely from 9% to about 30%.

Educational benefits are not only used to bring high quality recruits into the Army, but into difficult-to-fill MOS, such as combat arms. Research by RAND[6] indicates that the ACF accomplished this goal. ACF increased quality enlistments by 17% in MOS's where the ACF was applied, but had no effect upon MOS without incentives. Thus, the ACF appears to be important in channelling personnel to shortage MOS's.

The cost of the ACF, of course, depends upon participation rates as well as the rate at which participants use their benefits. Research[7] had found that initial ACF participation was very high. Over 80% of those eligible for ACF begin making contributions. Contribution rates have increased somewhat with the introduction of the New GI Bill to nearly 90%. Benefit usage is based upon serving on duty long enough to become eligible to use benefits, separating form the military (virtually no soldiers use benefits while on active duty), and attending a VA approved educational facility. Research results indicate that only about 25% of the potential benefits would be used, compared to the present DoD actuary's assumption of 50%.[8]

Less is known about the impact of the Army College Fund or other enlistment incentives on retention behavior. The mix of enlistment incentives does affect the characteristics of the accession cohort, thereby influencing future retention patterns of the cohort. Individuals who enlist primarily for the educational benefits are more likely to leave upon completion of the first tour. Similarly, individuals who enlist primarily to learn a marketable skill or to earn higher enlistment bonuses will exhibit a lower preference for military service, and as a result, will be more likely to leave after completing their tour.

The ACF program may indeed create some disincentives for reenlistment (although the program is a strong incentive for recruits to complete their initial term of enlistment). Some recruits may be unsure about their future, and enroll in the ACF program as insurance in case they desire to attend college after their initial term. However, this effect is minimized because ACF eligibility requirements limit participation in the program. In addition, ACF participants must enroll in the New GI Bill and contribute money to the program. ACF recruits who decide not to attend school after completing

their tour not only lose their ACF benefits but also their New GI Bill contributions. For these reasons, it is likely that the New GI Bill itself has greater disincentives to reenlistment than does the Army College Fund Program. Loss of the soldier's contribution may create a strong psychological motive to attend school (and to separate from the Army).

It would not be appropriate, however, to conclude that educational benefits, bonuses and other enlistment incentives provide an incentive to separate, despite higher separation rates for these groups. Although it appears that recruits who sign up for the Army College Fund or the two-year enlistment option have lower reenlistment rates, this might be explained not as an effect of the incentives on behavior, but rather the behavior of those individuals attracted by these incentives. The fact that individuals taking these incentives on average have lower retention patterns indicates that the incentives are effective as intended. If the retention patterns did not vary across enlistment incentive groups, it would be a prima facie indication that there was no enlistment effect, but only a substitution effect, that is, the recipients of these incentives have the same average taste for military service as other recruits and would have likely enlisted without the additional incentives.

Additional research on enlistment incentives is needed and is ongoing. The real research problems have been twofold: (1) measuring the marginal cost of enlistments for various enlistment incentives, and (2) estimating the indirect impact of these incentives on retention behavior. Research has been directed towards improving knowledge of these effects in order to ensure efficient management of enlistment and reenlistment incentives. Some ongoing research at the U.S. Army Research Institute devoted to answering these questions is detailed below.

ARI RESEARCH EFFORTS

Several research efforts are currently underway to improve our understanding of the costs and effectiveness of manpower policies on enlistment and retention behavior. These include creating longitudinal research-oriented data bases, manpower cost models, enlistment allocation models, force structure models, as well as research oriented towards improving the methodologies for estimating the effects of incentives. These efforts are outlined briefly.

Enlisted Panel Research Data Base (EPRDB)

Longitudinal data are required to improve upon current estimates of the enlistment and retention effect of various incentives and manpower policies. This data effort involves creating a longitudinal file of enlisted accessions from 1974 onward. The effort is scheduled to continue through 1989. The data set is creating a 25 percent sample with data from a variety of sources for the accession cohorts from 1974 through 1984. The cohorts from 1985 will consist of all accessions.

Officer Longitudinal Research Data Base (OLRDB)

Longitudinal data is also required for research on officers. The OLRDB includes officer personnel data files from 1970, as well as numerous pre-commission and post-commission training data files. Current plans are that these files will be maintained and updated over the next five years.

Army Educational Benefits Data Base

ARI has developed a major data base to analyze the effects of educational benefits. The data include extensive information on enlistment characteristics, educational benefit contribution behavior, retention behavior, and the usage of benefits via the Veterans' Administration. Currently, the data base covers all enlistments during FY 1981-1984 and benefit usage and retention through FY 1987. This data base is presently being expanded to include information on the enlistment bonus test of 1982-84.

Army Manpower Cost System (AMCOS)

AMCOS is a family of cost models designed to provide economic life-cycle and budget cost information by MOS, skill level, and pay grade, by appropriation category, for the Active, Reserve and Civilian Components of the Army. The models provide both a useful and detailed manpower cost data base and a costing tool for policy purposes. The models are integrated on a user-friendly, menu-driven software package that can be run on a personal computer.[9] This is a 5 year effort begun in March 1986; the Active Component portion of the economic life-cycle cost models has been completed.

Enlisted Personnel Allocation System (EPAS)

The Army is preparing to implement EPAS, an enhancement to the computer system that recommends training seats and MOS assignments to applicants. EPAS will provide policy makers with enhanced capabilities to meet the many objectives of the job assignment system, including reducing incentive costs.[10] EPAS will automate the use of the MOS presentation list. The current presentation list is managed to fill requirements and achieve a specific AFQT distribution. EPAS will ensure that

retention and job performance are formally considered in the recommendations. Furthermore, once the skill channelling effects of incentive combinations are estimated EPAS can be used to perform policy analysis of how alternative incentives will affect MOS fill.

Another function of EPAS would be the support of incentive experiments. Different regions of the country could receive different MOS incentives. EPAS could be used to collect data unobtrusively on the incentive impact. Systematic information could be derived on the relative effectiveness of alternative incentives.

Force Structure Planning Models (FSPM)

The FSPM is under development to create a force manpower planning system to analyze the effects of alternative manpower policies and programs on the force structure.

Prototype Army Compensation Model (PACM)

PACM is a two year effort, begun May 1987, to improve the methodologies for estimating the impact of changes in compensation on retention behavior. Previous models have been subject to numerous difficulties. Improvements in the methodology will allow for: (a) controlling for changes in the taste parameters (unobserved heterogeneity) resulting from policy changes, such as changes in enlistment incentives, (b) controlling for changes in accession cohort characteristics, (c) considering optimal decision rules, especially with respect to different time horizons, (d) obtaining improved civilian wage data, (e) controlling for compensating wage differentials, (f) adjusting for the personal discount rate, and (g) handling risk aversion. This effort will result in an improved Annualized Cost of Leaving (ACOL) Model, and also provide estimates of the effects of SRB's and other retention incentives using the enlisted panel research data base (EPRDB) discussed above.

Army Incentives Management Model

This future planned effort would combine the results of the research discussed above, as well as other past and ongoing research, integrate the improved incentive parameter estimates into a force structure model, and impose a linear programming model that would (a) iterate to a minimum cost solution to any force structure, and (b) generate costs associated with changes in manpower policies. However, as past and present research provides the Army with better parameter estimates of the impact of enlistment and retention incentives, such an incentive management model becomes more feasible. Given the current state of knowledge about

incentive effects and costs, such a complete and integrated model is not practical.

Army College Fund Analysis

Analysis of the Army College Fund program is facilitated by the development of the Army Educational Benefits Data Base. This will permit additional research on the enlistment, MOS-allocation, tour length and retention effects of educational benefits.

CONCLUSIONS

In some sense, enlistment incentives have two opposing effects on the force structure. First, enlistment incentives attract recruits. As enlistments increase, the absolute number of soldiers who desire to reenlist also increases. However, the second effect is that as recruiting becomes more difficult, and greater incentives are required to meet accession goals, individuals are recruited who have a lower taste for military service. The retention rates of these individuals will be below average. This phenomenon reflects the impact of increasing market penetration, accessing "new" youth markets. The lower retention associated with individuals who enlist solely in order to participate in the Army College Fund, to obtain skill training, or to earn enlistment bonuses does not necessarily indicate that these enlistment incentives create a reenlistment disincentive.

Selective reenlistment bonuses, on the other hand, are a retention tool designed to retain individuals who have already been recruited and trained. As recruiting becomes more difficult due to a diminishing population, improved economy or other phenomena, SRB's become even more cost-effective because increased retention reduces enlistment requirements. SRB's are particularly effective in those MOS's that require long and expensive investments in training.

Both recruiting incentives and SRB's also have MOS-specific distribution effects. Those MOS's which are difficult to fill to meet first-term requirements are often the same MOS's for which it is difficult to retain soldiers. Consequently, SRB's may be relatively high in those MOS's which offer enlistment bonuses and the ACF. The existence of enlistment incentives and reenlistment incentives in particular MOS are a function of personnel shortages in an MOS, not a cause of the shortages.

More research on recruiting and retention must be pursued, or course, with the objective of designing the most cost-

effective means of recruiting and retaining qualified personnel. The Army is currently promoting such research. However, the most current research suggests that the enlistment and reenlistment incentives used by the Army to recruit and retain personnel are cost-effective, and are necessary to ensure that the Army can continue to meet its personnel needs in the future.

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APPENDIX

THEORETICAL FRAMEWORK

The means to affect enlistment quantity is viewed by the Army as a variation of the traditional textbook supply and demand model. This familiar construct depicts some equilibrium wage (compensation/incentives) and enlistment levels at C_e and F_e, respectively, in Figure 1. The supply curve SS shows that more individuals will offer their services at successive higher levels of compensation; the demand curve DF_e indicates the desired enlistment level or recruiting goal.

If, in fact, the Army is not at full strength at some level F_o, an increase in incentives of C_oC_e is necessary to attract sufficient numbers of individuals from the private sector to enlist to achieve the corresponding enlistment level increase of F_oF_e. If, however, the supply curve were S'S', a much larger increase in compensation (C_oC_1) would be required to achieve the same force size increase. The steeper (more "inelastic") the slope of this curve, the less of an impact a given change in incentives will have, and the more costly it will be to achieve a desired enlistment level increase.

Where an increase in incentives would result in a movement along a given supply curve, changes in other factors such as advertising budgets, numbers of Army recruiters, a different enlistment option, and certain exogenous factors such as population or patriotism could shift the entire supply function. Thus, with an outward shift of the supply curve to S"S", for example, it is theoretically possible to achieve the desired enlistment goal F_e at the original incentives level C_o. This could happen, say, with increases in recruiting resources (including advertising), a deterioration

in labor market conditions (increasing civilian unemployment), or a surge in patriotic feeling in society -- factors which tend to widen the market from which the Army draws its recruits.

Although oversimplified here, this theoretical framework is the one with which Army policymakers can obtain answers to such questions as: What is the effect of military pay and bonuses on enlistment? How important are prevailing economic conditions (unemployment) on enlistments? What is the impact of educational benefits and recruiting resources? or the effect of demographic, socioeconomic, and attitudinal variables on the enlistment decision process? But to answer these questions, the policymaker needs to know both the shape and location of the supply curve--how steep and how far from the origin it is.

To this end, analysts have tried in recent years to better and more accurately specify enlistment supply curves; and today, policymakers have at their disposal a variety of sophisticated enlistment supply models (e.g. Daula and Smith, 1986; Dertouzos, 1985).

The supply of enlistments is typically modeled as multiple regression equations which take the general form

$$E = \sum_{i=1}^{n} b_i X_i + e$$

where E is enlistment contracts; b is the coefficient of the explanatory policy and other variables X; the subscript i denotes the number of such variables from 1 to n; and e represents the error term which captures the effects of omitted variables or errors of observation and measurement. Because calculating the effects of policy and other variables is far from a trivial exercise, sophisticated econometric techniques are commonly applied. The effects of these variables will differ, of course, because

of differences in equation specification, functional form, data used, and time period analyzed. They will also differ depending upon the alternative economic and demographic scenarios that are chosen. How, then, does the policymaker in the formation of policy choose between alternative estimates from different models?

Five to ten years ago Army policymakers would have had a difficult time sorting through the models, since estimates of important effects such as unemployment and military-civilian pay on enlistments were diverse and even opposite in direction from one another (see Dale and Gilroy, 1984; Horne, 1985). Recently, improved data and methodogical advances have lessened these differences. The research community is in closer agreement as to the relative size of these effects and can report their results in terms of a reasonable "range". Although researchers would like to be able to precisely identify the shape and location of the enlistment labor supply curve, the best they can do is provide policymakers with a "confidence" band. This as it should be since a result from an equation is an "estimate" only; an equation (or a system of equations) cannot include all possible explanatory variables nor can we expect that each variable that is included measures exactly what is intended, despite that application of sophisticated statistical techniques to correct for biases and inefficiencies.

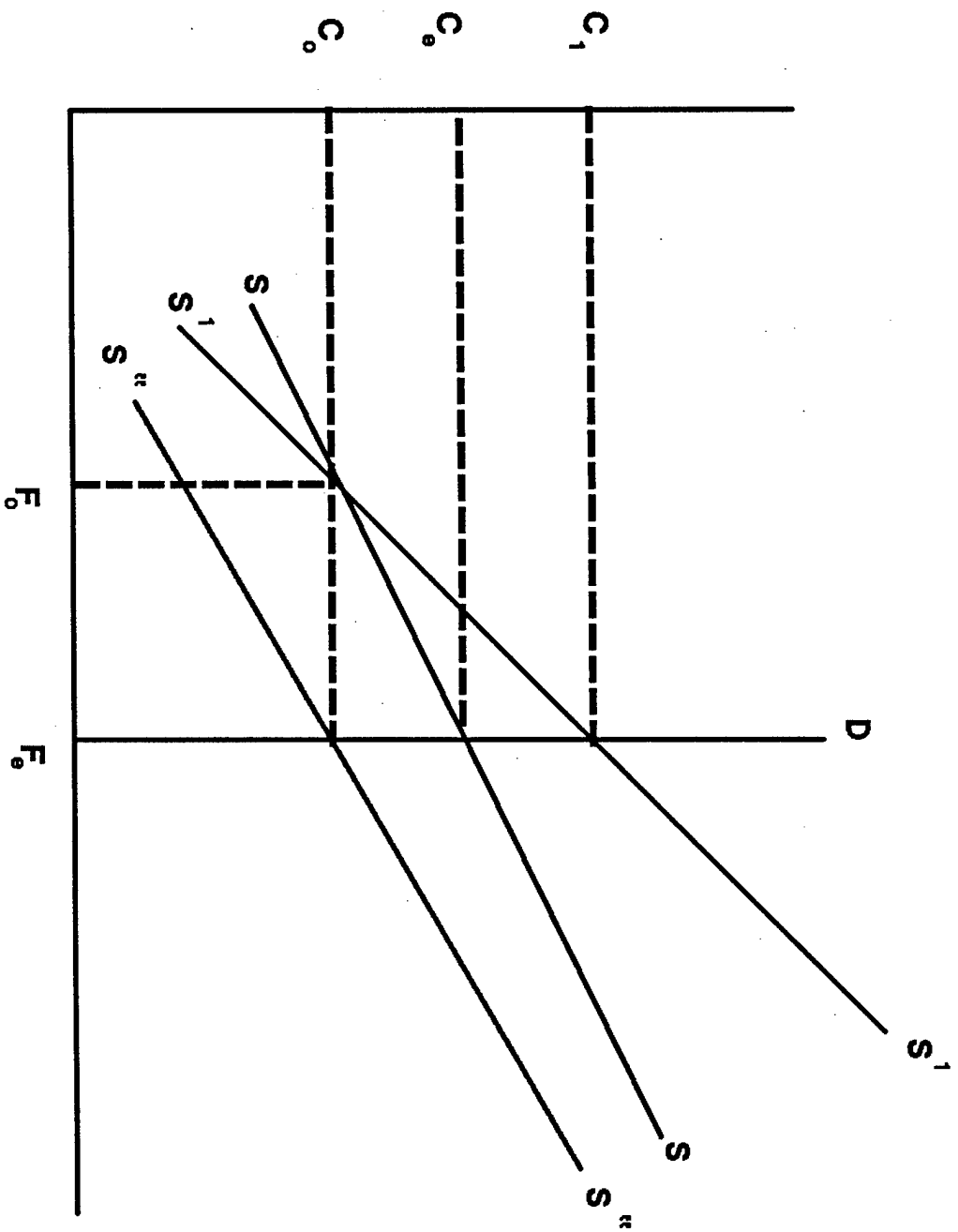
The Dual Market Concept. The "dual" or segmented market notion fits well into the Army incentives strategy. Studies have established that the prosensity of an individual to join any military service, especially the Army, is inversely proportional to his/her "human capital" (Kim et al., 1980; Toomepuu, 1981; Bray et al., 1985). That is, human capital theory would hold that occupational choice is an **investment** decision where

individuals choose that occupation that maximizes the present value of future money (and psychic) income, taking into account training costs and foregone earnings. Individuals who are more interested in job security, competitive pay, and skill training, for example, would be more inclined to join the military. But it was recognized that these more traditional benefits did not appeal to a large and growing segment of the population. The "middle class" and college-bound youth were relatively insensitive to higher pay. A significant interruption of their career plans and the relative undesirable nature of military service were factors that eliminated the service as a viable option. But there was the inclination among Army policymakers that educational benefits might be an appealing incentive for a significant portion of this population. A specialized college incentive package could be designed to enhance the recruitment of this qualitatively richer manpower pool. In designing such a package in 1980, the Army introduced its "Dual Market" strategy. Recruiting results in 1979 clearly established that without such a targeted incentive, the Army could not hope to meet its enlistment goals -- both quantitative and qualitative. The decision was made, then, to attempt to attract college-bound youth who, without a significant educational incentive, would not elect to serve in any of the services.

On the one hand, then, the Army could offer a traditional incentive package to so-called work (employment)-oriented youth who were interested in immediate employment, job security, an "up front" enlistment bonus, and skill training. On the other hand, college-oriented youth would be offered a deferred reward of substantial educational benefits. Compared to work-oriented youth, this new market is comprised of more educated, higher (AFQT) scoring, "investment-oriented" individuals.

The notion of how important such a program might be as an incentive grew from an introspective judgement as to what would attract a bright high school graduate to the Army, other than pay and skill training. It was reasoned that post-service educational benefits such as the old "GI Bill" would attract young men who would not otherwise choose to serve. But young men who were truely college bound would have an even higher propensity to volunteer if the obligated term of service was less than the normal, three year minimum. As a result, a two-year tour was offered in conjunction with the college incentive to significantly affect enlistment supply. The theory was that an Army-specific educational benefit over and above the military-wide benefit would be tantamount to an increase in incentives (say from C_0 to C_1, in Figure 1). This would be a movement up the S'S' curve and result in an increase in enlistments. Offering a shorter tour would actually widen the market, shifting the supply curve to S"S", and resulting in an even larger increase in enlistments for any given incentives level. The Army actually had a choice. It could request resources to better compete in the work-oriented market with more bonus dollars, a higher pay rate, etc. which would be expected to exacerbate competition with the other services and possibly result in simply "bidding up" wages, especially with a shrinking youth cohort. Or, it could attempt to address a new market segment--college bound youth--for which no other service was competing. Managerial intuition reinforced by theoretical considerations dictated the latter.

Figure 1.



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AN EXPLORATORY FACTOR ANALYSIS OF ARMY RESERVE COMPONENT ATTRITION

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AN EXPLORATORY FACTOR ANALYSIS

OF ARMY RESERVE COMPONENT ATTRITION

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Attrition is a manpower management problem for the U.S. Army Reserves. High turnover is costly because as attrition rises, increased recruiting and training requirements absorb resources. Attrition is currently estimated to be just over 30 percent per year in the U.S. Army Reserves (USAR) and slightly less for the Army National Guard (ARNG). Both components of the Army Reserves were surveyed in 1987 to determine the reasons for attrition. The survey listed 36 possible reasons for attrition. Both peers and supervisors of soldiers who had left the Reserves were asked to rate reason in the attritee's decision to leave the Reserve Component as either important or not important. The item responses are provided for a selected sample, illustrating differences in the responses between supervisors and also demonstrating the relative importance of the items.

For policy purposes, it is useful to simplify the survey results by reporting on the importance of a limited number of factors that may motivate Reserve Component attrition. The survey items are likely to be multiple indicators that reflect a smaller number of unobserved, attrition motives. Knowledge of these latent variables may contribute to an understanding of the attrition motives of Reservists. This paper provides a discussion of an exploratory factor analysis of the data, treating both the supervisor and the peer responses separately and comparing the two factor patterns.

SURVEY METHODOLOGY

The Army Research Institute Survey of Army National Guard/Army Reserve was distributed to the peers and supervisors of attritees who had been identified from Army personnel data files. The impact of extended annual training exercises was of particular interest, so units were selected that had recently been to extended training exercises in South America (Blazing Trails), Europe (REFORGER), or the National Training Center (NTC). Control units were also represented. Control units were required to be located in the same state and to have similar military functions as the comparison units. These units provided a basis of comparison given possible geographic or temporal variations in unmeasured or unobserved variables.

There were several advantages to surveying the peers and attritees rather than the attritees themselves. Time requirements did not allow for obtaining "burden hour" allocations from the Office of Management and Budget that are required in order for the Army to interview civilians. Burden hour requirements do not apply to soldiers on duty. In addition, it was thought that soldiers in the unit might be more willing to respond accurately to the survey because there was little incentive to provide reasons for attrition that might appear "socially acceptable."

Individuals who had attrited either 12 months preceeding the relevant extended annual training exercise or in the 6 months following the training were identified from personnel data files. Such exercises required up to 12 months of extended preparation and training, increasing the demands on the Reservists. Individuals were also selected from the control units if they had attrited over the same period. Two surveys for each of the 6,924 selected attritees were distributed to the attritees' former unit to be completed by a peer and a supervisor who had known the attritee. Of the surveys returned, 3,680 were identified as meeting the criteria that a single peer response and a supervisor response corresponded to the attritee. Surveys for which there was a peer but no supervisor reponse, or vice versa, were not included in this analysis, nor were multiple peer or supervisor responses. The pregnancy response was deleted for both supervisors and peers, because this response was appropriate only for a relatively small proportion of the population (i.e. females), and appeared to be of little importance as a reason for attriting. This item was not expected to load on any factor. A more detailed description of the survey research design can be found in Nogami, Horne, Hydock, and Weyrauch (1988). Data on the rates of attrition for the Reserve component units is contained in Grissmer, Kirby, and Nogami, (1988).

THE FACTOR STRUCTURE

The observations, limited to those attritees for whom there was both a peer and a supervisor response, were separated into a peer and a supervisor data set. Each data set was analyzed separately. However, the pattern of factors were similar for the two groups. The factors were first assumed to be orthogonal, then oblique as they were rotated using the varimax rotation method. The correlations were such that six factors emerged from the analysis. This number of factors was supported by the eigenvalues, shown below in Table 1, and the logical nature of the patterns themselves.

TABLE 1

Factor Analysis Eigenvalues

Eigenvalues	Peers	Supervisors
1	13.4	11.1
2	4.1	4.1
3	2.9	3.2
4	2.4	2.9
5	1.9	2.5
6	1.4	1.7
7	0.7	0.7

As Table 1 demonstrates, the eigenvalues suggest only six factors are appropriate. The standard cut-off is a value of 1.0; the sharp drop after the sixth factor suggest that a six-factor solution is also consistent with the scree test.

The factor loadings themselves are provided in Table 2 (for peers) and Table 3 (for supervisors). A brief description of each factor is provided below for both analyses because the factor structure for the peers is quite similar to the supervisor responses.

The first factor might be labeled training. Items loading on this factor include: no constructive activities, lack of equipment, lack of training areas, no interesting training opportunities, Reserve pay too low, and not enough skill training. In addition, conflict with Reserve leadership also loaded on this factor, although it loaded more strongly on another factor. Too much unpaid time loads on this factor, as does too much preparation time for the supervisor data set.

The second factor appears to be job conflict. Loss of income, loss of vacation, fear of job loss, fear of not being promoted, and Reserve conflict with civilian job all loaded strongly on this factor. The inability to attend extended annual training exercise loaded on this factor (in the supervisor data), as might be expected, but was just below the 0.3 level for the peer responses.

The third factor appears to be related to time constraints. These items included: could not attend regular drills, additional drills, annual training and extended training, and too much preparation time (although the loadings on the latter factor were just below 0.3 for supervisors). We would expect these items to correlate highly, but the interpretation of this factor is not

obvious because the reasons for the time constraint are not provided. These items do not load on any other factor such as job or family conflicts. This may be a function of the constraints imposed on the model in exploratory factor analysis. However, on a priori, we would expect that the items should load with either job conflict, familiarity conflict, or both of these factors, or the factors should be correlated with each other.

The fourth factor is family conflict. Loss of family time, spouse pressure, Reserve conflict with family, and interference with leisure time all load upon this factor. Difficulty with child visitation/custody was expected to load on this factor, but does not. This problem may be seen as separate from family conflict since child visitation or custody problems may imply a previous disintegration of the family unit.

The fifth factor is perhaps described as Reserve conflict. Conflicts with other members and leadership, poor performance, and dislike of Reserve duties were all correlated. The association between conflict in the unit and poor performance would be expected, although the direction of causality is perhaps less clear.

The final factor is health. Injury or health problems, poor physical conditions, overweight problems and retirement (for the peer responses) are the items that comprise the health factor. It is interesting to note that the poor performance item did not load on this factor, suggesting that poor performance is interpreted as an attitude problem rather than a health issue.

Several items do not load well on any factor. Conflict with schooling might be considered to be similar in nature to conflict with a job, but full-time students are less likely to have job constraints so the correlation between these items is low. Moving out of the area is another item that does not load on any factors, as might be expected. Changes in location might result from job or school changes, but in this case it appears that the Reserve duty is not viewed as a source of conflict. Leaving the Reserves is perhaps seen as a consequence of such changes in location, particularly if the individuals consider Reserve duty in their new location. Long travel time to drills also does not load on any factors, although it may be associated with several factors.

For policy purposes, the relative importance of these items are also of interest. Figures 1 through 6 represent the importance of each item in the decision to attrite from the Reserve components, as perceived by supervisors and by peers. These items have been grouped by the factors, with school conflicts, location changes and travel time grouped with the time conflict factor for convenience.

Figure 1, corresponding to the first factor in Table 2 and Table 3, shows the relative importance of the items loading on the training factor. The economic items, low pay and limited promotion opportunity exceed the other items in importance. Moreover, the peers appear to attribute relatively more importance to these items than do the supervisors. Figure 2 corresponds to the second factor, job conflict. Conflict with civilian job and loss of income appear to be relatively important determinants of attrition. Figure 3 illustrates the time conflict plus several items that do not load on other factors. Figure 4 represents family conflict, Figure 5 indicates conflict with the Reserve component, and Figure 6 illustrates the relative importance of health problems. Health problems rank relatively low in terms of determining attrition.

Although informative, these frequencies alone do not provide any causal explanation for attrition from the Army Reserve and National Guard. However, the fact that so many items appear to be important suggests that numerous, diverse factors play a role in the typical attrition decision. For example, additional drills or extended annual training alone would not lead to attrition, but if there is dissatisfaction with the training, equipment or training facilities as well, the overall dissatisfaction may provide sufficient impetus to leave Reserve or Guard duty. The data also demonstrate that some loss are due to poor health or poor performance. Such loss may be beneficial to the Reserve component.

The exploratory factor analysis is a useful beginning for research on this survey data. Additional research, perhaps testing various factor structures and looking at latent variables associated with the supervisor/peer "methods" (multitrait-multimethod confirmatory factor analysis), might be fruitful and could yield insights into attrition behavior in the Army Reserves and National Guard.

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TABLE 2

ROTATED FACTOR PATTERN: PEERS

FACTOR1	FACTOR2	FACTOR3	FACTOR4	FACTOR5	FACTOR6	VARIABLE
0.07892	0.65704*	0.15517	0.17934	0.03121	-0.01204	LOSS OF INCOME
0.13699	0.60894*	0.15611	0.19967	0.06615	0.11642	LOSE VACATION
0.12480	0.75324*	0.09712	0.05771	0.03850	0.04716	FEAR LOSS OF JOB
0.15038	0.67474*	0.12105	0.12148	0.03600	0.10012	FEAR NOT PROMOTED
0.10501	0.22942	0.10775	0.77020*	0.01489	0.01551	LOSS OF FAMILY TIME
0.16001	0.17965	0.09134	0.60962*	-0.00436	0.09696	SPOUSE PRESSURE
0.20908	0.15326	0.14396	0.04203	0.04099	0.11495	SCHOOL RESPONSIBLITIES
0.06557	0.56982*	0.22160	0.19422	0.09758	-0.03222	NG/RES CONFLICT WITH JOB
0.13376	0.22800	0.16336	0.74361*	0.07661	-0.00916	NG/RES CONFLICT WITH FAMILY
0.21582	0.29092	0.20561	0.15929	0.05693	0.24487	CHILD DIFFICULTIES
0.13772	0.05220	0.04836	-0.00376	-0.07279	0.06281	MOVED OUT OF AREA
0.10899	0.16009	0.20207	0.37979*	0.33059*	-0.05745	INTERFERE WITH LEISURE
0.05007	0.00047	0.07381	-0.00501	0.00125	0.53560*	INJURY OR HEALTH
0.05253	0.03044	0.04194	0.01550	0.15502	0.72172*	POOR PHYSICAL CONDITION
0.10581	0.04200	0.01756	0.00819	0.06890	0.48634*	OVERWEIGHT PROBLEMS
0.13285	0.07490	0.06389	0.03494	0.03100	0.37391*	RETIREMENT
0.04682	-0.02551	0.17133	-0.00521	0.51015*	0.11522	POOR PERFORMANCE IN UNIT
0.15618	0.10705	0.05834	-0.00066	0.57577*	0.14758	CONFLICT WITH OTHER MEMBERS
0.64387*	0.03675	0.07624	0.07939	0.21697	0.03704	NO CONSTRUCTIVE ACTIVITIES
0.65345*	0.08921	0.06422	0.08754	0.05904	0.13637	LACK OF EQUIPMENT
0.69710*	0.06543	0.05000	0.04126	0.07571	0.10829	LACK OF TRAINING AREAS
0.43678*	0.14034	0.01952	0.05223	0.29144	0.10813	LACK OF FAIR TREATMENT
0.21384	0.09801	0.02293	0.04030	0.57880*	0.07557	CONFLICT WITH LEADERSHIP
0.11517	0.02100	0.20819	0.09119	0.47835*	-0.03249	DID NOT LIKE NG/RES DUTIES
0.64315*	0.00300	0.05517	0.07923	0.13971	0.03840	NO INTERESTING TRAINING OPP
0.37687*	0.24553	0.18619	0.18734	0.06363	0.02160	NG/RES PAY TOO LOW
0.40384*	0.20490	0.11728	0.15294	0.08925	-0.00606	LIMITED PROMOTION OPPORTUNITIES
0.56815*	0.07221	0.07503	0.05993	0.12493	0.10252	NOT ENOUGH SKILL TRAINING
0.08008	0.11485	0.66229*	0.03723	0.22324	0.04436	COULD NOT ATTEND REGULAR DRILLS
0.12591	0.18208	0.72778*	0.15860	0.10343	0.06703	COULD NOT ATTEND ADDITONAL DRILLS
0.13128	0.19187	0.63331*	0.06128	0.15852	0.10906	COULD NOT ATTEND ANNUAL TRAINING
0.12150	0.28984	0.54939*	0.23199	0.06863	0.06927	COULD NOT ATTEND EXTENDED TRAINING
0.22234	0.18857	0.23053	0.11768	0.03088	0.16189	LONG TRAVEL TIME TO DRILLS
0.17572	0.29756	0.34013*	0.17770	0.09324	0.14058	TOO MUCH PREPARATION FOR ANNUAL TRAINING
0.32281*	0.27887	0.23287	0.21733	0.05664	0.10531	TOO MUCH UNPAID TIME

TABLE 3

ROTATED FACTOR PATTERN: SUPERVISORS

FACTOR1	FACTOR2	FACTOR3	FACTOR4	FACTOR5	FACTOR6	VARIABLE
0.10822	0.62176*	0.14314	0.18466	-0.05128	-0.00722	LOSS OF INCOME
0.16934	0.58014*	0.10583	0.18771	0.05625	0.06052	LOSE VACATION
0.11135	0.74074*	0.12224	0.03876	0.01982	0.03212	FEAR LOSS OF JOB
0.14261	0.66799*	0.10351	0.10233	0.04964	0.08330	FEAR NOT PROMOTED
0.11370	0.21520	0.07247	0.77585*	-0.00715	-0.00201	LOSS OF FAMILY TIME
0.10201	0.17284	0.08130	0.62426*	0.01323	0.05667	SPOUSE PRESSURE
0.25316	0.09746*	0.08284	0.03030	0.01815	0.12310	SCHOOL RESPONSIBLITIES
0.06679	0.56525	0.22147	0.20113	0.01198	-0.02087	NG/RES CONFLICT WITH JOB
0.12084	0.17913	0.12372	0.74253*	0.06713	0.02245	NG/RES CONFLICT WITH FAMILY
0.28786	0.19260	0.08263	0.10158	0.12306	0.18693	CHILD DIFFICULTIES
0.18189	0.01945	0.06715	-0.05153	-0.06310	0.02946	MOVED OUT OF AREA
0.12210	0.10232	0.20216	0.32578*	0.30160*	-0.04737	INTERFERE WITH LEISURE
0.09583	0.02211	0.04119	-0.01639	-0.00355	0.55772*	INJURY OR HEALTH
0.04379	-0.00243	0.01922	-0.00033	0.07766	0.82808*	POOR PHYSICAL CONDITION
0.03846	0.01035	0.01762	0.03500	0.02706	0.52176*	OVERWEIGHT PROBLEMS
0.21633	0.09224	0.02186	0.01117	0.01284	0.25580	RETIREMENT
0.00731	-0.08853	0.14874	-0.03442	0.58492*	0.05358	POOR PERFORMANCE IN UNIT
0.14150	0.04414	0.03761	0.01042	0.63048*	0.06938	CONFLICT WITH OTHER MEMBERS
0.62028*	-0.02553	0.01919	0.06661	0.19622	-0.00511	NO CONSTRUCTIVE ACTIVITIES
0.62909*	0.07161	0.05231	0.05727	0.09384	0.12777	LACK OF EQUIPMENT
0.63381*	0.05689	0.02946	0.05791	0.07330	0.05474	LACK OF TRAINING AREAS
0.39757*	0.16308	-0.02311	0.03855	0.25762	0.13013	LACK OF FAIR TREATMENT
0.14784	0.07587	0.02186	0.04796	0.60232*	0.02620	CONFLICT WITH LEADERSHIP
0.09155	0.01500	0.19106	0.06913	0.49492*	-0.02241	DID NOT LIKE NG/RES DUTIES
0.62285*	0.00079	0.02361	0.05036	0.04237	-0.03073	NO INTERESTING TRAINING OPP
0.34834*	0.13871	0.14789	0.18454	0.03745	-0.02567	NG/RES PAY TOO LOW
0.35840*	0.12966	0.07613	0.15374	0.06390	-0.00824	LIMITED PROMOTION OPPORTUNITIES
0.59632*	0.03646	0.01945	0.01546	0.09613	0.06059	NOT ENOUGH SKILL TRAINING
0.04409	0.09201	0.68225*	0.05602	0.17220	0.00333	COULD NOT ATTEND REGULAR DRILLS
0.12909	0.12796	0.77889*	0.14295	0.09839	0.03176	COULD NOT ATTEND ADDITONAL DRILLS
0.13199	0.21089	0.57952*	0.04089	0.16142	0.06022	COULD NOT ATTEND ANNUAL TRAINING
0.15021	0.31122*	0.56795*	0.19513	0.08881	0.04837	COULD NOT ATTEND EXTENDED TRAINING
0.24277	0.14740	0.20658	0.01708	0.00224	0.07599	LONG TRAVEL TIME TO DRILLS
0.31014*	0.24572	0.27275	0.14223	0.09942	0.08211	TOO MUCH PREPARATION FOR ANNUAL TRAINING
0.44156*	0.18314	0.11882	0.18903	0.07368	0.04235	TOO MUCH UNPAID TIME

TRAINING ISSUES

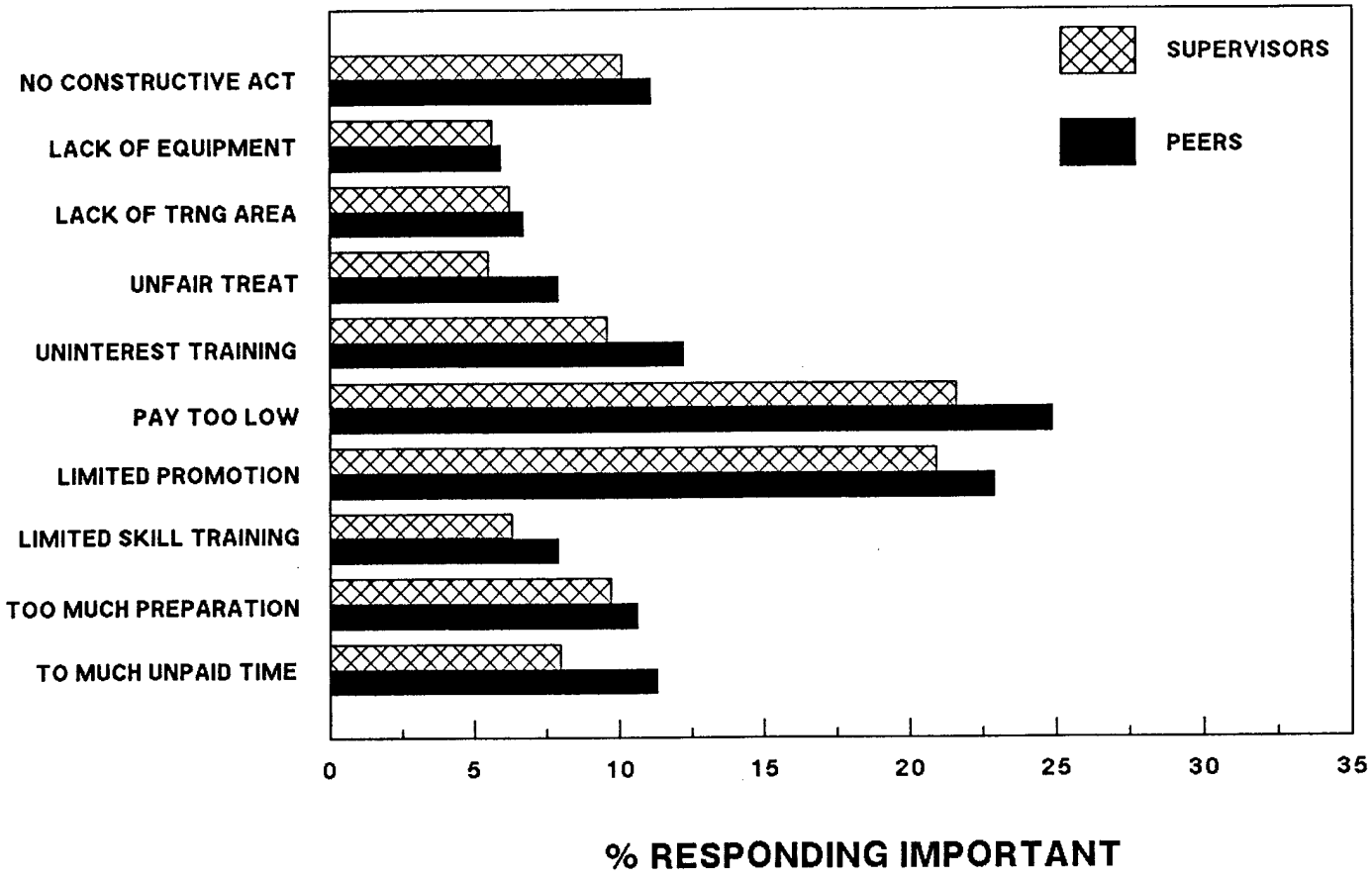

Figure 1. Training Issues

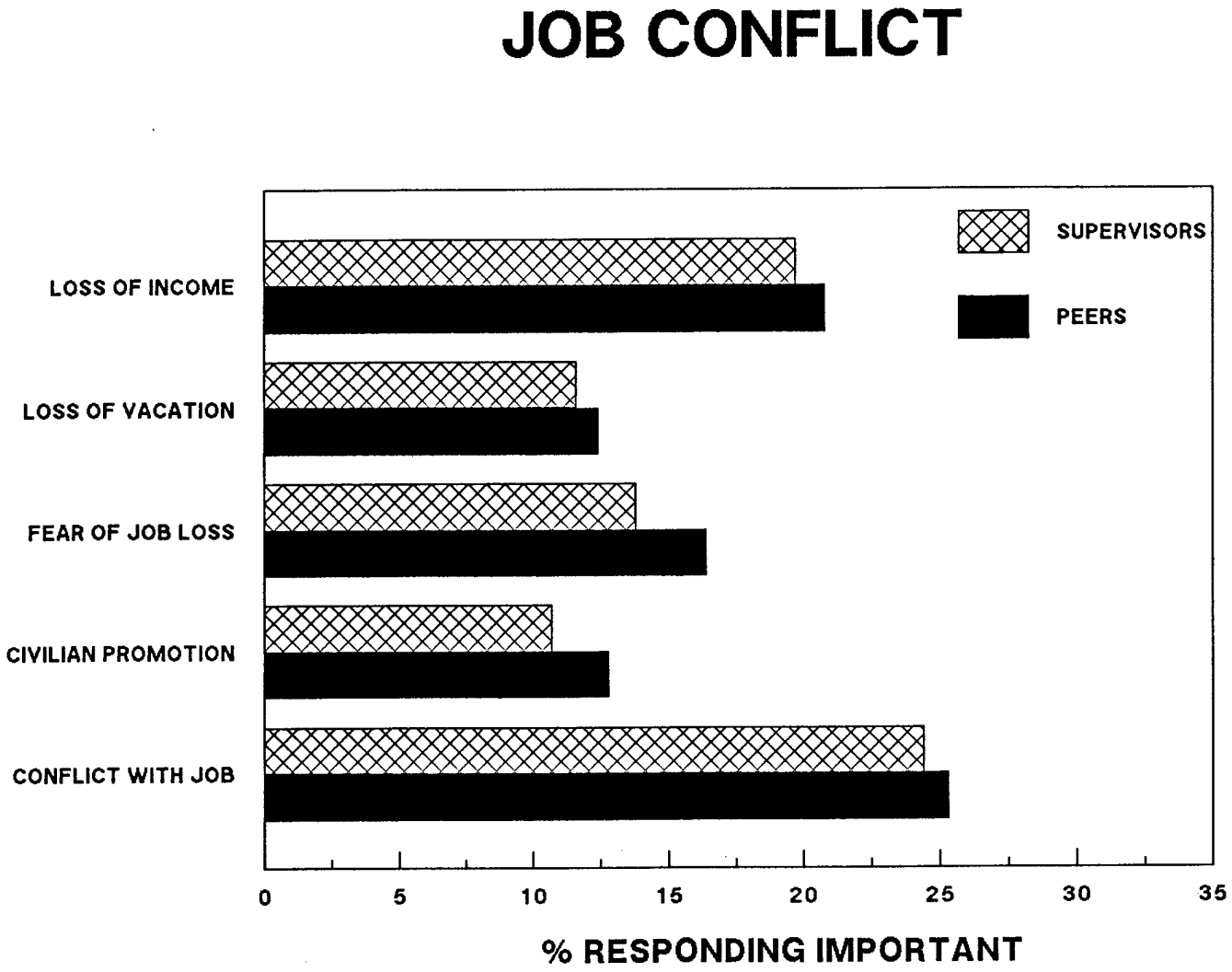

Figure 2. Job Conflict

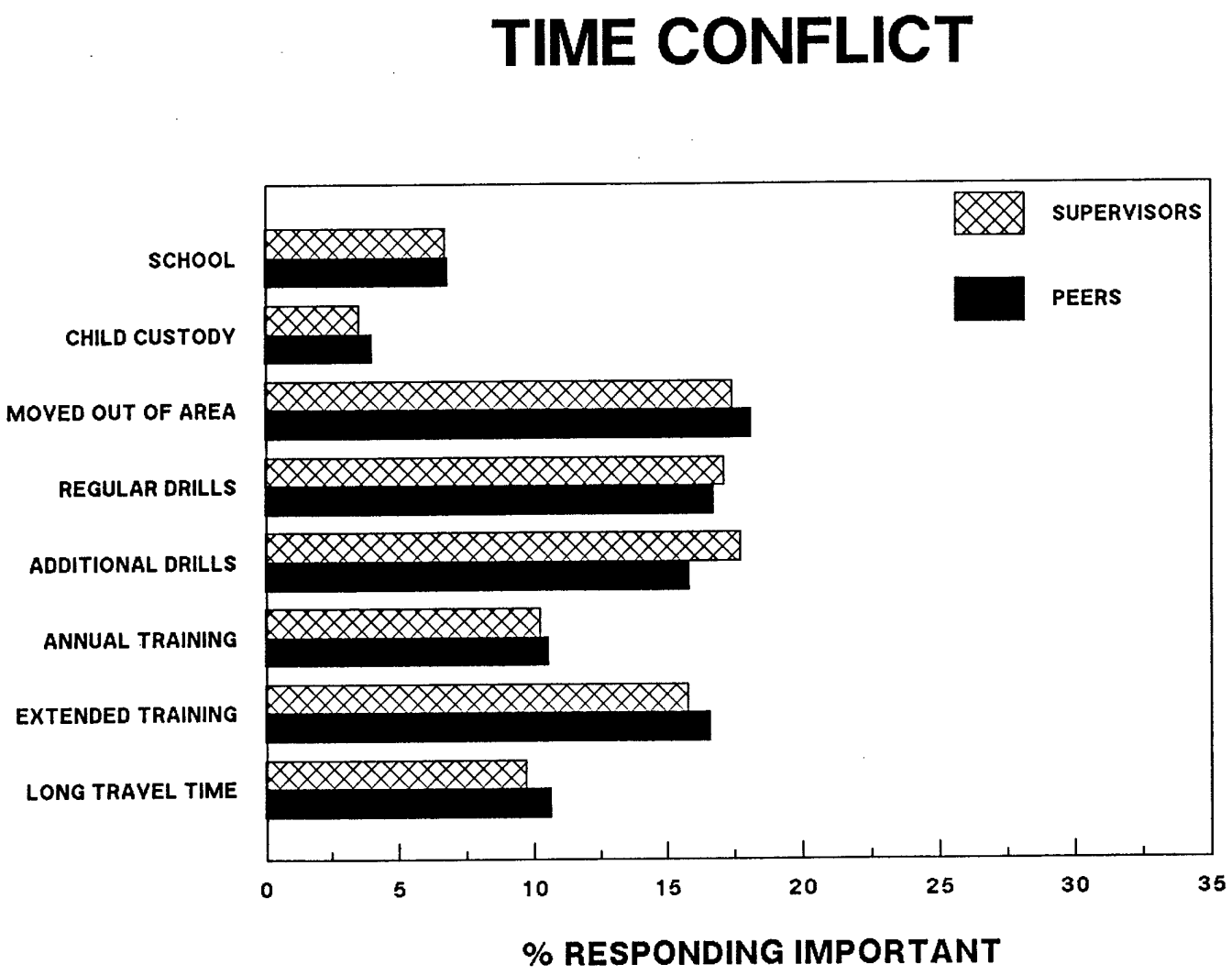

Figure 3. Time Conflict

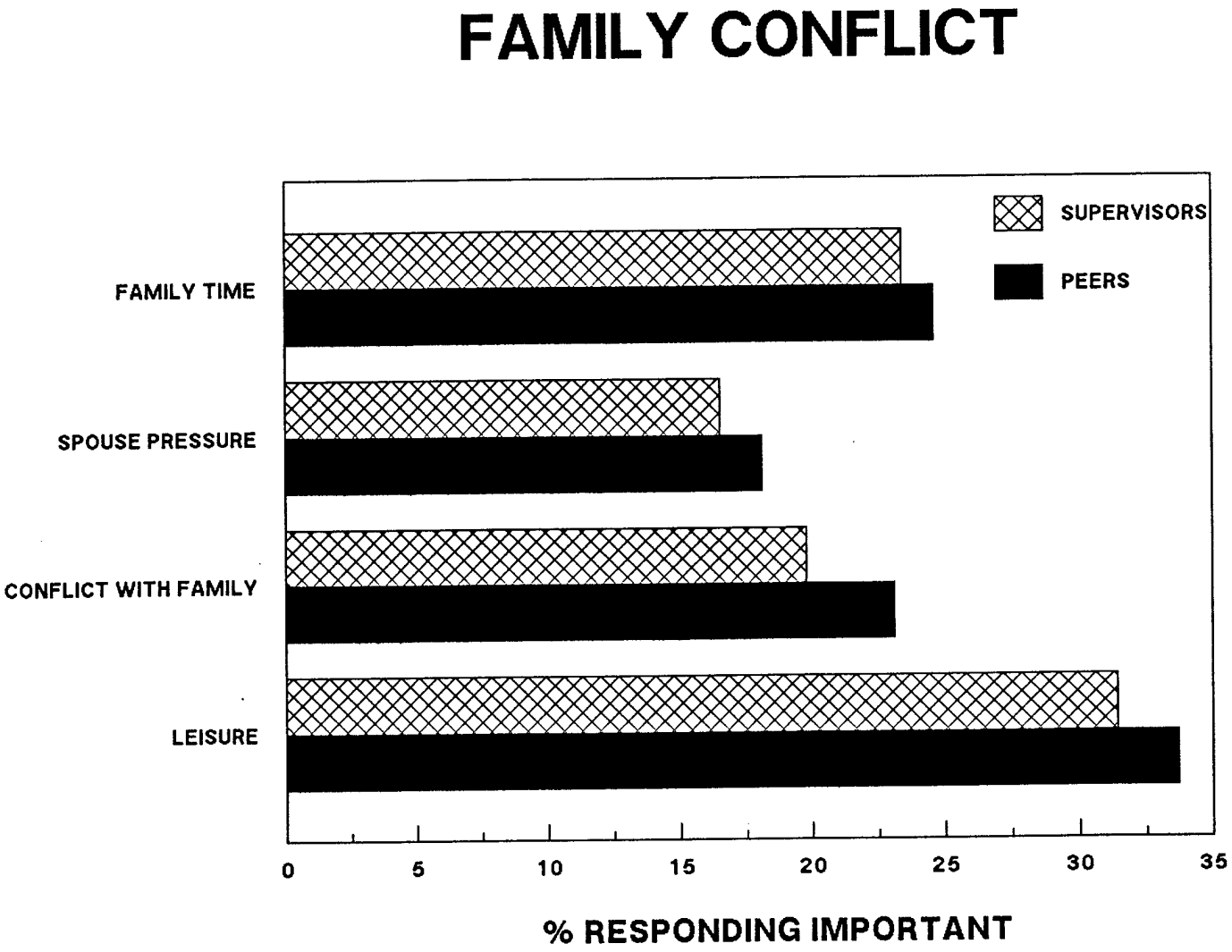

Figure 4. Family Conflict

RESERVE CONFLICT

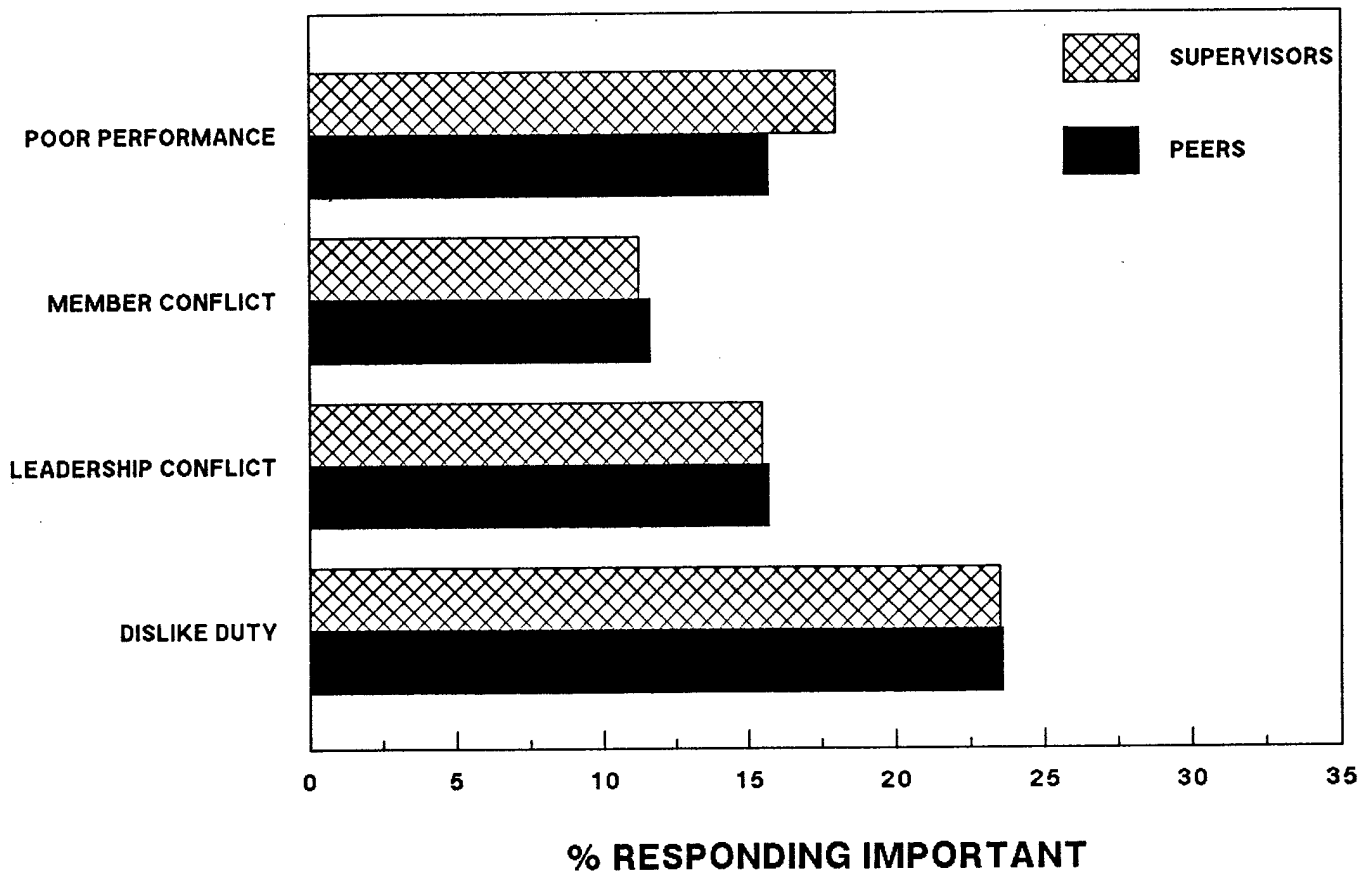

Figure 5. Reserve Conflict

HEALTH PROBLEMS

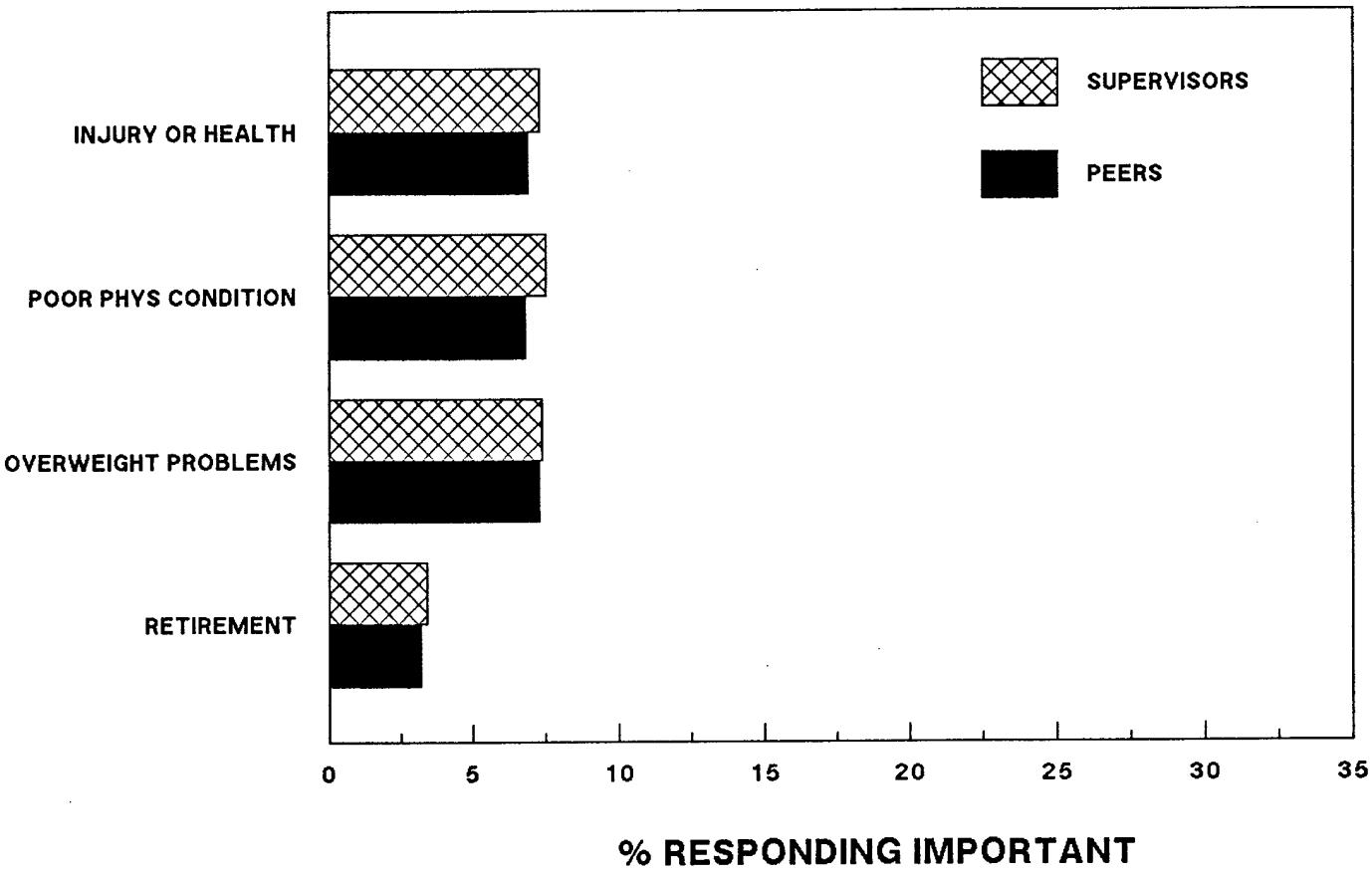

Figure 6. Health Problems

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THE IMPACT OF THE ARMY'S TWO-YEAR ENLISTMENT OPTION

by

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December 1986

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ABSTRACT

Data from the U.S. Army Research Institute's Survey of Army Recruits was examined to assess the effectiveness of the two-year enlistment tour. Cross-tabulation and cost-benefit analyses were conducted. The analyses indicated that in the 1986 sample of new Army recruits, more than half (54%) of the male, two-year recruits would not have enlisted without the two-year option. Furthermore, this percentage was even larger for the higher AFQT category recruits which indicates that the two-year option is particularly useful for attracting recruits from the highest AFQT categories. The two-year option was also found to be a valuable allocation tool that attracts recruits to MOS that would otherwise be difficult to fill. The cost-benefit analysis (that took into account training and differential attrition and retention rates across tours) indicated that the two-year option is not cost-effective, costing the Army nearly $58.5 million per year. An additional analysis assessed the extent to which the Army two-year option draws recruits from other services and indicated that this effect is relatively small.

FOREWORD

The two-year enlistment option is one of a number of enlistment incentives offered to potential recruits. This report investigates the effectiveness of the two-year option as an enlistment incentives and analyzes the costs of the program. The report presents data from the Army's Survey of New Recruits, administered by the Army Research Institute, on the importance of the enlistment option. This research has been conducted as part of ARI's continuing research on enlistment incentives in order to provide additional information on managing recruiting resources.

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Technical Director

ACKNOWLEDGMENTS

The authors are Economist, Psychologist, and Chief respectively in the Manpower and Personnel Policy Research Group of the U.S. Army Research Institute for the Behavioral and Social Sciences. This paper has benefitted from discussions with Ltc Frame. The views expressed in this paper are solely those of the authors and do not necessarily represent those of the aforementioned individuals, the U.S. Army, or the Department of Defense.

THE IMPACT OF THE ARMY'S TWO-YEAR ENLISTMENT OPTION

EXECUTIVE SUMMARY

Requirement:

To assess the effectiveness of the two-year enlistment tour as an enlistment incentive.

Procedures:

Data from the U.S. Army Research Institute's Survey of Army Recruits was examined to assess the effectiveness of the two-year enlistment tour. Cross-tabulation and cost-benefit analyses were conducted. The implications of these analyses for Army policy makers and personnel planners were considered.

Results:

The analyses indicated that in the 1986 sample of new Army recruits, more than half (54%) of the male, two-year recruits would not have enlisted without the two-year option. Furthermore, this percentage was even larger for the higher AFQT category recruits which indicates that the two-year option is particularly useful for attracting recruits from the highest AFQT categories. The two-year option was also found to be a valuable allocation tool that attracts recruits to MOS that would otherwise be difficult to fill. The cost-benefit analysis (that took into account training and differential attrition and retention rates across tours) indicated that the two-year option is not cost-effective, costing the Army nearly $58.5 million per year. An additional analysis assessed the extent to which the Army two-year option draws recruits from other services and indicated that this effect is relatively small.

Utilization:

This research will be used by U.S. Army policy makers and personnel planners to assess the effectiveness of the two-year enlistment tour as a cost-effective means for meeting the Army's human resource requirements.

THE IMPACT OF THE ARMY'S TWO-YEAR ENLISTMENT OPTION

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THE IMPACT OF THE ARMY'S TWO-YEAR ENLISTMENT OPTION

David K. Horne, Rebecca M. Pliske, and Curtis L. Gilroy*

The Army's two-year enlistment option is a valuable incentive that attracts high quality recruits. To youths who are uncertain of their career orientations, or to youths who plan to attend college and are enlisting to take advantage of educational benefits, a three- or four-year tour commitment is often too long. Young adults consider even two years to be a long commitment.** By offering a two-year tour, the Army captures a large market of youths who otherwise would not have enlisted for military service.

This paper addresses the effectiveness of the two-year enlistment tour as an enlistment incentive using data from the Army Research Institute's Surveys of New Recruits. We consider potential drawbacks to the two-year option, but argue that these are minor effects and that the two-year option is both cost effective and expands the market from which the Army draws its high quality recruits.

Effect of No Two-Year Option

Several questions included in ARI's New Recruit Survey address the

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**See McTeigue, Kralj, Adelman, Zirk and Wilson (1986) for a summary focus group discussions with high school seniors and recent high school graduates on career decision making.

effectiveness of the two-year option.* The particular question addressing the market expansion effect of the two-year option asks new recruits: "Suppose no military service had a 2 year enlistment option. What would you have done?"** The possible responses are:

1. Signed up for the same job anyway.
2. Signed up for a different job in the Army.
3. Tried to join a different service.
4. Not enlisted at all.

Figure 1 illustrates responses for males who signed a two-year contract according to enlistment records,*** for 1984 through 1986.

The data illustrated in Figure 1 indicate that more than half (54 percent) of the two-year recruits would not have enlisted in any service without the option. Moreover, that number has risen steadily since 1984.

Recent increases in enlisted manpower quality in the Army can be at least partially attributed to the popularity of the two-year option which has been directed towards the high-quality market. Figure 2 demonstrates that the number

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*ARI has surveyed new Army recruits at reception stations annually since 1982. For a summary of the survey methodology see Westat (1984, 1985, 1986).

**This question is preceded by a screening question that asks for the length of the recruit's enlistment tour. Only recruits indicating they enlisted for a two-year tour were instructed to complete the series of questions about the two-year enlistment incentive.

***It is important to note that a small percent (less than 1%) of the recruits who enlisted for a two-year tour according to enlistment records indicated in the screening question in the survey that they signed up for a longer tour and did not respond to the survey questions on the two-year option.

of recruits taking the two-year tour has grown considerably over the past few years, even though a limited number of slots is available in specified MOS's.

An illustration of the effectiveness of the two-year option in attracting high quality recruits is provided by Figure 3. The two-year option is only available for AFQT category I-IIIA high school graduate recruits. However, even within this group there is a quality differential in the response to the survey question about no service offering a two-year tour. Whereas 48 percent of AFQT IIIA recruits respond that they would not have enlisted without the two-year option, 56 percent of the AFQT II recruits and 62 percent of the AFQT I recruits reply that they would not have enlisted. Thus, the two-year option is particularly useful for attracting recruits in the highest AFQT categories.

The two-year enlistment option is also particularly effective in attracting youths who plan to attend college after completion of their tour. Figure 4 illustrates the proportion of recruits who indicate that they will "definitely" or "probably" attend college after their enlistment by length of tour. Over 80 percent of recruits in the two-year tour intend to pursue a college education, whereas 57 percent of three-year and 52 percent of four-year recruits indicate such an intention. It is likely that youths who plan to attend college are less likely to commit themselves to longer tours of duty.

The two-year option is also a valuable allocation tool. Recruits responding to the New Recruit Survey were also asked "Suppose the job you signed up for did not offer a 2-year enlistment option. What would you have done?" The response alternatives are:

1. Signed up for the same job anyway

2. Signed up for a different job in the Army whether or not it had a 2-Year Enlistment Option

3. Signed up for a different job in the Army <u>only</u> if it had a 2-Year Enlistment Option

4. Tried to join a different service

5. Not enlisted at all

Figure 5 presents responses to this question from the 1984 through 1986 surveys for male recruits who enlisted for a two-year tour of duty according to enlistment records. The data indicate that in 1986 54% of the recruits would have enlisted in a different MOS offering the two-year tour if the MOS they signed up for did not have the option. Only 16% of the recruits in 1986 would have enlisted in the same MOS (this percentage has decreased since 1984). These data clearly indicate the value of the two-year tour as an allocation tool.

The Impact of the Two-Year Tour

There are two potential drawbacks to the two-year enlistment option: (1) the program might simply allow recruits to substitute shorter tours for longer tours (to the degree that shorter tours are substitutes for longer tours, recruiting and training costs increase as more youths need to be accessed to maintain a constant force structure); (2) the two-year program may attract youths who otherwise would enlist in other services. This section of the paper argues that these are not significant effects, and addresses each of these in turn.

Substitution to Shorter Tours

According to the 1986 New Recruit Survey, 23% of recruits who enlisted in a two-year tour would have enlisted in the same MOS even if the two-year option were unavailable. For these recruits, the two-year option imposes a cost on the Army because a shorter tour is simply substituted for a longer tour. From the numbers in Figure 1 one cannot ascertain whether this substitution effect is offset by the Army's net gain of 64 percent of the two-year recruits who said they would have either not enlisted at all or enlisted in another service. The trade-off can be viewed as follows. Suppose the two-year option were

eliminated. The Army would lose some recruits, while others would still enlist in the Army for longer tours. In the simplest analysis, given a program of 13,000 two-year recruits, the Army would lose 64 percent times two years, for a loss of 16,640 man-years. At the same time, 36 percent would stay for longer tours (those who indicated they would sign up for the same job or a different job as shown in Figure 1), so the loss would be offset by a gain of 4,680 by one to two years. Some recruits might be willing to sign up for four years, but many might not be willing to enlist for more than three years as an alternative to the two-year tour. To be conservative, if 3.5 years is used as the average alternative tour (an addition of 1.5 years), 4,680 times 1.5 equals an additional 7,020 man-years. Thus the net loss of man-years would be (16,640 - 7,020) = 9,620 man-years.

This is a very simple example. The gain of 9,620 man-years from the two-year program might be overstated if "trained" man-years are compared, because a larger proportion of the two-year tour is spent in training exercises. An extension from two to three years yields an additional year in trained man-years since much of the formal training occurs early in the first term. However, higher attrition rates are associated with longer tours, so adjustments must be made for the probability of not completing the tour. A third complication is that additional incentives would be required to attract three- and four-year recruits to replace the manpower lost if the two-year program were eliminated. We have calculated the cost of eliminating the two-year program and attracting a sufficient number of three- and four-year recruits to maintain a constant number of trained man-years. The differential attrition rates are incorporated into the cost-benefit analysis, as are training and recruiting costs as well as bonuses necessary to attract additional three- and four-year recruits. The model also accounts for differential reenlistment rates and adjusts for changes

in manpower associated with both first and second terms. It is implicitly assumed that the changes in policy do not affect the number of soldiers reenlisting beyond the second tour.

The intuitive explanation of the cost-benefit analysis (outlined in the appendix) is as follows: after accounting for training and differential attrition and retention across tours, the net manpower gain associated with the two-year option (net of the substitution effect from longer terms) is 9,397 man-years. One alternative is to replace the two-year option with a bonus program to increase three-and four-year enlistments. Given the attrition and retention rates associated with the three-year tour, it would take 3,447 additional three- to four-year accessions to replace the lost two-year accessions. Assuming a pay elasticity of 1.5, a pay increase of $529. per year would be sufficient to attract the additional number of three- and four-year enlistments. Because fewer accessions are needed, some training and recruiting costs are saved. With combined (assumed) training and recruiting costs of $18,000 per recruit (which is likely to be a conservative estimate), the savings associated with eliminating the program would be $87.7 million, while the cost of the increase in compensation to all GMA accessions (possibly through bonuses) would be $43.7 million per year. Thus, given the above assumptions, the two-year program does not appear to be cost-effective, costing the Army nearly $58.5 million per year from higher recruiting and training costs.

Educational benefits are not included in this analysis, but to the extent that the two-year recruits are more likely to plan to use these benefits (which increase with length of tour but at a decreasing rate), the cost of the two-year option may be understated. Information on the likely usage rates of the new GI Bill, particularly by term of service, is unavailable so educational benefits have not been explicitly included in the cost-benefit formula. The equation can

easily be modified to reflect different assumptions on the costs of the program, if desired. Neither are reserves included in the cost analysis. To the extent that the two-year option requires a larger number of accessions and those additional active Army accessions lead to higher Army Reserve manpower in the future, less would be spent on Army Reserve recruiting.

Substitution from Other Services

Because the Army is the only service currently offering a two-year enlistment option, some recruits may be drawn away from the other services. As was shown in Figure 1, this substitution from other services is relatively small. In 1986, for example, only 10 percent of the two-year recruits responded that they would have tried to enlist in another service if no two-year option was available in any service. The number of recruits who would have actually enlisted (or been accepted) in the other services is likely to be significantly smaller than 10 percent, thereby lessening the detrimental impact on other services' recruiting.

Another question in the 1986 New Recruit Survey specifically addresses the issue of interservice competition. Recruits were asked "What if a Navy (or Marine or Air Force) recruiter had offered a 2-year tour?" The sample was split into three groups to respond to the option alternative for a specific service. Possible responses are:

1. Signed up with the Army anyway

2. Signed up for 2 years with the Navy (Air Force, Marines) only if a specific job had a 2-year enlistment option

3. Signed up for 2 years with the Navy (Air Force, Marines) for any job that had a 2-year enlistment option

The responses to this question are shown in Figure 6. The results demonstrate that if the other services were to compete in the two-year market, the impact on the Army would be quite detrimental. Only 46% of the two-year recruits respond that they would remain in the Army if the Air Force offered a two-year option, while 64% would remain if the Navy had such a program and 73% if the Marines offered the option. If all the other services had two-year options, the results suggest that the Army would lose over half of its two-year recruits.

Summary and Conclusions

The analysis of the effectiveness of the two-year enlistment option has demonstrated some significant advantages to the program. The program is a market expander. The enlistment option attracts many high quality youths who otherwise would not have enlisted in any service. Fifty-four percent of recruits responding to the 1986 New Recruit Survey who have taken the two-year option indicate they would not have enlisted without it. An additional ten percent of the respondents suggest that they might have tried to enlist in another service. Although this inter-service competition effect is small, the number of Army recruits who actually would have enlisted in another service is likely to be even smaller.

However, the two-year enlistment option does not appear to be cost effective. The cost-benefit analysis uses fairly conservative assumptions, such as assuming that an equal number of three- and four-year recruits could be attracted to replace the two-year recruits. The pay elasticity of 1.5 used to calculate the required increase in compensation to replace the two-year option is within the range found by most empirical econometric studies. Moreover, it is assumed that the increase in compensation could be targeted solely to GMA's through bonuses. If a general pay increase were used to increase enlistments, the costs of the two-year option relative to a bonus plan could be less than

that estimated here. Our estimates suggest that the Army cost of the two-year enlistment program is approximately $58.5 million per year.

Unfortunately, the data are not available to determine the optimal size of the two-year option program. The New Recruit Survey data allow us to generate average costs and benefits, not marginal costs and benefits. Thus, it is not possible to generate the changes in the responses that would result from small increases in the size of the program. However, the New Recruit Survey can be used in a post hoc manner to evaluate the effectiveness soon after changes in the size of the program have been implemented. The trend over the past several years indicates that the growth of the program may be contributing to an increased effectiveness as knowledge of the program becomes more widespread in the general public.

The two-year enlistment option clearly provides the Army with a small recruiting advantage relative to the other services. This edge is important because the Army has an initial disadvantage due to (a) the number of recruits required by the Army is much larger than for the other services, (b) the Army has been perceived to have an image problem relative to the other services, and (c) the Army has traditionally had a relative disadvantage in recruiting quality accessions. Recent improvements in the quality of Army accessions may be partially attributed to the expansion and marketing of the two-year enlistment option in addition to effective recruiting management. The survey data demonstrate that a large proportion of high quality recruits participating in the two-year program would not have enlisted in any service if the Army's program had not been available. This market expansion effect is particularly valuable for recruiting high quality recruits.

The New Recruit Survey data suggest that it would be counterproductive for the other services to offer a similar program. The Army's program currently

draws very few of its two-year recruits from the other services. However, a two-year program offered by other services would induce over half of the two-year Army recruits to enlist elsewhere. Continuation of the Army's two-year enlistment option will ensure access to an additional source of high quality manpower while minimizing the interservice competition effects. However, the program appears to relatively costly related to other potential incentive programs.

EQUATIONS: COST-BENEFIT ANALYSIS

1. Manpower associated with the two year program:

$$NM = P*M_2*At_2*(1.67+4*Re_2) + (1-P)M_2[At_2(1.67+4*Re_2)-At_3(3.17+4*Re_3)]$$

2. Additional accessions required to replace two year program:

$$AM_3 = NM/At_3(3.17+4*Re_3)$$

3. Bonus required to attract AM_3 accessions:

$$B_s = AM_3/60,000*RMC/E_p$$

4. Training and Recruiting Savings from eliminating option:

$$S = (P*M_2 - AM_3) * \$18,000$$

5. Cost of bonus program to attract GMA accessions:

$$C = (60,000 - PM_2 + AM_3)B_s$$

6. Net cost to replace the two year enlistment option:

$$NC = S - C.$$

Variable list and values on next page.

APPENDIX

VARIABLE LIST AND VALUES USED IN ANALYSIS

Variables		Value
P	Proportion of 2 yr recruits who would not have enlisted without option	.64
M_2	Number of 2 yr recruits	13,000
Re_2	Reenlistment rate, 2 yr soldiers	.094
Re_3	Reenlistment rate, 3 yr soldiers	.184
At_2	1 - Attrition rate, 2 yr soldiers	.833
At_3	1 - Attrition rate, 3 yr soldiers	.698
RMC	Regular Military Compensation	$13,800
E_p	pay elasticity	1.5
NM	Net Manpower gain assoc. with 2 yr prog.	(9397)[a]
AM_3	No. of 3 and 4 year accessions required	(3447)[a]
B_s	Enlistment bonus (each year)	($529)[a]
S	Savings on training and recruiting	($87.7M)[a]
C	Cost of bonuses per year	($29.2M)[a]
NC	Net cost of two year option	($58.5M)[a]

Assumptions

Training and Recruiting Cost per recruit: $18,000

Pay elasticity: 1.5

Average tour of additional accessions: 3.5 years

Average Training time: 4 months

Trained manpower: 1.67 years (2 yr tour); 3.17 years (3.5 yr tour)

Level of GMA accessions per year in analysis: 60,000

Number of 2 yr accessions per year: 13,000

Reenlistment tour: 4 years

[a] variable values are calculated from the model

Notes

Attrition and retention rates from Elim-complip;

Historical and current two year series from Forecast system

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Manpower and Personnel Policy Research Group

Working Paper 88-27

Army Manpower Cost System (AMCOS) Semi-Annual Progress Report

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Systems Research and Applications Corporation

November 1988

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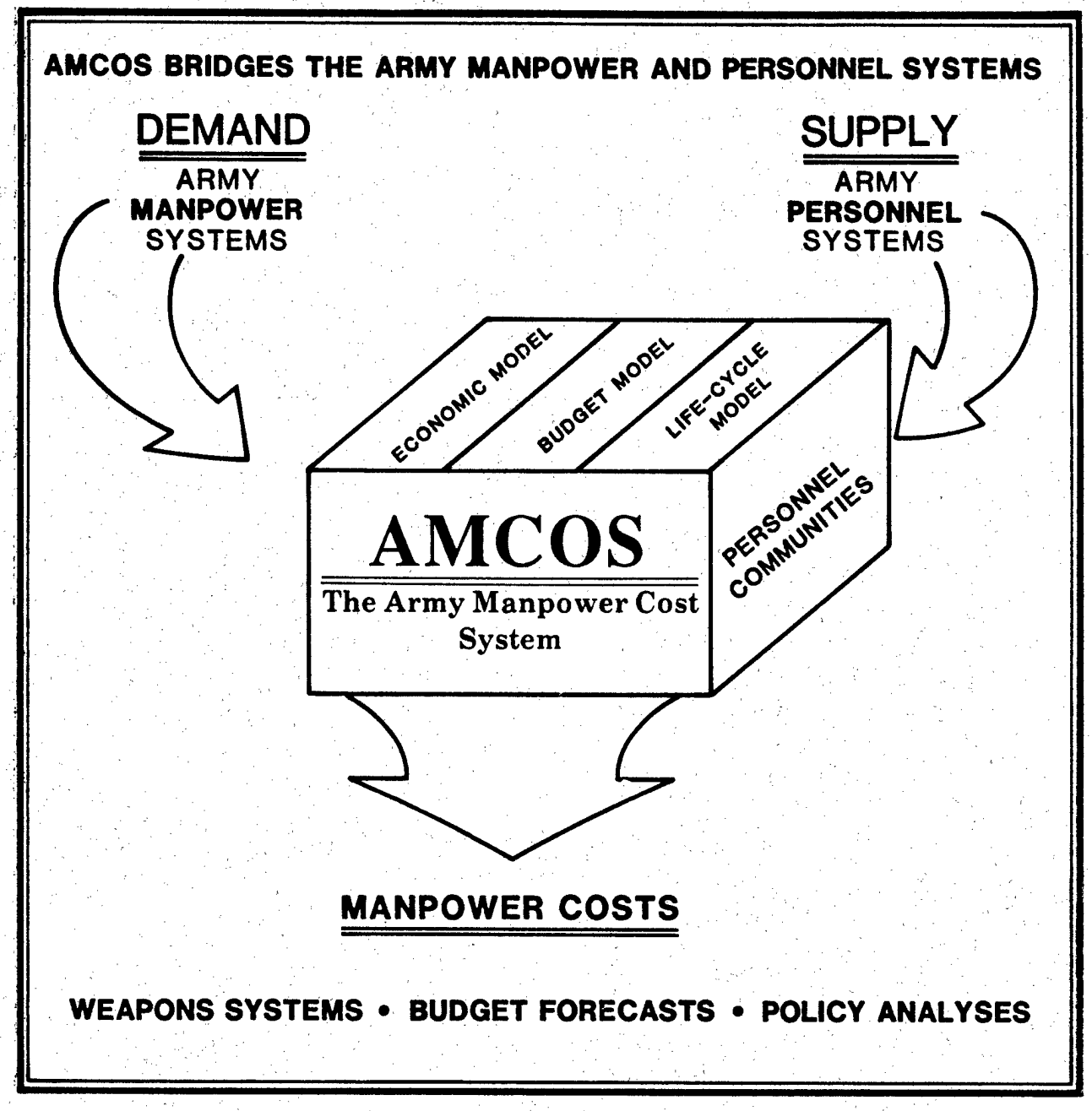

ARMY MANPOWER COST SYSTEM

NOVEMBER 1988

Developed by
The U.S. Army Research Institute

SEMI-ANNUAL PROGRESS REPORT

RICHARD W. HUNTER, Ph.D.
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The views, opinions, and findings contained in this report are those of the authors and should not be construed as an official Department of the Army position, policy, or decision, unless so designated by other official documentation.

Systems Research and Applications Corporation
Arlington, Virginia

November 1988

SEMI-ANNUAL PROGRESS REPORT

Contract Number	MDA903-86-C-0106
Contract Expiration Date	March 17, 1991
Total Dollar Value	$1,347,915
Short Title of Contract Work	AMCOS
Authors	Richard W. Hunter, Ph.D. Raelene Canuel Paul F. Hogan Lee S. Mairs Donald E. Rose, Jr.
Name of Contractor	Systems Research and Applications Corporation (SRA)
Name of Sub-Contractor	SAG Corporation
Contractors Project Manager	Donald E. Rose, Jr.
Phone Number	(703) 558-4700
Government Sponsor	Army Research Institute
Contracting Officer's Representative	David K. Horne, Ph.D
Date of Submission	November 1988

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EXECUTIVE SUMMARY

E.1 PURPOSE OF THIS REPORT

This paper is the fifth semi-annual AMCOS progress and financial report covering the period April 1, 1988 through September 30, 1988, submitted in compliance with Section F. of Contract MDA903-86-C-0106.

E.2 PRIORITIES FOR THE REPORTING PERIOD

On April 25, 1988, the General Officer Study Advisory Group met to review the status of AMCOS. The meeting was chaired by the Deputy Comptroller of the Army who reestablished the following priorities for the AMCOS contract during this reporting period:

(1) Complete remaining enhancements to the active component model.

(2) Develop reserve components model(s) for the Army Reserve and National Guard and deliver a test model in June 1988.

(3) Develop a basic civilian model to include both general schedule and wage board personnel systems.

(4) Develop budget models for all three components of Army personnel (active, reserve, and civilian).

E.3 PROJECT ACTIVITY FOR THIS REPORTING PERIOD

During the past reporting period, SRA worked on the following items:

A. Active Component Life Cycle Cost Model (AC LCCM)

(1) Redisigned the automated requirements download capability and Unit Edit Module

(2) Installed the default inflation rates

(3) Revised special pay policy module

(4) Optimized use of the model code

B. Reserve Component Life Cycle Cost Model (RC LCCM)

(1) Developed Policy Modules

(2) Built Structured Cost Data Base

(3) Developed a test RC LCCM with the same features and operations as the AC LCCM

(4) Prepared RC LCCM User's Manual and Information Book

E.4 AMCOS PLAN

Figure E.1 summarizes the current status of and long-range development plan for AMCOS as of September 30, 1988.

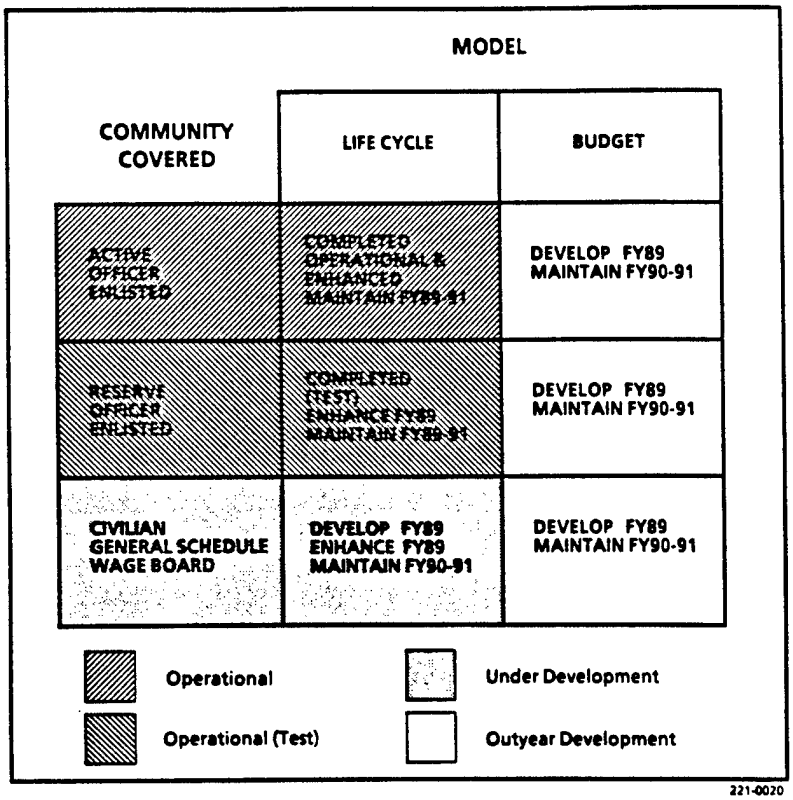


FIGURE E.1

AMCOS DEVELOPMENT PLAN

E.5 EXPENDITURES

AMCOS development is on schedule and within budget, but this is due to a cutback in activity to conserve contract resources until the end of FY88. The devlopment plan has been changed to reflect an expected contract modification and calls for an enhanced civilian LCCM to be completed in FY89 and a basic budget analysis model for all components to be completed in FY90. The AMCOS team is prepared to meet this level of effort after the contract is modified.

E.6 CONCLUSION

Work on AMCOS has been extremely successful. The AMCOS team has delivered and operationally tested an enhanced active component LCCM that the COR has accepted as fully operational. The team has also delivered a test version of the reserve component LCCM during this reporting period for testing and evaluation.

AMCOS FIFTH SEMI-ANNUAL PROGRESS REPORT

DRAFT

1.0 INTRODUCTION

The Army Manpower Cost System (AMCOS) is a research and development effort conducted by SRA Corporation for the Army Research Institute (ARI). This five-year project, sponsored by the Assistant Secretary of the Army (Financial Management), is developing an automated manpower costing systems to improve the Army's ability to conduct cost analyses.

1.1 PURPOSE OF THIS REPORT

This paper is the fifth semi-annual AMCOS progress and financial report covering the period April 1, 1988 through September 30, 1988, submitted in compliance with Section F of Contract MDA903-86-C-0106.

1.2 PURPOSE OF THE CONTRACT

To quote from the Army's request for proposal, the Army Research Institute undertook this effort:

> To design and validate a system of models (with their associated databases) to accurately estimate manpower costs of current and future weapons and other systems, to forecast manpower budget costs, and to analyze scenarios of personnel policy changes...
>
> As the Army looks to the 1990's and beyond, the shift toward increasingly sophisticated technology will be translated into sharp increases in the demand for skilled or high quality labor. At the same time, similar shifts in other sectors of the economy will contribute to a general bidding up of the price of labor. Constraints on the Army's ability to create specialists through training, coupled with the

increasing cost of skilled labor, makes it incumbent on the Army to predict manpower costs accurately.

> At present, the Army does not have an operational model to evaluate manpower costs of weapons and other systems... The objectives of this [effort] is to develop a system of manpower cost models consisting of economic cost, budget cost, and life cycle cost models...

1.3 THE PLAN FOR AMCOS

Figure 1.1 illustrates the overall scope of the AMCOS effort and the progress to date. The active component life cycle cost model (LCCM) is operational and has been delivered. The reserve component LCCM is in the test stage and has been delivered. The civilian LCCM is under development. Out-year development calls for development of the budget model for all components. Figure 1.2 summarizes the status of each element and the timing plan for development. The figure shows that the civilian LCCM will be completed and delivered in FY89. The budget model for all components is scheduled for delivery in FY90 and all models are to be updated each year. Final documentation and the complete AMCOS package will be turned over to the Army in FY91.

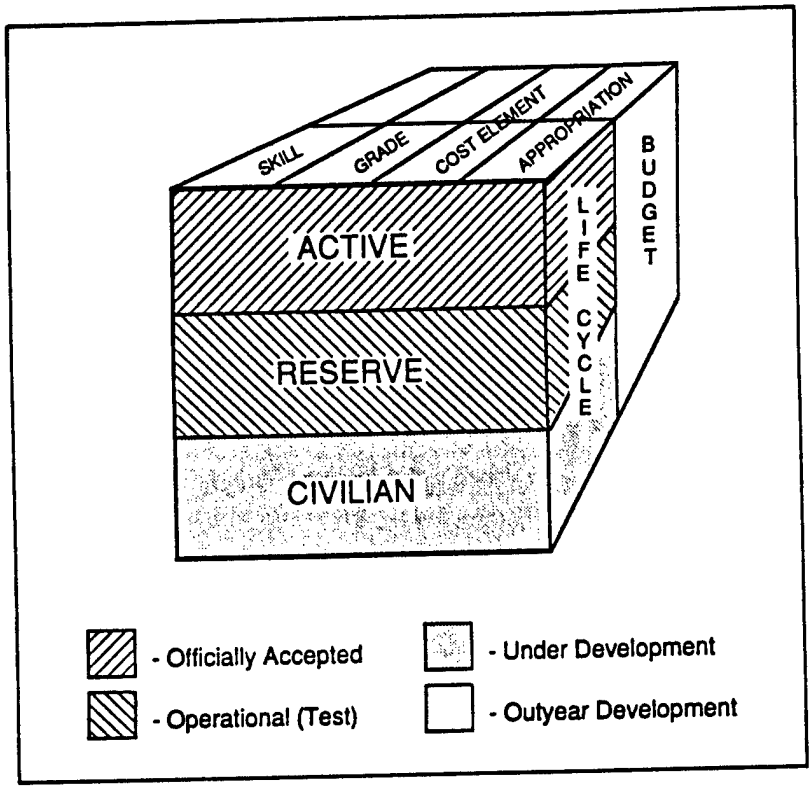


FIGURE 1.1
AMCOS OVERVIEW

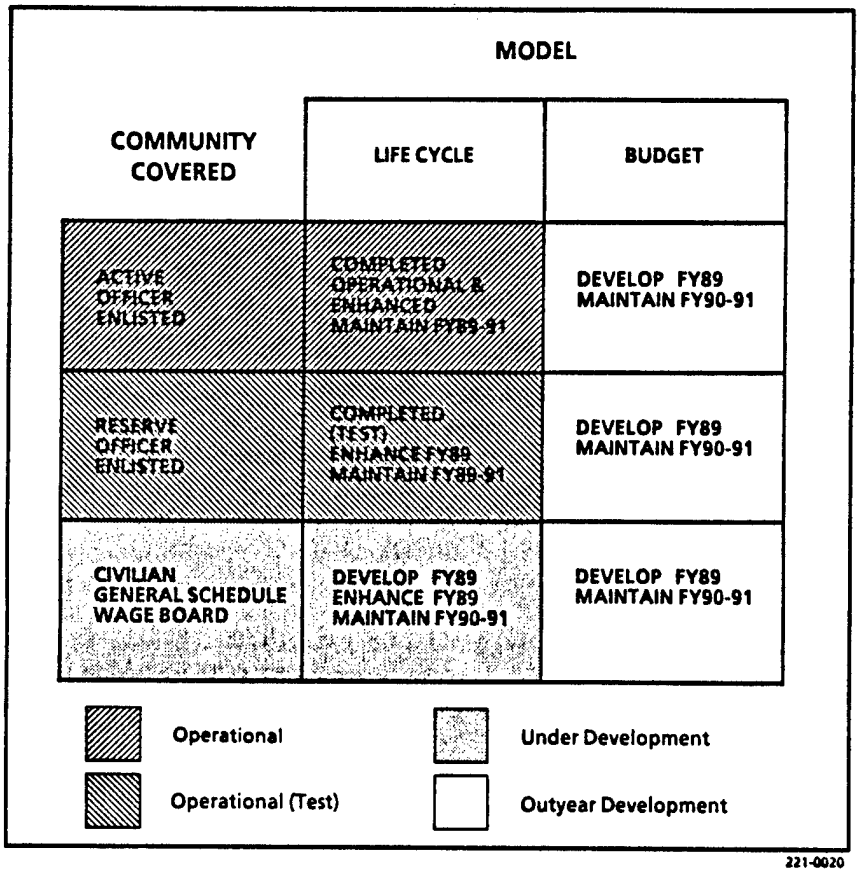


FIGURE 1.2
AMCOS DEVELOPMENT PLAN

1.4 AMCOS OVERVIEW

Over the past two and a half years, the AMCOS team has been building the system of budget and life cycle cost models for the active, reserve, and civilian components of Army manpower. AMCOS interfaces the Army's manpower requirements and personnel policies to improve manpower cost estimating capabilities in the following areas:

New Weapon Systems. Accurate manpower cost estimates over the life of a weapon system will assist in choosing the most efficient system, and in developing the most cost-effective manpower/hardware configuration for that system.

Manpower Requirements. Cost estimation by grade and occupation for the active, reserve, and civilian components, will help in choosing the most efficient manpower mix.

Personnel Policies. Explicit cost modeling of personnel policies such as tour lengths, reenlistment bonus policies, the proportion of high quality recruits and PCS moves, will allow rapid estimation of how changes in these policies affect the costs of filling specific manpower positions.

Budget Decisions. Explicit cost modeling of the effect of personnel policies on budget costs will result in better personnel planning, policy development, and budget support.

1.4.1 Modular Design

AMCOS uses a modular design concept. We develop simple modules that are expanded as needed. When needed we remove policy modules from the model, update, and re-insert without adversely affecting other parts of the model. We update data bases in a similar way.

1.4.2 Evolutionary Approach

These models will accept manpower requirements generated by the FORECAST System, the MANPRINT process or any "what-if" scenario. The models will produce a time-phased profile of the cost of manpower over the life cycle of a weapon system. By developing a working model early in the process, we are now able to use the results of actual cost estimation efforts to refine and improve the models to meet the Army's real needs.

As the research progressed, we developed selected policy modules in more detail and enhanced the cost estimation process to make it more dynamic and flexible. AMCOS's modular design makes this evolutionary strategy practical. We have refined personnel policy and compensation modules and have enhanced them to meet the changing requirements of the Army and other users that emerge from real-life applications.

1.5 THE ACTIVE DUTY LIFE CYCLE COST MODELS

The schematic in Figure 1.3 portrays the design of the life cycle cost model. As shown in the schematic, the heart of the model is the structured cost data base. That data base forms the point of interaction between the model software and the user.

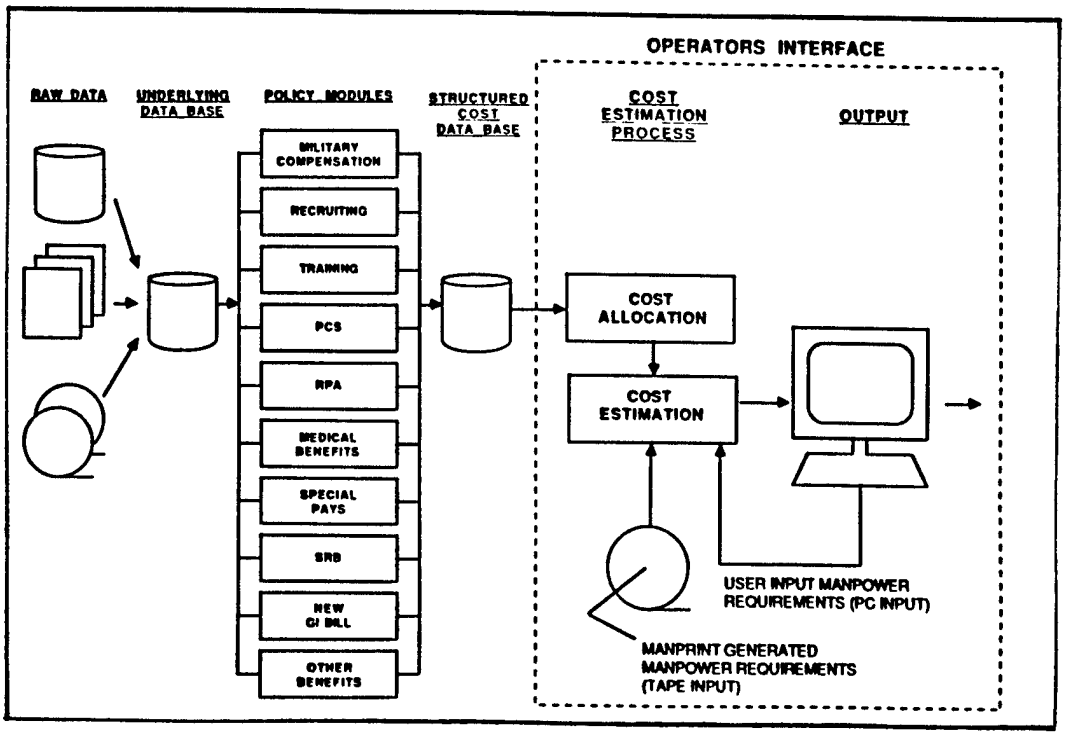


FIGURE 1.3
AMCOS SCHEMATIC FLOW DIAGRAM

1.5.1 The Structured Cost Data Base

The model takes data input from a variety of Army sources and processes them through policy modules that emulate personnel policies. This generates costs by skill and grade that are deposited in the structured cost data base. These costs represent the "price" of an individual soldier to the Army.

1.5.2 User Operation

Figure 1.4 shows how the life cycle cost model operates. The user inputs the needed information through man-machine interface with the computer. Inputs include manpower requirements and cost modifications. The model has already created a structured cost data base by processing data from various Army sources through the policy modules. The cost estimation process merges the user input with the structured cost data base to produce manpower cost estimates. As shown on the right hand side of the graphic, the user may elect a variety of output options to review the results.

USING AMCOS

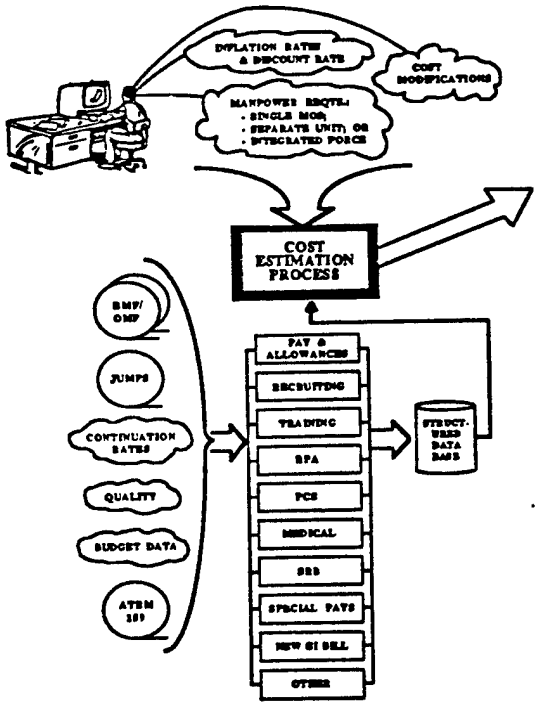
User-Defined Inputs

- **Manpower Requirements**--Manning by MOS and grade, number and type of units, phase-in/interim changes/phase-out
- **Cost Review**--All enlisted MOSs and officer specialties; separate cost elements that roll-up to major budget appropriation categories
- **Cost Modifications**--User-specified cost policies; selection of specific pays; average versus marginal costs; costs of high versus low quality personnel; discount rates; and inflation rates by appropriation category

User-Oriented Outputs

- **Micro-to-Macro Focus**--Cost results for any position/unit/division combination
- **Cost Patterns**--Estimated for 1 to 30 years, discounted and undiscounted
- **Levels of Detail**--By major element (recruiting, training, basic pay and allowances, retirement, SRB, PCS, etc.); by budget appropriation category; by total costs
- **Output Options**--Display/save/ print; tabular and graphic, comparative results

AMCOS USER INTERFACE



MULTIPLE OUTPUTS

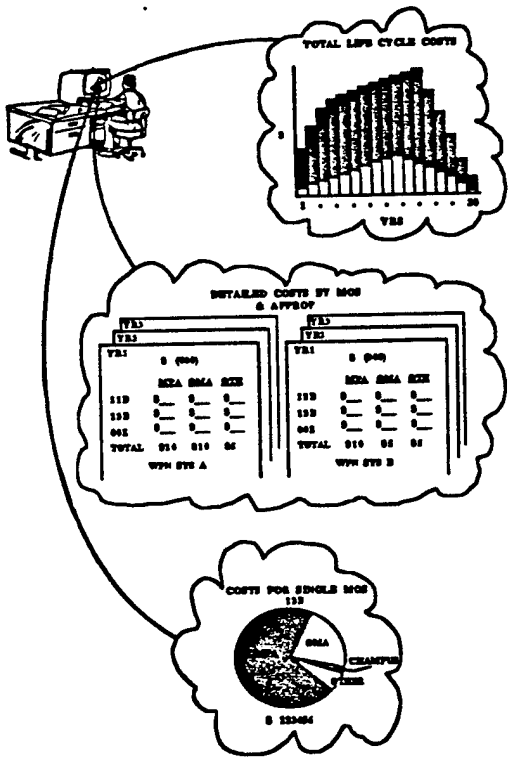


FIGURE 1.4
AMCOS INPUT/OUTPUT SCHEMATIC DIAGRAM

1.5.3 AMCOS Version 3.2

At the beginning of this reporting period, the Army's Cost and Economic Analysis Center (CEAC) officially accepted the AMCOS active component model version 3.2. Version 3.2 provided the user with an improved AC LCCM that not only made operation of the model quicker and easier but provided more capabilities to the user. In addition the cost data base was updated to reflect FY87 actual costs and then inflated to FY88 dollars. The main improvements seen in this version were the ability to view cumulative training costs, to compare outputs, and to be able to import all or part of the AMCOS files using an AMCOS installation package. Specifically, the user could:

(1) view training costs that have been accumulated over the life of the soldier either with or without attrition being considered;

(2) compare the total discounted and undiscounted costs associated with various projects by budget appropriation; and

(3) install selected files that had been sent by the developer without contractor assistance.

In addition version 3.2 allows the user to save results of various model runs in project files to be viewed at a later date.

1.6 PRODUCTS DELIVERED IN THE FIRST TWENTY FOUR MONTHS

Table 1-1 lists the products delivered under this contract during its first twenty four months. This work forms the basis for discussion of contractor activity during this reporting period (April 1, 1988 to September 30, 1988) described in the rest of the report.

TABLE 1-1

PRODUCTS DELIVERED

DATE	TITLE
4-15-86	Briefing to ODCSPER, Program and Budget Division
5-15-86	Briefing to Deputy Comptroller of the Army
7-2-86	Technical Report: Evaluation of the Prototype (Draft)
9-30-86	Concept Paper #1: Life Cycle Cost Model Active Army Manpower (Draft)
10-15-86	Technical Report: AMCOS Information Book (Draft Working Documents)
10-31-86	AMCOS Semi-Annual Progress Report
11-12-86	Briefing to Working Level SAG
12-12-86	Briefing to Mr. Distasio, Office of the Comptroller
1-31-87	Active Component Enlisted Life Cycle Cost Model (Test Version) Delivered
1-31-87	Update to Technical Report: AMCOS Information Book (Draft Working Documents)
2-9-87	AMCOS Demonstration to Dr. Gilroy, Chief (MPPRG), ARI
3-4-87	AMCOS Demonstration to Col. Wood, Dep. Dir., CEAC
3-12-87	AMCOS Demonstration to Mr. Frantz, Dir., CEAC
3-15-87	Active Component Officers Life Cycle Cost Model (Test Version) Delivered
3-30-87	Briefing to Deputy Comptroller of the Army Operational Active Component Life Cycle Cost Model

TABLE 1-1 (cont'd)

PRODUCTS DELIVERED

DATE	TITLE
5-15-87	AMCOS Brochure
5-31-87	AMCOS Version 2.0 (Includes Executive Shell, Automated Requirements Input, One Year Model Variable Inflation Rates, Consolidation of Enlisted and Officer Models)
7-31-87	AMCOS Version 3.0 (Includes selective cost modification/suppression, Graphics, print option and the alternate methods for computing Retired Pay Accrual)
9-28-87	In-Process-Review presented to Deputy Comptroller of the Army
10-31-87	AMCOS Version 3.1 in-process-review.
11-6-87	Briefing to the General Officer Study Advisory Group
12-31-87	AMCOS Version 3.2 with update of structured cost data base using FY87 costs
1-31-88	Reserve Component Life Cycle Cost Model Design (draft concept paper)
3-15-88	Updated structured cost data base to include Jan 88 pay tables. all costs in FY88 dollars.

1.7 REPORT ORGANIZATION

This report is divided into seven sections, as follows:

- o introduction
- o summary of project activity in the reporting period;
- o descriptive list of all briefings, meetings, and visits conducted during the reporting period;
- o fiscal report on project costs for this reporting period;
- o description of problems encountered;
- o discussion of the planned activities for the next reporting period
- o conclusion.

2.0 PROJECT ACTIVITY FOR THE FIFTH REPORTING PERIOD

2.1 PRIORITIES

On April 25, 1988, the General Officer Study Advisory Group met to review the status of AMCOS. This meeting was chaired by the Deputy Comptroller of the Army whose priorities for the remaining work remained unchanged from the previous reporting period. Those priorities are:

(1) Complete remaining enhancements to the active component model.

(2) Develop Reserve Components model(s) for the Army Reserve and National Guard and deliver a test model in June 1988.

(3) Develop a basic civilian model to include both general schedule and wage board personnel systems.

(4) Develop Budget models for all three components of Army personnel (Active, Reserve, and Civilian).

2.2 OUTLINE OF PROJECT ACTIVITY

During the past reporting period, SRA worked on the following items:

A. Active Component Life Cycle Cost Model (AC LCCM)

(1) Redisigned the automated requirements download capability and Unit Edit Module

(2) Installed the default inflation rates

(3) Revised special pay policy module

(4) Optimized use of the model code

B. Reserve Component Life Cycle Cost Model (RC LCCM)

(1) Developed Policy Modules

(2) Built Structured Cost Data Base

(3) Developed a test RC LCCM with the same features and operations as the AC LCCM

(4) Prepared RC LCCM User's Manual and Information Book

2.2.1 Active Component Life Cycle Cost Model

2.2.1.1 Redesign of Automated Requirements Download and Unit Edit Module

As indicated in the fourth semi-annual report, SRA had determined that the automated requirements download capability did not allow the user to distinguish between 9 character standard requirements codes (SRCs). This occurred because the 9th character was originally believed to be nondiscretionary but in fact is discretionary. SRA redesigned the requirements download capability so that a user can load requirements into AMCOS using a single file. This has significantly reduced the space requirements as well as making the process faster. A user can now import manpower requirements from any data source by conforming to a simple format and by using a unit identification code that is 9 characters or less.

In addition, because of the need to use AMCOS in the Total Army Analysis (TAA) 96 process, we have made changes that allow a user to input negative and fractional requirements. This allows an analyst to estimate the costs of both increases and decreases to a single unit in a single run. It also gives the user the ability to input fractional requirements to estimate costs where only a portion of a manyear is required to support a weapon

system. All these changes add to a much more flexible cost estimation tool.

2.2.1.2 Default Inflation Rates

During the AMCOS user's training for CEAC personnel, SRA recognized the need for default inflation rates. During training, users were confused as to how to enter inflation rates into the model (e.g. is 3 percent inflation entered as 3.00 or 1.03?). The default rates illustrate the correct format and also provide the cost analysts with the most common set of rates used for their purposes. These default values eliminate the need to input rates for many cost estimation exercises.

2.2.1.3 Revised Special Pay Policy Module

Congress changed the elements of special pay and hazardous duty pay that the Army could pay soldiers. These changes were incorporated in the special pay policy module. SRA also consolidated all special and hazardous duty pays into one policy module (previously diving pay and special duty pay had been part of the other benefits policy module). In addition we added a pop-up screen to the model that allows the user to view the full special pay rates that are currently included in the model.

2.2.1.4 Optimization of Model Operation

SRA systems analysts conducted optimization analysis on three of the biggest and longest running programs in the life cycle cost model. This resulted not only in a major reduction in the amount of disk space required for storage of code, but the programs ran significantly faster cutting run times approximately in half. In addition several data files were converted from ASCII to binary, creating substantial savings in disk space.

2.2.2 Reserve Component Life Cycle Cost Model

2.2.2.1 Policy Modules

Policy modules were constructed along the same lines as those in the active component model with some variation due to policy differences between the active and reserve components. Below is a table comparing the policy modules in the reserve components model to the active component model.

TABLE 2-1
COMPARISON OF RC AND AC POLICY MODULES

Reserve Component LCCM	Active Component LCCM
1. Military Compensation	1. Military Compensation
2. NPS Recruiting	2. Recruiting
3. PS Recruiting	
4. Officer's Acquisition	3. Officer's Acquisition
	4. PCS Costs
5. Reenlistment Bonus	5. SRB
6. Retirement Costs	6. Retired Pay Accrual
7. Training	7. Training
8. Special Pays	8. Special Pays
9. Miscellaneous Costs and Benefits	9. Other Benefits
10. Educational Benefits	10. GI Bill

2.2.2.2 Structured Cost Data Base

Unlike the active component model, the structured cost data base in the reserve component model represents a mix of costs. Some costs are expressed in dollars per drill period and some in dollars per year. This allows the user the flexibility of specifying the number of drill periods a unit is expected to experience in a year. Those costs that vary by number of drill periods, can simply be multiplied by the number of drill periods to obtain an annual cost for that element.

The reserve component structured cost data base uses generic budget appropriations (e.g. instead of RPA or NGPA the appropriation is labeled PA for pay and allowances). This allows the model to use the same structured cost data base for both the Army Reserve and the Army National Guard.

2.2.2.3 The Reserve Component Life Cycle Cost Model, Version 1.0

With the exception of the differences noted in the previous two paragraphs, a test version of the RC LCCM was delivered to the Army with the same features and options as the AC LCCM. Because the personnel policies are very similar between the active and reserve components,the RC LCCM used the majority of the programming code with a minimum of modifications.

SRA delivered a test version of the RC LCCM to the program and budget analysts in the Office of the Chief, Army Reserve and the National Guard Bureau, on July 6, 1988, with a request that they review the model, especially structured cost data base. SRA wants to make sure that the costs being generated by the AMCOS policy modules accurately reflect the cost of the reserve soldiers as seen by the reserve component analysts.

2.2.2.4 User's Manual and Information Book

SRA developed and delivered an AMCOS user's manual for version 1.0 of the reserve component life cycle cost model that will allow a user who is familiar with IBM's DOS to install and operate the AMCOS software. The manual makes extensive use of screen images to minimize confusion when describing an operation.

SRA also published an information book in conjunction with the LCCM and the user's manual. The information book describes the economic and mathematical underpinnings for the policy modules and the cost estimation process used in the LCCM. Not only is the hard copy book available, but the text from the information book

is imbedded in the model's software, so that a user can call it up for reference at any time.

2.3 PRODUCTS DELIVERED

Table 2-1 lists the products delivered during this reporting period.

TABLE 2-2
PRODUCTS DELIVERED THIS REPORTING PERIOD

DATE	TITLE
4-25-88	Briefing to the General Officer Study Advisory Group
4-27-88	AMCOS AC LCCM Version 3.3 (includes improved structured cost data base and optimized code)
4-27-88	One Day User Training Session
6-21-88	Briefing to TRADOC DCSRM
6-23-88	AMCOS RC LCCM Version 1.0 (with User's Manual and Information Book)
7-5-88	AMCOS AC LCCM Version 3.4 (includes revised unit editor and improved automated requirements download capability)

2.4 APPLICATIONS

2.4.1 AMCOS Use in the Army's TAA 96 Process.

Each year the Army analyzes force structure changes to determine both the personnel supportability and manpower

affordability of these changes. In past years, using the FORECAST mainframe budget models, the Army could only calculate costs for an entire force structure and then only down to grade level of detail.

AMCOS has provided the Army with an alternative that is both faster and more accurate. Army analysts will be able to estimate costs of specific force structure changes by grade and MOS. Because AMCOS is PC based, it will considerably reduce the time needed to conduct cost analyses.

2.4.2 AMCOS Use in the Independent Cost Estimation Process

CEAC has accepted the AMCOS LCCM as the official cost estimation tool in the independent cost estimation process and is now working with the Army Materiel Command (AMC) to have it accepted as the official cost estimation tool in the baseline cost estimation process. CEAC expects AMC acceptance during the next reporting period.

2.5 ACCEPTANCE OF ACTIVE COMPONENT MODEL

ARI and the Army Staff completed operational testing of the active component LCCM during this period and ARI presented results to the General Officer SAG on April 25, 1988. The Deputy Comptroller of the Army, chairman of the SAG, gave all members the oppurtunity to recommend changes or revisions to the model with a suspense of May 16, 1988. When on May 16, 1988, the COR received no recommendations for changes, ARI accepted version 3.3 as the official active component life cycle cost model.

3.0 BRIEFINGS, MEETINGS, AND VISITS

Dr. David Horne of ARI, the COR, continues to be a key participant in the development team. He attended many meetings and exchanged numerous telephone calls during the reporting period. The following list summarizes the key briefings, meetings, or visits conducted by SRA in the reporting period.

3.1 Visit Army's 6th QRMC Office. On April 15, 1988, Mssrs. Rose and Davis, SRA, met with Col LaMude, Army representative to the 6th QRMC. Reserve components compensation was discussed as well as any potential data sources that SRA had not yet used but might be helpful in the development of the reserve component LCCM.

3.2 Meeting of the General Officer Study Advisory Group. The AMCOS team briefed the status of AMCOS on April 25, 1988. Dr. West, Deputy Comptroller of the Army, opened the meeting by announcing that he would be retiring and that Mr. Walker, Deputy Director of the Army Budget, would replace him as the project sponsor. Dr. Gilroy, ARI, then presented a briefing on the status of the contract followed by several army staff officers who discussed the various ways that AMCOS was being used. This was followed by a demonstration of the AC LCCM by Mr. Rose.

3.3 AMCOS User's Training. On April 27, 1988, the SRA AMCOS team visited CEAC and conducted a day long user's training session for the CEAC cost analysts. SRA geared the training session towards use of AMCOS for the specific purpose of feeding the Army's P-92 report. CEAC uses that format for independent cost estimates.

3.4 AMCOS Contractor Meeting. A meeting of SRA Corporation and its subcontractor SAG Corporation was held on May 3, 1988 to discuss procedures for building the AMCOS budget model. They

discussed data requirements, hardware requirements and programming support. They considered several options for the budget model and decided that these options would be presented to the ARI for its consideration.

3.5 Information Briefing. On May 14, 1988, Dr. Black, Mr. Hogan, and Mr. Rose provided an information briefing and demonstration of the AMCOS project to Maj Luper, an Individual Mobilization Augmentee assigned to ARI. Maj Luper is also assigned to the Air Force's Human Resources Lab full time as a civilian employee and has an interest in using AMCOS for the Air Force.

3.6 ODCSPER Visit. Mr. Rose met with Maj Warner on June 8, 1988, to discuss how the active component LCCM would be used to support the Army's TAA 96 process. They also discussed any modifications that would have to be made to the automated requirements downloading portion of the model.

3.7 Planning Session for TRADOC Visit. Messrs. Hogan and Rose, SRA, met with Drs. Gilroy and Horne, ARI, on June 14, 1988, to discuss the content of a briefing to be given to BG Stroup at TRADOC. BG Stroup, the DCSRM for TRADOC, requested a briefing and demonstration of the AC LCCM.

3.8 TRADOC Visit. On June 21, 1988, Messrs. Hogan and Rose visited TRADOC to brief BG Stroup and demonstrate the active component LCCM. They discussed TRADOC's support of the model by providing training costs and potential TRADOC applications of the model.

3.9 Meeting with ODCSPER DCP. Ms. MacFadden and Ms. Funes from ODCPER's Directorate for Civilian Personnel visited SRA on June 28, 1988, to discuss the civilian component LCCM. Mr. Rose presented a briefing on the draft design for the civilian model, and Ms. Canuel demonstrated the AC LCCM.

Ms. MacFadden raised some concerns about duplication of effort on the civilian model and suggested that her concerns be addressed before proceeding further with the model development.

3.10 OCAR/NGB Visit. On July 6, 1988, Mr. Rose visited the front offices of OCAR and NGB to leave a copy of draft software for the RC LCCM with accompanying documentation (Concept Paper, User's Manual and Information Book). He asked each agency was asked to review the model and provide feedback.

3.11 Meeting with ODCSPER Budget Office. Dr. Gilroy and Messrs. Hogan and Rose briefed and demonstrated the AC LCCM to Col Englesbe and his staff on July 14, 1988. A discussion ensued covering the design possibilities for the AMCOS budget model. Col Englesbe indicated that a budget model as envisioned by the original contract was not needed because a similar model was already being developed by GRC. He suggested that the AMCOS budget model should take a more focused approach to budget cost estimates.

3.12 AMCOS Funding Meeting. Dr. Gilroy, ARI, met with Dr. Black and Messrs. Hogan and Rose at SRA on 18 July, 1988, to discuss SRA's change in overhead rates and the subsequent impact on AMCOS funding. They considered alternative courses of action. They decided that SRA would explain these alternatives in a 75% letter to the Contracting Officer. Such a letter was sent to Ms. Edith Hawley, CO, on July 28, 1988. (See appendix A for a copy of the letter).

3.13 Discussion of CO Letter. The team met on August 4, 1988 to discuss Ms. Hawley's response to SRA's 75%letter (see appendix B for a copy of the letter). The CO's letter told SRA that the government could not endorse any work at risk and in effect stopped work on AMCOS until additional funds

are received. Because of the relatively high probability of receiving additional funds, SRA elected to continue at risk.

3.14 Briefing to OSD's Training and Performance Data Center. On August 25, 1988, Mr. Rose visited TPDC and briefed and demonstrated the AC and RC LCCMs to appropriate staff members. TPDC is interested in AMCOS because of its potential application to other services and the manpower cost data that it contains.

3.15 ODCSPER Visit. Mr. Rose visited with Maj Warner on September 12, 1988, to update him on changes to the AC LCCM and to install an updated model on his PC. The updated model will allow Maj Warner to accept manpower requirements changes from the FORECAST system. This was done to allow AMCOS to be used as a cost estimation tool in the TAA 96 process.

3.16 Meeting of AMCOS Senior Team Members. On September 28, 1988, Dr. Black and Mr. Rose met with Messrs. Walker and Frantz (ASA-FM), and Drs. Gilroy and Horne (ARI) to discuss potential contract modifications to improve future AMCOS products. Development of a sophisticated civilian LCCM and a basic budget model for all three components would require about $300,000 to be added to the ceiling of the contract.

4.0 FISCAL STATUS REPORT

4.1 SUMMARY OF EXPENDITURES

Table 4-1 shows the staff-months expended and dollars obligated by month for April 1988 through September 1988. It also shows cumulative labor and cost for the contract to date for each month and the labor and expenditures remaining in the contract at the end of the reporting period. At the end of September 1988, the contract had used 131 staff-months at a total cost of $1051 thousand. About 38 staff-months and $297 thousand remain in the contract.

TABLE 4-1
EXPENDITURES*

Month	Staff-Months		Obligations ($ thousands)		
	Monthly	Cumulative	Planned	Obligated	Cumulative***
March**	-	108	--	--	884
April	5	113	28	44	928
May	7	120	28	44	972
June	5	125	28	41	1013
July	3	128	28	17	1029
August	2	130	28	15	1044
September	1	131	28	8	1051
Remaining		38			297

* Expenditures based on currently approved rates. We expect expenditures to increase somewhat when SRA receives new rates after the next government audit.
** Total from previous Semi-Annual Report
*** Cumulative totals may not add due to rounding

Although the average monthly expenditure is only $28.5k per month, the first three months of this period we spent about $43k per month in an effort to complete the RC LCCM (test) prior to the end of June 1988. This was followed by a three month period of reduced spending in an effort to conserve funds until October 1988 when the next funding increment is expected. In addition, the letter we received from the Contracting Officer (see appendix B) indicated that no additional increments would be available until the start of the next fiscal year.

The average expenditure per staff-month for this six-month period is $7.3 thousand. That is down from $10.2 per staff month reported for the first six months and is well within to the $8.0 thousand estimated for the overall five-year effort. This trend in the expenditures is desirable as it indicates that initial work on the project was done by more senior analysts in the formulation of concepts. Now, as the project has matured, less experienced and lower cost analysts are performing most of the work under senior level supervision.

Figure 4.1 compares the cumulative planned costs per month with actual cumulative expenditures per month for the reporting period. At the end of this reporting period, cumulative expenditures are about $8 thousand below the planned level, but this is due to a cutback in activity to conserve contract resources until the end of the fiscal year.

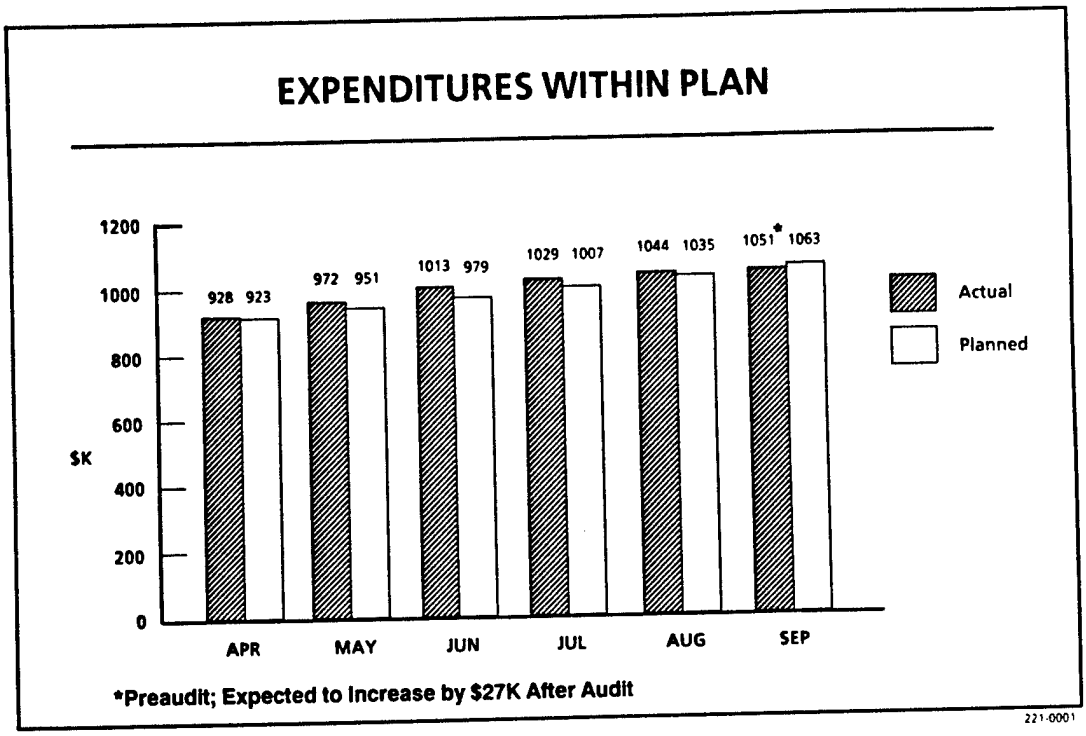


FIGURE 4.1
CUMULATIVE EXPENDITURES

4.2 STAFF-DAY ACCOUNTING BY PROFESSIONAL

Table 4-2 provides a detailed break down of the professional staff-time expended during the period by task and by staff professional (including subcontractor personnel). For comparison purposes the block just below the table entitled "planned", provides the staff days planned by task as stated in the previous semi-annual report. Professional staff participation in AMCOS is in balance with the work achieved in this reporting period and is consistent with the staff-time and expenditures shown in previous tables and figures.

TABLE 4-2

PROFESSIONAL STAFF-DAYS PER PERSON PER TASK

Staff Professional	Task 1 Concept Development	Task 2 Model Development	Task 3 Model Validation	Task 4 Briefing SAG Etc	Total
SRA					
Black	1			1	2
Canuel		44	38	12	94
Davis	15	8		4	27
Doering		10	13	9	32
Hogan	4		2	5	11
Hunter			2	5	7
Regnier	8		2		10
Rose	10	13	14	32	69
Rubens			2		2
Slywester		11			11
Other		5		14	19
Subtotal	(38)	(91)	(73)	(82)	(284)
SAG					
Anderson		43	24		67
Cary		7	11		18
Lo		22	6		28
Mackin			11		11
Mairs	9			22	31
Shumway			4		4
Subtotal	(9)	(72)	(56)	(22)	(159)
TOTAL	47	163	129	104	443
PLANNED	200	200	80	70	550

Task 1 - Prepare the Concept Paper for formal publication.

Task 2 - Develop and enhance LCCM models.

Task 3 - Validate LCCM model.

Task 4 - Interact with Army sponsors, train users, and demonstrate the finished product. (See Chapter 3)

Although the plan called for most of our effort to concentrate on concept and model development, efforts to properly validate the reserve component required more time than previously anticipated. In addition,the government asked for more AMCOS briefings and training sessions than previously anticipated. As a result table 4-2 shows a shift in the distribution of staff days. There where fewer staff days expended overall than previously planned due to the effort to conserve resources.

4.3 PLANNED EFFORT BY TASK

During the next six months (through March 1989), SRA will complete the draft civilian LCCM design, start construction and complete the civilian LCCM (test), continue to enhance the existing models, and update existing data bases.

Table 4-3 summarizes our estimated six-month work load by staff days and expenditures by task for the next reporting period.

TABLE 4-3

PROJECTED RESOURCES

	TASK 1	TASK 2	TASK 3	TASK 4	TOTAL
STAFF DAYS	100	200	130	70	500
EXPENDITURES ($K)	36	72	47	25	180

4.4 AMCOS SPENDING PLAN

Figure 4.2 shows the expenditures, both actual and planned, by quarter for the entire five year contract as suggested for

contract modification by the Army Research Institute. The clear area displays the actual expenditures by quarter for a total cost of $1051k. The hashed area shows planned expenditures under the proposed contract modification being considered by ARI. This area represents an increase of $306k over the original contract ceiling and includes $131k already provided by CEAC. When added to the $297k remaining from the original ceiling this will provide $603k to be spent after contract modification. However, once the government auditors complete their audit of SRA's rates for FY88, we expect an increase in cost of approximately $27k for that year, reducing remaining funds to $576k.

The AMCOS team will concentrate on completion of the enhanced civilian LCCM during the next fiscal year. This model will provide the user with the same features as, and operate in a similar manner to, the active and reserve components LCCMs. SRA proposes to spend most of the FY89 money building the civilian model. About three quarters of the way through the fiscal year, we will start development of a simple budget model. SRA will complete the budget model in FY90 at a cost of about $166k. In addition, maintenance of all previously developed models during that year will cost about $100k. We propose to spend the remaining funds in FY91 ($60k) writing the final report and transferring the entire system of models to the Army.

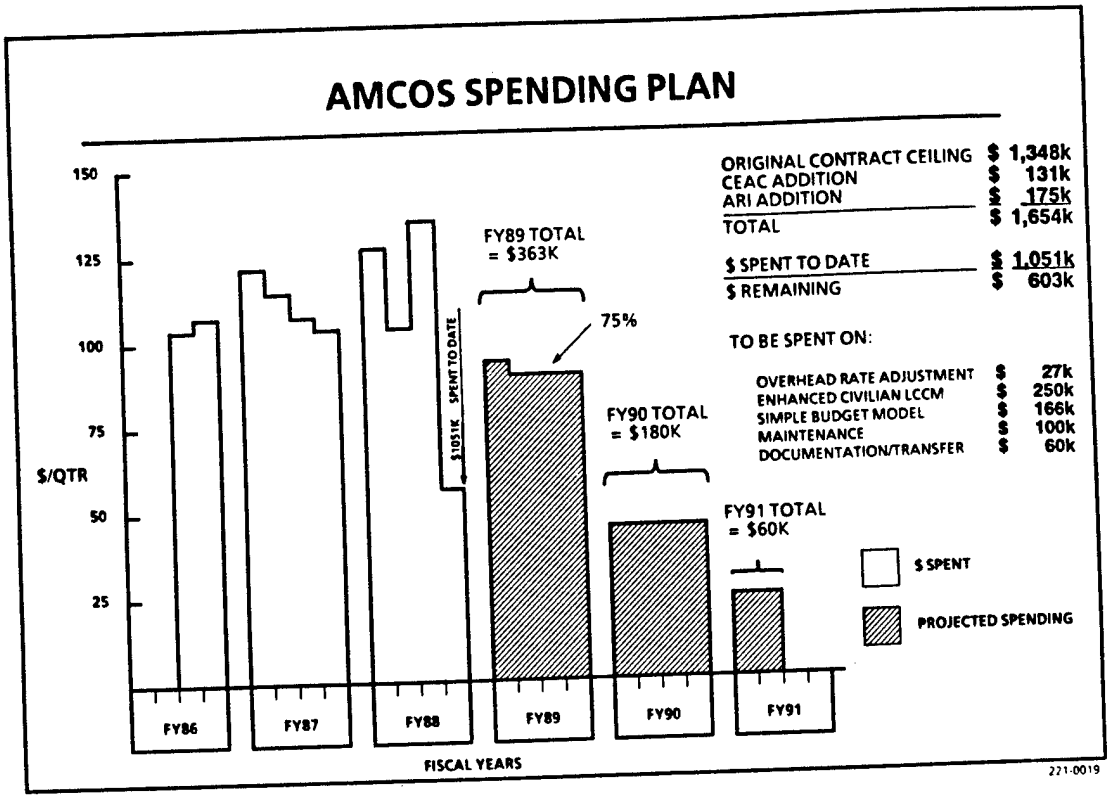


FIGURE 4.2
AMCOS SPENDING PLAN

The plan calls for the AMCOS to be transferred to the Army with final documentation in March 1991. The AMCOS team will complete all models by September 1990, but it will still need to update data bases and to finalize documentation in FY91. Also note that we expect to expend 75% of the dollars in the modified contract on the third anniversary of the start of the contract (March 1989).

4.5 NEAR-TERM PRODUCT SCHEDULE

Table 4-4 below shows the near term products for AMCOS to be delivered in the next nine month period.

TABLE 4-4
NEAR TERM PRODUCTS SCHEDULE

1.	Civilian Life Cycle Cost Model Design (draft)	31 October 88
2.	Briefing to Comptroller of the Army	23 November 88
3.	Civilian Life Cycle Cost Model (test)	31 March 89
4.	Civilian Life Cycle Cost Model Model (operational)	30 June 89

5.0 PROBLEMS ENCOUNTERED

5.1 READING NEGATIVE MANPOWER REQUIREMENTS

ODCSPER identified AMCOS as a tool for estimating the cost of force structure changes resulting from the TAA96 process. Originally the AMCOS team envisioned that ODCSPER would cost additions to the force structure in one run and reductions to the force structure in a separate run. ODCSPER would then compare the two runs to determine the net cost of the changes. Because of the number of changes that occur in any given unit, both negative and positive, ODCSPER decided that that methodology would not work. As a result SRA changed the code to allow the AMCOS models to read negative as well as positive manpower requirements. The unit requirements module will now read positive or negative numbers that are either whole numbers or fractions.

5.2 UPDATE OF THE TRAINING COST DATA BASE

Because of higher internal priorities, TRADOC has not updated the course costs in the ATRM-159 since December 1986. TRADOC has been working on reprogramming the model that processes the raw data received from the field; however, that model is only 90% complete. As a result, TRADOC has not updated the ATRM-159 to reflect FY87 costs. TRADOC now plans to have their model running in time to process the FY88 raw cost data when it is received in December 1988. The AMCOS team plans to receive the updated ATRM-159 by January 1989 and to update the AMCOS cost data bases by February 1989. In addition, the team expects that the data will be in a format that will make updating of training costs a much easier process then it has been in the past. In the interim, AMCOS continues to use the previous ATRM-159 adjusted by estimated inflation factors.

5.3 AMCOS FUNDING

The AMCOS R&D contract calls for flexibility and innovation during systems development. Throughout the first 30 months of the contract SRA has constantly worked with the government in making these models more useful to the Army. As a result we are now developing models that require greater effort than was originally anticipated either by the government or by SRA. That is inherent in R&D efforts of this sort and is why the contract contains a clause permitting expansion (see 3rd para of Task Type 2 discussion in SOW at appendix C). As shown in the attached 75% letter (appendix A), the AMCOS team suggested a number of options open to the government. SRA understands that the COR is recommending option 3. Option 3 increases the contract ceiling by $306k to continue the level of development effort shown in Figure 6.1. The AMCOS team is prepared to meet this level of effort once the contract is modified.

6.0 CONCLUSION

Work on AMCOS has been extremely successful. The AMCOS team has delivered and operationally tested an enhanced active component LCCM that the COR has accepted as fully operational. The team has delivered a test version of the reserve component LCCM during this reporting period for testing and evaluation. SRA plans to complete the civilian LCCM in FY89 and pending approval of the proposed contract modification will complete development of the budget model in FY90. Delivery of all models and the accompanying documentation will be completed in FY91.

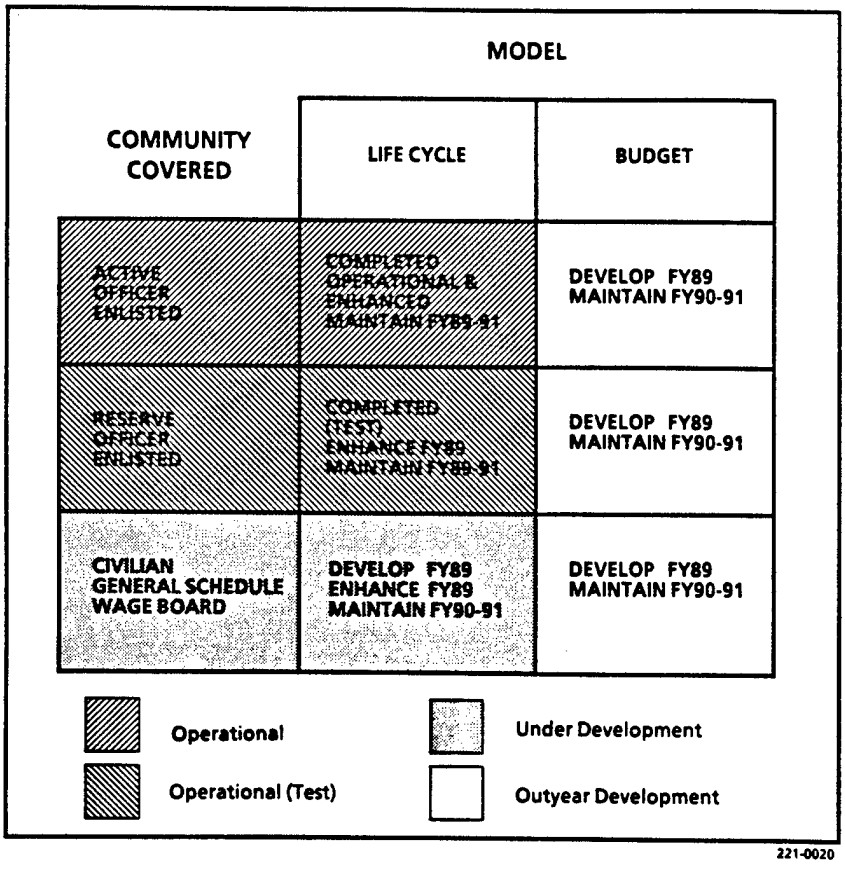


FIGURE 6.1
AMCOS DEVELOPMENT PLAN

7.0 AUTHENTICATION

This semi-annual report is approved.

Donald E. Rose, Jr.
Contractor's Project Director

David K. Horne, Ph.D.
Contracting Officer's
Representative

SRA CORPORATION

July 28, 1988

Edith M. Hawley
Contracting Officer
Defense Supply Service-Washington
The Pentagon, Room 1D245
Washington, D.C. 20301

Dear Mrs. Hawley:

In accordance with the terms of Contract No. MDA903-86-0106, to develop a prototype Army Manpower Cost System (AMCOS) for the Army Research Institute (ARI), we are notifying you that we have spent 75% of the contract value. We have kept you apprised of our successful progress on AMCOS through our monthly statements and our semiannual progress reports. This letter follows-up on those reports and on Mr. Paul Hannan's telephone conversation with you on July 27. It raises two separate issues that we request you consider as soon as possible:

(1) Ability to Complete the Contract at Current Expectation Levels within Total Contract Funding, and

(2) Early Exhaustion of Funding in the Current Increment.

Issue #1: Contract Completion

The contract requires 15 major deliverables, each a specific cost model, as follows: three types of cost models (life cycle, economic, and budget) for each of the five Army communities (active officer, active enlisted, reserve officer, reserve enlisted and civilian). Thus far, we have completed eight of the models; specifically, the life cycle and economic models for the active and reserve, officer and enlisted communities. Development of the life cycle and economic cost models (LCCM and ECM) for the civilian force is well underway.

By all accounts, the AMCOS project is an R&D success story. The prototype models produced under this R&D contract have gained widespread acceptance by the Army Staff and have received consistent praise from the Army leadership. The Cost and Economic Analysis Center (CEAC) in the Office of the Assistant Secretary (Financial Management) used the active component life cycle cost model during prototype testing to develop life cycle manpower cost appraisals of major weapons systems and to conduct independent cost estimates. CEAC is very pleased with the model and looks forward to using the family of AMCOS models as an integral part of its manpower costing efforts. Other components of the Army Staff also have tested the prototype in a wide variety of applications

with very positive feedback. The active LCCM/ECM have successfully passed prototype testing and have received the approval of the General Officer Study Advisory Group for operational implementation. The Army is now conducting prototype testing on the Reserve LCCM/ECM.

The success of the AMCOS project can be attributed largely to the degree of rigor and detail required by ARI and provided by SRA in the development of the life cycle and economic models. AMCOS is on track and within cost, but is developing models that require greater effort than was originally anticipated either by the government or by SRA. We can complete the remaining models required under the terms of the contract with the remaining funds, but not with the degree of sophistication and detail that we have built into the completed models. The COR has indicated the user's preference for the more sophisticated and detailed models, but we can not accomplish this with the funds available. Accordingly, we suggest four functional alternatives for your consideration:

Alternative 1. Execute the remainder of the contract with existing funds, producing: (1) life cycle and economic manpower cost models for civilians that are simpler than those already completed for the active and reserve, officer and enlisted communities and (2) basic budget models for all five Army manpower communities.

Alternative 2. Complete the civilian life cycle and economic models in the sophisticated and detailed manner comparable to the methodology evolved for the active and reserve communities and delete the budget models from the contract.

Alternative 3. Same as Alternative 2, but retain the simple, basic budget models.

Alternative 4. Complete all remaining models in the sophisticated and detailed manner comparable to the methodology used for the active and reserve life cycle and economic models.

The following table shows the approximate additional funding required to complete the contract under each alternative. Funding additions are over and above the five-year contract ceiling of $1.348 million, three-quarters of which has been included in incremental funding to date. Each alternative assumes that the government may use incremental funding as in the past and that SRA will complete the entire project within the original five-year

contract period. None of these alternatives precludes further enhancements to the models that the government may order and fund in accordance with the provisions of the original contract.

ADDITIONAL FUNDING BY ALTERNATIVE		
Alternative	Description	Additional Funding ($K) Required 1/
1	Complete Contract w/simple models	0
2	Sophisticated LCCM/ECM, no budget models	180
3	Same as #2, with simple budget models	300
4	All Models same methodology	500

1/ Above the contract ceiling of $1.348M

Issue #2: Incremental Funding

This contract has been incrementally funded. The latest modification (P00007) increased the funding from $902,000 to $1,063,000 and extended the period of performance to 30 September 1988. SRA's FY 88 overhead and G&A rates for our fiscal year ending June 30th exceeded those in our original cost proposal and reduced our available funding by about $26,800. Consequently, we have run out of money for this increment 4-6 weeks earlier than anticipated. As a minimum, we need your authorization to continue working on this contract. To stop work will interrupt the continuity of AMCOS development and may add to overall cost when work is resumed.

We would be pleased to meet with you to discuss either or both of these issues in detail. Although we need your guidance on both issues soon, Issue #2 is most pressing. We need your authorization to continue or we must stop work on AMCOS in the very near future. If you have any questions or require additional information, please feel free to call me at any time. We look forward to hearing from you.

Sincerely,

Stuart R. Rubens
Vice President
Director, Systems
Analysis Group

DEPARTMENT OF THE ARMY
DEFENSE SUPPLY SERVICE—WASHINGTON
WASHINGTON, D.C. 20310-5200

REPLY TO
ATTENTION OF

11 August 1988

JDSS-W/R3

Subject: Contract MDA903-86-C-0106, Limitation of Funds Clause

Mr. Paul Hannan
Systems Research and
Applications Corporation
2000 15th Street North
Arlington, VA 22201

Dear Mr. Hannan:

Reference is made to your letter dated 29 August 1988, notifying this office that all funds obligated under subject contract has been expended and that there is a possibility that a cost growth may occur under the contract.

The Limitation of Funds clause of the contract required you to notify the Contracting Officer, in writing, whenever you had reason to believe that the costs expected to be incurred within the next 60 days under the contract would exceed 75% of the total amount so far allotted to the contract. This office has no record that such a notice was given.

Due to budget restraints, no additional funds will be available to the contract prior to 30 September 1988. When and if FY 1989 funds become available to continue performance of the contract, an additional increment of funds will be added to the contract. Until such time, no additional work shall be performed under the contract which will cause an incurrence of costs in excess of the total amount actually allotted to the contract.

Sincerely,

THOMAS H. BUSHNELL
Contracting Officer

cc:
DCASMA-Baltimore
ARI/Mr. D. Horne

EXTRACT OF TASK 2 FROM CONTRACT SOW

TASK TYPE 2: Development of New Models

The contractor shall develop each new model on the basis of the approved theoretical approach (for the lead models) or experience gathered in development of the lead model--the enlisted model of that class. The development effort shall consist of simultaneous algorithm development and data base review. As the potential data sources are screened for ease of access, reputation for accuracy, reliability of future availability and other factors, the development of algorithms will reflect theoretical choices consistent with those findings.

Once the algorithms have been finalized, data collection shall be completed and programs developed for pre-processing and final processing. These programs will be tested to the extent feasible before being run on large scale data bases. Preliminary runs will be checked extensively to detect errors. To assist in this effort, the contractor shall identify at least two SAG members (e.g., ODCSPER and TRADOC) from the Army agencies interested in the outcome of the cost modeling exercise each year and distribute advance copies of the data sets to them for review. All errors found during the review process shall be corrected and the final data set delivered.

From time to time, there may be changes in the system. The contractor will then be required to undertake related special tasks. The contractor may develop innovative proposals related to the project. The ARI, at its option, may accept or reject them.

Manpower and Personnel Policy Research Group Working Paper MPPRG 88-20

AMCOS FOURTH SEMI-ANNUAL PROGRESS REPORT

RICHARD W. HUNTER, PAUL F. HOGAN, LEE S. MAIRS, DONALD E. ROSE, JR.

May 1988

FOR INTERNAL ARI DISTRIBUTION ONLY

Approved by:

Curtis L. Gilroy
Chief, Manpower and Personnel
Policy Research Group

MANPOWER AND PERSONNEL RESEARCH LABORATORY

U.S. ARMY RESEARCH INSTITUTE
FOR THE BEHAVIORAL AND SOCIAL SCIENCES
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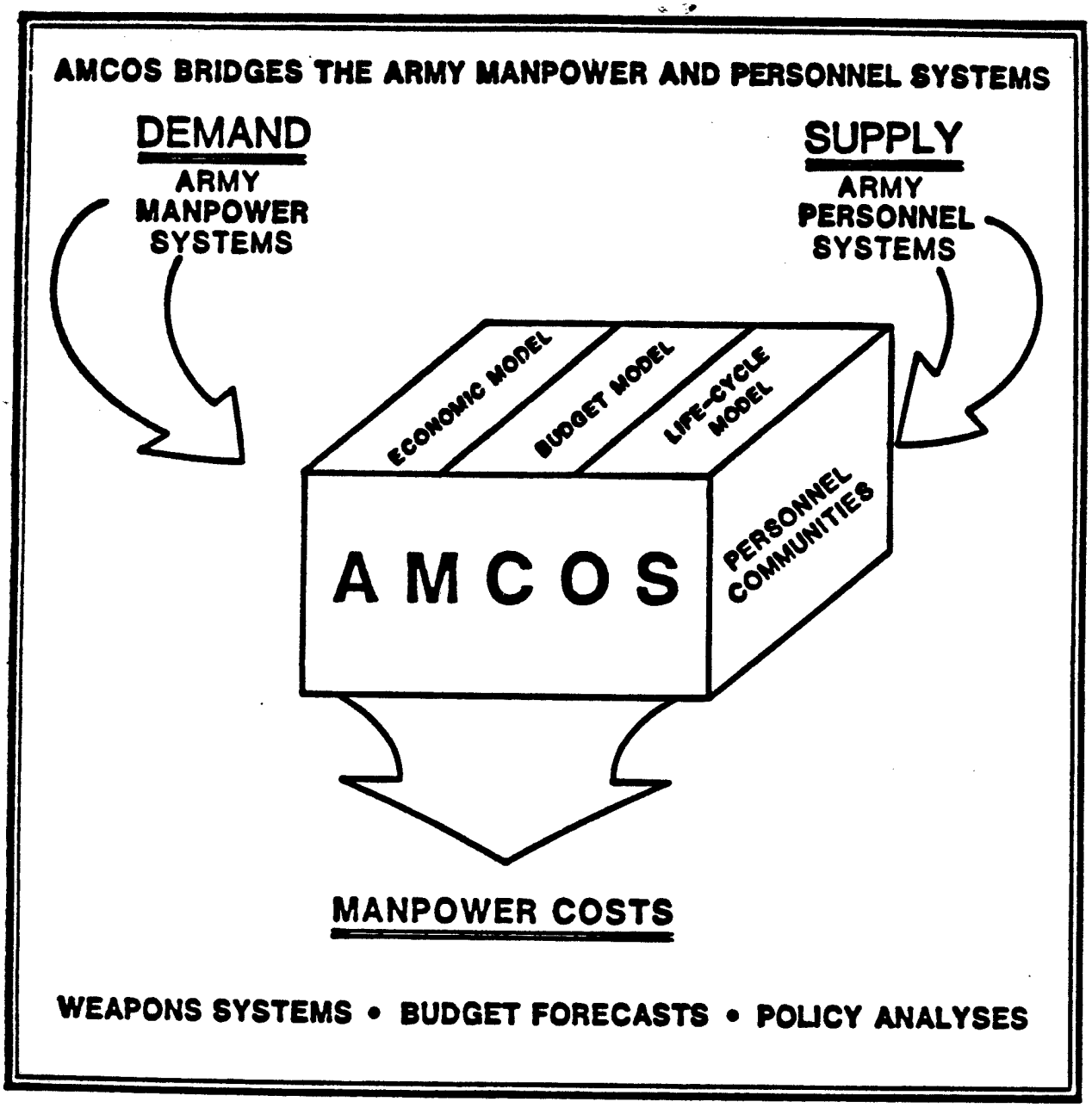

ARMY MANPOWER COST SYSTEM

MAY 1988

SRA CORPORATION

SAG CORPORATION
System–Analytics Group

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EXECUTIVE SUMMARY

E.1 PURPOSE OF THIS REPORT

This paper is the fourth semi-annual AMCOS progress and financial report covering the period October 1, 1987 through March 31, 1988, submitted in compliance with Section F of Contract MDA903-86-C-0106.

E.2 PRIORITIES FOR THE REPORTING PERIOD

On September 28, 1987, the Deputy Comptroller of the Army established the following priorities for the AMCOS contract during this reporting period:

(1) Complete remaining enhancements to the active component model.

(2) Develop Reserve Components model(s) for the Army Reserve and National Guard.

(3) Develop a basic civilian model to include both general schedule and wage board personnel systems.

(4) Develop Budget models for all three components of Army personnel (Active, Reserve, and Civilian).

E.3 PROJECT ACTIVITY FOR THIS REPORTING PERIOD

During the past reporting period, SRA worked on the following items:

(1) Cumulative Training Cost Module

(2) User Print Option

(3) Output Comparison

(4) Software Installation Package

(5) Training Sessions

(6) Reserve Components Life Cycle Cost Model Concept Paper

(7) Development of the Reserve Components Life Cycle Cost Model

E.4 AMCOS PLAN

Figure E.1 summarizes the current status of and long-range development plan for AMCOS as of March 31, 1988.

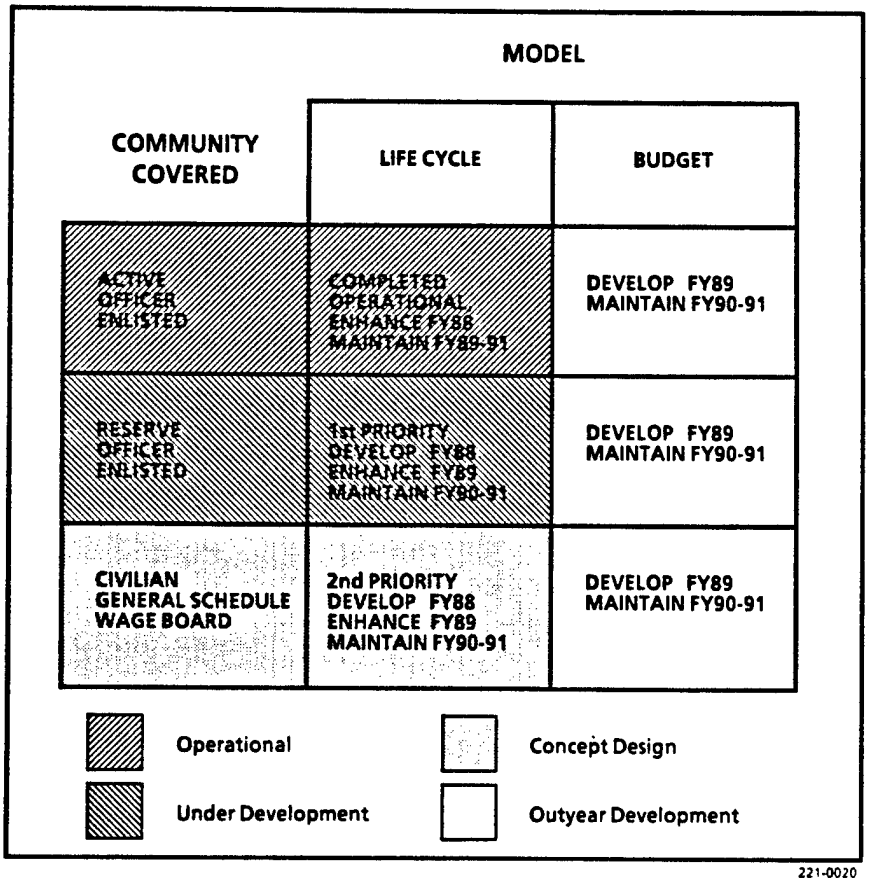


FIGURE E.1
AMCOS DEVELOPMENT PLAN

E.5 EXPENDITURES

AMCOS development is on schedule and within budget. The development plan calls for completion of model development by the end of FY89. Unless the Government exercises the contract clause to enhance the system and expand application work, AMCOS work in FY90 and FY91 will be limited to data base update and turning the operating system over to the Army.

E.6 CONCLUSION

Work on AMCOS has been extremely successful. The AMCOS team has delivered and operationally tested an enhanced active duty life cycle cost model during this reporting period. The AMCOS active duty LCCM is ready for operational acceptance by the COR.

AMCOS FOURTH SEMI-ANNUAL PROGRESS REPORT

1.0 INTRODUCTION

The Army Manpower Cost System (AMCOS) is a research and development effort conducted by SRA Corporation for the Army Research Institute (ARI). This five-year project, sponsored by the Assistant Secretary of the Army (Financial Management), is developing an automated manpower costing systems to improve the Army's ability to conduct cost analysis.

1.1 PURPOSE OF THIS REPORT

This paper is the fourth semi-annual AMCOS progress and financial report covering the period October 1, 1987 through March 31, 1988, submitted in compliance with Section F of Contract MDA903-88-C-0106.

1.2 PURPOSE OF THE CONTRACT

To quote from the Army's request for proposal, the Army Research Institute undertook this effort:

> To design and validate a system of models (with their associated databases) to accurately estimate manpower costs of current and future weapons and other systems, to forecast manpower budget costs, and to analyze scenarios of personnel policy changes...
>
> As the Army looks to the 1990's and beyond, the shift toward increasingly sophisticated technology will be translated into sharp increases in the demand for skilled or high quality labor. At the same time, similar shifts in other sectors of the economy will contribute to a general bidding up of the price of labor. Constraints on the Army's ability to create specialists through training, coupled with the

increasing cost of skilled labor, makes it incumbent on the Army to predict manpower costs accurately.

At present, the Army does not have an operational model to evaluate manpower costs of weapons and other systems... The objectives of this [effort] is to develop a system of manpower cost models consisting of economic cost, budget cost, and life cycle cost models...

1.3 THE PLAN FOR AMCOS

Figure 1.1 illustrates the overall scope of the AMCOS effort and the progress to date. Figure 1.2 summarizes the status of each element and the timing plan for development.

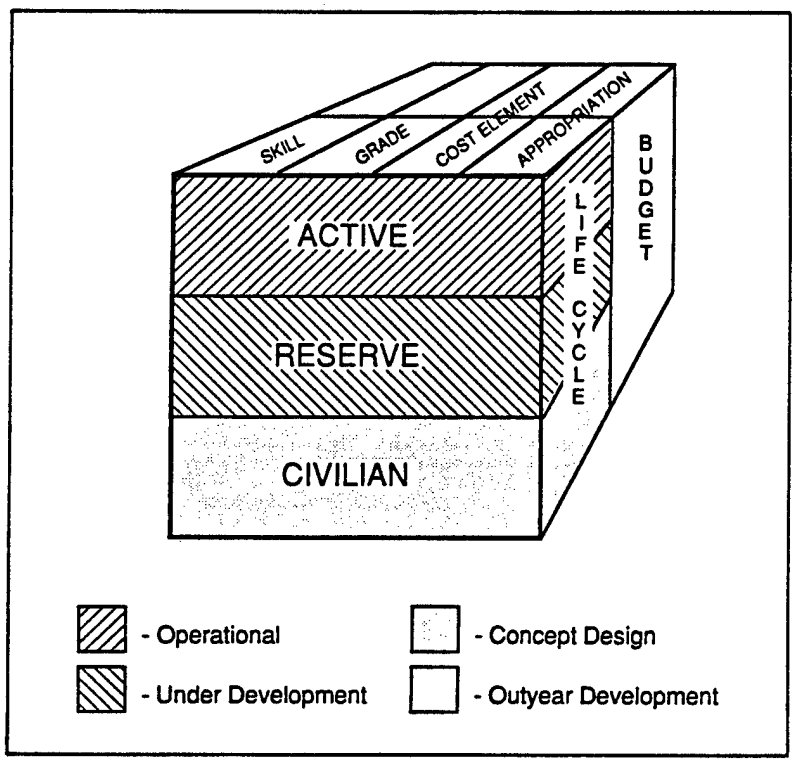


FIGURE 1.1
AMCOS OVERVIEW

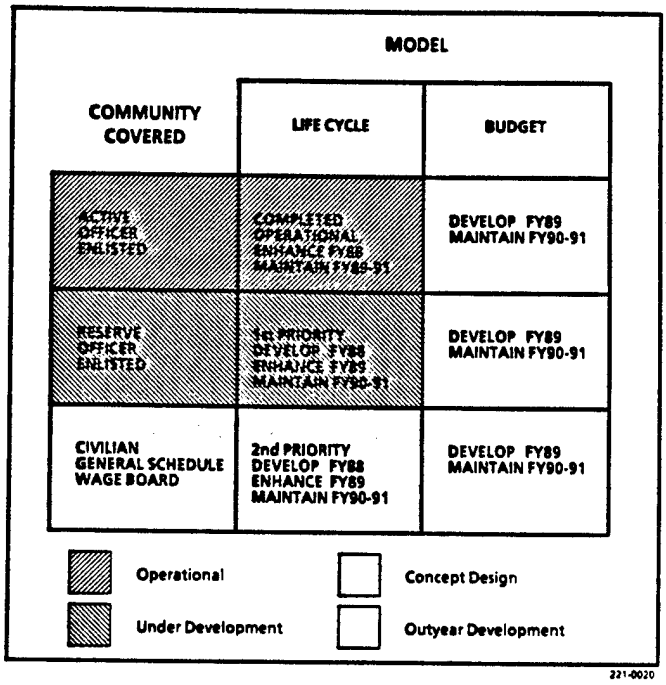


FIGURE 1.2
AMCOS DEVELOPMENT PLAN

1.4 AMCOS OVERVIEW

The AMCOS team is now building the system of budget and life cycle cost models for the active, reserve, and civilian components of Army manpower. AMCOS interfaces the Army's manpower requirements and personnel policies to improve manpower cost estimating capabilities in the following areas:

New Weapon Systems. Accurate manpower cost estimates over the life of a weapon system will assist in choosing the most efficient system, and in developing the most cost-effective manpower/hardware configuration for that system.

Manpower Requirements. Cost estimation by grade and occupation for the active, reserve, and civilian components, will help in choosing the most efficient manpower mix.

Personnel Policies. Explicit cost modeling of personnel policies such as tour lengths, reenlistment bonus policies, the proportion of high quality recruits and PCS moves, will allow rapid estimation of how changes in these policies affect the costs of filling specific manpower positions.

Budget Decisions. Explicit cost modeling of the effect of personnel policies on budget costs will result in better personnel planning, policy development, and budget support.

1.4.1 Modular Design

AMCOS uses a modular design concept. We develop simple modules that are expanded as needed. Policy modules are removed from the model, updated, and reinserted without adversely affecting other parts of the model. Data bases are updated in a similar way.

1.4.2 Evolutionary Approach

These models will accept manpower requirements generated by the FORECAST System, the MANPRINT process or any "what-if" scenario and will produce a time-phased profile of the cost of manpower over the life cycle of a weapon system. By developing a working model early in the process, we are now able to use the results of actual cost estimation efforts to refine and improve the models to meet the Army's real needs.

As the research progressed, we developed selected policy modules in more detail and enhanced the cost estimation process to make it more dynamic and flexible. AMCOS's modular design makes this evolutionary strategy practical. Personnel policy and

compensation modules have been and still can be refined and enhanced to meet the changing requirements of the Army and other users that emerge from real-life applications.

1.5 THE ACTIVE DUTY LIFE CYCLE COST MODELS

The schematic in Figure 1.3 portrays the design of the life cycle cost model. As shown in the schematic, the heart of the model is the structured cost data base. That data base forms the point of interaction between the model software and the user.

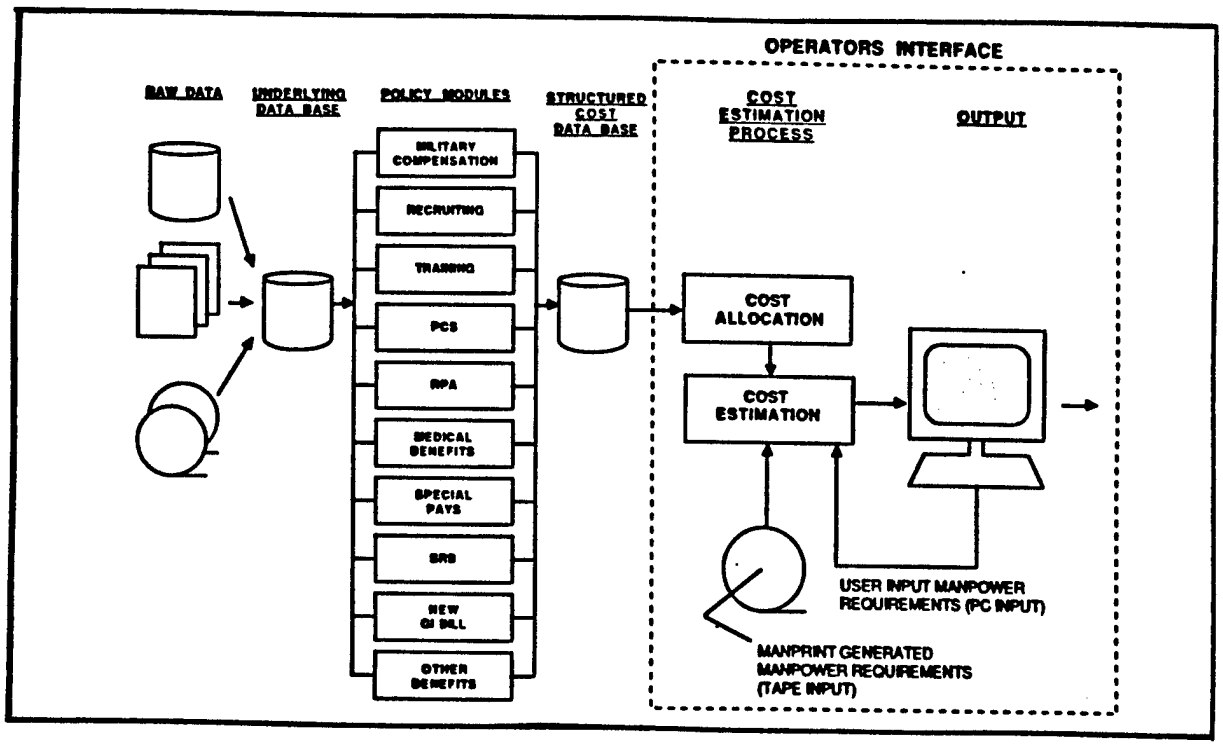


FIGURE 1.3
AMCOS SCHEMATIC FLOW DIAGRAM

1.5.1 The Structured Cost Data Base

The model takes data input from a variety of Army sources and processes them through policy modules that emulate personnel policies. This generates costs by skill and grade that are deposited in the structured cost data base. These costs represent the "price" of an individual soldier.

1.5.2 User Operation

Figure 1.4 shows how the life cycle cost model operates. The user inputs the needed information through man-machine interface with the computer. Inputs include manpower requirements and cost modifications. The model has already created a structured cost data base by processing data from various Army sources through the policy modules. The cost estimation process merges the the user input with the structured cost data base to produce manpower cost estimates. As shown on the right hand side of the graphic, the user may elect a variety of output options to review the results.

USING AMCOS

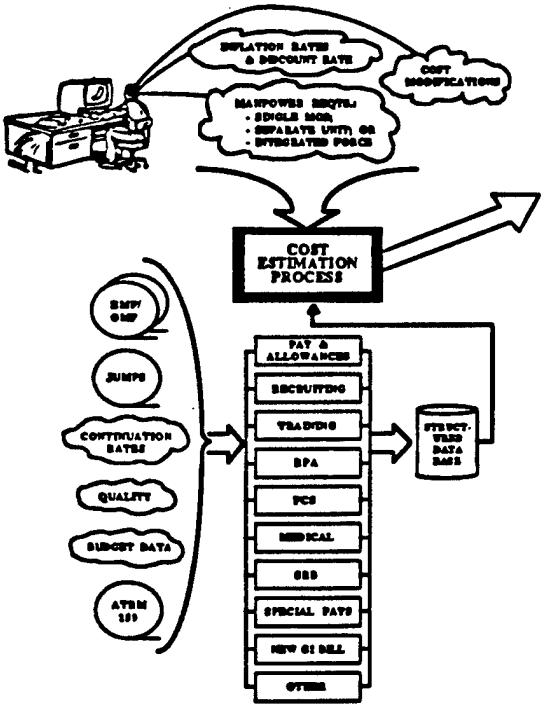
User-Defined Inputs

- **Manpower Requirements**--Manning by MOS and grade, number and type of units, phase-in/interim changes/phase-out
- **Cost Review**--All enlisted MOSs and officer specialties; separate cost elements that roll-up to major budget appropriation categories
- **Cost Modifications**--User-specified cost policies; selection of specific pays; average versus marginal costs; costs of high versus low quality personnel; discount rates; and inflation rates by appropriation category

User-Oriented Outputs

- **Micro-to-Macro Focus**--Cost results for any position/unit/division combination
- **Cost Patterns**--Estimated for 1 to 30 years, discounted and undiscounted
- **Levels of Detail**--By major element (recruiting, training, basic pay and allowances, retirement, SRB, PCS, etc.); by budget appropriation category; by total costs
- **Output Options**--Display/save/ print; tabular and graphic, comparative results

AMCOS USER INTERFACE



MULTIPLE OUTPUTS

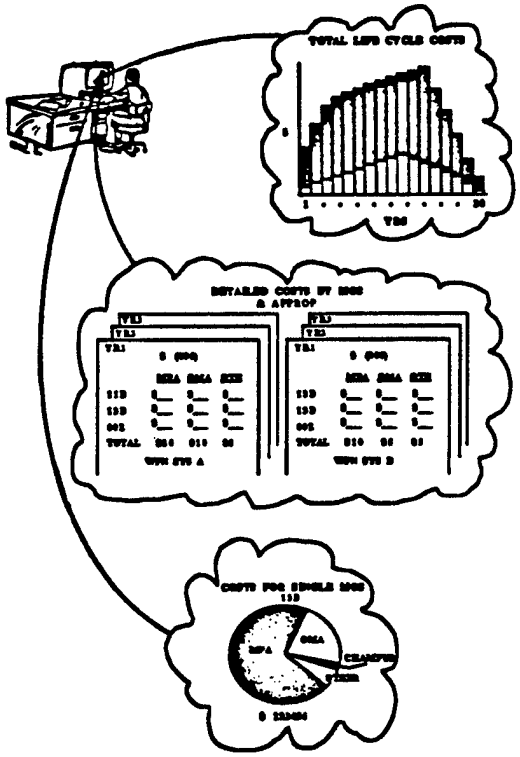


FIGURE 1.4
SCHEMATIC FLOW DIAGRAM

1.5.3 AMCOS Version 3.0

At the beginning of this reporting period, the AMCOS active component model version 3.0 was under operational test by the Army's Cost and Economic Analysis Center (CEAC). Version 3.0 combined active officer and enlisted models into an integrated system, operating on the original FY86 test data base with some updates, and provided cost estimates for validation and comparisons with estimates from other sources. The major improvements featured in this version were its user friendliness when inputting manpower requirements and the speed of the calculations. Specifically, the user could:

(1) download large manpower requirements files from magnetic tape to the hard disk of a PC quickly and easily;

(2) modify the model-generated cost data to suit a specific cost estimation exercise; and

(3) specify a discount rate and variable inflation rates for the first five years of cost projections.

In addition the model displays results graphically as well as allowing the user to print out any or all of the results using standard report formats.

1.6 PRODUCTS DELIVERED IN THE FIRST EIGHTEEN MONTHS

Table 1-1 lists the products delivered under this contract during its first eighteen months. This work forms the basis for discussion of contractor activity during this reporting period (October 30, 1987 to March 31, 1988) described in the rest of the report.

TABLE 1-1

PRODUCTS DELIVERED

DATE	TITLE
4-15-86	Briefing to ODCSPER, Program and Budget Division
5-15-86	Briefing to Deputy Comptroller of the Army
7-2-86	Technical Report: Evaluation of the Prototype (Draft)
9-30-86	Concept Paper #1: Life Cycle Cost Model Active Army Manpower (Draft)
10-15-86	Technical Report: AMCOS Information Book (Draft Working Documents)
10-31-86	AMCOS Semi-Annual Progress Report
11-12-86	Briefing to Working Level SAG
12-12-86	Briefing to Mr. Distasio, Office of the Comptroller
1-31-87	Active Component Enlisted Life Cycle Cost Model (Test Version) Delivered
1-31-87	Update to Technical Report: AMCOS Information Book (Draft Working Documents)
2-9-87	AMCOS Demonstration to Dr. Gilroy, Chief (MPPRG), ARI
3-4-87	AMCOS Demonstration to Col. Wood, Dep. Dir., CEAC
3-12-87	AMCOS Demonstration to Mr. Frantz, Dir., CEAC
3-15-87	Active Component Officers Life Cycle Cost Model (Test Version) Delivered
3-30-87	Briefing to Deputy Comptroller of the Army Operational Active Component Life Cycle Cost Model

TABLE 1-1 (cont'd)

PRODUCTS DELIVERED

DATE	TITLE
5-15-87	AMCOS Brochure
5-31-87	AMCOS Version 2.0 (Includes Executive Shell, Automated Requirements Input, One Year Model Variable Inflation Rates, Consolidation of Enlisted and Officer Models)
7-31-87	AMCOS Version 3.0 (Includes selective cost modification/suppression, Graphics, print option and the alternate methods for computing Retired Pay Accrual)
9-28-87	In-Process-Review presented to Deputy Comptroller of the Army

1.7 REPORT ORGANIZATION

This report is divided into seven sections, as follows:

- o introduction
- o summary of project activity in the reporting period;
- o descriptive list of all briefings, meetings, and visits conducted during the reporting period;
- o fiscal report on project costs for this reporting period;
- o description of problems encountered;
- o discussion of the planned activities for the next reporting period
- o conclusion.

2.0 PROJECT ACTIVITY FOR THE FOURTH REPORTING PERIOD

2.1 PRIORITIES

On September 28, 1987, the Deputy Comptroller of the Army established the following priorities for the AMCOS contract during this reporting period:

(1) Complete remaining enhancements to the active component model.

(2) Develop Reserve Components model(s) for the Army Reserve and National Guard.

(3) Develop a basic civilian model to include both general schedule and wage board personnel systems.

(4) Develop Budget models for all three components of Army personnel (Active, Reserve, and Civilian).

2.2 OUTLINE OF PROJECT ACTIVITY

During the past reporting period, SRA worked on the following items:

(1) Cumulative Training Cost Module

(2) User Print Option

(3) Output Comparison

(4) Software Installation Package

(5) Training Sessions.

(6) Reserve Components Life Cycle Cost Model Concept Paper

(7) Development of the Reserve Components Life Cycle Cost Model

2.2.1 Cumulative Training Cost Module

SRA completed the work started in the previous reporting period on a capability to display training costs that have been accumulated over the life of the soldier. The costs can be displayed either with or without attrition being considered. With attrition, the model recognizes that more than one soldier must be trained to replace a soldier that leaves the Army.

As indicated in the third semi-annual report, to develop the cumulative costs without attrition, "path analysis" was conducted using AR 611-214 after first determining training costs by grade and skill. As a soldier is tracked through a particular career path the appropriate training costs are accumulated. The model determines both the average cost path and the maximum cost path.

To develop the cumulative costs with attrition, we first mapped skill levels into year of service intervals and assumed that new training in a skill level occurs at the beginning of that skill level. Continuation rates were then used to estimate the attrition rates (probabilities of loss).

2.2.2 User Print Options

Once the model has created output, the user needs to be able to print it out to a hardcopy form either as a report or for communicating results to management. SRA has added to the model such a capability. The model can print all or part of the output generated by an AMCOS run. The user can also specify the appropriate header information identifying the parameters that can be used to define the output.

2.2.3 Output Comparison

Once analysts started using the model, it quickly became clear that a very useful enhancement would be the capability to compare output from various runs. SRA has modified the model to allow the user to compare the results of two runs side by side. To do this we first developed a capability to save the output from individual runs in separate project files. By saving the output, the model is able to compare the bottom line totals for each appropriation for both undiscounted and discounted costs. It calculates the difference between the two and displays it in a third column. This ability to save and compare output provides the user greater flexibility in conducting analysis.

2.2.4 Software Installation Package

To distribute the model software to the many users across the CONUS and overseas, we needed a non-proprietary software package. To meet the need, SAG Corporation developed a software package that will allow the developer to select files for sending to users as well as allowing the user to install those selected files on the PC.

2.2.5 AMCOS Formal User Training Classes

SRA has conducted two formal training courses to Army users. The course uses a five phase approach to teaching the students how to use AMCOS.

(1) Phase One introduces the model to the students with a discussion of how and why the contract came about and who the players are.

(2) Phase Two presents an overview of the model. In this phase the student gets an appreciation for what the model can do and a general idea of how it goes about doing it.

(3) In Phase Three, the instructor walks through a practical exercise with the students. The exercise is designed to demonstrate all of the model's features and start the familiarization process for the students.

(4) Phase Four allows the students to operate the model under the supervision of an instructor. A different practical exercise is used which allows the user to become more familiar with the features of the model. At the end of phase four the student should be able to operate the model on his/her own.

(5) Phase Five is independent operation of the model on the user's own PC with the presence of an instructor to answer questions and provide assistance as needed.

2.2.6 Reserve Components Life Cycle Model Concept Paper

On January 31, 1988 the AMCOS Team delivered the draft concept paper outlining the proposed approach to development of the life cycle cost model for the Reserve Components. This paper was reviewed by the ARI and the Army staff and approved.

2.2.7 Development of the Reserve Components Life Cycle Cost Model

During this reporting period, the AMCOS Team initiated development of the Reserve Component LCCM based on the approved concept paper. Work is progressing well on this model including the policy modules, the operating system and the underlying data base.

2.3 PRODUCTS DELIVERED

Table 2-1 lists the products delivered during this reporting period.

TABLE 2-1
PRODUCTS DELIVERED THIS REPORTING PERIOD

DATE	TITLE
10-31-87	AMCOS Version 3.1 in-process-review.
11-6-87	Briefing to the General Officer Study Advisory Group
12-31-87	3.2 Update of Structured Cost Data Base using FY87 costs
1-31-88	Reserve Component Life Cycle Cost Model Design (draft)
3-15-88	Updated structured cost data base to include Jan 88 pay tables. All costs in FY88 dollars.

2.4 APPLICATIONS

2.4.1 CEAC Use of AMCOS

AMCOS has been used continuously by CEAC throughout the reporting period. In addition to being used to estimate the costs of an AFV defined Corps for submission to OSD, it was also used to estimate manpower costs for various units, both actual and theoretical, at the request of the Army Staff and Congress. It has been accepted by CEAC as their tool of choice for all manpower cost estimates used in the Army's independent cost estimates (ICE).In the past six month period AMCOS has been widely distributed. Because of its flexibility and ease in operating, it has become a useful tool to many agencies other than CEAC.

2.4.2 AMCOS Use in the Army's TAA96 Process.

Each year the Army analyzes force structure changes to determine both the personnel supportability and manpower affordability of these changes. In past years, using the FORECAST mainframe budget models, the Army could only calculate costs for an entire force structure and then only down to grade level of detail.

AMCOS has provided the Army with an alternative that is both faster and more accurate. It will be able to estimate costs of specific force structure changes by grade and MOS. Because AMCOS is PC based it will cut down the time conducting analyses considerably.

2.4.3 AMCOS Use in Justifying SRB Policies.

The Army is continually trying to justify to Congress the expenditure of SRB dollars. Their basic argument is it costs too much to replace a soldier; if the reenlistment bonus keeps a soldier in the Army, then it is worth it to pay the bonus.

For the first time AMCOS provides the Army a comprehensive set of training and soldier acquisition costs by grade and MOS. This data base by itself has proven to be very helpful in justifying SRB programs.

2.4.4 AMCOS Use in the MANPRINT Process.

The Army Research Institute's Systems Research Lab has used AMCOS to assist them in policy decisions regarding manpower requirements. AMCOS was used to estimate the cost of two manning alternatives for the Pedestal Mounted Stinger (one operator/ maintainer versus one operator and one maintainer). Because of AMCOS's ability to look at specific skill training costs, Army was

able to determine that the requirement for one maintainer and an one operator is less expensive than one operator/maintainer.

2.5 ACCEPTANCE OF ACTIVE COMPONENT MODEL

As the operational testing of version 3.2 nears completion, the AMCOS Team will make final revisions. SRA recommends a final review of the operational test by the General Officer SAG. With the SAG's concurrence, ARI can then accept the latest approved version of the model for the Army as the Army's operational Active Component Life Cycle Manpower Cost Model.

3.0 BRIEFINGS, MEETINGS, AND VISITS

Dr. David Horne of ARI, the COR, continues to be a key participant in the development team. He attended many meetings and exchanged numerous telephone calls during the past six-month period. The following list summarizes the key briefings, meetings, or visits conducted by SRA in the past six months.

3.1 Visit to CPO, AMC. Met with Mr. Morris on October 7, 1987 to discuss civilian personnel policies and their impact on civilian personnel compensation. In addition we sought information on potential data sources that would help generate costs for the civilian LCCM.

3.2 Meeting of AMCOS Senior Team Members. On October 11, 1987, Dr. West, Mr. Frantz, Dr. Hunter and Dr. Gilroy met to discuss changes to the AMCOS development schedule. Results of the meeting changed development priority to the reserve component life cycle model. It was decided that the 1st draft of the civilian life cycle model be finished but work should be started immediately on the reserve component model with delivery expected in June 88.

3.3 Visit to OCAR and NGB. On 23 October, 1987 Mr. Rose (SRA) met with representatives of OCAR and NGB comptroller's office to discuss potential data sources for manpower costs. In addition obtained copies of the appropriate budget justification books.

3.4 Meeting of the General Officer Study Advisory Group. The AMCOS team, briefed the status of AMCOS on November 6, 1987. Dr. West opened the meeting with comments on the value of AMCOS as a tool to improve Army predictive capability. Dr. Gilroy provided an overview of the AMCOS model, Mr. Frantz discussed how the model had been used by CEAC, and Dr. Hunter

and Mr. Rose discussed the technical aspects of and demonstrated the active component life cycle cost model.

3.5 Army Resource Manager's Conference. Dr. Hunter and Mr. Rose presented a short training session to the Army's resource managers on November 22, 1987. For those at the conference who were not able to attend the training, AMCOS brochures were distributed.

3.6 Visit to Air Force MPT Office. Dr. Black and Mr. Hogan met with Air Force representatives on December 7, 1987 to discuss tools for estimating costs of manpower, personnel and training. AMCOS was presented as a tool that could be used with minor modifications.

3.7 SRA Project Review. SRA conducted its third internal project review for senior members of SRA on January 13, 1988. Messrs Rose and Davis presented the draft concept design for the reserve component life cycle cost model to Mr. Rubens and Dr. Hunter.

3.8 Meeting with CEAC. On January 15, 1988, Dr. Hunter, Mr. Rose, Dr. Horne, and Mr. Frantz met at SRA to discuss potential model enhancements to the active component life cycle cost model. The cost to add these potential enhancements was the focus of the discussion

3.9 Meeting with ARI Comptroller. Mr. Rose visited ARI comptroller's office with Drs. Gilroy and Horne to discuss status of remaining FY88 AMCOS funds.

3.10 Visit to Officer's Personnel Management Directorate, TAPA. Mr. Rose demonstrated the active component life cycle model to LTC Maloney, chief of officers distribution development branch. His office had an interest in the model because of work they were doing to reduce PCS costs.

3.11 MANPRINT Methodologies Workshop. Mr. Rose presented a demonstration of the active component life cycle cost model to Army combat developers at the Soldier Support Center, TAPA on February 11, 1988. The audience included members of the Army's MANPRINT community from ARI, TRADOC and AMC.

3.12 AMCOS User Training. SRA conducted user training for Army users on February 18, 1988 at SRA. Dr. Hunter welcomed the 10 students who attended. Mr. Rose presented the training while Ms. Canuel, Mr. Doering and Mr. Davis acted as assistant instructors providing one on one instruction when needed. Each student received hands on experience running the life cycle cost model on individual PCs and their own copy of the software.

3.13 Briefing to Local Chapter of the Institute of Cost Analysis. On February 24, 1988, Messrs Rose and Davis presented a demonstration of the active component life cycle cost model at a luncheon for the Institute of Cost Analysis. The luncheon was attended by cost analysts from across the DoD.

3.14 Visit to Personnel Structure and Force Integration Division, ODCSPER. Messrs Hogan and Rose met with Maj Warner on March 23, 1988 to discuss the use of AMCOS in the Total Army Analysis (TAA) 96 process. Maj Warner will be evaluating the cost of force structure changes in both the active and reserve components throughout the process.

3.15 Visit to OCAR. Messrs Rose and Davis met with LTC Barnes on March 24, 1988 to discuss reserve component personnel policies and their cost implications. In addition potential data sources were discussed.

4.0 FISCAL STATUS REPORT

4.1 SUMMARY OF EXPENDITURES

Table 4-1 shows the staff-months expended and dollars obligated by month for October 1987 through March 1988. It also shows cumulative labor and cost for the contract to date for each month and the labor and expenditures remaining in the contract at the end of the reporting period. At the end of March 1988, the contract had used 108 staff-months at a total cost of $884 thousand. About 61 staff-months and $639 thousand remain in the contract.

TABLE 4-1
EXPENDITURES

Month	Staff-Months		Obligations ($ thousands)		
	Monthly	Cumulative	Planned	Obligated	Cumulative
September*	-	76	--	--	654
October	6	82	37	38	692
November	5	87	37	36	728
December	7	94	37	52	780
January	6	100	37	52	832
February	5	105	37	28	860
March	3	108	37	24	884
Remaining		61			639

* Total from previous Semi-Annual Report.

The increase in spending in December and January is due to an accumulation of vouchers that were paid in those months. There was also a conscious effort to reduce spending in February and March to balance total expenditures. When looked at over the 6 month period spending averaged $38k per month.

The average expenditure per staff-month for this six-month period is $7.2 thousand. That is down from $10.2 per staff month reported for the first six months and is well within to the $8.0 thousand estimated for the overall five-year effort. This trend in the expenditures is desirable as it indicates that initial work on the project was done by more senior analysts in the formulation of concepts. Now, as the project has matured, lower level analysts are performing most of the work fleshing out the skeleton under senior level supervision.

Figure 4.1 compares the cumulative planned costs per month with actual cumulative expenditures per month for the reporting period. At the end of this reporting period, cumulative expenditures are about $10 thousand below the planned level.

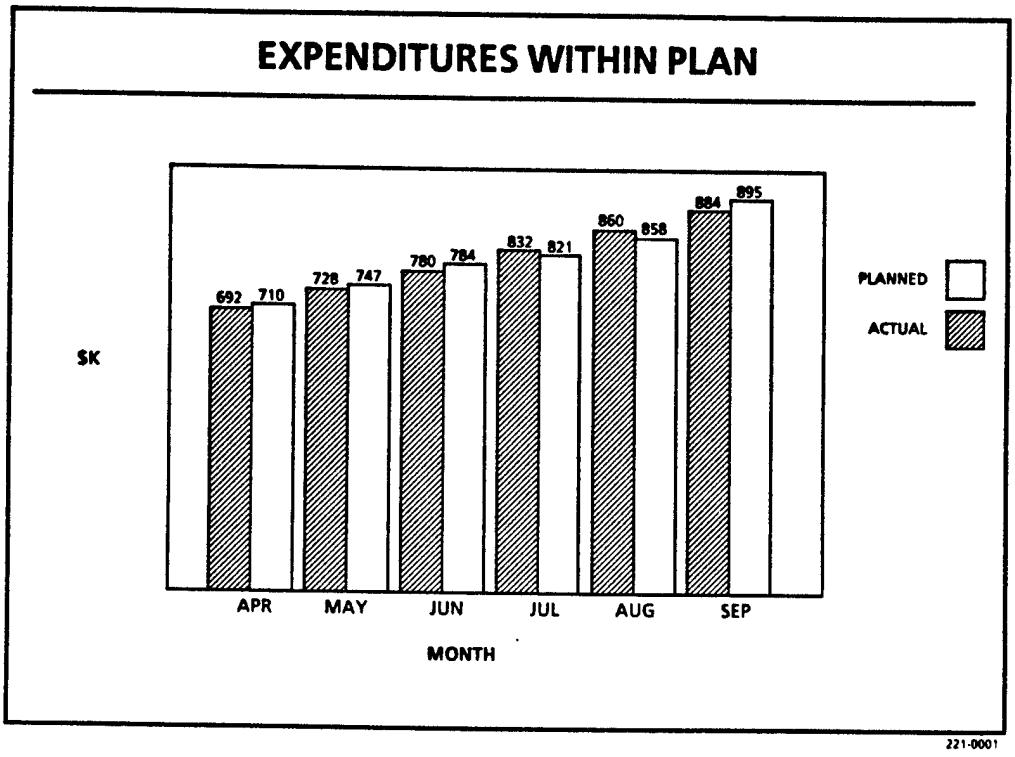


FIGURE 4.1
CUMULATIVE EXPENDITURES

4.2 STAFF-DAY ACCOUNTING BY PROFESSIONAL

Table 4-2 provides a detailed break down of the professional staff-time expended during the period by task and by staff professional (including subcontractor personnel). Just below the table we have provided the planned staff days by task for comparison purposes. Professional staff participation in AMCOS is in balance with the work achieved in this reporting period and is consistent with the staff-time and expenditures shown in previous tables and figures.

TABLE 4-2

PROFESSIONAL STAFF-DAYS PER PERSON PER TASK

Staff Professional	Task 1 Concept Development	Task 2 Model Development	Task 3 Model Validation	Task 4 Briefing SAG Etc	Total
SRA					
Black	1			2	3
Canuel		65	44	10	119
Davis	57	35		10	102
Doering		47	32	5	84
Hogan	4		1	11	16
Hunter	2		2	8	12
Rose	27	15	19	32	93
Rubens			2		2
Zuckerberg		10	2		12
Other				37	37
Subtotal	(91)	(172)	(102)	(115)	(480)
SAG					
Anderson		63	43		106
Lo		35	13		48
Mairs	30			15	45
Subtotal	(30)	(98)	(56)	(15)	(199)
TOTAL	121	270	158	130	679

PLANNED	200	200	80	40	520

Task 1 - Prepare the Concept Paper for formal publication.

Task 2 - Develop and enhance LCCM models.

Task 3 - Validate LCCM model.

Task 4 - Interact with Army sponsors, train users, and demonstrate the finished product. (See Chapter 3)

Although the plan called for most of our effort to concentrate on concept and model development, Army needs for further enhancement and user training required a shift in work distribution. We therefore concentrated more of our efforts on developing and validating the required enhancements than originally planned, presenting the results, and training primary users during this reporting period. We also have prepared for and participated in executive level briefings and meetings as the COR has requested.

An indicated in paragraph 4.1, average expenditure per staff months for the reporting period was only $7.2k as opposed to the planned $8k per month. This allowed us to increase the number of staff days expended by 30%.

4.3 PLANNED EFFORT BY TASK

During the next six months (through September 1988), we will complete the reserve component LCCM (test), complete the draft civilian LCCM design, start to build that model, continue to enhance the existing models, and update existing data bases.

Table 4-3 summarizes our estimated six-month work load by staff days and expenditures by task for the next reporting period.

TABLE 4-3

PROJECTED RESOURCES

	TASK 1	TASK 2	TASK 3	TASK 4	TOTAL
STAFF DAYS	200	200	80	70	550
EXPENDITURES ($K)	72	72	29	27	200

4.4 AMCOS SPENDING PLAN

Figure 4.2 shows the expenditures, both actual and planned, by quarter for the entire five year contract as it has been suggested for revision by the Office of the Assistant Secretary of the Army (Financial Management). The solid dark area displays the actual expenditures by quarter for a total cost of $884k. The light solid area shows funding that has been obligated by Army Research Institute for the remainder of FY88 ($179k). (See paragraph 4.1 for an explanation of the large spike shown in the first quarter of FY88.) The hatched area on Figure 4.2 represents the remaining contract dollars yet to be obligated ($460k).

The graph indicates that the life cycle cost model will be completed by the end of the first quarter FY89 (at a cost of $300k in the next three quarters) and the budget models (with no enhancements) will be completed by the end of FY89 (at a cost of $270k).

In the SOW for this contract under the discussion of Task 2, the government acknowledges that there may be changes in the system. The contractor will then be required to undertake related special tasks. The contract encourages the contractor to develop innovative proposals related to the project. The ARI, at its option, may accept or reject them. As the white area on Figure 4.2 shows there remains the possibility of further model enhancement in FY90 provided additional funds are available. The enhancements could be done at the discretion of the Army in phases. CEAC already transferred $130k to ARI for the addition of CEAC requested enhancements during the first contract year.

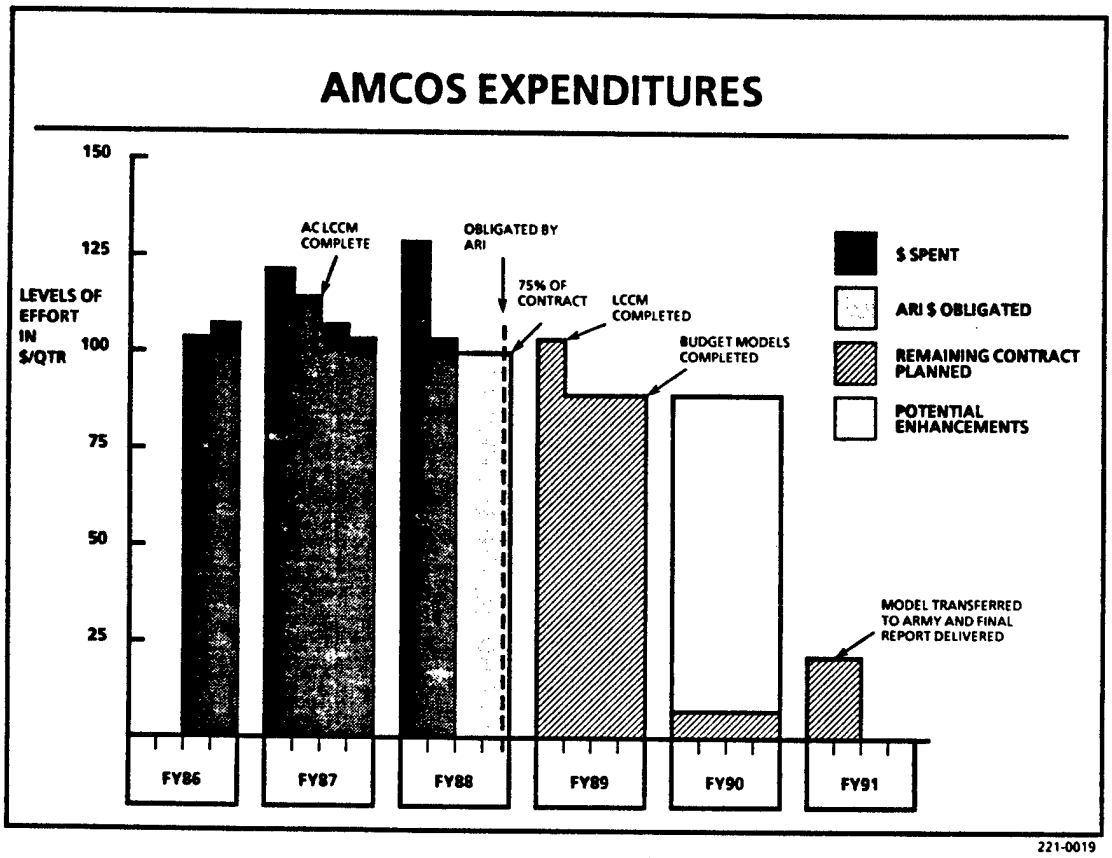


FIGURE 4.2
AMCOS SPENDING PLAN

The plan calls for the model to be transferred to the Army with final documentation in March 1991. Although the team will complete the model by September 1989, it will still need to update data bases in FY90 and FY91 ($20k each year) and to finalize documentation ($29k) in FY91. Also note that we expect to expend 75% of the original contract dollars ($1045k) midway through the 4th Qtr FY88.

4.5 NEAR-TERM PRODUCT SCHEDULE

Table 4-4 below shows the near term products for AMCOS to be delivered in remainder of calendar year 1988.

TABLE 4-4
NEAR TERM PRODUCTS SCHEDULE

1.	Briefing to General Officer Study Advisory Group	25 April 88
2.	Reserve Component Life Cycle Cost Model (test)	30 June 88
3.	Civilian Life Cycle Cost Model Design (draft)	31 August 88
4.	Reserve Component Life Cycle Cost Model (operational)	31 December 88
5.	Civilian Life Cycle Cost Model (test)	31 December 88

5.0 PROBLEMS ENCOUNTERED

5.1 READING SRC UNIT REQUIREMENT

When the unit data base was first being built, our initial discussions with the Army staff led us to believe the first eight digits of an SRC code were all that was needed to discriminate between different units. Hence, we designed a system that created a file for each SRC (unit). That has proved to be wrong; in fact the first nine digits are required to identify a separate unit. Because we must use all nine digits of the SRC code, we could no longer use a separate file for each unit's requirements. As a result, the whole concept of how AMCOS processes unit requirements must be redone. However, this is not a major problem. During the next reporting period we will correct this error and a revised unit data base and edit capability will be included in both the active and reserve component LCCM.

5.2 UPDATE OF THE TRAINING COST DATA BASE

Because of higher internal priorities, TRADOC has been unable to update the course costs in the ATRM-159. TRADOC projects completion of that project sometime in June 88. At that time, it will deliver updated costs based on FY87 actual costs. In addition, we expect that the data will be in a format that will make the update of training costs a much easier process. In the interim, AMCOS continues to use the previous ATRM-159 adjusted by estimated inflation factors.

6.0 CONCLUSION

Work on AMCOS has been extremely successful. The AMCOS team has delivered and operationally tested an enhanced mode during this reporting period. The AMCOS active duty LCCM is ready for operational acceptance by the COR. We are now developing the Reserve Component and the Civilian LCCM. We will develop budget models in FY89, update data bases and make enhancements in FY90 and FY91, and deliver all final products and documentation in FY91. Figure 6.1 summarizes this plan.

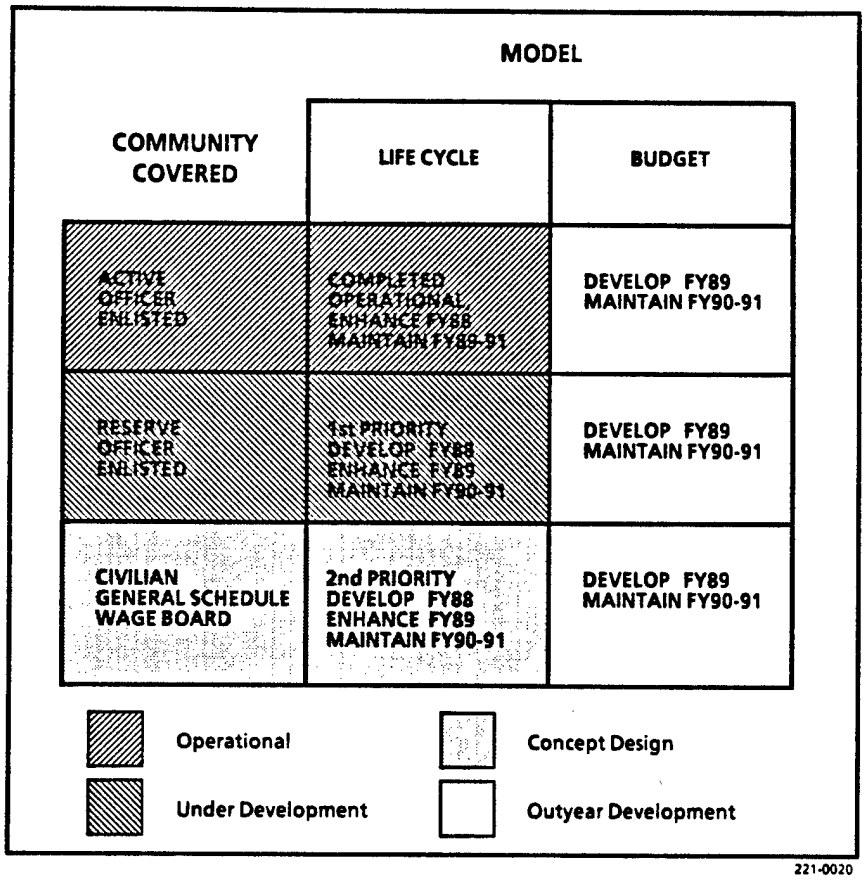
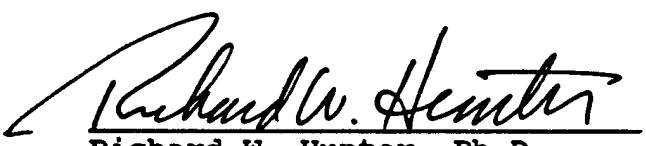


FIGURE 6.1
AMCOS DEVELOPMENT PLAN

8.0 AUTHENTICATION

This semi-annual report is approved.



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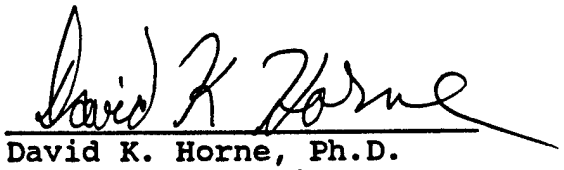
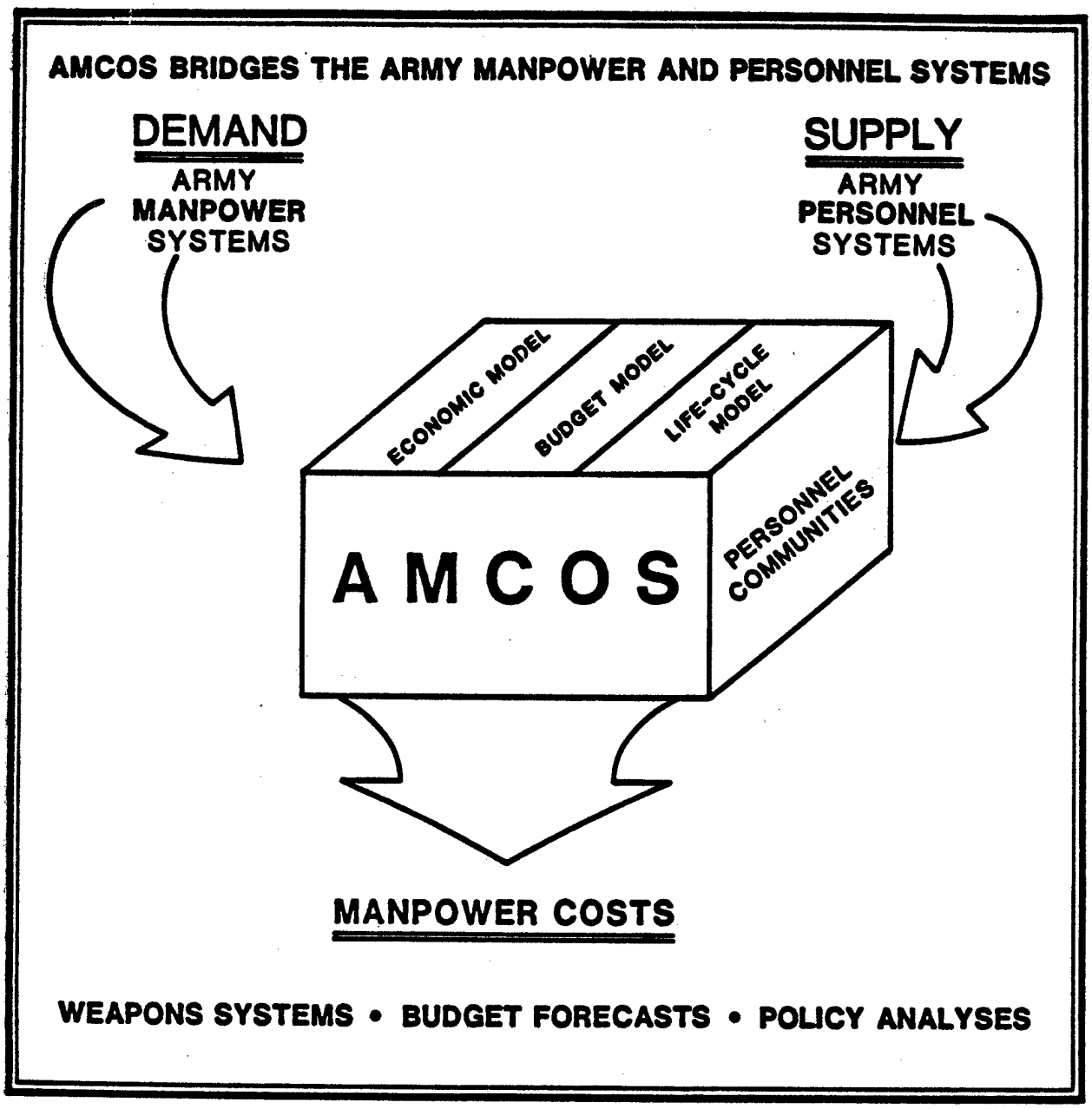
Contractor's Project Director



David K. Horne, Ph.D.
Contracting Officer's
Representative

WP 88-19 ZHS 21 Jul '88

THIRD SEMI-ANNUAL PROGRESS REPORT



ARMY MANPOWER COST SYSTEM

NOVEMBER 1987

PB 8966

SRA CORPORATION

SAG CORPORATION
System–Analytics Group

THIRD SEMI-ANNUAL PROGRESS REPORT

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Lee S. Mairs
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The views, opinions, and findings contained in this report are those of the authors and should not be construed as an official Department of the Army position, policy, or decision, unless so designated by other official documentation.

Systems Research and Applications Corporation
Arlington, Virginia

November, 1987

THIRD SEMI-ANNUAL PROGRESS REPORT

Contract Number	MDA903-86-C-0106
Contract Expiration Date	17 March 1991
Total Dollar Value	$1,347,915
Short Title of Contract Work	AMCOS
Authors	Richard W. Hunter, Ph.D. Paul F. Hogan Lee S. Mairs Donald E. Rose, Jr.
Name of Contractor	Systems Research and Applications Corporation (SRA)
Contractor's Project Director	Richard W. Hunter, Ph.D.
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AMCOS THIRD SEMI-ANNUAL PROGRESS REPORT

1.0 INTRODUCTION

The Army Manpower Cost System (AMCOS) is a research and development effort conducted by SRA with the assistance of SAG Corporation for the Army Research Institute (ARI). The purpose of this five-year project, sponsored by the Deputy Comptroller of the Army in the Office of the Assistant Secretary of the Army (Financial Management), is to develop automated manpower cost models to improve the Army's ability to conduct cost analysis.

1.1 Purpose of this Report

This paper is the third semi-annual AMCOS progress and financial report covering the period April 1, 1987 through September 30, 1987, submitted in compliance with Section F of Contract MDA903-86-C-0106.

1.2 Purpose of the Contract

To quote from the Army's request for proposal, the Army Research Institute undertook this effort:

> To design and validate a system of models (with their associated databases) to accurately estimate manpower costs of current and future weapons and other systems, to forecast manpower budget costs, and to analyze scenarios of personnel policy changes...
>
> As the Army looks to the 1990's and beyond, the shift toward increasingly sophisticated technology will be translated into sharp increases in the demand for skilled or high quality labor. At the same time, similar shifts in other sectors of the economy will contribute to a general bidding up of the price of labor. Constraints on the Army's ability to create specialists through training, coupled with the increasing cost of skilled labor, makes it incumbent on the Army to predict manpower costs accurately.

> At present, the Army does not have an operational model to evaluate manpower costs of weapons and other systems... The objectives of this [effort] is to develop a system of manpower cost models consisting of economic cost, budget cost, and life cycle cost models...[1]

1.3 AMCOS OVERVIEW

The AMCOS team is building a series of budget, economic, and life cycle cost models for the active, reserve, and civilian components of Army manpower. Applications include budget decisions; economic trade-offs among active, reserve, and civilian forms of manpower; cost-effectiveness; budget consequences of alternative personnel policies; and life cycle cost estimates of manpower for weapon systems and alternative force structures.

As illustrated in Figure 1.1, AMCOS interfaces the Army's manpower requirements and personnel policies to improve manpower cost estimating capabilities in the following areas:

New Weapon Systems. Accurate manpower cost estimates over the life of a weapon system will assist in choosing the most efficient system, and in developing the most cost-effective manpower/hardware configuration for that system.

Manpower Requirements. Cost estimation by grade and occupation for the active, reserve, and civilian components, will help in choosing the most efficient manpower mix.

Personnel Policies. Explicit cost modeling of personnel policies such as tour lengths, reenlistment bonus policies, the proportion of high quality recruits and PCS moves, will allow rapid estimation of how changes in these policies affect the costs of filling specific manpower positions.

Budget Decisions. Explicit cost modeling of the effect of personnel policies on budget costs will result in better personnel planning, policy development, and budget support.

---

[1] DSS-W RFP MDA903-85-R-0177 dated 16 August 1985, SECTION J, Attachment No. 1, "Statement of Work," pp. 1-2.

AMCOS BRIDGES THE ARMY MANPOWER AND PERSONNEL SYSTEMS

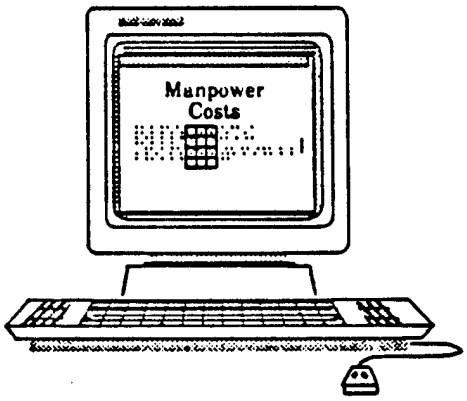
DEMAND

ARMY MANPOWER SYSTEMS

AMCOS

SUPPLY

ARMY PERSONNEL SYSTEMS



APPLICATIONS

- WEAPON SYSTEMS
- MANPOWER REQUIREMENTS
- PERSONNEL POLICIES
- BUDGET DECISIONS

221-0003

FIGURE 1.1

1.3.1 Sound, but Simple Models First

Following the strategy established by the Deputy Comptroller of the Army, we built sound, but relatively simple, life cycle cost models for active duty officer and enlisted personnel. These two models were composed of several policy modules each, with a "flexible static" cost-estimating model, and have been integrated into one combined active duty model.

1.3.2 Modular Design

AMCOS uses a modular design concept. We develop simple modules that can be expanded as needed. Policy modules can be removed from the model, updated, and reinserted without adversely affecting other parts of the model. Data bases can be updated in a similar way.

1.3.3 Evolutionary Approach

These models will accept manpower requirements generated by the FORECAST System, the MANPRINT process or any "what-if" scenario and will produce a time-phased profile of the cost of manpower over the life cycle of a weapon system. By developing a working model early in the process, we are now able to use the results of actual cost estimation efforts to refine and improve the models to meet the Army's real needs.

As the research progressed, we developed selected policy modules in more detail and enhanced the cost estimation process to make it more dynamic and flexible. AMCOS's modular design makes this evolutionary strategy practical. Personnel policy and compensation modules have been and still can be refined and enhanced to meet the changing requirements of the Army and other users that emerge from real-life applications.

1.4 AMCOS Redirection

1.4.1 The Original AMCOS Plan -- Focus on Budget Models First

The Army AMCOS contract (MDA903-86-C-0106) established the original development plan for the AMCOS family of manpower cost models. As shown in Figure 1.2, the contract requires 4 development steps for 15 models. It calls for 3 models for each of the 5 Army personnel communities (Active Component officer and enlisted, Reserve Component officer and enlisted, and Civilian Component). The original plan called for the development of the budget models first, then work towards the more complex life cycle models.

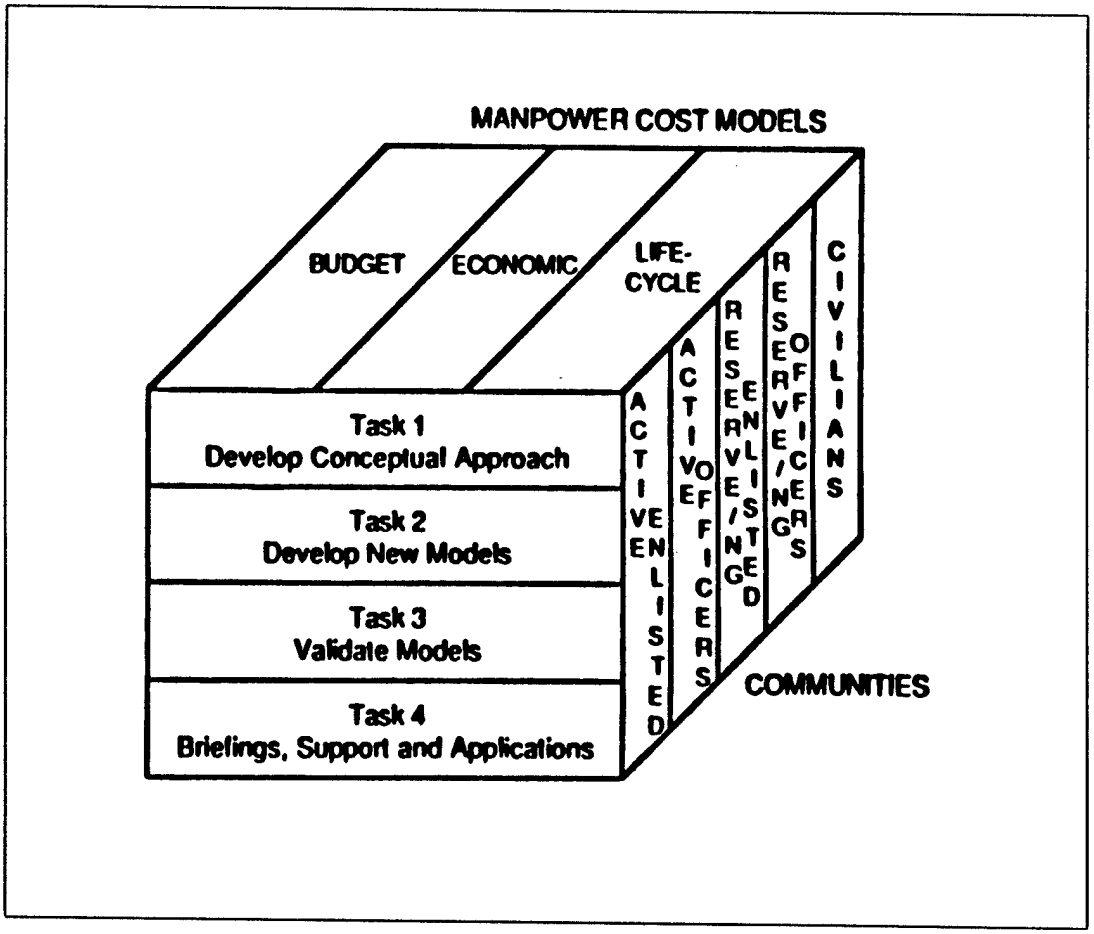


FIGURE 1.2

1.4.2 Deputy Comptroller Redirection -- Life Cycle Models First

On July 3, 1986, the Deputy Comptroller of the Army refocused the AMCOS development. He and Dr. Curt Gilroy of ARI agreed to a new priority for the AMCOS research and development effort. Development of the life cycle models took first priority. They agreed that initial efforts should focus on the Active Army enlisted and then the Active Army officers models. A contract modification dated June 12, 1987 formally incorporated this redirection into the contract.

1.4.3 Active Component Life Cycle Cost Models

SRA Corporation delivered an enlisted active duty life cycle cost model on January 31, 1987 and an officer active duty life cycle cost model on March 15, 1987. The U.S. Army Cost and Economic Analysis Center (CEAC) began using these models to estimate costs of Army programs, especially the Armored Family of Vehicles Study.

1.5 The Active Duty Life Cycle Cost Models

As shown on the schematic in Figure 1.3, the heart of the life cycle cost model is the structured cost data base. It is the focus of both user's and the software's efforts when estimating costs.

1.5.1 The Structured Cost Data Base

The model takes data input from a variety of Army sources and processes them through policy modules that emulate personnel policies. This generates costs by skill and grade that are deposited in the structured cost data base. These costs represent the "price" of an individual soldier.

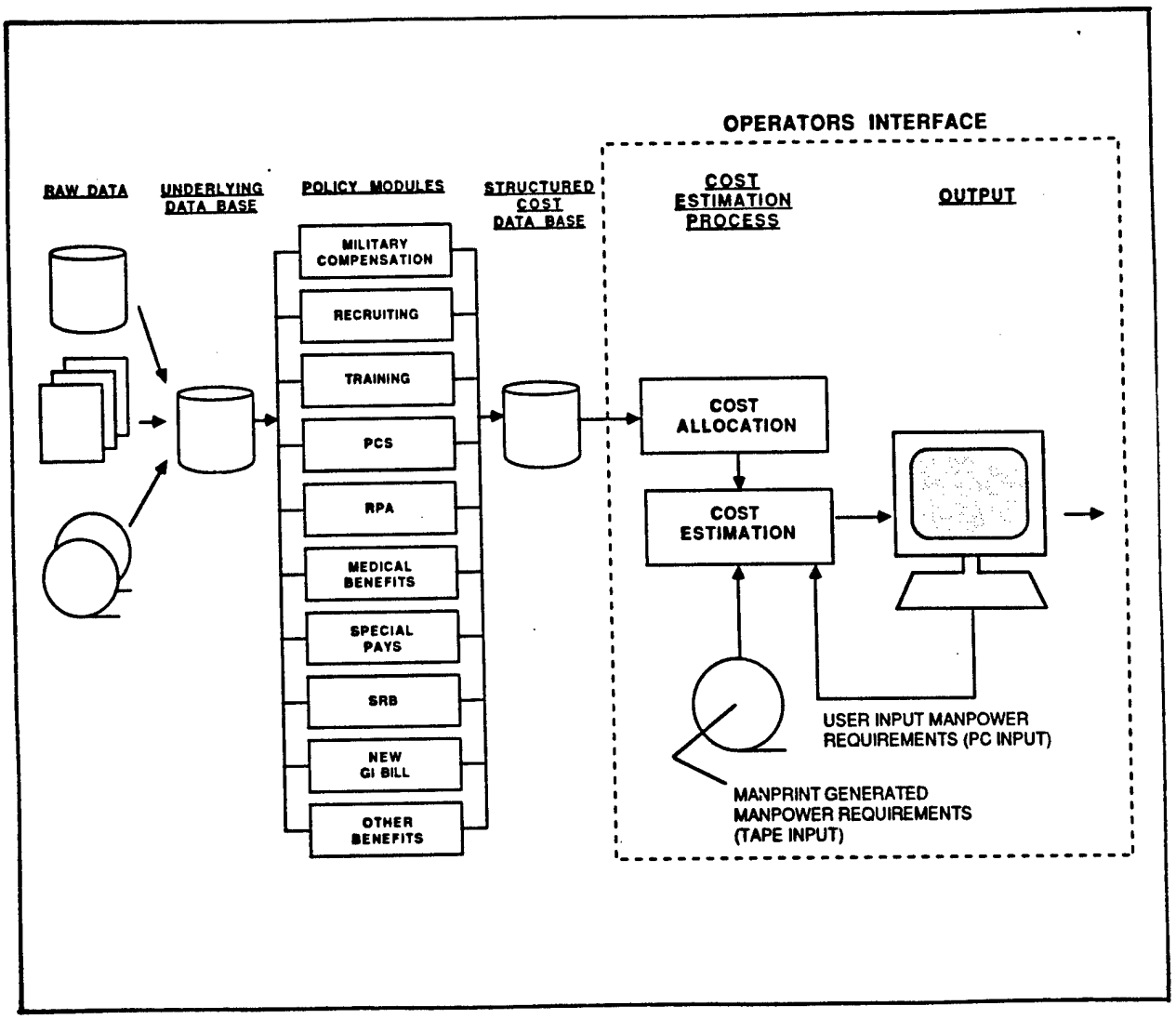


FIGURE 1.3

AMCOS SCHEMATIC FLOW DIAGRAM

1.5.2 User Operation

The user enters manpower requirements information that merges with the structured cost data base to produce cost estimates. The resultant output is received by the user through the personal computer. The output may be reviewed on the screen or the user may print it out in tabular format.

1.5.3 AMCOS Version 1.0

This deliverable was the sound, simple, modular product the Deputy Comptroller desired. It was now ready for evolutionary enhancement as CEAC gained experience using the model to estimate costs for actual Army applications

1.6 First Year Products

Table 1-1 lists the products delivered under this contract during its first year. The first year's work forms the basis for discussion of the work accomplished during this reporting period (April 1 - September 30, 1987) described in the rest of the report.

TABLE 1-1

PRODUCTS DELIVERED

DATE	TITLE
4-15-86	Briefing to ODCSPER, Program and Budget Division
5-15-86	Briefing to Deputy Comptroller of the Army
7-2-86	Technical Report: Evaluation of the Prototype (Draft)
9-30-86	Concept Paper #1: Life Cycle Cost Model Active Army Manpower (Draft)
10-15-86	Technical Report: AMCOS Information Book (Draft Working Documents)
10-31-86	AMCOS Semi-Annual Progress Report
11-12-86	Briefing to Working Level SAG
12-12-86	Briefing to Mr. Distasio, Office of the Comptroller
1-31-87	Active Component Enlisted Life Cycle Cost Model (Test Version) Delivered
1-31-87	Update to Technical Report: AMCOS Information Book (Draft Working Documents)
2-9-87	AMCOS Demonstration to Dr. Gilroy, ARI
3-4-87	AMCOS Demonstration to Col. Wood, CEAC
3-12-87	AMCOS Demonstration to Mr. Frantz, CEAC
3-15-87	Active Component Officers Life Cycle Cost Model (Test Version) Delivered
3-30-87	Briefing to Deputy Comptroller of the Army Operational Active Component Life Cycle Cost Model

1.7 Report Organization

This report is divided into seven sections, as follows:

- o introduction
- o summary of project activity in the reporting period;
- o descriptive list of all briefings, meetings, and visits conducted during the reporting period;
- o fiscal report on project costs for this reporting period;
- o description of problems encountered;
- o discussion of the planned activities for the second year; and
- o conclusion.

2.0 PROJECT ACTIVITY FOR THE THIRD REPORTING PERIOD

2.1 Priorities

On March 30, 1987, the Deputy Comptroller of the Army established the following priorities for the second year of the contract:

(1) Accelerate development of enhancements of the active component model.

(2) Develop a basic civilian model to include both general schedule and wage board personnel systems.

(3) Develop Reserve Component models for the Army Reserve and National Guard.

2.2 Active Component Enhancements

Figure 2.1 summarizes the enhancements we agreed to incorporate in the active component life cycle costs models during the March 30 In-Progress-Review with ARI and the Deputy Comptroller of the Army. They formed the basis for much of the work completed during this reporting period.

ENHANCEMENT STATUS

ENHANCEMENT	STATUS		
	COMPLETE	PARTIALLY COMPLETE	FUTURE DEVELOPMENT
o Consolidation of Enlisted and Officer's Model	x		
o Automated Input of Manpower Requirements	x		
- Help screens for ease in manipulation of data	x		
- Development of a one year model	x		
o Variable inflation rates by appropriation and year	x		
o Capability to surpress individual cost elements	x		
o Incorporation of ATRM-159 cost data		x	
o Army Specific RPA	x		
o Graphic display of output	x		
o Cumulative Training Cost Display		x	
o Comparison of output			x
o Dissemination		x	

FIGURE 2.1

2.2.1 Enhancements Completed. During this reporting period we completed 7 enhancements.

2.2.1.1 Consolidation of the Enlisted and Officer Model

Once CEAC began to estimate costs of actual Army units it became clear that using two models to analyze one document's manpower summary was awkward. To correct this situation we consolidated the two models by building a shell from which the user could access both structured cost data bases. From this shell the user would also be able to activate the cost estimation process and generate results.

2.2.1.2 Automated Input of Manpower Requirements

Even before the model was installed on the CEAC computers, CEAC recognized a need for a software device to handle the large volume of system manpower requirements used in the AFV study. SRA Corp obtained a tape extract of a Standard Requirements Code (SRC) file from the U.S. Army Combined Arms Combat Development Agency (CACDA) containing skill and grade requirements by SRC. A utility program was written by SRA to allow the user to download the appropriate AFV requirements directly to the personal computer. In addition we put a series of help screens into the model shell to allow the user ease in selecting different unit requirements.

2.2.1.3 Development of One Year Model

CEAC's initial cost estimates of the AFV being submitted to OSD were to be for only one year versus estimates over the life cycle of the system. For this reason SRA built a version of the model that would allow the user to project baseline costs to a future year for the requirements specified.

2.2.1.4 Variable Inflation Rates by Appropriation and Year

To allow the user the ability to conform with OSD guidance, SRA modified the model to allow the user to insert variable inflation rates for the first five years of the analysis. The model will use zero inflation unless the user changes the rates. In addition, the user can specify a global discount rate. The default rate is ten percent in accordance with OSD guidance.

2.2.1.5 Capability to Surpress Cost Elements

To meet CEAC's needs SRA installed an option to allow the user to selectively apply cost elements. This was needed because a user may not want to use all cost elements in an analysis. In

addition, this option will allow the user to modify some cost elements in the event that more accurate information is available (e.g., If the user knows that a billet will definitely be authorized flight pay, he can charge full flight pay to the billet).

2.2.1.6 Army Specific Retired Pay Accrual

The model not only calculates the Army's cost for retired pay accrual based on a factor provided by the DoD Actuary, but it will also allow the user to estimate the cost of retired pay accrual based on Army specific retention rates. This could provide the Army user useful information since the DoD factor represents average retention across the services and Army retention rates are below the average.

2.2.1.7 Graphic Display of Output

The AMCOS model is capable of displaying the results of a user's analysis graphically. It allows the user to view the results on the computer monitor in four modes. Mode one displays cost totals by appropriation, both discounted and undiscounted, using a bar graph. Mode two displays the same totals using a logarithmic scale. Mode three allows the user to compare discounted and undiscounted totals by appropriation using pie charts. Mode four displays the cost totals by appropriation for each year of the analysis using a bar graph.

2.2.2 Enhancements in Progress. Work was also started on two other enhancements that we are continuing work on through the next reporting period.

2.2.2.1 Incorporation of ATRM-159 Cost Data

The Army's Training Cost Data Base is the ATRM-159 and is generated by the U.S. Army Training and Doctrine Command (TRADOC).

To include the ATRM-159 costs in the structured cost data base required us to write a small utility program to transfer the TRADOC data from a LOTUS spreadsheet to the structured cost data base. As TRADOC continues to refine the ATRM-159 (they intend to change their methodology for collecting data) we will also refine the interface between their data base and AMCOS.

2.2.2.2 Cumulative Training Cost Display

In response to CEAC's request, SRA developed an option that allows the user to view training costs as they accumulate over the life of a soldier. The costs can be displayed either with or without attrition. If attrition is included, it recognizes that more than one soldier must be trained to replace a soldier that leaves the Army.

To develop the cumulative costs without attrition, "path analysis" was conducted using AR 611-214 after first determining training costs by grade and skill. As a soldier is tracked through a particular career path the appropriate training costs are accumulated. The model determines both the average cost path and the maximum cost path.

To develop the cumulative costs with attrition, we first mapped skill levels into year of service intervals and assumed that new training in a skill level occurs at the beginning of that skill level. Continuation rates were then used to estimate the attrition.

2.2.3 Future Enhancements. In the future we intend to include an option in the model that will allow the user to compare output from various runs of the model. To do this we will have to first develop a capability to save the output from individual runs in separate project files. This ability to save and compare output will provide the user greater flexibility in conducting analysis.

2.3 Civilian LCCM Concept Paper. While enhancing the active component models, we began designing and developing the civilian life cycle cost model. This task did not simply involve imposing the active component cost structure on the Army civilian inventory. Not only do the cost elements differ substantially between the two populations, but so do their personnel systems. For example, lateral entry of personnel is common in the civil service but almost non-existent in the active Army. Differences of this sort necessitated a rethinking of the model's conceptual framework.

At present, we have completed a first draft of the concept paper for the civilian life cycle cost model, which outlines our approach to the model in general and to each of the cost elements. We have also begun collecting the necessary data and implementing the conceptual design. Consistent with the priorities of the Deputy Comptroller of the Army and Army Research Institute, however, we have stopped work on the civilian model and initiated work on the reserve components life cycle cost model.

2.4 CEAC Use of AMCOS

AMCOS has been used continuously by CEAC throughout the reporting period. In addition to being used to estimate the costs of an AFV defined Corps for submission to OSD, it was also used to estimate manpower costs for various units, both actual and theoretical, at the request of the Army Staff and Congress. It has also been used to estimate manpower costs for the Remotely Piloted Vehicle (RPV) Independent Cost Estimate (ICE).

2.5 AMCOS Version 3.0

Figure 2.2 shows how version 3.0 of the life cycle cost model operates. The user inputs the needed information through man-machine interface with the computer. Inputs include manpower requirements and cost modifications. The model has already created

a structured cost data base by processing data from various Army sources through the policy modules. The cost estimation process merges the the user input with the structured cost data base to produce manpower cost estimates. As shown on the right hand side of the graphic, the user may elect a variety of output options to review the results.

USING AMCOS

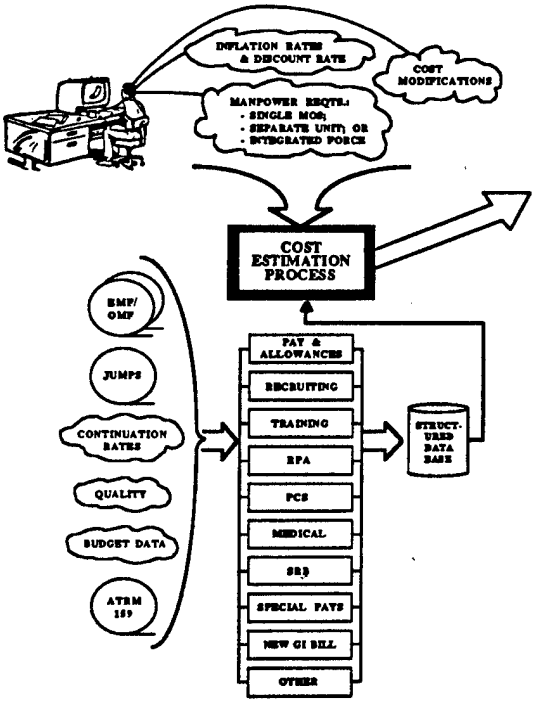
User-Defined Inputs

- **Manpower Requirements**--Manning by MOS and grade, number and type of units, phase-in/interim changes/phase-out
- **Cost Review**--All enlisted MOSs and officer specialties; separate cost elements that roll-up to major budget appropriation categories
- **Cost Modifications**--User-specified cost policies; selection of specific pays; average versus marginal costs; costs of high versus low quality personnel; discount rates; and inflation rates by appropriation category

User-Oriented Outputs

- **Micro-to-Macro Focus**--Cost results for any position/unit/division combination
- **Cost Patterns**--Estimated for 1 to 30 years, discounted and undiscounted
- **Levels of Detail**--By major element (recruiting, training, basic pay and allowances, retirement, SRB, PCS, etc.); by budget appropriation category; by total costs
- **Output Options**--Display/save/ print; tabular and graphic, comparative results

AMCOS USER INTERFACE



MULTIPLE OUTPUTS

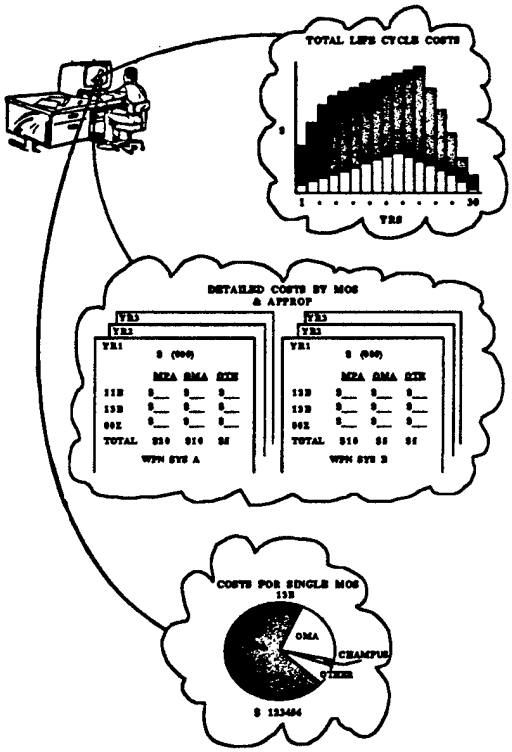


FIGURE 2.2

2.6 Project Activity Summary

As of the end of the reporting period, we have delivered a fully enhanced active component life cycle cost model. The major improvements featured in the model are its user friendliness when inputting manpower requirements and the speed of the calculations. Specifically, the user can now;

(1) download large manpower requirements files from magnetic tape to the hard disk of a PC quickly and easily;

(2) modify the model-generated cost data to suit a specific cost estimation exercise; and

(3) specify a discount rate and variable inflation rates for the first five years of cost projections.

In addition the model displays results graphically as well as allowing the user to print out any or all of the results using a standard report format. Table 2-1 shows the delivery schedule for work completed in the past six month period.

TABLE 2-1

PRODUCTS DELIVERED THIS REPORTING PERIOD

DATE	TITLE
5-15-87	AMCOS Brochure
5-31-87	AMCOS Version 2.0 (Includes Executive Shell, Automated Requirements Input, One Year Model Variable Inflation Rates, Consolidation of Enlisted and Officer Models)
7-31-87	AMCOS Version 3.0 (Includes selective cost modification/surpression, Graphics, print option and the alternate methods for computing Retired Pay Accrual)
9-28-87	In-Process-Review presented to Deputy Comptroller of the Army

3.0 BRIEFINGS, MEETINGS, AND VISITS

Dr. David Horne of ARI, the COR, continues to be a key participant in the development team. He attended many meetings and exchanged numerous telephone calls during the past six-month period. The following list summarizes the key briefings, meetings, or visits conducted by SRA in the past six months.

3.1 SRA Project Review. SRA conducted an internal SRA project review for Senior Members of SRA on April 9, 1987. The Director of the U.S. Army Research Institute also attended the review. The final enlisted and officers LCCMs were demonstrated and enhancements to be completed were briefed. Dr. Hunter and Mr. Rose delivered the briefing to Mr. Brehm, Mr. Rubens, Mr. Peixotto, and Col. Henderson.

3.2 Visit to MILPERCEN Training Office. Mr. Rose and Mr. Zuckerberg visited Maj. Zerkow in the Enlisted Accession Training and Retention Management Division on April 15, 1987. He provided SRA with MOS training requirements to be used in the development of the cumulative training module.

3.3 ODCSPER Briefing. Mr. Mairs (SAG Corp) and Mr. Rose (SRA) briefed Maj. Deutsch, program manager of the Army's SRB program. The briefing focused on what kind of product the training module would be and its potential use for establishing SRB bonus levels. Also in attendance was Dr. Gilroy of ARI.

3.4 Air Force MPT Seminar. The Air Force sponsored a DoD-wide seminar to address Manpower, Personnel, and Training issues 11-13 May, 1987 in San Antonio. Messrs Rose and Hogan participated in the seminar as well as demonstrating the AMCOS model in an exhibit hall set up between sessions.

3.5 MORS Presentation. Mr. Hogan presented a paper on AMCOS to the Military Operations Research Society on 19 May at Maxwell AFB. This was the initial effort to disseminate information on the AMCOS model through various professional societies in accordance with contract requirements.

3.6 Enhanced Model Delivery and User Training. On 30 June the enhanced version of the active component LCCM was delivered to CEAC. This version of the model included the changes necessary to estimate the costs of the AFV study quickly and easily. In addition selected users were trained on use of the new model.

3.7 Visit to Civilian Personnel Directorate, ODCSPER. Representatives of the AMCOS team visited with Ms. Tedrick and Mr. Shanes on 13 July to discuss issues involving civilian personnel compensation policies. The meeting was held to initiate research for the civilian component LCCM. In addition Ms. Tedrick was very helpful in directing SRA to the appropriate Army offices for data to feed the civilian LCCM.

3.8 Visit to FORECAST Office. Messrs Rose and Davis met with Cpt. Elam, custodian of the CIVFORS data base, to obtain access to appropriate civilian cost data.

3.9 Visit to Budget Mgt and Data Div, ASA-FM. The AMCOS team met with Ms. Rogers to discuss the civilian component LCCM and the compensation policy issues. She was extremely helpful by offering to collect a portion of the necessary data for calculating the various cost elements.

3.10 Long Range Stationing Study Group Briefing. Maj. Hupp of the Long Range Stationing Study Group visited SRA on 14 August. He briefed the AMCOS team on their efforts to evaluate costs associated stationing units at various installations and in

turn the AMCOS team briefed Maj Hupp on the active component LCCM. At this meeting an interest in using AMCOS to assist in their efforts was expressed.

3.11 ARI Briefing. On 25 August, Mr. Rose briefed Dr. Keesee, Director of the Systems Research Lab in ARI. Dr. Keesee's directorate is responsible for evaluating weapon system's MANPRINT requirements. As a result of this meeting he directed that AMCOS be used to estimate the costs of RPV as a test of the model.

3.12 OSD Training Seminar. Mr. Hogan and Dr. Horne presented a paper on the use of AMCOS to estimate training costs to the seminar. The paper was well received and as a result many requests for AMCOS training data have been received.

3.13 IPR for Dr. West. On 28 September the AMCOS team presented an In Process Review to the Army Research Institute and the Deputy Comptroller of the Army. At that meeting we discussed the upcoming General Officer SAG as well as the priorities for the upcoming contract year. As a result of the meeting, priority has again shifted to the Reserve Components model. The civilian model will be placed on hold temporarily.

4.0 FISCAL STATUS REPORT

4.1 Summary of Expenditures

Table 4-1 shows the staff-months expended and dollars obligated by month for April 1987 through September 1987. It also shows cumulative labor and cost for the contract to date for each month and the labor and expenditures remaining in the contract at the end of the reporting period. At the end of September 1987, the contract had used 76 staff-months at a total cost of $654 thousand. About 93 staff-months and $739 thousand remain in the contract.

TABLE 4-1

EXPENDITURES

Month	Staff-Months		Obligations ($ thousands)		
	Monthly	Cumulative	Planned	Obligated	Cumulative
March*	-	48	--	--	441
April	5	53	37	39	480
May	5	58	37	37	517
June	4	62	37	31	548
July	4	66	37	37	585
August	5	71	37	35	620
September	5	76	37	34	654
Remaining		93			739

* Total from previous Semi-Annual Report.

The average expenditure per staff-month for this six-month period is $7.6 thousand. That is down from $10.2 per staff month reported for the first six months and is well within to the $8.0 thousand estimated for the overall five-year effort. This trend in the expenditures is desirable as it indicates that initial work on the project was done by more senior analysts in the formulation of concepts. Now as the project matures lower level analysts are performing most of the work fleshing out the skeleton under senior level supervision.

Figure 4.1 compares the cumulative planned costs per month with the actual cumulative expenditures per month for the reporting period. At the end of this reporting period, cumulative expenditures are about $20 thousand below the planned level.

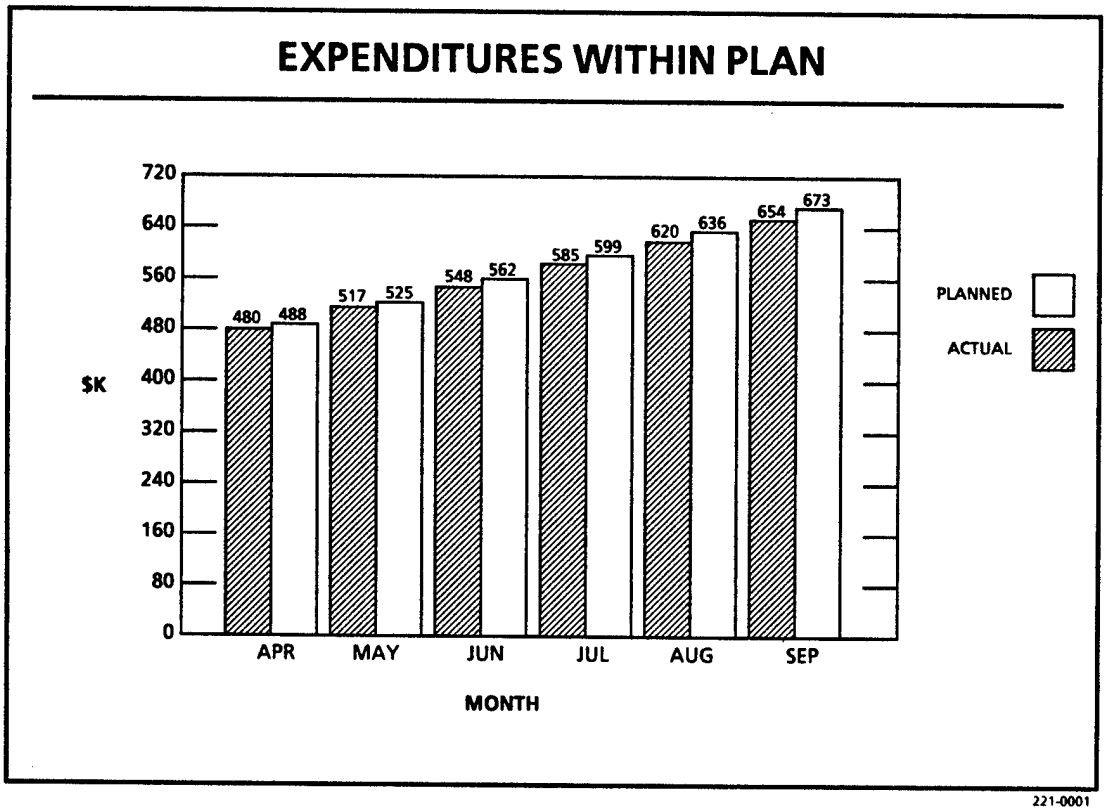


FIGURE 4.1

4.2 Staff-Day Accounting by Professional

Table 4-2 provides a detailed break down of the professional staff-time expended during the period by task and by staff professional (including subcontractor personnel). Professional staff participation in AMCOS is in balance with the work achieved in this reporting period and is consistent with the staff-time and expenditures shown in previous tables and figures.

The labor distribution, shown on Table 4-2, is consistent with the contract work load provisions in the contract. We concentrated our efforts on developing and validating the required enhancements, presenting the results, and training primary users during this reporting period. We also have prepared for and participated in executive level briefings and meetings as the COR has requested.

TABLE 4-2

PROFESSIONAL STAFF-DAYS PER PERSON PER TASK

Staff Professional	Task 1 Concept Development	Task 2 Model Development	Task 3 Model Validation	Task 4 Briefing SAG Etc	Total
SRA					
Black	1		1	2	4
Canuel		25	15		40
Davis	46				46
Doering		95	30	1	126
Harris		5		30	35
Hogan	4		1	11	16
Hunter	4		2	8	14
Peixotto			1		1
Rose	35	19	25	40	119
Rubens			3		3
Zuckerberg		43	8	5	56
Other				60	60
Subtotal	(90)	(187)	(86)	(157)	(520)
SAG					
Lo		33	10		43
Mairs	2		3	4	9
Subtotal	(2)	(33)	(13)	(4)	(52)
TOTAL	92	220	99	161	572

Task 1 - Prepare the Concept Paper for formal publication.

Task 2 - Develop and enhance LCCM models.

Task 3 - Validate LCCM model.

Task 4 - Interact with Army sponsors, train users, and demonstrate the finished product. (See Chapter 3)

4.3 Planned Effort by Task

During the next six months (through March 1988), we will develop the reserve component LCCM concept paper and start to build the model, develop the civilian LCCM concept paper, update the active component data base, and continue to enhance the existing models.

Table 4-3 summarizes our estimated six-month work load by staff days and expenditures by task for the next reporting period.

TABLE 4-3

PROJECTED RESOURCES

	TASK 1	TASK 2	TASK 3	TASK 4	TOTAL
STAFF DAYS	200	200	80	40	520
EXPENDITURES ($K)	81	81	32	16	210

4.4 AMCOS Spending Plan

Figure 4.2 shows the expenditure plan by quarter for the entire five year contract as it has been suggested for revision by the Deputy Comptroller of the Army. The hashed area displays the actual obligated costs by quarter (these are consistent with the monthly expenditures shown in previous charts). This includes what has already been spent ($654k), what is obligated by Army Research Institute ($152k). The clear area represents the remaining contract dollars yet to be obligated ($717k). As shown in the figure, the AMCOS system of models will be completed by the

end of FY 89 but with no enhancements to the budget or economic models. The graph also reflects the possibility of further model enhancements in two phases provided funds are available. The first phase would add $160 thousand to the contract with the option of adding another $180 thousand should the Army desire.

The plan allows for the model to be transferred to the Army with final documentation in March 1991. Although the models will be completed by September 1989, there will still be a need to update data bases in FY90 ($20k) and to finalize documentation. Also note that we expect to expend 75% of the contract dollars ($1045k) midway through the 4th Qtr FY 88.

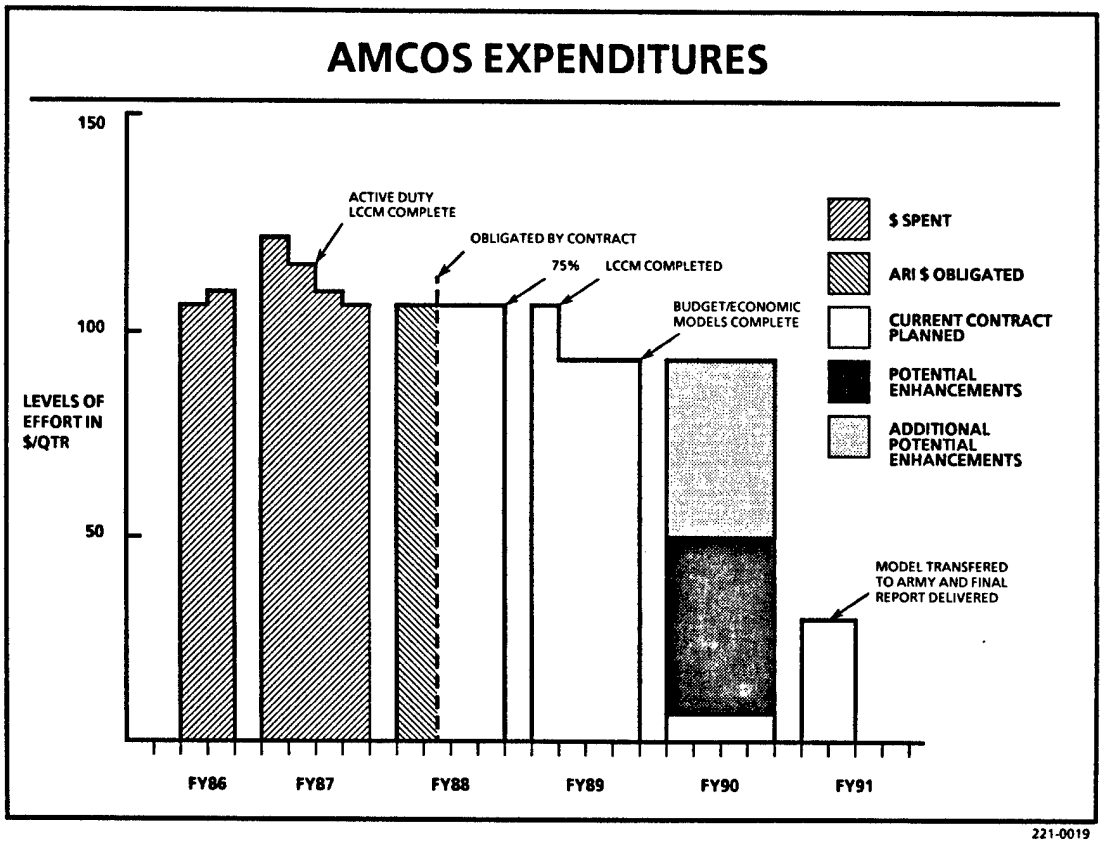


FIGURE 4.2
AMCOS SPENDING PLAN

Table 4-4 below shows the near term tasks for AMCOS.

TABLE 4-4

NEAR TERM TASKS

1.	Briefing to General Officer Study Advisory Group	6 November 87
2.	Presentation to Army Resource Managers (Financial Management '88)	20 November 87
3.	Final FY87 Update to Active Component LCCM	15 December 87
4.	Circulate Draft Concept Papers for Reserve/National Guard and Civilian LCCM	28 February 88
5.	Reserve/National Guard LCCM (test)	30 April 88
6.	Operational Reserve/National Guard LCCM	30 June 88

5.0 PROBLEMS ENCOUNTERED

5.1 Training Cost Data Base

The training costs in the structured cost data base reflect all formal entry level and skill level training given by the Training and Doctrine Command (TRADOC) and Health Services Command (HSC). The costs are captured in a TRADOC data base, ATRM-159, and is directly fed to SRA for inclusion in AMCOS on an annual basis. There are two problems we encountered while working with the ATRM-159.

5.1.1 Inclusion of SQI and ASI Cost Data in AMCOS

Although the ATRM-159 contains costs for training that leads to the award of a skill qualification identifier (SQI) and additional skill identifiers (ASI), AMCOS does not reflect costs at that level of detail. There currently is no methodology developed that will allow us to distribute the costs of SQI and ASI training to the various MOS. As a result the structured cost data base does not reflect the total schoolhouse training costs associated with each MOS.

To correct this SRA can develop a methodology to incorporate the appropriate ASI and SQI costs into each MOS's training costs and be included in the structured cost data base. Depending upon the availability of funds, this option could be added to the active component model in the future.

5.1.2 Capturing NCO Development Course Costs

In addition, the ATRM-159 does not reflect NCO development course costs. Consequently the AMCOS model does not reflect these costs. NCO development courses (Primary leadership courses, basic NCO courses, and advanced NCO courses) are controlled and managed

at the installation level and there is no centrally controlled data base of course costs by MOS.

SRA can research existing Army data bases to determine if these course costs are available. A methodology could then be developed to capture these costs and include them in the structured cost data base. Again, depending upon the availability of funds this enhancement could be included in the active component model in the future.

5.2 Timeliness of Data

The AMCOS contract requires SRA to update the existing model data bases on an annual basis for the life of the contract. This was to have been done each September (6th month of each contract year); however, most Army data bases do not reflect the fiscal year end position until well after the end of the fiscal year. As a result SRA will need to delay updating the data base each year to take advantage of the Army's year end updates.

5.3 Data Base Update Procedures

To update the data base requires a sophisticated understanding of the IBM Personal Computer Disk Operating System. In future versions of AMCOS we will automate the update procedures to the extent that help screens will be available to walk the user through the update process. This will allow the user to be able to update the data bases easily and quickly.

6.0 CONCLUSION

Work on AMCOS has been extremely successful. An enhanced model has been delivered during this past reporting period enabling the Army to meet a short suspense date for the AFV Study. We are continuing the work on completion of the enhancements and development of the Reserve Component and the Civilian LCCM.

Figure 6.1 summarizes the status and development plan as of March 31, 1987. All years are contract years (March - March).

AMCOS
STATUS AND DEVELOPMENT PLAN

	MODEL		
COMMUNITY COVERED	**Life Cycle**	**Budget**	**Econometric**
Active Army Officer Enlisted	Completed Operational, Enhance 1988 Maintain 1989-91	Develop 1989 Enhance 1990 Maintain 1991	Develop 1989 Enhance 1990 Maintain 1991
Reserve Components Officer Enlisted	1st Priority Develop 1988 Enhance 1989 Maintain 1990-91	Develop 1989 Enhance 1990 Maintain 1991	Develop 1989 Enhance 1990 Maintain 1991
Civil Service General Schedule Wage Board	2nd Priority Develop 1988 Enhance 1989 Maintain 1990-91	Develop 1989 Enhance 1990 Maintain 1991	Develop 1989 Enhance 1990 Maintain 1991

FIGURE 6.1

AMCOS DEVELOPMENT PLAN

7.0 AUTHENTICATION

This semi-annual report is approved.

Richard W. Hunter, Ph.D.
Contractor's Project Director

David K. Horne, Ph.D.
Contracting Officer's
Representative

Working Paper

MPPRG 86-41 ~~87-4~~

AN ECONOMETRIC ESTIMATION OF THE

IMPACT OF THE NEW GI BILL ON HIGH QUALITY ARMY ENLISTMENTS

Cyril E. Kearl

October 1986

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In July 1985, the Veteran's Educational Assistance Program was replaced by the new G.I. Bill. This program saw the basic educational benefits increase from $5400 to $9600, while the soldier's contribution decreased from $2700 to $1200. Considering the implicit increased cost of this program, a major policy concern is whether the change in educational benefits has increased quality enlistments for the Army.

To investigate this issue ARI examined how high quality (GSMA) enlistments have changed and whether recent changes might be associated with education benefits programs. The results of the investigation represent a preliminary analysis of the effectiveness of these educational benefits. We find that the implementation of the new G.I. Bill has increased enlistments of Male High School Seniors and Graduates scoring in the upper 50th percentile on the AFQT by 9.7%.

Our analysis assumes that the supply of GSMA enlistees depends on environmental and economic factors, recruiting resources, and a variety of seasonal and local factors which are unobserved but which cause seasonal and regional differences in recruiting. We use a data set compiled by USAREC for forecasting enlistments (known as the EPM historical data base). This data set consists of quarterly observations of recruiting battalion variables. Its advantage is that it is current through FY1986 Quarter 2. Its limitation is that it includes a restricted set of variables. Most notably it does not include a variable for relative military compensation.

We assume a log-log model of enlistments based upon quarterly battalion data from FY82 through the second quarter of FY86. While the new educational benefits are available to both sexes, our dependent variable includes only

High Quality males (GSMA) enlistment contracts. Since the magnitude of the new G.I. Bill cannot be determined from either expenditures or physical measure, we use a dummy variable (equal to 1 for the quarters in which the new program was in effect and 0 otherwise) to capture the effect of the program. In addition, population (based on recruiter reports of high school senior enrollments) and local area unemployment rates are included to control for regional differences in economic conditions. Recruiting resources are controlled for by including both the number of recruiters and recruiting mission. It is assumed that recruiter effort is positively influenced by the high quality recruiting mission and negatively influenced by other recruiting missions. Because missions are set taking into account factors not included explicitly in the model, estimates based on actual battalion mission are likely to be biased. To correct for this, unbiased estimates of mission are obtained by using a two-stage procedure in which Army level GSMA mission and "other" missions are used as the respective indentifying variables. Finally, seasonal and regional factors are controlled for by including quarterly and brigade dummy variables.

Table 1 provides the results for the variables included. All are significant with the appropriate sign except for some of the quarterly and brigade dummies. In particular, the coefficient of the variable measuring the effect of the new G.I. Bill is highly significant with a coefficient of .0927 which implies a 9.7% increase in GSMA contracts as a result of implementing the new educational program.

One difficulty in using dummy variables is that they might be capturing the effect of unobserved leadership changes taking place simultaneous to the implementation to the new educational benefits. In obtaining unbiased

estimates of mission the educational dummy was included in both estimation of GSMA mission and other missions. One would expect leadership changes to affect all missions, the new educational benefits had a significant (and positive) effect on only the GSMA mission. While this does not demonstrate conclusively that the dummy variable for the new G.I. bill is capturing only the desired effects, it is consistent with that proposition.

GSMA contracts have increased by about 10% since the establishment of the new G.I. Bill. While these results are preliminary, they are consistent with time trend analyses that control for most major explanatory variables. Approximately 6,000 GSMA contracts would be expected in FY1986 as a result of implementing this program.

TABLE 1

Model Coefficients

Variable	Coefficient	t-statistic
Intercept	-.710	
Recruiters	.265	3.19
High quality mission	.522	11.89
Population	.226	7.19
Unemployment	.251	9.62
Other mission	-.122	-1.98
GI Bill	.093	3.49
First quarter	.019	0.81
Second quarter	.079	3.59
Third quarter	-.008	-0.39
Brigade 1	-.034	-1.49
Brigade 3	.267	10.55
Brigade 4	-.043	1.78
Brigade 5	.047	2.02

Working Paper

MPPRG ~~87-14~~ 86-39

OPTIMAL RECRUITING RESOURCE ALLOCATION (Rev.)

Cyril E. Kearl

November 1986

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I. INTRODUCTION

Recruiting mission matters. The United States Army Recruiting Command (USAREC) knows that changing recruiting quotas* affects the amount of effort expended by a recruiter. Yet allocation of mission to the various recruiting battalions** is done by systems that do not take into account the influence of that mission on recruiter effort and the resulting number of enlistments. In part, this is because traditional linear regression forms cannot be easily used both to account for the effects of mission on output and at the same time set the appropriate mission.

As an alternative, this paper, in Section III, presents estimates of the effects of mission on enlistments using a translog production function. The hypothesized diminishing effects of increased mission on enlistments is highly significant. In Section IV, the estimated coefficients are then used to allocate the FY1987 Second Quarter recruiting missions for each battalion so as to maximize total enlistments.

The fundamental drawback in the work presented here is that the specification does not include a relative wage variable. Although military wage data is uniform across the country, civilian wage data is not available for several recruiting battalions. This paper therefore represents a preliminary analysis and application to be further refined when more wage data is available. Nevertheless, this approach offers interesting insights and a promising solution to the problem of setting quotas for the various recruiting battalions.

---

* Referred to as recruiting missions by the Army. The terms are used interchangeable hereafter.

** The United States is divided geographically into 56 areas which are referred to as recruiting battalions. These recruiting battalions are grouped into 5 recruiting brigades.

II. BACKGROUND

The effort expended by individual recruiters is fundamental to the recruiting process. Typical model specifications which estimate the number of high quality male enlistment (GSMA) contracts include the number of recruiters as a variable but omit measures of recruiter effort*. This omission has acceptable consequences only if differences in recruiter effort are random (or recruiters exert identical levels of effort). Unfortunately, there is theoretical evidence that effort is not randomly distributed, but varies systematically with the rewards to production. Specifically, the level of recruiter effort can be shown to depend on the probability of achieving the particular recruiting mission and the reward payment structure**.

Recruiter effort has been omitted from most analyses of recruiter production because it is not completely observable. Although Holmstrom(1979) has demonstrated that using imperfect information about recruiter performance (specifically measurable production) in the reward structure improves performance, nevertheless, omitting information about effort creates biases in the estimated effects of the other explanatory variables which are included and also correlated with effort.

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* See Altman and Fechter(1967), Fernandez(1979), Goldberg(1982), Ash, Udis, and McNown(1983), Brown(1986), Dale and Gilroy(1985), and Cotterman(1986).

** For theoretical analysis of incentives on unobserved effort see Lazear and Rosen(1981), Green and Stokey(1983), Nalebuff and Stiglitz(1984). To focus specifically on quotas see Keren(1972). For research specifically on recruiter incentives see Dertouzos(1985).

Several studies have recognized that a relationship between recruiting mission and effort exists and have attempted to exploit this relationship to avoid omitted variable bias in estimating battalion enlistments. Jehn and Schugart(1976) include mission as a variable in estimating enlistment contracts, arguing that increased mission requires greater recruiter effort*. Daula and Smith(1985) modified this approach arguing that raising mission increases effort for those recruiting battalions which are achieving mission but has little effect on those battalions not achieving mission - they are already using optimal levels of effort.

These methods of accounting for the effects of recruiter effort on enlistments are adequate when the primary objective is to estimate the effects of demographic variables and other recruiting resources, but have several conceptual and empirical problems when the objective is to determine the proper policy for setting recruiting missions. The typical approach to setting recruiting mission is to estimate a labor supply model using expected levels of inputs to forecast expected production. This estimate then becomes the basis for establishing the appropriate recruiting mission. But if the size of the recruiting mission affects recruiter effort which in turn affects the number of enlistments, then mission is both an explanatory variable and a dependant variable. This circularity makes it necessary to omit mission as a dependant variable.

An alternative approach to setting mission is to choose a mission that maximizes GSMA contracts (implicitly maximizing recruiter effort).

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* Goldberg(1980) also recognizes the importance of recruiter effort in the enlistment process but chooses not to include estimates of its effect because of concerns about collinearity. See Goldberg(1982).

Unfortunately, where mission is given a linear specification, (as it was by Jehn and Schugart and Daula and Smith) the policy which maximizes output is to set mission as large as possible. For most variables a linear specification is workable because costs constrain the unlimited use of resources. This is not the case for recruiting mission. Setting a large mission has no greater explicit cost for USAREC than a small mission. It would follow that if recruiting mission has a positive effect on enlistments, it should be set as high as possible since there is no cost to doing so. This has the effect of doing away with any meaningful (or attainable) quotas and effectively eliminating mission as a policy tool.

This contradictory policy implication - set mission so high that there is no effective mission - highlights the fundamental shortcoming of using a linear specification the effect of recruiting mission. Put simply, mission and effort do not have a monotonic relationship. Achieving mission has costs for the recruiter - hard work. On the other hand, it has a payoff in the form of group recognition, improved working atmosphere, desirable future assignments, and increased chances for promotions. The decision by the recruiter to work harder requires a balance between the costs of additional work and the concomitant benefits - the increased chances of achieving mission times the payoff. When recruiting mission is set at low levels, achieving it requires little effort and increases in mission are achievable with little additional cost. In previous analyses, these recruiters are characterized as "demand constrained" since their recruiting mission is "constraining" their production*. As recruiting mission is increased, a recruiter must work harder to have the same chance of making mission. As long as the additional costs of this effort do not exceed the

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* See Daula and Smith (1986) for this characterization.

marginal benefit of this effort, the recruiter will respond to increased mission with more effort (and production). At some point, however, the recruiter will decide that the chances of making the increased mission are so small that there is no point in exerting any effort. At this point the recruiter becomes "supply constrained" since the available labor supply of high quality males will not enable the recruiter to achieve the recruiting mission at a level of effort he is willing to exert. Over this range, increases in mission may actually decrease recruiter effort (See Keren(1972) pp. 476-477)*.

For individual recruiters with equal recruiting resources, proportional recruiting missions, and heterogenous talents, we would expect the enlistment production of the "demand constrained" recruiters to be distributed around the recruiting mission with a second distribution for those "supply constrained" recruiters centered on a lower level of output. Carroll, Lee, and Rao(1986) observe this bimodal distribution of output in analyzing production for individual Navy recruiters but attribute it only to the heterogeneity of recruiter talents not recognizing the effect that recruiting mission has on this distribution**. So long as this underlying mixing distributions of individual recruiters has a finite variance, the enlistment production of the recruiting battalion will be normally distributed. Increases in battalion recruiting

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* Recruiters may not actually quit working but may instead stop working on the current mission and work instead on a future mission to avoid repeated failures. The problem with hiding this work is that some of the potential enlistees for next month may become impatient and enlist in another service or find civilian full time employment.

** Their failure to consider the effects of recruiting mission are undoubtedly due, in part, to the unusual way of missioning used by the Navy at the time of their study. See pp. 1373-1374.

mission ceteris paribus that are proportionately distributed to individual recruiters will increase battalion enlistments so long as the number of recruiters who become "supply constrained" and reduce effort is relatively small relative the increased effort of those who are "demand constrained". As the battalion recruiting mission grows and the number of "supply constrained" recruiters grow, increases in battalion output will be smaller and ultimately increased recruiting mission will actually cause battalion output to fall.

III. AN ALTERNATIVE APPROACH TO SETTING MISSION

The dilemma that has faced planners in setting recruiting mission has been a choice of approaches. One can omit mission from the empirical estimations basing mission on biased forecasts of GSMA enlistments (hoping the biases are small)* or one can include mission as an explanatory variable to avoid bias although this specification implies USAREC should set unattainable missions. The solution to this dilemma is to use a more flexible empirical form to estimate enlistment production. Such a form should be able to estimate both the positive and negative effects of mission on enlistments and should also include interaction effects for mission and other explanatory variables.

The translog production function meets these necessary requirements in estimating the effects of mission on production. This form is a special case for a Log/Log specification of the generalized quadratic function which can be interpreted as a second-order Taylor's-series approximation to a nonlinear

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*. This is the approach explicitly chosen by Fairchild(1985) in omitting mission from the estimation process.

function*. Frequently this functional form is used to restrict specifications to be homogenous and/or homothetic or alternatively to test for these conditions**. In this case, however its primary importance is that it includes interaction terms and "higher order" terms which makes it is possible to approximate output elasticities that vary with the level of resources being used. The form for a translog production function is:

$$\ln Q = \sum_i \alpha_i \ln X_i + .5 \sum_i \sum_j \beta_{ij} \ln X_i \ln X_j$$

One obvious difficulty with the translog specification is the large number of terms to be estimated with the inclusion of each additional variable. To avoid the proliferation of terms, the translog form is used only for the policy variables (recruiters and GSMA mission). While unemployment and other variables may have diminishing effects on recruiting, they can not be adjusted by USAREC planners. Other variables were assumed to shift production and are entered without interactions.

Using mission as an instrument for recruiter effort in a translog specification results in the following terms in the regression equation:

α_1 ln(Mission) + β_1 .5 ln(Mission) ln(Mission) +
α_2 ln(Recruiters) + β_2 .5 ln(Recruiters) ln(Recruiters) +
β_3 ln(Recruiters) ln(Mission) +
β_4 ln(Mission) ln(Unemployment) + β_5 ln(Mission) ln(Population) +
β_6 ln(Recruiters) ln(Unemployment)+ β_7 ln(Recruiters) ln(Population) +
α_3 ln(Unemployment) + α_4 ln(Population) +
Other factors that shift production;

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* See Lau and Mitchell (1971), Lau(1974), and Blackorby, Primont, Russell (1978) pp. 290-296.

** For a more detailed discussion of the properties of translog specifications see Brendt and Wood(1975) and Caves and Christensen(1980).

TABLE 2

Second Stage: Estimating the Effects
of Various Variables on GSMA Enlistments

Dependant Variable: Log of GSMA Enlistment Contracts

VARIABLE	PARAMETER ESTIMATE	T RATIO
INTERCEPT	-5.010872	-3.9857**
LN_RECR	1.967334	4.8456**
LN_REC2	-0.764668	-4.9951**
LN_HMIS	1.939487	7.1266**
LN_MIS2	-0.884487	-8.3519**
LN_POP	-0.221835	-1.5554
LN_UE	0.310847	1.5957
LN_AMOTH	-0.127947	-4.1461**
EDDUM	0.099656	6.2965**
LN_MUE	0.136571	3.0757**
LN_MPOP	0.101684	2.4371**
LN_MREC	0.435769	4.4336**
LN_RPOP	-0.023608	-0.4645
LN_RUE	-0.203807	-3.2438**
NORTHEAST A	-0.294926	-18.0320**
NORTHEAST B	0.143932	9.3828**
SOUTHEAST	0.199572	12.6402**
SOUTHWEST	-0.128106	-8.1505**
MIDWEST	0.048304	3.5553**
FIRST QTR	-0.037929	-2.8623**
SECOND QTR	0.089155	7.3636**
THIRD QTR	-0.015463	-1.2878

** Significant at the α = .05 level

Table 2 gives the results of the regression to estimate the parameters affecting enlistments. As hypothesized the coefficient of mission is positive and the coefficient of mission squared is negative. Both are significant at the .95 level supporting the hypothesis that increasing mission has a decreasing effect on battalion enlistments (and presumably effort). The interaction effects between mission and recruiters, population, and unemployment are all positive and significant at the .95 level. Increases in the number of

recruiters, population, and the unemployment rate enhance the effects of an increase in mission on enlistments.

In addition, the coefficients of recruiters and recruiters squared are opposite in sign and significant at the .95 level indicating that increasing the number of recruiters also has a positive but decreasing effect on enlistments. Both the estimated interactions between recruiters and population and the unemployment rates are negative. Recruiters in battalions with higher populations and unemployment rates are not necessarily more effective. However, the coefficient for the interaction between recruiters and population is not significant.

While the coefficient of population is negative, this should not be interpreted as an negative elasticity since it depends on the combined effect of population on enlistments in all terms including interactions. Table 3 gives the elasticities for this variable as well as for the unemployment rate, recruiters and mission. One effect of using a translog specification is that the elasticities depend on levels of resources being used so these will differ for each battalion and each period. Table 3 lists the elasticities based on average values for the entire sample and on average values for only FY1986 Second quarter - the last quarter used in estimation. There is little variation in the average elasticities for the variables of interest when comparing the overall average elasticities with those based on FY86 Q2 only. However when individual recruiting battalion data is used there are considerable variations in the estimated coefficients as is also indicated. While negative mission elasticities were computed, these were for only two recruiting battalions (Miami and Atlanta).

Because variables enter the estimation in several terms, interpretation of individual coefficients is not straightforward. However, for increases in mission to have a positive but diminishing effect on GSMA contract production (and ultimately a negative effect), α_1, the coefficient of the mission only term, must be positive and β_1, the coefficient of the mission squared term, must be negative.

Appendix A is a complete list the variables used in estimating enlistment production. For the most part the variables incorporated are from an operational USAREC data base used for setting GSMA mission. They consist of quarterly observations for the 56 recruiting battalions over the period 1st quarter FY1981 - 2nd quarter FY1986.

Since recruiting mission is a policy variable which can be set by USAREC at any desired level, it is likely that USAREC planners consider the impact of recruiting resources which are not specifically included in estimating this model, including special advertising campaigns and other recruiting incentives. These programs are numerous and not easily incorporated in the estimated model. Their effects are part of the model error structure. To the extent that USAREC anticipates the effects of these programs and incorporates them into mission, recruiting mission will be positively correlated with these errors. For example, a new advertizing campaign may result in a higher recruiting mission and more enlistments. In this case, a higher mission does not indicate greater effort, it reflects the same level of effort with additional resources. To correct for biases created by this problem, a two stage estimation procedure is used. In the first stage, battalion mission is estimated using variables used by USAREC planners with the total Army high quality mission as the identifying exogenous variable. The resulting unbiased estimates of mission (which exclude the

representing the battalions in the Philadelphia, New York, Boston Corridor; B representing the battalions in the remainder of the recruiting Brigade. While this distinction may be somewhat arbitrary, the divergence and strength of the signs indicate important regional differences which necessitate the distinction.

IV. ALLOCATING MISSION AMONG RECRUITING BATTALIONS

One purpose of a model is to assist the planner in establishing appropriate policy. One important task of USAREC planners is to allocate GSMA mission among the various recruiting battalions. For this purpose, the Army level GSMA mission for 3rd quarter FY1986 is distributed among the various recruiting battalions using the estimated model. Population and the unemployment rate are assumed to be the same as that in 2nd quarter 1986. USAREC estimates of the number of recruiters, and all other Army recruiting missions are used. The actual Army GSMA mission is assumed to be fixed.

The objective is to set mission is such a way as to maximize forecasted output holding other battalion resources constant. The resulting allocation is compared with the actual recruiting mission in Appendix B. When aggregated to the Recruiting Brigade, the proposed reallocation of mission appears modest giving a greater share of that mission to the Northeast(8.5%), Southwest(5.8%), and Midwest(0.9%) and reducing the mission shares of the West(-9.2%) and Southeast(-3.8%). Yet while the reallocations are modest at the brigade level, there are substantial variations in the estimated actual and optimal recruiting missions for the various recruiting battalions; 21 of the 56 recruiting battalions would require adjustments in their recruiting mission of more than 15%. In four of these the adjustment would have to be more than 30%. Despite

biasing effects of the unobserved variables) are then used in the second stage to estimate GSMA contracts. Tables 1 and 2 provide the results for both stages of the estimation procedure.

TABLE 1

First Stage: Obtaining an unbiased estimate of the Incentive Effects of Mission

DEPENDANT VARIABLE: Log of Battalion GSMA Mission

R-SQUARE 0.8048

VARIABLE	PARAMETER ESTIMATE	T RATIO
INTERCEPT	-8.983593	-35.3294**
LN_RECR	0.652705	16.7546**
LN_UE	0.072837	3.1032**
LN_POP	0.140303	6.9263**
LN_AMHQ	1.025081	47.5724**
LN_RDOD	0.052626	2.0947**
EDDUM	0.041926	2.0139**
FIRST QTR	-0.010683	-0.5618
SECOND QTR	-0.020793	-1.1146
THIRD QTR	0.008991	0.4534

**Significant at the α = .05 level

The most striking result of the first stage estimation, shown in Table 1, is the overriding importance of the Army GSMA mission in determining the battalion mission. Not surprisingly the coefficient of Army GSMA mission is not significantly different from 1.0. When the Army mission increased by 1% the battalion recruiting mission is increased by 1%.

Joint tests of the coefficients for mission and recruiters indicate that these elasticities are significant at the .95 level. A joint test of the coefficients for population indicates that the elasticity is significant at the .90 level despite the fact that the coefficient for population alone was not significant. Unfortunately, the same is not true of the joint effects of the coefficients which determine the elasticity of unemployment. This shortcoming is due perhaps to the large amount of introduced collinearity.

TABLE 3
Average Input Elasticities

VARIABLE	ALL OBSERVATIONS EST. AVG. ELASTICITY	1986 Q2 EST. AVG. ELASTICITY	1986 Q2 RANGE OF BATTALIONS ELASTICITY
GSMA Mission	.21	.20	.63 to -.03
Recruiter	.37	.37	.65 to .09
Unemployment	.18		.17 .26 to .08
Population	.24	.24	.28 to .16

EDDUM, one of the other variables used in this specification is a 0/1 variable to account for the effects of the implementation of the New G.I. Bill which went into effect in July 1985. For those quarters including 4th quarter FY1985 and after, this variable is given a value of 1 and of 0 otherwise. The coefficient of .0996 is significant and consistent with previous estimations. (See Kearl(1986))

LN_AMOTH is the log of the total army mission excluding GSMA mission. Multiple missions place multiple demands on the recruiter's time. This variable is intended to capture this competition effect. Its estimated coefficient of -0.1279 is significant with the expected sign.

The remaining variables are 0/1 variables intended to control for regional and seasonal differences. The Northeast Brigade is given two dummy variables: A

this dramatic reshuffling of mission, the forecasted gains enlistments would be small - about 1.8%. One likely cause for this would be a substantial amount of noise in the data for individual battalions which may make individual forecasts based on the estimated model subject to large errors.

A second way to consider allocating recruiting mission using this estimated model is to determine the level of mission at which increases in mission stop increasing enlistments. Since quotas have no explicit costs for the Army, there would be a benefit maximizing use of mission for USAREC planners. Using mean inputs for FY1986 Q2, with an average mission of 270 and an elasticity of .20, it would require an increase in mission to 336, an increase of 24.4%, to cause the elasticity to fall to 0.0. Based on anecdotal evidence this seems much larger than even the most optimistic recruiter would think could be added to mission without demoralizing the battalion.

VI. CONCLUSION

The foregoing model analysis and estimation supports the theory that recruiting mission matters. However the forecast results are much less conclusive. On average, the amount of mission to be added to each recruiting battalion to achieve optimal production seems unrealistically large. But since average recruiting mission has never exceeded 280, forecasting enlistments with an increase in recruiting mission to more than 337 is far beyond the range of reliability that can be expected. It is possible that the model underestimates the magnitude of the second order effect of increasing mission because there are few observations in which battalions have had missions set high enough to cause its effect to be negative.

At the individual battalion level, the gains from reallocating mission are estimated to be small while the changes in individual battalion missions would be large. A single equation model may exclude many important factors which affect local recruiting. This may result in unrealistic forecasts for any particular battalion. One way to account for local factors is to include battalion dummy variables. The difficulty of using dummy variables is that it is never clear exactly what local conditions are being included. Battalion missions ought to be adjusted account for lack of recruiter access to a particular local school system or existence of a portion of the population who are not fluent in the English language. But dummies may be building slack into missions due to inexperienced recruiters or commanders and may obscure the effects of qualitative variables. Developing a data set which includes all of the potential regional differences is costly and time consuming. Examination of specific regional conditions that explain large reallocations could narrow the number of variables to be considered and could add insights into factors that affect recruiting everywhere.

Another concern with the foregoing analysis is the limited number of variables that are assumed to affect the recruiting process. Aside from the factors that affect various regions and the omission of relative compensation (which will be added to the data in the near future), there is a lack of adequate data to measure the effects of programs designed to enhance GSMA recruiting (including the number of two year enlistments available, advertizing, regional attitudes toward both military service and the military working environment, and enlistment bonuses). Part of the problem is that some of these programs such as educational benefits and the two-year enlistment option cannot be quantified easily. Dummy variables are often used to crudely measure the

effects of a program for which there are no reliable data on cost (eg. Dale & Gilroy(1984), Goldberg(1982), Daula & Smith(1986)). This technique does not capture changes in the magnitude of a particular program (such as an increase in the number of two-year enlisments available). Since the size and scope of these programs is frequently adjusted, more sensitive measures are needed.

One strength of this approach is its flexibility in permitting planners to constrain changes in mission allocations to minimize the effects of random noise (for example the current USAREC algorithyms limiting changes in the mission allocation to be not more than 10% for any particular recruiting battalion could easily be accommodated). Given the problem of random noise affecting any method of allocating recruiting mission where the amount of local data is limited, this approach may be the best available.

Despite weaknesses in the forecasted results, this approach to missioning and enlistment forecasting integrates some of the insights of Agent-Principle approach to unobservable effort into the existing approach focusing on estimating labor supply. The theory that mission increases output at a decreasing rate and that excessive mission reduces enlistments is strongly supported by the data.

APPENDIX A

Identification of the Variables Used in Estimating Enlistment Production

First Stage

DEPENDENT VARIABLE

LN_MBHQ - Log of Battalion GSMA Mission

INDEPENDENT VARIABLES

INTERCEPT
LN_RECR - Log of the number of Bn Production Recruiters
LN_UE - Log of Bn Unemployment Rate
LN_POP - Log of Bn Population of 17-21 year old males
LN_AMHQ - Log of Total Army GSMA Mission
LN_RDOD - Log of Other DOD Recruiters
EDDUM - A 0/1 variable equal to 1 for the New G.I. Bill
FIRST QTR -
SECOND QTR- Quarterly 0/1 Variables
THIRD QTR -

Second Stage

DEPENDENT VARIABLE

LN_CBMHQ - Log of Battalion GSMA Contracts

INDEPENDENT VARIABLES

INTERCEPT
LN_RECR - Log of the number of Bn Production Recruiters
LN_REC2 - .5 * The Squared Log of Production Recruiters
LN_HMIS - Log of Bn GSMA Mission
LN_MIS2 - .5 * The Squared Log of GSMA Mission
LN_POP - Log of Bn Population of 17-21 year old Males
LN_UE - Log of Bn Unemployment Rate
LN_AMLQ - Log of Total Army Mission less GSMA Mission
EDDUM - A 0/1 variable equal to 1 for the New G.I. Bill
LN_MUE - Log of GSMA Mission * Log of Unemployment
LN_MPOP - Log of GSMA Mission * Log of Population
LN_MREC - Log of GSMA Mission * Log of Recruiters
LN_RPOP - Log of Recruiters * Log of Population
LN_RUE - Log of Recruiters * Log of Unemployment
FIRST QTR
SECOND QTR- Quarterly 0/1 Variables
THIRD QTR
NORTHEAST BDE A - 0/1 Variable for Boston/N.Y./Phila corridor
NORTHEAST BDE B - 0/1 Variable for Remainder of N.E. Region
SOUTHEAST BDE
SOUTHWEST BDE - 0/1 Variable for other Recruiting Regions
MIDWEST BDE
WEST BDE

APPENDIX B

Comparison of Optimal Allocation of Battalion
Actual and Optimal Recruiting Mission
(Based on a fixed Total Army GSMA Mission)

BATTALION	MISSION FY86 Q3 ACTUAL	OPTIMAL	DIF
ALBANY	172	200	16.3%
BALTIMORE	400	345	-13.8%
BOSTON	260	247	-5.0%
CONCORD	176	181	2.8%
HARRISBURG	324	328	1.2%
NEW HAVEN	161	206	28.0%
LONG ISLAND	191	276	44.5%
NEWBURGH	163	244	49.7%
FT MONMOUTH	172	231	34.3%
PHILADELPHIA	228	269	18.0%
PITTSBURGH	395	330	-16.5%
SYRACUSE	343	307	-10.5%
NORTHEAST BDE	2413	2619	8.5%
ATLANTA	311	253	-18.6%
BECKLEY	199	217	9.0%
CHARLOTTE	182	189	3.8%
COLUMBIA	189	209	10.6%
JACKSONVILLE	322	266	-17.4%
LOUISVILLE	239	232	-2.9%
MIAMI	317	249	-21.5%
MONTGOMERY	263	259	-1.5%
NASHVILLE	250	236	-5.6%
RALEIGH	176	197	11.9%
RICHMOND	226	225	-0.4%
SAN JUAN	96	134	39.6%
SOUTHEAST BDE	2770	2666	-3.8%
ALBUQUERQUE	186	209	12.4%
DALLAS	285	291	2.1%
DENVER	304	261	-14.1%
HOUSTON	272	280	2.9%
JACKSON	210	242	15.2%
KANSAS CITY	279	266	-4.7%
LITTLE ROCK	202	227	12.4%
NEW ORLEANS	164	212	29.3%
OKLAHOMA CITY	200	214	7.0%
SAN ANTONIO	201	235	16.9%
SOUTHWEST BDE	2303	2437	5.8%

BATTALION	MISSION FY86 Q3 ACTUAL	OPTIMAL	DIF
CHICAGO	268	316	17.9%
CINCINNATI	238	231	-2.9%
CLEVELAND	392	360	-8.2%
COLUMBUS	234	246	5.1%
DES MOINES	239	252	5.4%
DETROIT	280	315	12.5%
INDIANAPOLIS	271	282	4.1%
LANSING	318	321	0.9%
MILWAUKEE	364	340	-6.6%
MINNEAPOLIS	351	314	-10.5%
OMAHA	304	273	-10.2%
PEORIA	258	298	15.5%
ST LOUIS	320	322	0.6%
MIDWEST BDE	3837	3870	0.9%
SAN FRANCISCO	231	266	15.2%
HONOLULU	130	146	12.3%
LOS ANGELES	407	372	-8.6%
PHOENIX	273	231	-15.4%
PORTLAND	301	236	-21.6%
SACRAMENTO	356	291	-18.3%
SALT LAKE CITY	244	249	2.0%
SANTA ANA	334	312	-6.6%
SEATTLE	366	297	-18.9%
WEST BDE	2642	2400	-9.2%

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Working Paper

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ALLOCATING GSMA MISSION FOR FY 1987 QUARTER 4

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Allocating GSMA Mission for FY 1987 Quarter 4

I. Background

In a previous working paper, "Optimal Recruiting Resource Allocation," a procedure for allocating GSMA recruiting mission to recruiting battalions was outlined. Using a translog production function, mission was allocated so as to maximize expected enlistments. This paper represents a refinement of that model and includes wage and enlistment incentive variables in the econometric specification. These variables have a highly significant effect on enlistments and have improved the model's forecasting accuracy.

Using quarterly data from 1st Quarter 1981 through 1st Quarter 1987, an enlistment equation is estimated. Missions are distributed among the battalions to maximize expected enlistments. However, the allocated missions are constrained to be within 10% of their values a year earlier (fourth quarter 1986).

Using this entire 1981 - 1987 time series has the advantage of observing enlistment production with commanders that have a variety of skills and abilities. The resulting missions implicitly assume average leadership. Superior commanders may exceed these missions while inferior commanders may fall short. In the following analysis, the allocated mission is compared to several external criteria including mission achievement in fourth Quarter 1986 and the highest mission ever achieved. It is possible to correctly allocate a higher mission to a unit that failed to achieve mission under similar circumstances a year earlier due to poor leadership. It is also possible for the model to systematically misallocate mission in excess of what is possible because of unmeasured variables that affect recruiting in a particular region. For each recruiting brigade some battalions are identified for which the mission allocation is inconsistent with past performance. To improve the allocation model requires identifying those variables which cause systematic errors in mission.

The allocation assumes a USAREC 4th Quarter 1987 GSMA mission of 15,700 - a reduction of 270 from mission the same quarter the previous year. The number of recruiters for each recruiting battalion and the battalion GSMA population are assumed to be the same as those values in 2nd Quarter 1987. Relative earnings (the ratio of military to civilian earnings) and unemployment are projected to the fourth Quarter using an autoregressive forecast. Unfortunately, relative earnings series were unavailable for the Detroit, Miami, San Juan, and Seattle recruiting battalions. These battalions were therefore excluded

from the allocation procedure and were assigned the same fraction of total mission as they had received the previous year.

Tables 1 through 5 list the results of this allocation procedure by recruiting brigade, the mission fractions, and the mission and performance for the previous year.

II. First Recruiting Brigade

Table 1 outlines the allocation of mission for the First Recruiting Brigade. The sum of the battalion missions would result in virtually no change in the mission share from 20.26% a year ago to 20.25%. The reduction of 96 is due to the lower total mission. Of the 12 battalions, 8 would have their missions lowered. In each case, except Newburgh, this is consistent with achievement in 1986; none of these recruiting battalions were able to achieve assigned mission. It is also anticipated that economic conditions for these recruiting battalions will continue to improve with accompanying reductions in unemployment rates (except Pittsburgh and Albany) and reduced relative earnings. In no case would the proposed mission exceed the highest previously achieved GSMA mission.

Increases in mission are indicated for the Baltimore, Harrisburg, Long Island, and Syracuse battalions. This reallocation is questionable for Long Island and Baltimore since neither of these battalions achieved their mission the year earlier, relative earnings are expected to decline, and assigned missions are higher than those previously achieved. Although Harrisburg also failed to achieve mission in the previous year, it is anticipated that the local economy will not improve, and we know that the Harrisburg battalion actually achieved a higher mission in 2nd Quarter 1986. On the other hand, the model reduces mission in Pittsburgh and Newburgh despite the fact that Newburgh achieved mission a year earlier and Pittsburgh is forecast to have a continued sluggish economy.

Summary: The aggregate and individual allocations are consistent with other external evidence with the exceptions of Baltimore, Long Island, Newburgh, and Pittsburgh.

III. Second Recruiting Brigade

Table 2 outlines the allocation of mission for the Second Recruiting Brigade. The sum of the battalion missions would result in an increase in the Brigade's mission share from 18.27% a year ago to 20.47% - an increase of 186. Of the 12 battalions, only 3 would have lower mission - Atlanta, Miami, and San Juan. Furthermore, in the case of Miami and San Juan these reductions are due solely to the lower total mission. Their mission share

was held constant since they were not included in the missioning process.

The remaining 9 battalions would be allocated larger recruiting missions. This coupled with the fact that only Nashville and Charlotte failed to achieve their mission in 1986 indicates that this brigade may have been undermissioned previously. In addition, Charlotte is forecast to have continued improvement in the local economy making recruiting more difficult. Despite these increases, only Montgomery would be allocated a mission larger than previously achieved.

Summary: The proposed mission allocation is consistent with external factors except for the allocation to Charlotte.

IV. Fourth Recruiting Brigade

Table 3 outlines the allocation of mission for the Fourth Recruiting Brigade. The sum of the battalion missions would result in a reduction in the Brigade's mission share from 27.12% a year ago to 26.95% - a reduction of 154. Of the 13 battalions, 8 would have their missions lowered. For the Chicago, Cincinnati, Cleveland, Columbus, Indianapolis, and Lansing battalions this is inconsistent with performance in the previous year performance in which all of these battalions achieved larger missions. However, the local economies in Cincinnati, Cleveland, Columbus, and Lansing are forecast to be improved over a year ago making recruiting more difficult.

For the Des Moines battalion mission is increased over the previous year. While this battalion did not achieve mission that year, it was very close (98.96%). In addition, local economic conditions are expected to deteriorate somewhat improving the recruiting environment.

Summary: While a reduction in mission for the Fourth recruiting brigade may be appropriate, that generated by the model seems large when compared with previous year's production. As mentioned above, this may simply reflect superior leadership or may be due to the existence to recruiting factors in the area which result in underestimating recruiting potential. This is particularly true for Minneapolis which virtually achieved its previous year's mission and is expected to have a slightly deteriorated local economy.

V. Fifth Recruiting Brigade

Table 4 outlines the allocation of mission for the Fifth Recruiting Brigade. The sum of the battalion missions would result in a increase in the Brigade's mission share from 16.32% a year ago to 16.63% - but a decrease of 29 because of the lower total mission. Of the 10 battalions, half would have increased

mission: Houston, Jackson, Little Rock, New Orleans, and Oklahoma City. All of these battalions, except Jackson have exceeded their 1986 fourth Quarter recruiting mission substantially and (except for Houston) are expected to continue to be areas of high unemployment and low relative earnings. The poor previous Jackson performance is inconsistent with its low wages and high unemployment - similar to conditions in the New Orleans and Little Rock battalions. Consequently, increases for the Jackson battalion seems justified.

Of those battalions for which a reduced mission is allocated, all exceeded mission for the previous year. For the Dallas and San Antonio battalions some improvement in economic conditions is anticipated which may make recruiting more difficult. However, in the other three battalions, little change is anticipated in local economic conditions which would explain the lower missions.

Summary: Based on past performance the Fifth Recruiting Brigade has enjoyed the greatest improvement in recruiting success in the country. Some of this success is the result of favorable economic conditions which are reflected in increased mission allocations for five of the recruiting battalions. On the other hand the reductions in recruiting mission for 5 of the battalions seem inconsistent with this past success and the model may have under-allocated mission to the Fifth recruiting brigade.

VI. Sixth Recruiting Brigade

Table 5 outlines the allocation of mission for the Sixth Recruiting Brigade. The sum of the battalion missions would result in a reduction in the Brigade's mission share from 26.91% a year ago to 26.57% - a reduction of 179. Of the 9 battalions, 7 would have their missions lowered. Of these, only Seattle and Sacramento failed to achieve mission the previous year. However, Los Angeles and Phoenix are expected to have improved local economic conditions which should make recruiting more difficult.

More perplexing are the increased mission for San Francisco and Honolulu, both of which failed to achieve mission in fourth Quarter 1986. For San Francisco, this may be due to its high performance prior to that period, and for Hawaii, to an anticipated deterioration in the economy.

Summary: As with the Fourth Brigade, the model has reduced the recruiting mission in the West. It is possible that this reduction may be too large for the Phoenix and Salt Lake City battalions, particularly since there is an anticipated deterioration in the Salt Lake City economy which should improve recruiting outlook.

VII. Conclusions

The mission allocations in Tables 1 - 5 are the result of a model that is an alternative to the EPM model currently being used by USAREC. The allocations are consistent with other missioning criteria (in particular, past performance) for most battalions. In addition, by making use of a wide set of variables, the model may be used to simulate mission strategy in response to a variety of hypothetical situations and provide guidance for the allocation of recruiting resources. Although the mission allocation model is improved over earlier versions, better measures of youth earnings, recruiting expenditures for advertising, and enlistment incentives would make the estimates more reliable for all battalions.

Table 1
Allocation of GSMA Mission
for 1987 4th Quarter

First Brigade

Recruiting Battalion Name	Proposed Mission FY 1987 Q4	Percent	As of FY 1986 Q4 Mission	Percent	Achieved
FIRST BDE	3139	20.25%	3235	20.26%	86.71%
ALBANY	187	5.96%	194	6.00%	78.87%
BALTIMORE	446	14.21%	418	12.92%	83.73%
BOSTON	236	7.52%	263	8.13%	84.79%
CONCORD	187	5.96%	208	6.43%	66.35%
HARRISBURG	370	11.79%	359	11.10%	92.76%
NEW HAVEN	164	5.22%	183	5.66%	91.80%
LONG ISLAND	215	6.85%	196	6.06%	75.51%
NEWBURGH	166	5.29%	184	5.69%	101.09%
FT MONMOUTH	162	5.16%	182	5.63%	92.31%
PHILADELPHIA	225	7.17%	251	7.76%	83.67%
PITTSBURGH	397	12.65%	442	13.66%	88.01%
SYRACUSE	384	12.23%	355	10.97%	95.49%

Table 2
Allocation of GSMA Mission
for 1987 4th Quarter

Second Brigade

Recruiting Battalion Name	Proposed Mission FY 1987 Q4	Percent	Mission as of FY 1986 Q4 Mission	Percent	Achieved
SECOND BDE	3094	20.47%	2918	18.27%	100.17%
ATLANTA	313	10.12%	340	11.65%	105.29%
BECKLEY	216	6.98%	197	6.75%	117.26%
CHARLOTTE	226	7.30%	206	7.06%	87.38%
COLUMBIA	229	7.40%	208	7.13%	103.37%
JACKSONVILLE	381	12.31%	346	11.86%	97.40%
LOUISVILLE	263	8.50%	239	8.19%	105.02%
MIAMI	344	11.12%	350	11.99%	92.57%
MONTGOMERY	317	10.25%	288	9.87%	101.39%
NASHVILLE	273	8.82%	249	8.53%	91.97%
RALEIGH	189	6.11%	172	5.89%	104.65%
RICHMOND	250	8.08%	228	7.81%	101.75%
SAN JUAN	93	3.01%	95	3.26%	98.95%

Table 3
Allocation of GSMA Mission
for 1987 4th Quarter

Fourth Brigade

Recruiting Battalion Name	Proposed Mission FY 1987 Q4	Percent of Mission	As of FY 1984 Q4 Mission	Percent	Achieved
FOURTH BDE	4177	26.95%	4331	27.12%	101.29%
CHICAGO	270	6.46%	300	6.93%	103.67%
CINCINNATI	235	5.63%	253	5.84%	102.37%
CLEVELAND	375	8.98%	417	9.63%	98.56%
COLUMBUS	239	5.72%	266	6.14%	100.38%
DES MOINES	317	7.59%	288	6.65%	94.79%
DETROIT	336	8.04%	342	7.90%	82.46%
INDIANAPOLIS	276	6.61%	307	7.09%	103.58%
LANSING	332	7.95%	369	8.52%	101.63%
MILWAUKEE	383	9.17%	372	8.59%	109.14%
MINNEAPOLIS	377	9.03%	419	9.67%	94.03%
OMAHA	358	8.57%	352	8.13%	111.93%
PEORIA	317	7.59%	288	6.65%	110.76%
ST LOUIS	362	8.67%	358	8.27%	105.59%

Table 4
Allocation of GSMA Mission
for 1987 4th Quarter

Fifth Brigade

Recruiting Battalion Name	Proposed Mission FY 1987 Q4	Percent of Mission	As of FY 1986 Q4 Mission	Percent	Achieved
FIFTH BDE	2577	16.63%	2606	16.32%	113.16%
ALBUQUERQUE	197	7.64%	203	7.79%	109.36%
DALLAS	280	10.87%	312	11.97%	130.77%
DENVER	310	12.03%	345	13.24%	109.86%
HOUSTON	337	13.08%	306	11.74%	121.90%
JACKSON	250	9.70%	227	8.71%	77.53%
KANSAS CITY	286	11.10%	318	12.20%	101.89%
LITTLE ROCK	264	10.24%	240	9.21%	121.25%
NEW ORLEANS	212	8.23%	193	7.41%	129.02%
OKLAHOMA CIT	241	9.35%	240	9.21%	113.33%
SAN ANTONIO	200	7.76%	222	8.52%	114.87%

Table 5
Allocation of GSMA Mission
for 1987 4th Quarter

Sixth Brigade

Recruiting Battalion Name	Proposed Mission FY 1987 Q4	Percent of Mission	As of FY 1986 Q4 Mission	Percent	Achieved
SIXTH BDE	2712	17.50%	2880	18.03%	99.10%
SAN FRANCISCO	268	9.88%	255	8.85%	86.67%
HONOLULU	147	5.42%	134	4.65%	85.82%
LOS ANGELES	396	14.60%	440	15.28%	113.41%
PHOENIX	277	10.21%	308	10.69%	98.70%
PORTLAND	310	11.43%	345	11.98%	103.48%
SACRAMENTO	355	13.09%	369	12.81%	87.26%
SALT LAKE CITY	243	8.96%	270	9.38%	107.41%
SANTA ANA	321	11.84%	357	12.40%	98.60%
SEATTLE	395	14.56%	402	13.96%	98.01%

Working Paper

MPPRG 87-25

ESTIMATING THE HIGH QUALITY POPULATION BY AREA

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May 1987

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Estimating the High Quality Population by Area

Cyril E. Kearl

One of the primary challenges for the Army and the Recruiting Command has been recruiting quality individuals. These have been defined as scoring in the upper 50% of the Armed Forces Qualifying Test (Categories I - IIIA). To properly allocate recruiting resources, the number of these people for various regions of the country must be identified. Although these individuals constitute 50% of the total population, they are not uniformly distributed across the country. Therefore, it would be incorrect to assume that half of the population of any particular area of the country would score at or above 50 on the AFQT.

To determine the size of the quality population in any particular area, USAREC relies on the Military Entrance Processing Command (MEPCOM) which administers the AFQT, on a voluntary basis, to High School Seniors across the country and compiles the results by High School. High School Seniors constitute an important part of the quality enlistment market and knowledge of the size of the quality population in area high schools gives valuable information about the total quality market for the area.

A question has arisen about the proper interpretation of the results of the AFQT tests administered by MEPCOM and the proper method of aggregating results for a geographic area containing more than one high school. If high quality students attended the high schools at random and took the test at random, the resulting fraction of those who score in Categories I-IIIA at any particular high school would be an unbiased (that is, on average, correct) estimate of the true proportion of quality seniors in that high school. The sum, across schools, of quality seniors divided by the sum of those taking the examination would give an unbiased estimate of the true proportion of quality seniors for the particular area of interest.

The problem in estimating the number of high quality students in a particular area, or even in a particular high school, is that students who take the test are probably systematically different from those who do not take the test. Since taking the test is voluntary, a particular student's decision depends on the costs and on the benefits of the test. The test takes approximately three hours to complete, time that has alternative uses. Testing is also unpleasant. The benefits of taking the test include an opportunity to gain desired training and work in a chosen occupation, qualification for enlistment bonuses, and eligibility for educational benefits. For some students these benefitsldo not exceed the costs of

testing and those alternative benefits they perceive they will gain by attending college or in entering some alternative civilian occupation. This may be particularly true of bright students - ones that would be in Category I-IIIA.[1] As a result, the estimated proportion of quality students for any school based on AFQT testing can be biased because smarter, more affluent students choose not to test. In aggregate this bias is significant. While the test is scored to include 50% of the population in Category I-IIIA, Verdugo and Nord (1987) show that aggregating MEPCOM estimates of the quality would result in only 34.8% of the population being in this category.

This indicates that for any particular school those voluntarily taking the test are not a representative sample. Despite this, it is still possible to get unbiased estimates of the fraction of the population in Category I-IIIA by using a two step estimation procedure: First estimating the probability of taking the AFQT and then estimating the probability of being in Category I-IIIA. This procedure, outlined in Maddala (1983), is used by Orvis and Gahart (1987) to estimate the fraction of the population taking the YATS that are Category I-IIIA. Unfortunately, his procedure requires additional information about those taking the test (such as parental education, age, race, grade, grade point average, number of math classes, prior contact with the military, etc.). At present, this sort of information is not collected by MEPCOM. However the requisite information could probably be collected with a few preliminary questions when the test is administered, or perhaps by querying schools about the academic achievements of those taking the test.

This technique could also be used to estimate the population fractions in the various subcategories (Cat I, II, IIIA, IIIB, IV) but the precision of the estimates would depend on the number of people taking the test.

The problem currently confronting USAREC is that many high schools have a low number of students taking the AFQT. As a result, estimates of the quality population fraction for these schools are extremely imprecise. In these cases, USAREC computes the quality fraction for the entire area which it then applies to the schools with low testing rates. To derive the area fractions, USAREC aggregates the fractions for all of the High Schools in the area weighing each fraction by the school's response rate. The quality fractions in schools with higher response rates are given greater weight. This procedure would be appropriate if the distribution of AFQT is similar for the different high schools in an area. Schools with higher response rates would give less biased estimates of the true quality composition for the area. This proposition is empirically

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[1] It might also be true that those who anticipate doing poorly on the AFQT and would derive little benefit may also decide not to take the test.

testable. If schools with higher response rates have less bias, then the aggregated fraction of high quality students in these schools should be closer to .5 than the aggregated fraction of high quality students in schools with low response rates.

On the other hand, schools in an area may have different response rates because differences in their distribution of AFQT scores causes them to have different fractions of high quality students. Under these circumstances the schools with high response rates will have a lower percentage of students in Categories I-IIIA. The USAREC procedure, by giving more weight to the high response schools in computing the area quality fractions and then applying the result to the low response schools, may actually exaggerate the effects of the bias.

An alternative procedure would be to apply a stratified sampling approach with each school treated as a different stratum. This approach does not reduce the inherent bias created by students with high AFQT not taking the test. It could, however, increase the precision of the resulting estimates if there are significant variations in the distribution in AFQT between different schools. This procedure, outlined in Cochran(1977), weights the observed fraction in Category I-IIIA for each school by the fraction of the total population in that school. This technique would not be effective, however, if the largest schools had the worst response rates and were the most biased and the least precise.

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Manpower and Personnel Policy Research Group

Working Paper MPPRG 88-25

ARMY GSMA FORECASTS: FY 1989

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APPROVED FOR DISTRIBUTION TO SPONSOR/PROPONENT

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ARMY GSMA FORECASTS: FY 1989

The number of GSMA enlistment contracts has continued to decline for Fiscal Year 1988. Over the past two years, GSMA contracts have declined more than 20%-- from a high of 62,393 in FY86 to 49,024 in FY88. This has been the result of two forces that have acted simultaneously to depress recruiting: reductions in recruiting resources and improved economic (labor market) conditions.

TABLE 1

ARI FORECASTS OF GSMA CONTRACTS: FY86 - FY88

Date	Forecasts	Actual	Error (percent)
FY86			
Q1	15,343	15,379	-0.2
Q2	16,541	16,836	-1.8
Q3	14,019	14,260	-1.7
Q4	15,342	15,918	-3.6
TOTAL	61,245	62,393	-1.8
FY87			
Q1	14,613	15,044	-2.9
Q2	16,152	15,367	5.1
Q3	13,123	12,355	6.2
Q4	13,902	13,284	4.7
TOTAL	57,790	56,050	3.1
FY88			
Q1	12,960	12,949	0.0
Q2	14,379	13,902	3.4
Q3	11,679	11,010	5.7
FY88Q4	12,210	11,163	8.6
TOTAL	51,228	49,024	4.3

Reductions in recruiting resources continued in FY88. Its most obvious effect was a decline in the number of two-year ACF seats. In FY86 more that 11,500 ACF two-year seats were filled; by FY88 this number had fallen to less than 4,000. Over this same period, enlistment bonus dollars have also fallen by more than 25%. In addition, a small, but important source of quality contracts -- those receiving high school diplomas in night school -- were given a separate recruiting mission box, eliminating them from the count of GSMA contracts and reducing recruiter incentives to enlist them. While the number of recruiters has increased over this

period, from just over 4,900 to more than 5,250, more than half of this increase has taken place in the past six months so that its full impact on enlistment contracts is not yet being felt.

While recruiting resources have been reduced, the economy continues into its sixth year of recovery, and has been unexpectedly strong over the past year. This has increased the competition the Army faces in attracting quality recruits. One indication of this competition is that youth unemployment rates have continued to fall. In FY87 youth unemployment was expected to be about 16.6% but actually fell to 15.0%. Because some analysts had predicted a faltering economy, it seemed unlikely that this level of unemployment could be maintained. And as recently as February, the Congressional Budget Office had predicted an unemployment rate of 16%. In fact, enlistment forecasts made at the beginning of FY88 were predicated on the CBO estimate of 16% youth unemployment rate. However, unemployment did not climb back to 16%; instead it has continued to fall. By June 1988, youth unemployment had reached 13.3%. While it has increased slightly since then, it is still below 14%. In addition, continued modest but significant declines in the target youth population, and in military earnings relative to civilian earnings have made recruiting more difficult.

Since FY87Q1, the reductions in recruiting resources and improved labor market conditions have worked to depress enlistment contracts and have resulted in larger than normal forecasting errors. By the fourth quarter of FY88 quality enlistment contracts were over-predicted by more than 8% (12,210 forecast versus 11,163 actual), the largest quarterly error since the model was built.

Table 2 provides GSMA forecasts for FY89 and FY90. Forecasts for FY89 are nearly 12% lower than the forecasts for FY88, a substantial reduction. Their similarity to actual FY88 production suggests, however, that this level of production is not an aberration in the data. Recruiting conditions are not expected to improve dramatically over FY88.

TABLE 2

ARI FORECAST OF GSMA CONTRACTS: FY89-90

Quarter	FY89	FY90
Q1	11,792	12,693
Q2	13,354	13,914
Q3	11,309	11,600
Q4	12,730	12,998
Total	49,185	51,205

The strong economy is expected to carry over into FY89. This should be reflected in a steady unemployment rate of around 14% for the first half of FY88 and deteriorating slightly in the last two quarters to 14.2%. On the other hand, it is unlikely that unemployment will drop much more than its current level since this would likely lead to levels of inflation above the current 5% and result in tighter monetary policy by the Federal Reserve.

There are several forecasts of a mild recession for the fall of 1989. Given the length of our current recovery, such a recession is possible although its timing is uncertain. Forecasts for FY90 are based on an unemployment rate of 14.5% which may be too conservative if a recession actually occurs. In addition, it is assumed that youth population will continue to decline over both years.

In addition to uncertainty about the economy there is uncertainty about recruiting resources. Undoubtedly, reductions in enlistment incentives, advertising, travel, and other costs of recruiting have aggravated an already difficult recruiting environment. If future reductions in Defense Department spending are shared by the recruiting command, it will further reduce enlistments. On the other hand, inclusion of High School Diploma Graduates (HMA) as GSMA contracts should increase the quality count modestly.

Finally, it is not clear what long run effect over-missioning will have on recruiter effort. In each quarter since FY87Q1, aggregate enlistments have fallen short of the aggregate recruiting mission. Based on current forecasts and recruiting missions for FY89, it seems likely that this pattern will continue. If recruiters do not view the mission as a realistic goal, it may cease to provide incentives for recruiter effort.

Manpower and Personnel Policy Research Group

Working Paper MPPRG 88-26

BATTALION MISSIONS AND PRODUCTION
FOR GSMA CONTRACTS - FY 1989

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Battalion Missions and Production for GMSA Contracts - FY 1989

Over the past two years recruiting has become more challenging. In successive years total GSMA enlistment contracts have fallen by more than 10% each year. The difficulties of achieving GSMA recruiting mission have been reflected in the recruiting brigades, recruiting battalions, and individual recruiters in achieving their respective missions. The recruiting shortfall has been the product of two forces: 1) improved economic conditions that have served to increase competition for high quality youth, and 2) reduced recruiting budgets resulting in fewer enlistment incentives and less advertising. These trends are expected to continue throughout FY 1989.

ARI produces forecasts by quarter for each of the recruiting battalions and aggregates them to the Brigade level. These forecasts are based on parameter estimates from an autoregressive model specification which includes population, ACF seats, production recruiters, military compensation, civilian earnings, and recruiting missions.

The accuracy of the forecasts depends on the level of aggregation. There can be large differences within recruiting battalions between predicted and actual levels of quarterly GSMA enlistments. Over the period 1981-1988, these differences averaged approximately 9.5%. Aggregating to annual brigade forecasts reduces these errors to about 3.5%. For aggregate annual forecasts the differences between predicted and actual GSMA contracts are reduced to less than 3%.

BATTALION FORECASTS

The forecasts for the various recruiting battalions are listed by brigade in the Appendix Tables A1-A5. Since there is not sufficient historical data to estimate the reorganized First Brigade, a combined GSMA contract estimate is given for battalions 1G (New York City) and 1H (Newburgh).

For the first quarter (the only quarter for which mission has been allocated to particular battalions), only twelve of the 55 recruiting battalions are expected to achieve their GSMA recruiting mission:

First Brigade - Boston, Brunswick, Harrisburg, Syracuse
Second Brigade - Columbia
Fourth Brigade - Chicago, Detroit
Fifth Brigade - Albuquerque, Houston, New Orleans, San Antonio

Because of the size of the assigned aggregate mission in the succeeding three quarters, it is unlikely that there will be any increase in the number of battalions making GSMA mission in the remainder of the fiscal year.

AGGREGATED FORECASTS

Table 1 presents aggregated quarterly forecasts and recruiting missions for FY1989 (excluding the Puerto Rico recruiting battalion).

Table 1

USAREC GSMA Enlistment Contract Forecasts and Mission, FY1989

FY1989	Contracts[1]	Mission
Q1	11,567	13,320
Q2	13,016	14,600
Q3	10,954	11,847
Q4	12,200	13,415
TOTAL	47,737	53,182

This forecast is more than 10% less than the assigned recruiting mission for the year. The recruiting mission exceeds expected contracts by 15% and 12% during the first two quarters of the year, making mission achievement particularly unlikely. The expected contract shortfall drops during the third and fourth quarters to 8% and 10% respectively. Table 2 presents expected GSMA quarterly contracts by brigade.

[1] This forecast differs somewhat from the 49,185 figure derived from the ARI Time-Series Forecasting Model published in Army GSMA Forecasts: FY 1989, Working Paper 88-25, Oct 1988. The differences between that estimate these forecasts are due to 1) exclusion of Puerto Rico Recruiting Battalion from these data; 2) the use of different slightly data sets, variables, and statistical methods; and 3) random forecasting error. Despite these differences, the forecasts differ by less than 2.5% when the omission of Puerto Rico from the battalion data is estimated.

Table 2

Quarterly GSMA Brigade Forecasts FY1989

FY1989	1ST BDE	2ND BDE	4TH BDE	5TH BDE	6TH BDE	USAREC
Q1	2,147	2,304	2,475	2,581	2,061	11,567
Q2	2,383	2,452	2,816	3,032	2,333	13,016
Q3	1,856	2,091	2,366	2,677	1,963	10,954
Q4	2,012	2,272	2,725	3,097	2,093	12,200
TOTAL	8,398	9,119	10,383	11,388	8,450	47,737

An additional issue for recruiting brigades concerns the fairness of the mission allocation. A fair allocation of recruiting mission is one that gives all brigades an equal opportunity for success. Ironically, when the aggregate recruiting mission is set higher than "expected" contracts, a fair allocation of recruiting mission is one that no recruiting brigade has a very good chance of making. One way of measuring fairness is to compare the percentage of the recruiting mission assigned to a particular recruiting brigade and its expected share of enlistment contracts. Table 3 lists the fraction of total enlistments expected from each brigade and the fraction of first quarter GSMA recruiting mission assigned.

TABLE 3

Percentage of GSMA Contracts contributed by Brigade

		1ST BDE	2ND BDE	4TH BDE	5TH BDE	6TH BDE
Mission	Q1	18.1	19.7	21.8	22.1	18.4
Expected	Q1	18.6	19.9	21.4	22.3	17.8
Contracts	Q2	18.3	18.8	21.6	23.3	17.9
	Q3	16.9	19.1	21.6	24.4	17.9
	Q4	16.5	18.6	22.3	25.3	17.2

A mission share of 18% in the 1st brigade, while slightly below expected contract share in the first and second quarter, will represent a relatively large share in the last two quarters

of the year when less than 17% of expected enlistments will occur in the Northeast. Conversely, the 5th brigade will enjoy a relatively small mission share of the GSMA mission if their mission share remains at 22% while their production grows to more than 25% of the USAREC total. In the 2nd and 4th brigades production is expected to remain a constant fraction of total GSMA production. In the 6th brigade, the expected production share will be consistently below its current mission share of 18.4%. In first quarter alone, 6th Brigade can be expected to fall 19% short of the assigned mission. If the mission share is not reduced, this brigade will have the most difficult time achieving mission.

In short, a fairness criterion for allocating recruiting mission will result in a reduction in the 1st Brigade's share during the second half of the year and in the 6th Brigade's mission share. It will also result in an increase in the mission share for the 5th Brigade throughout the year, ironically increasing an already unrealistic recruiting mission.

CONCLUSION

Faced with a continued strong economy and reduced recruiting resources, USAREC will continue to have a difficult time achieving its enlistment mission. Forecasts for the current year that are more than a 1,000 contracts lower than the 49,024 achieved in FY1988. A deterioration in economic conditions which would improve recruiting conditions cannot be expected before fourth quarter or even FY90. In the mean time, there are no obivious solutions short of increasing recruiting resources, or accessing populations that are not currently being recruited.

Total mission achievement is a key criterion in evaluating recruiter performance. Since total mission is not achievable without achieving GSMA mission, either few recruiters will receive satisfactory evaluations, or USAREC will have to keep a second set of more realistic performance standards that can be used to rate recruiters. Neither alternative is a very satisfactory solution. Unrealistic performance standards (recruiting missions) are unlikely to provide effective recruiter motivation.

With GSMA recruiting missions unattainable, recruiters have few incentives to increase efforts in more productive recruiting areas because there are few rewards for doing so. With recruiter rewards primarily focused on GSMA and total contracts, it is impossible to know whether shortfalls in other mission boxes are due to reduced market availability or because recruiters have no incentives to allocate their time to markets where there can be no payoff as long as higher quality missions cannot be met.

APPENDIX
Table A-1

Quarterly Battalion GSMA
Forecasts FY1989

First Brigade					
	ALBANY	BALTIMORE	BOSTON	BRUNSWICK	HARRISBURG
Q1	137	272	168	163	276
Q2	165	343	170	149	284
Q3	111	298	137	117	205
Q4	118	303	145	119	236
TOTAL	531	1217	621	547	1001

	NEW HAVEN	NEW YORK CITY/ NEWBURGH	PHILADELPHIA	PITTSBURGH	SYRACUSE	TOTAL
Q1	117	360	144	226	285	2147
Q2	98	403	175	273	323	2383
Q3	77	327	141	208	234	1856
Q4	86	348	149	236	272	2012
TOTAL	378	1437	608	943	1114	8398

APPENDIX
Table A-2

Quarterly Battalion GSMA
Forecasts FY1989

Second Brigade

	ALTANTA	BECKLEY	CHARLOTTE	COLUMBIA	JACKSONVILLE	LOUISVILLE
Q1	257	152	198	203	322	181
Q2	245	172	227	205	331	209
Q3	184	137	180	178	286	171
Q4	185	146	199	178	295	193
TOTAL	870	607	804	764	1235	754

	MIAMI	MONTGOMERY	NASHVILLE	RALEIGH	RICHMOND	TOTAL
Q1	273	225	183	149	160	2304
Q2	266	243	217	141	197	2452
Q3	267	208	179	144	157	2091
Q4	284	242	209	154	186	2272
TOTAL	1090	917	788	589	700	9119

APPENDIX
Table A-3

Quarterly Battalion GSMA
Forecasts FY1989

Fourth Brigade

	CHICAGO	CINCINNATI	CLEVELAND	COLUMBUS	DES MOINES	DETROIT
Q1	199	119	265	149	156	260
Q2	199	152	299	176	180	278
Q3	169	139	252	146	165	199
Q4	185	155	292	168	185	263
TOTAL	751	564	1109	638	687	1000

	INDIANAPOLIS	LANSING	MILWAUKEE	MINNEAPOLIS	OMAHA	PEORIA	TOTAL
Q1	207	317	225	198	208	171	2475
Q2	247	325	279	228	258	196	2816
Q3	219	256	238	188	221	175	2366
Q4	261	290	252	225	243	207	2725
TOTAL	935	1187	994	839	930	748	10383

APPENDIX
Table A-4

Quarterly Battalion GSMA
Forecasts FY1989

Fifth Brigade

	ALBUQUERQUE	DALLAS	DENVER	HOUSTON	JACKSON	KANSAS CITY
Q1	161	343	182	319	152	312
Q2	185	391	267	356	195	344
Q3	171	352	223	350	171	291
Q4	189	444	291	422	165	322
TOTAL	707	1530	963	1447	682	1269

	LITTLE ROCK	NEW ORLEANS	OKLAHOMA CITY	SAN ANTONIO	ST LOUIS	TOTAL
Q1	208	140	192	275	299	2581
Q2	286	152	233	291	332	3032
Q3	228	140	204	280	266	2677
Q4	261	177	220	319	287	3097
TOTAL	983	609	849	1165	1184	11388

APPENDIX
Table A-5

Quarterly Battalion GSMA
Forecasts FY1989

Sixth Brigade

	SAN FRANCISCO	HONOLULU	LOS ANGELES	PHOENIX	PORTLAND
Q1	211	90	215	240	235
Q2	211	96	247	271	240
Q3	179	110	246	218	206
Q4	182	117	253	257	212
TOTAL	783	413	961	986	893

	SACRAMENTO	SALT LAKE CITY	SANTA ANA	SEATTLE	TOTAL
Q1	285	186	257	343	2061
Q2	331	240	286	412	2333
Q3	262	200	227	315	1963
Q4	272	208	253	338	2093
TOTAL	1150	834	1022	1408	8450

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ESTIMATING ENLISTMENTS:
GROSS VERSUS NET CONTRACTS

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Estimating Enlistments: Gross versus Net Contracts

Cyril E. Kearl

I. Introduction

Current models of recruiting focus on net enlistment contracts, which are a function of both labor supply and losses from the Delayed Entry Program (DEP). Changes in either of these factors affect net contracts. Yet losses from DEP have been largely neglected in enlistment models. Recent increases in DEP loss have highlighted the importance of this factor.

This paper (1) outlines the problems of estimation and forecasting that result from neglecting DEP loss, and (2) estimates models of DEP loss, gross contracts, and net contracts.

While more reliable estimates of enlistments can be obtained using gross contracts, models of net enlistments can be developed to take DEP loss into account.

II. Background

Studies of Army recruiting have focused on the effects of economic activity and recruiting resource variables on net enlistment contracts. (See Daula and Smith(1986), Dale and Gilroy(1985), Polich and Dertouzos(1986), and Goldberg(1987)). In addition, USAREC's performance evaluation system is based on

production of net enlistment contracts. Forecasts of enlistments focus on this variable, and recruiting resources are allocated so that a desired number of net enlistment contracts can be achieved. Neglected in this process is the distinction between net enlistment contracts and gross enlistment contracts. By construction, gross and net enlistment contracts are related, the difference being DEP loss, and simply expressed as:

$$\text{NET} \equiv \text{GROSS} - \text{DEPLOSS}$$

DEP loss represents those individuals who sign an enlistment contract but prior to their accession date, decide not to enter military service. DEP loss and Gross Contracts can be represented by the following equations:

$$\text{Gross Contracts} = X_{11}\beta_{11} + X_{12}\beta_{12} + \epsilon \qquad \epsilon \sim N(0,\sigma_{\epsilon}^2)$$

$$\text{DEP loss} = X_{22}\beta_{22} + X_{21}\beta_{21} + \cap \qquad \cap \sim N(0,\sigma_{\cap}^2)$$

where X_{11}, and X_{22} are variables exclusively affecting gross contracts and DEP loss, respectively. If $X_{12} = X_{21} = Z$ represent variables that affect both gross contracts and DEP loss, the reduced form for net contracts would be:

$$\text{Net Contracts} = X_{11}\beta_{11} + X_{22}\beta_{22} + Z(\beta_{12} - \beta_{21}) + (\epsilon - \cap)$$

Models of enlistment supply relying on net contracts are estimated with this reduced form. This highlights a problem with present models of enlistments. By focusing exclusively on factors which are related to labor supply, they have omitted important variables that primarily affect DEP loss. If these omissions are serious, the result is likely to be biased parameter estimates and large errors of estimate.

DEP loss can have several causes: some individuals may become DEP losses because they find better job offers; some may undergo changing personal circumstances which make military life less desirable; some may gain information that causes them to reevaluate military service. While these cannot be directly observed, many observable factors would be expected to affect DEP loss. Observable factors can be broadly categorized as economic, DEP policy, and characteristics of individuals in DEP.

Economic factors would be expected to affect the availability of alternative opportunities in the same way that these factors affect the initial supply of enlistment contracts. These include measures of economic activity, economic resources, and recruiting resources. However, the effects should have the opposite sign, ie. factors that increase enlistments are likely to decrease DEP loss.

DEP policy variables, on the other hand, are less likely to have a direct effect on gross enlistments and are not usually included in enlistment models. DEP management can have pervasive effects on the character of the DEP. Not only can these policies

affect the size and duration of DEP but can also affect the personal characteristics of those in DEP.

Finally, individual characteristics will influence DEP loss. Some of these characteristics are measured by various surveys such as the YATS propensity variable. Unfortunately most of the important individual characteristics are not observable and may continue to be omitted.

As long as DEP policy and individual variation are constant, their omission from the estimation of net contracts may not create a statistical problem. Unfortunately, this has not been the case. Of the expected accessions in 1987, nearly 10% were lost to DEP loss - a substantial increase over the 6% rate of 1986.

III. The Data

USAREC has used net contracts as an almost exclusive indicator of enlistment success. As a result there is very little data available on either DEP loss or gross enlistment contracts. While little aggregate data is available, USAREC has maintained individual records of those signing enlistment contracts in 1986 and 1987. In all, there were more than 147,000 GSMA[1] enlistment contracts during this two year period. These

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[1]GSMA refers to Graduate and Senior Males scoring in the upper 50 %ile of the Armed Forces Qualification Test and are a primary group toward which recruiting activities are directed.

records have been aggregated to calculate quarterly observations of the DEP loss, gross contracts, and personal characteristics for each recruiting battalion during FY 1986-1987. Table 1 gives average values for these variables as well as their range over the two year period. Battalion net GSMA enlistment contracts, by quarter, as well as other recruiting variables, were obtained from the USAREC data files. These include battalion population, area unemployment rates, measures of youth attitudes toward the military as measured by YATS (Propensity), DOD recruiters, GSMA recruiting mission, other recruiting missions, and local advertizing.[2] In addition, quarterly dummies and brigade dummies are included. In all, 448 observations (56 battalions * 2 years * 4 quarters) were used in the analysis.

One serious problem with the variables used in models of enlistment is the strong colinearity between recruiting mission, the number of recruiters, the number of DOD recruiters, and the size of the population (correlations range from .79 to .81). In part, these are due to USAREC policies which determine the inter-battalion allocation of recruiters and recruiting missions primarily on the basis of population. Multicolinearity can cause estimated models to be unstable and make interpretation of

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[2]Notably absent are measures of military/civilian wage relationships. There are few sources for disaggregate youth wages. Several previous studies starting with Fernandez(1982) have relied on regional manufacturing wages to capture differences in civilian wages. More recently, Goldberg(1987) has derived youth wages from 1980 census data. This data was not available for this paper. Alternative youth wage estimates based on census and cps data are being developed but are not yet fully developed.

Table 1

Characteristics of the Average
Recruiting Battalion's
DEP
FY1986 - FY1987

VARIABLE	MEAN	MINIMUM	MAXIMUM
DEPLOSS Quarterly DEP loss	22.714	1.000	98.000
AGE Age in months	247.501	235.634	282.650
MAR Fraction Married	0.074	0.012	0.332
BLACK Fraction Black	0.114	0.000	0.430
AFQT	70.262	60.875	73.679
TERM Enlistment Term in years	3.299	2.938	3.600
ACF Fraction receiving Army College Fund	0.474	0.231	0.767
BONUS Fraction receiving Enlistment Bonus	0.251	0.041	0.623
DEPEND Number of Dependents	0.301	0.027	1.619
DEPLEN Time in DEP in months	116.288	76.532	177.917
TOTDEP Expected time in DEP in months	214.492	148.868	260.267
DEPSIZE Size of DEP	528.241	91.829	1020.767
DEPPART Fraction of DEP completed (DEPLEN/TOTDEP)	0.543	0.373	0.723

coefficients difficult. To correct this, GSMA contracts, population, DOD recruiters, local advertising expenditures, DEP loss, DEP size, and the recruiting missions were divided by the number of recruiters in the battalion. This reduced the colinearity to reasonable levels (.22 - .30), and has a straightforward interpretation.

IV. Results

A. Explaining DEP loss with Net Contract variables

Table 2 contains a comparison of the results of estimating a typical set of independent variables against gross enlistments, net enlistments, and DEP loss. The results for DEP loss are surprisingly bad. Parameter estimates for unemployment rates are significant and have the expected sign: increased unemployment reduces DEP loss. Recruiting mission is also significant. Its positive sign suggests that recruiters with higher missions have less time to manage DEP and consequently greater DEP losses.[3] Population per recruiter also significantly reduces DEP loss and

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[3]An alternate explanation may be that higher recruiting missions reflect past recruiting success, larger DEP and consequently larger DEP loss. A similar but far more severe problem occurred using DEP size as a dependant variable. While it behaved well in OLS models, it caused dramatic sign reversals and other bizarre effects in three stage models. Since DEP size is directly related to past recruiting success, including it in three stage models of enlistments was equivalent to including lagged dependant variables.

Table 2

Comparison of Parameter Estimates for Net and Gross Enlistments and for DEP loss

Variable	Net Enlistments	Gross Enlistments	DEP Loss
Constant	-0.90035**	-0.50948**	-0.46655
	(0.17055)	(0.14486)	(0.60457)
GSMA Mission	0.76244**	0.73334**	0.62594**
per Recruiter	(0.04280)	(0.03635)	(0.15171)
Population	0.12815**	0.09995**	-0.18640*
per Recruiter	(0.02508)	(0.02130)	(0.08891)
Other missions	-0.04249	-0.03959	-0.04153
per recruiter	(0.03868)	(0.03285)	(0.13709)
Unemployment	0.20197**	0.15256**	-0.30690**
	(0.02705)	(0.02298)	(0.09589)
Propensity	0.06414**	0.04458*	-0.12885
	(0.02351)	(0.01997)	(0.08333)
DOD Recruiters	-0.16030**	-0.16086**	-0.05883
per Army Rctr	(0.04443)	(0.03774)	(0.15750)
Local Advertising	0.02380	0.02929*	0.08760
per recruiter	(0.01949)	(0.01556)	(0.06909)
1st Quarter	0.01833	0.01141	-0.05285
	(0.01647)	(0.01399)	(0.05839)
3rd Quarter	-0.06749**	-0.0509**	0.22249**
	(0.01733)	(0.01472)	(0.06144)
4th Quarter	-0.04441**	0.02761*	0.72810**
	(0.01692)	(0.01437)	(0.05999)
1st Brigade	-0.07486**	-0.07206**	-0.02238
	(0.02286)	(0.01942)	(0.08103)
2nd Brigade	0.06593*	0.05221*	-0.14107
	(0.02782)	(0.02363)	(0.09860)
5th Brigade	0.10358**	0.08296**	-0.17282*
	(0.02342)	(0.01989)	(0.08300)
4th Brigade	-0.08941**	-0.08450**	-0.04791
	(0.02368)	(0.02011)	(0.08393)
RMSE	0.12005	0.10197	0.42555
R-Squared	0.8031	0.8245	0.4272

Propensity for the military has the expected effect of reducing DEP loss although it is not significant. In addition, DEP loss is significantly higher in the third and fourth quarters and in the fifth brigade (this may be related to the high levels of enlistments in the southwest. On the other hand, the estimated equation generally fits the data poorly with an R^2 of .43 and a within sample root mean squared error (RMSE) of .426. Since the variables used are typical of those used in estimating net enlistment models, this indicates that these models do not include an appropriate set of variables to account for DEP loss. An R^2 of .43 is generally consistent with findings by Nelson and Patchell (1987) in which they attribute about 30% of the increase in DEP loss to economic factors.

Considering the poor fit of DEP loss, the estimates of net contracts model and gross contracts model have surprisingly similar results. In both cases, only non-GSMA recruiting missions failed to be significant. Since net contracts represents the difference between gross contracts and DEP loss, the difference in magnitude the coefficients of net and gross enlistments should depend on the inverse of the sign of the coefficient of DEP loss. By and large this conditions is met by most of the coefficient with the exception of DOD recruiters, recruiting missions, and two of the quarter dummies. As expected, the gross enlistments model has a better fit with a RSME nearly 2 percentage points lower than the RSME for Net

enlistments. The R^2 is also modestly higher for Gross enlistments (.82 v .80).

B. Alternative models of DEP loss

Obviously estimation of DEP loss must include a wider variety of variables than is typically included in models of net enlistments. Table 3 presents estimates of a model of DEP loss with a variety of variables to measure DEP characteristics in addition to economic and recruiting resource variables. Of the economic variables from the original OLS, only the mission variable is still significant (although its magnitude is drastically reduced). In addition, local advertising not only increases DEP loss, it is significant. Unemployment variables no longer are significant even though lag values improve their fit. However, their signs are consistent with hypothesis that changes in economic conditions motivate DEP loss. Several of the variables representing DEP characteristics are significant. In particular, having a greater proportion of married recruits, bonus, and Army College Fund (ACF) users tends to reduce DEP loss. While having an older DEP increases DEP loss. Enlistment term, per cent of Blacks in DEP and AFQT were insignificant.

Two variables are used to capture DEP policy. The first, time in DEP measures the average time recruits have spent in DEP. This measure of DEP policy is highly significant and as expected DEP loss tends to increase as the average time in DEP increases.

Table 3
OLS Parameter Estimates for
DEP loss (including measures
of DEP characteristics)

Parameter	Estimate
Constant	-37.88844**
	(10.72715)
GSMA Mission per recruiter	0.35729*
	(0.13978)
Unemployment	-0.14175
	(0.14581)
Unemployment lagged 1 qtr	0.25066
	(0.14690)
Propensity	0.05045
	(0.07485)
DOD Recruiters	-0.20626
	(0.14123)
Local Advertizing	0.13382*
	(0.05727)
% of DEP completed	0.62158
	(0.41803)
Time in DEP	1.09263**
	(0.35532)
% Married in DEP	-2.22618*
	(0.97980)
% Bonus users in DEP	-1.18808**
	(0.31562)
% ACF users in DEP	-0.67097*
	(0.30161)
% Black in DEP	-0.48026
	(0.27714)
AFQT of DEP	2.02450
	(1.20260)
Term of Service in DEP	0.56869
	(0.74094)
Age of DEP	4.04380**
	(1.53530)
1st Quarter	0.24432**
	(0.07003)
3rd Quarter	-0.3159388
	(0.09994)
4th Quarter	0.32438**
	(0.07925)
1st Brigade	-0.01581
	(0.07099)
2nd Brigade	0.10348
	(0.08065)
4th Brigade	-0.14069
	(0.07550)
5th Brigade	-0.02121
	(0.07697)

() std error

* - α = .05
** - α = .01

The second, per cent of DEP completed, is not significant. It is hypothesized both recruits and recruiters may postpone reporting DEP loss until it is nearly time for accession. While this variable has the expected sign, DEP loss increases as the end of the DEP approaches, the hypothesis that it has no affect cannot be rejected. This result represents a substantial improvement in fit over the initial model. The RMSE, while still very high is reduced from .43 to .35 and the R^2 is increased to .62. While there is still substantial room for improvement, using selected DEP variables, increases the within sample fit[4].

B. Improving Models of Enlistment Contracts

Initial estimations indicate that more precise parameter estimates and can be achieved by estimating models of gross enlistment contracts. While results are presented only for an Ordinary Least Squares model, similar improvements results hold in complex models of enlistments as long as models of net contracts neglect DEP loss. USAREC, however, is interested in the net gain in enlistment contracts. Estimates of gross contracts is not adequate for this purpose. Consequently estimates of DEP loss must be used to improve models of net enlistment contracts. Tables 4 and 5 present two alternative

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[4]When the specification of the dependant variable is expressed as DEP loss rather than DEP loss per recruiter, including the number of recruiters increases R^2 to move than .80. Unfortunately is specification is not particularly illuminating.

methods of doing this. Table 4 contains the results of a reduced form estimation in which the additional variables of the DEP loss estimation are added to the gross contract equation. The model is estimated using a Generalized Least Squares approach. Compared to the estimated model of net contracts in Table 2, most of the coefficients are reduced in sized (with even larger reductions in their standard errors). One disturbing result is

Table 4

3SLS Reduced Form for Net Contracts

Variable	Parameter Est.
Constant	3.42025
	(3.28220)
GSMA Mission per recruiter	0.75854**
	(0.04343)
Population per recruiter	0.04922
	(0.03098)
Other Missions per recruiter	0.00506
	(0.03941)
Unemployment	0.11609**
	(0.04472)
Propensity	0.06204**
	(0.02307)
DOD Recruiters per recruiter	-0.14454**
	(0.04367)
Local Advertising per recruiter	0.02058
	(0.01769)
% Married in DEP	-0.10485
	(0.13333)
% of DEP completed	0.00331
	(0.04489)
% ACF Users in DEP	-0.51259**
	(0.08725)
% Black in DEP	-0.10463
	(0.07634)
AFQT in DEP	0.67206
	(0.39326)
Time in DEP	-0.45702**
	(0.11452)
Term of Service in DEP	-0.91333**
	(0.22505)
Age of DEP	-0.60634
	(0.45082)
% Bonus Users in DEP	0.54612**
	(0.09073)
1st Quarter	-0.07447**
	(0.02151)
3rd Quarter	0.08394**
	(0.03069)
4th Quarter	-0.00190
	(0.02489)
1st Brigade	-0.11641**
	(0.02229)
2nd Brigade	0.00310
	(0.02727)
4th Brigade	-0.09186**
	(0.02333)
5th Brigade	0.05172*
	(0.02225)

() - standard error

* - $\alpha = .05$
** - $\alpha = .01$

that the effects of population per recruiter, while still positive, is not significant in the reduced form. In addition, the effects of recruiting in the first quarter become highly significant and negative when estimated with the reduced form. When compared to the DEP variables estimated model of DEP loss in Table 3, only time in DEP, term of service, and percent of bonus use give significant, consistent results. The percent of ACF use has a significant negative effect on net contracts[5] In addition, the percent of Blacks in DEP and the percent married in DEP have a sign inconsistent with those estimated for the DEP loss model although these are not significant. Overall, the within sample fit improves dramatically for the reduced form with a RMSE of .11. The fit is comparable to that of the gross enlistment contracts model.

An alternate to the reduced form is to estimate structural equations for net enlistment contracts and DEP loss with DEP loss included as a right hand side variable in the net contract equation. This has the potential advantage over the reduced form of separating the effects of the variables which may be important for policy purposes. These equations are estimated using three stage least squares since random errors to DEP loss also affect net contracts.

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[5]When percentage of bonus use is excluded from the model, the precentage of ACF use becomes significant and positive. It is probable that its sign reflects the high degree of colinearity between these variables over the two year period.

The results of this estimation are contained in Table 4. Within this structure some of the perversity of the reduced form are eliminated. Population per recruiter has a significantly positive effect on enlistments, and percent of DEP receiving ACF has a negative (although not significant) effect on DEP loss. As expected, DEP loss has a significant, negative effect on Net enlistment contracts. The coefficient, while appearing low actually has a larger than expected effect. Since over the two year period, DEP loss averaged .26 per recruiter per quarter and GSMA enlistments averaged 3.03, a 1% increase in DEP loss (.03) results in a .12% reduction in net contracts (.04) so that DEP loss is estimated to have a greater than one to one effect on net contracts. Overall the within sample fit for Net contracts is .12.

V. Conclusions

Net enlistment contracts are the result of gross enlistment contracts and DEP loss. Yet most models of enlistment neglect DEP loss in specification and estimation. As a result, estimation errors tend to large and omitted variable bias is probable. One way to avoid this is to estimate parameters using gross enlistment contracts. Since these do not depend on DEP loss. The resulting parameter estimates tend to have lower standard errors and a better within sample fit.

Table 5
3SLS Estimates of Structural Model for Net Contracts and DEP loss

Net Contracts Variable	Parameter Est
Constant	-0.91902**
	(0.16713)
GSMA Mission per recruiter	0.84290**
	(0.04443)
Population per recruiter	0.09922**
	(0.02478)
Other Missions per recruiter	-0.04983
	(0.03746)
Unemployment	0.16228**
	(0.02751)
Propensity	0.04787*
	(0.02338)
DOD Recruiters per recruiter	-0.16791**
	(0.04387)
DEP loss per recruiter	-0.12149**
	(0.02267)
Local Advertizing per recruiter	0.03434
	(0.01936)
1st Quarter	0.01185
	(0.01632)
3rd Quarter	-0.04037*
	(0.01784)
4th Quarter	0.04345
	(0.02350)
1st Brigade	-0.07806**
	(0.02259)
2nd Brigade	0.04661
	(0.02753)
4th Brigade	-0.09564**
	(0.02341)
5th Brigade	0.08179**
	(0.02343)

DEP loss Variable	Parameter Est
Constant	-37.64529**
	(10.46412)
GSMA Mission	0.39533**
	(0.13874)
Unemployment	-0.10458
	(0.14302)
Unemployment lagged 1 Qtr	0.22508
	(0.14311)
Propensity	0.03279
	(0.07449)
DOD Recruiters per recruiter	-0.19701
	(0.14069)
% of DEP completed	0.65206
	(0.40787)
Time in DEP	1.30059**
	(0.34694)
% Married in DEP	-2.22854*
	(0.95558)
% Bonus users in DEP	-1.40027**
	(0.30813)
% ACF users in DEP	-0.32086
	(0.29418)
% Black in DEP	-0.41629
	(0.27032)
AFQT in DEP	1.58934
	(1.17524)
Term of Service in DEP	1.08173
	(0.72173)
Age in DEP	4.02338**
	(1.49890)
Local Advertizing per recruiter	0.12782*
	(0.05723)
1st Quarter	0.28601**
	(0.06922)
3rd Quarter	-0.37083**
	(0.09832)
4th Quarter	0.33262**
	(0.07821)
1st Brigade	0.00276
	(0.07075)
2nd Brigade	0.10838
	(0.08010)
4th Brigade	-0.13692
	(0.07518)
5th Brigade	-0.00280
	(0.07644)

Of the variables which measure DEP policy, Time in DEP proved consistently significant while percent of DEP completed did not matter. While this result is not surprising, its magnitude is. A one percent increase in average time in DEP increases DEP loss by more than one percent. In the reduced form the direct effects of a 1% increase in Time in DEP results in a .45% decrease in enlistments. DEP policies that increase Time in DEP surely must be justified on the basis of dramatically increased recruiting success.

Surprisingly few of the variables designed to measure DEP characteristics proved to be significant. However both enlistment bonuses and ACF, in addition to being recruiting tools, are associated with lower levels of DEP loss. Other significant characteristics, including marital status and age while having plausible effects may prove difficult to use or control in practice. A more useful forum to evaluate the effects of individual characteristics is undoubtedly in disaggregates model of DEP loss using individual observations.

Overall these models can be viewed as an exploration of DEP loss. The results are promising. Controlling for DEP loss can results in both better parameter estimates and better forecasts of enlistments. It remains to be seen if models of DEP loss can give significant insights into optimal DEP policy.

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GSMA Enlistment Forecasts
by Recruiting Battalion:
First Quarter, 1989

Cyril E. Kearl

June 1988

APPROVED FOR DISTRIBUTION TO SPONSOR/PROPONENT

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GSMA Enlistment Forecasts for Recruiting Battalions: First Quarter FY 1989

The last two years have been difficult for Army recruiting. GSMA enlistment contracts reported for Fiscal Year 1987 was 56,050, a decrease from 62,393 contracts in FY86. FY88 has witnessed a further deterioration in recruiting success. Primarily, this has been due to improvement in the civilian youth labor market. Youth Unemployment has fallen from more than 16% in FY87 to less than 15% in FY88 at the same time youth wages have risen over this period by more than 6% while military compensation has increased by only 3%. A continued strong economy is anticipated for first quarter 1989. The aggregate forecast of 13,059 for this quarter reflect these continuing unfavorable recruiting conditions. It is similar to forecast GSMA enlistment contracts for the last two quarters of FY88; 13,036 for third quarter FY88 and 14,201 for fourth quarter FY88. In addition to the expected similarity in the youth labor market, these forecasts also assume a similar distribution of recruiting resources and a continuation of enlistment bonuses and the army college fund at current levels. If these conditions continue all of FY89, USAREC can expect around 52,000 GSMA contracts. While there is the possibility of deteriorating civilian labor markets during the later half of the year, it is premature to incorporate this possibility into battalion level forecasts.

The distribution of brigade and individual battalion forecasts is also similar to those for third and fourth quarters FY88. This reflects the similarity in assumptions about regional economic conditions and recruiting resources. One factor not explicitly taken into account, is a change in recruiting policy which will count night school high school graduates as GSMA contracts. This appears to be a reversion to the recruiting policies of FY87 and should improve recruiting in the states affected.[1] This factor, not currently included in the forecasting model, will be included in future estimations.

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[1] In FY87, there were ten states that give full weight to diplomas earned in night school.

Table 1

Forecasted GSMA Enlistments
First Quarter 1989

	Forecast		Forecast
ALBANY	143	CHICAGO	235
BALTIMORE	300	CINCINNATI	200
BOSTON	168	CLEVELAND	330
CONCORD	136	COLUMBUS	232
HARRISBURG	284	DES MOINES	208
NEW HAVEN	112	DETROIT	232
LONG ISLAND	159	INDIANAPOLIS	300
NEWBURGH	129	LANSING	290
FT. MONMOUTH	111	MILWAUKEE	295
PHILADELPHIA	186	MINNEAPOLIS	254
PITTSBURGH	304	OMAHA	245
SYRACUSE	275	PEORIA	260
FIRST BDE	2307	FOURTH BDE	3081
ATLANTA	280	SAN FRANCISCO	197
BECKLEY	200	HONOLULU	112
CHARLOTTE	181	LOS ANGELES	348
COLUMBIA	178	PHOENIX	230
JACKSONVILLE	330	PORTLAND	231
LOUISVILLE	224	SACRAMENTO	295
MIAMI	291	SALT LAKE CITY	228
MONTGOMERY	234	SANTA ANA	270
NASHVILLE	220	SEATTLE	320
RALEIGH	158		
RICHMOND	177	SIXTH BDE	2231
SECOND BDE	2473		
		USAREC TOTAL	13059
ALBUQUERQUE	198		
DALLAS	350		
DENVER	270		
HOUSTON	330		
JACKSON	196		
KANSAS CITY	300		
LITTLE ROCK	250		
NEW ORLEANS	228		
OKLAHOMA CITY	255		
SAN ANTONIO	275		
ST LOUIS	315		
FIFTH BDE	2967		

Manpower and Personnel Policy Research Group

Working Paper MPPRG 89-12

ARMY GSMA FORECASTS: FY 1990

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APPROVED FOR DISTRIBUTION TO SPONSOR/PROPONENT

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ARMY GSMA FORECASTS: FY 1990

The economic recovery continued through FY 89 without signs of a slowdown. The effects of a strong economy and a tighter military budget was reflected in the continued decline in GSMA net enlistment contracts for the year. Table 1 summarizes ARI forecasts since FY86. While these forecasts have tended to overestimate GSMA enlistment contracts since FY87, the stabilizing of the recruiting budget and the economy in the past year increase our confidence in the reliability of FY90-91 forecasts.

TABLE 1

ARI FORECASTS OF GSMA CONTRACTS: FY86 - FY89

Date	Forecasts	Actual	Error (percent)
FY86	61,245	62,393	-1.8
FY87	57,790	56,050	3.1
FY88	51,228	49,024	4.3
FY89	47,734	45,734	4.4

Although there are no signs of a recession for the first half of FY90, we expect a small but gradual increase in unemployment rates throughout the year. This translates into modestly improved recruiting conditions in the quality market and a slight rebound in GSMA contracts over FY89. Table 2 presents the ARI forecasts for FY90 and FY91.

TABLE 2

ARI FORECAST OF GSMA CONTRACTS: FY89-91

Quarter	FY90	FY91
First	11,975	12,274
Second	12,527	12,695
Third	10,658	10,777
Fourth	12,002	12,123
Total	47,162	47,869

While FY90 forecasts represent an improvement of nearly 1,500 contracts over FY89 production, they are still substantially below recruiting targets. Athough increased recruiting incentives and more efficient incentive allocation may result in some improvements in recruiting, without a drastic increase in recruiting resources, a 20% increase in GSMA enlistment contracts implied by the 54,674 recruiting target seems unrealistic.

Manpower and Personnel Policy Research Group

Working Paper MPPRG 89-05

REDUCING THE ATTRITION EFFECTS OF INCREASED FEMALE ACCESSIONS

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MARCH 1989

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Final

Reducing the Attrition Effects of Increased Female Accessions

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Problem

Current manpower forecasts indicate that the number of high-school diploma graduate (HSDG) males with above-average AFQT scores (CAT I-IIIA) signing enlistment contracts with the Army will fall considerably short of Army goals. The projected shortfall has created concern about the consequences of increasing the proportion of new accessions from other sources on the capabilities and readiness of the force. On the basis of current market estimates, it is unlikely that the projected shortfall can be made up merely by increasing recruitment of graduate, CAT IIIB males (GSMB). This means that increased numbers of non-grads (HMA,HMB,NMA,NMB), CAT IV grads (GSM4), and females will be needed to meet FY89 accession targets. Previous research, as well as past Army experience, has indicated that increases in accessions from these groups will result in increases in first-term attrition (because of higher attrition rates among females and non-grads) and reduced performance (because of the lower performance levels among CAT IV grads).

The purpose of this paper is to suggest ways in which the attrition impact of increased female accessions can be minimized. We propose encouraging female enlistments in MOSs where the differences between male and female attrition rates are small. An earlier paper provided similar suggestions with respect to non-HSDG males. These represent an interim approach to the appropriate MOS placement of these alternative groups. ARI researchers are currently in the process of conducting an integrated analysis using the simulation capabilities of the Enlisted Personnel Allocation System to identify optimal job assignment policies for all three groups.

Methodology

The problem of identifying jobs that are good prospects for increased female accessions is not as simple as it might at first appear. Two simple approaches were tried for this analysis, but rejected because they provided misleading and/or unreliable results. The first of these was to simply examine historical attrition rates of females in different MOSs, and identify the MOSs with the lowest female attrition rates. This information would

then be used to reduce the number of females in the MOSs with high attrition and increase the number of females in the MOSs with low attrition. Following this approach would require that some other group (e.g. GSMAs) will be used in place of females in MOSs with high female attrition and would be replaced by females in MOSs with low female attrition. Unfortunately, in many cases, MOSs that have low female attrition rates also have low male attrition rates and conversely, MOSs with high female attrition rates also have high male attrition rates. Consequently, the effect of increasing female accessions in all "low attrition" MOSs would be, in many cases, to transfer males to a "high attrition" MOSs reducing female attrition but increasing male attrition. In some cases, the increased male attrition would more than offset the reduction in attrition obtained for females.

An alternative approach is to select MOSs on the basis of observed differences between male and female attrition rates. A shortcoming of this approach is that it fails to account for other factors that affect attrition but are not randomly distributed between males and females. For example, an MOS with a high proportion of non-grad males would have a high attrition rate for males. The apparently small attrition differential between males and females might lead to a policy of placing females in that particular MOS. However, if the result of increased female accessions was to fill vacancies resulting from the shortfall in low attrition HSDG males, the net effect would be an unexpectedly large increase in the attrition rate.

To address these issues, we used multiple logistic regressions to control for as many potentially confounding factors as was feasible, given time and data limitations. MOS-specific regression equations were estimated on a pooled sample of non-prior service accessions for the years 1983-1985. The sample included all NPS accessions to all MOS that had at least 20 female accessions in at least one of the three years. This criterion initially produced observations on 138 MOS. This number was reduced to 116 by combining MOSs which had undergone name changes since 1983. The MOS-specific sample sizes ranged from 200 to 15,000. For these MOSs, 28.9% of the training seats over the three year period were filled by women. This is significantly higher than the overall 12% of the training seats filled by women because it excludes a significant number of MOSs for which women are ineligible and have never been filled by women. The total number of annual training seats involved is 66,094 (for FY89).

The models include variables to control for race, AFQT category, HSDG status, and two-year accessions. The dependant variable is the probability of completion of the first enlistment term. After controlling for these factors, a large positive coefficient for sex would indicate an MOS in which there was a large differential in male/female attrition rates. While a more complete presentation of the regression results will be

forthcoming, for the most part the estimated coefficients were highly significant. The MOSs were rank-ordered based on the size of the estimated coefficient. Those MOSs with large coefficients would be candidates for reduced female content, while those with small coefficients would be candidates for increased female content.

One difficulty with this approach is that the variance of the estimated male/female attrition differed significantly across the different MOSs. This was due to both differences in MOS sample size and differences in MOS variability in attrition rates across years. As a result, it was possible to have two MOSs with identical estimated attrition effects but differences in their reliability because of the differences in their attrition rate variance. To avoid a recommendation of increasing women in MOSs with low but extremely variable male/female attrition differentials, we reordered the MOSs on the basis of the MOS 95% upper bound on the true parameter estimate. This bound takes into account not only the size of the female attrition effect, but also its variance. An analogous procedure was followed to identify those MOSs with large, stable male/female attrition differentials. For these, the second ordering was based on the "conservative" lower 95% bound for the true effect of sex on attrition.

Results

Table 1 provides a summary of key characteristics of the groups. The resulting groupings are presented in attached Tables 2-6. Associated with each MOS grouping is the overall attrition rate; the male/female attrition differential, the predicted effect on the overall MOS attrition rate of increasing female enlistments by 20%, and the number of training seats. The first group contains MOSs for which estimated male/female attrition differentials are in the lowest quartile. These MOSs also rank in the lower quartile based on the ranking of their upper 95% bound. For these 20 MOSs we strongly recommend increasing the female content since male/female attrition differences are small and reliable. Of the remaining MOSs with lower than median attrition (9 from the first quartile and 29 from the second quartile), we formed a second group of 35 MOSs which appear to be good candidates for increased female content. All of these MOSs have lower attrition than median and an upper bound that is ranked below the median as well. Three MOSs (1 from the first quartile and 2 from the second quartile) with below average male/female attrition differentials were not included in either group because of high variability in the estimated attrition differential. For these three no recommendation is made.

Of the 29 MOSs with the highest attrition differentials, 27 also had lower bounds in the highest quartile. For these we recommend reducing female content because of the strong and reliable differences in attrition for females. Of the 30 remaining

Table I Summary of Male/Female Attrition Differentials for MOS in each Quartile.

Quartile	Attrition Rate	Male/Female Differential	Percent Female	Effect of a 20% increase in Females	1989 Seats
GROUP I	35.2%	5.5%	24.9%	0.4%	11232
GROUP II	28.1%	10.8%	26.5%	0.7%	22630
GROUP III	30.4%	16.3%	25.4%	0.9%	14357
GROUP IV	31.1%	23.4%	33.3%	1.4%	10693
GROUP V					7182
TOTAL	30.1%	13.0%	28.9%	0.8%	66094

MOS in the third quartile, 22 were retained since the rank-order of both expected attrition and the 95% interval were both above the median. These MOSs are also candidates for reduced female assignment. For 10 MOSs no recommendation is made since, despite high estimates of male/female attrition, the variance is also very large.

For the period FY83 - 85 the overall first term attrition rate was 30.1% and the average difference between male and female attrition was 13.0%. As would be expected the difference in male/female attrition rates is the lowest in the first quartile - 5.5%, and highest for the fourth quartile - 23.4%. However, this is not reflected in the overall attrition rates: the MOSs with the lowest male/female differentials in attrition have the highest average attrition rates.

Surprisingly, the MOS that have the lowest male/female attrition differentials also have the lowest percentage of women The first quartile is composed of 24.9% women while the fourth quartile is made of 33.3% women. This due primarily to the below average female content in three large MOS - 63J, 31K, and 94B in the first quartile and the higher female content of 62F, 96D, and 97E in the fourth quartile. These differences are counter-intuitive.

It implies that either the Army has been placing women in MOS where they have the highest relative attrition rates or that women volunteer for duty in MOSs in which they have less chance of success. Since neither of these explanations seem rational, further analysis is needed to determine if current female fill

rates are still at the same levels as during FY83-85.

Conclusions

The importance of looking at male/female attrition differentials as the basis for assigning female accessions is illustrated by the simulated effect of increasing female accessions to replace GSMA accessions. For MOSs in the first quartile, the effect of increasing female accessions by 20% merely increase overall attrition by .4 percentage points. The same 20% increase for MOSs in the fourth quartile would increase overall attrition by 1.4 percentage points; an effect more than 3 times as large. In absolute numbers, this difference in female attrition is not large because of the limited use of females in most MOSs. A 20% increase in females in the 116 MOSs studied constitutes only 6,772 additional accessions and a one percent reduction in attrition means reducing absolute attrition by 68 simply by placing women in MOSs with low attrition. This however represents a real savings in both recruiting and training costs.

One shortcoming of this analysis is that we have controlled for a limited set of characteristics that affect attrition. This analysis distinguishes between those MOS in which male/female attrition differentials are low and those for which the differentials are high. It does not go very far in identifying underlying factors that cause the differences. Consequently, the results are not easily generalized to MOSs outside of the analysis. An important extension of this approach would be to analyze MOSs on the basis of characteristics their job characteristics and working conditions. It would then be possible to identify those MOSs in which there may currently be no women but in which women would have low relative attrition. A preliminary analysis of male/female attrition rates by CMF has been undertaken to see if there are generalizable attrition patterns by CMF. Based on this grouping of MOSs, it appears that male/female attrition differentials are particularly low in Administration (CMF 71), Supply and Service (CMF 76), Transportation (CMF 88), and Medical (CMF 91). These differentials appear high in Land Combat Maintenance (CMF 27), Communications Electronic System Maintenance (CMF 29), Intercept Systems Maintenance (CMF 33), Military Police (CMF 95), and Military Intelligence (CMF 96).

One difficulty in generalizing about attrition differentials among MOSs in a particular CMF is that CMF groupings are not based exclusively on job content. For example Hospital Food Service Specialist (MOS 94F), Physical Therapy Specialist (MOS 91J), Medical Supply Specialist (MOS 76J), and Patient Administration Specialist (MOS 71G) are all in CMF 91 despite the disparate skills and working conditions involved. Obviously, more careful analysis of job content and working conditions are required to generalize the results with the same degree of confidence.

A second short-coming of this analysis is that it assumes that females replace GSMA enlistments. In fact, the gains from minimizing female/nongrad attrition differentials offer even larger attrition savings than those outlined above. We are currently analyzing the optimal distribution of nongrads, females, and GSM4s using various assumptions about the performance and attrition of these different sources of enlistments. This should enable further attrition savings.

Finally, this paper should not be interpreted as advocating "closing" MOS opportunities for women. Even in MOSs with high attrition differentials, most women do not attrite. If a particular woman chooses to enlist in a particular occupation, it is neither fair nor proper to exclude her on the basis of the performance of others. On the other hand, there may be big payoffs to presenting MOSs with low attrition differentials to women who are undecided about an appropriate career.

Table 2. MOS with Small Differences in Male/Female Attrition Rates

MOS	Total Attrition Rate	Male/Female Differential	Percent Female	Expected Change in Attrition for a 20% increase in female accessions	1989 Seats
43M	42.1%	-16.4%	26.3%	-0.5%	64
88K	46.1%	6.1%	42.9%	0.8%	210
91F	32.2%	11.6%	45.6%	1.1%	64
67V	23.7%	3.8%	12.2%	0.1%	157
39E	23.7%	16.4%	33.4%	0.7%	105
76J	36.6%	1.5%	51.9%	0.8%	250
71G	32.2%	1.3%	9.3%	0.3%	222
45K	25.6%	16.0%	10.1%	0.5%	227
63J	32.1%	6.2%	10.3%	0.6%	1178
31K	28.7%	6.2%	20.2%	0.1%	1891
91S	28.8%	3.7%	56.7%	0.6%	133
93P	25.2%	2.1%	62.6%	0.6%	181
77F	28.4%	7.5%	29.1%	0.3%	14
88H	36.9%	4.9%	46.2%	0.7%	511
94B	39.6%	5.2%	21.7%	0.3%	4600
43E	41.9%	6.1%	24.5%	0.5%	561
71M	30.2%	6.6%	30.9%	0.8%	6
71Q	32.1%	3.8%	41.6%	0.4%	609
75B	31.4%	10.0%	43.1%	1.2%	244
71L	28.2%	9.9%	39.3%	1.4%	5
TOTAL	35.2%	5.5%	24.9%	0.4%	11232

Table 3. MOS with Moderate to Small Differences in Male/Female Attrition Rates

MOS	Total Attrition Rate	Male/Female Differential	Percent Female	Expected Change in Attrition for a 20% increase in female accessions	1989 Seats
81Q	25.0%	21.4%	20.9%	1.8%	55
91H	22.2%	3.8%	58.3%	1.7%	41
91R	33.8%	11.6%	38.6%	1.3%	125
15E	29.8%	11.6%	3.7%	0.1%	501
57E	35.9%	4.7%	31.1%	0.4%	130
75C	31.1%	6.1%	38.3%	1.5%	182
76C	25.5%	9.8%	43.1%	0.2%	1431
91Y	36.5%	3.5%	54.8%	1.8%	52
75E	29.8%	6.8%	43.8%	1.0%	84
75D	35.2%	6.7%	28.3%	0.8%	1580
76Y	28.3%	6.9%	30.9%	0.5%	175
91A	26.6%	6.8%	35.3%	0.8%	4586
54B	27.5%	9.7%	5.7%	0.2%	1317
94F	40.5%	8.6%	51.7%	1.2%	518
76P	25.7%	9.1%	39.9%	0.9%	2198
92B	23.7%	8.5%	44.0%	0.6%	443
31V	24.6%	14.3%	29.4%	0.3%	251
76X	27.1%	10.0%	36.6%	1.0%	56
91D	29.0%	7.4%	27.7%	0.4%	202
52C	27.2%	10.9%	13.3%	0.5%	355
91Q	26.7%	10.7%	39.2%	0.9%	91
55B	29.8%	12.6%	11.2%	0.5%	784
73C	25.3%	11.5%	27.3%	1.6%	170
76V	27.0%	11.9%	6.5%	0.8%	1818
52D	25.9%	13.2%	5.9%	0.2%	1527
72E	26.5%	14.9%	35.0%	0.5%	123
91T	30.6%	11.1%	45.2%	1.2%	85
72G	23.5%	11.5%	47.8%	1.3%	187
63S	30.6%	22.3%	8.2%	0.3%	392
81C	26.0%	10.4%	12.0%	0.8%	91
26Q	23.6%	16.5%	11.7%	0.4%	445
88M	29.7%	13.3%	21.2%	0.4%	108
36M	39.9%	12.6%	18.0%	0.9%	91
16X	29.7%	19.1%	14.2%	0.6%	1013
71D	30.2%	18.6%	38.6%	1.5%	1423
TOTAL	28.1%	10.8%	26.5%	0.7%	22630

Table 4. MOS with Moderate to Large Differences in Male/Female Attrition Rates

MOS	Total Attrition Rate	Male/Female Differential	Percent Female	Expected Change in Attrition for a 20% increase in female accessions	1989 Seats
36C	38.0%	12.7%	27.8%	1.2%	981
63H	31.5%	12.7%	9.0%	0.3%	1100
31C	29.2%	13.3%	15.8%	0.4%	51
35H	18.2%	18.5%	23.3%	0.9%	80
88N	31.9%	9.9%	11.1%	2.0%	846
91E	22.4%	14.1%	35.4%	1.2%	238
74F	22.9%	15.5%	47.5%	1.0%	127
32D	29.1%	16.0%	27.2%	1.0%	1060
75F	24.9%	15.8%	43.6%	1.5%	724
31M	28.4%	16.6%	48.4%	0.9%	1829
98C	23.9%	17.0%	43.3%	1.5%	304
98G	21.8%	19.1%	21.4%	0.8%	353
05D	23.5%	15.9%	39.6%	1.3%	262
62B	29.6%	15.7%	22.7%	0.2%	3406
68G	25.4%	17.7%	7.1%	0.4%	206
31N	38.8%	19.0%	26.3%	2.0%	1058
63B	32.6%	18.9%	5.9%	0.4%	633
91P	23.6%	19.9%	32.7%	1.3%	80
91C	30.2%	23.0%	83.0%	2.7%	45
29N	39.1%	22.7%	8.9%	0.9%	278
13M	35.7%	29.2%	3.5%	0.2%	696
TOTAL	30.4%	16.3%	25.4%	0.9%	14357

Table 5. MOS with Large Differences in Male/Female Attrition Rates

MOS	Total Attrition Rate	Male/Female Differential	Percent Female	Expected Change in Attrition for a 20% increase in female accessions	1989 Seats
16H	20.8%	19.0%	22.1%	0.9%	257
95B	22.0%	21.1%	13.3%	0.6%	196
91G	28.4%	22.1%	46.6%	2.2%	83
96B	25.8%	23.5%	32.1%	1.6%	387
93C	11.3%	23.0%	60.3%	1.0%	246
27E	21.2%	22.6%	37.9%	0.5%	111
74D	23.0%	19.8%	48.0%	1.6%	161
62F	42.0%	19.3%	27.4%	0.4%	3406
05H	23.8%	22.6%	19.4%	0.9%	597
05K	27.9%	21.9%	52.5%	2.4%	394
68B	28.3%	23.6%	3.6%	2.4%	260
81E	33.7%	24.2%	29.7%	2.3%	91
63W	31.0%	25.4%	16.8%	0.6%	194
55D	34.8%	11.2%	20.3%	1.0%	112
29V	27.4%	27.8%	12.6%	1.1%	83
71R	23.4%	26.8%	56.8%	1.7%	304
97E	24.6%	26.9%	32.3%	1.7%	1556
98J	23.8%	22.0%	32.5%	1.5%	353
35G	22.8%	28.2%	31.0%	1.7%	169
24L	32.3%	26.3%	45.5%	3.6%	16
42D	24.8%	22.8%	38.3%	1.9%	34
96D	30.6%	20.5%	65.6%	2.9%	897
67N	18.7%	32.4%	9.5%	0.3%	69
35L	24.6%	32.6%	36.1%	2.5%	118
21G	28.4%	36.6%	32.5%	2.4%	85
55R	34.6%	25.6%	34.6%	1.8%	86
82D	34.4%	48.5%	29.6%	5.1%	428
TOTAL	31.1%	23.4%	33.3%	1.4%	10693

Table 6. MOS for which No Recommendations are Made Due to Extreme Variability

MOS	Total Attrition Rate	Male/Female Differential	Percent Female	Expected Change in Attrition for a 20% increase in female accessions	1989 Seats
93F	36.5%	7.5%	20.3%	2.4%	110
73D	34.0%	6.8%	17.0%	1.0%	870
27B	34.8%	21.2%	12.8%	2.0%	295
84B	28.3%	12.5%	33.8%	0.6%	4781
35K	16.1%	15.4%	22.3%	0.9%	135
83F	31.6%	6.8%	43.2%	1.6%	76
41C	27.1%	13.8%	27.7%	1.2%	59
33Q	22.3%	20.3%	24.9%	0.9%	28
63G	37.5%	21.9%	8.5%	0.6%	433
55G	22.0%	25.4%	32.6%	1.5%	154
91J	32.4%	17.4%	28.4%		

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ACOMS QUARTERLY REPORTS
FOR SCHOOL YEAR 86/87: FALL AND WINTER QUARTERS

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May 1987

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ACOMS QUARTERLY REPORT
FOR SCHOOL YEAR 86/87: FALL AND WINTER QUARTERS

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OVERVIEW OF THE ARMY COMMUNICATIONS OBJECTIVES MEASUREMENT SYSTEM (ACOMS)

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OVERVIEW OF THE ARMY COMMUNICATIONS OBJECTIVES MEASUREMENT SYSTEM (ACOMS)

THE ACOMS PROJECT

ACOMS Background

In an era when manpower experts are predicting increased difficulties for recruiting into military service, it becomes increasingly important for the U.S. Army to improve understanding and management of the factors that enable it to meet its manpower goals. Advertising communications represent one such factor.

Advertising is used extensively by the various Army components--the active Army, the U.S. Army Reserve (USAR), the Army Reserve Officers' Training Corps (ROTC), and the Army National Guard (ARNG)--to bring about changes in the knowledge, attitudes, and behaviors of youth and their parents. Each year, the Army makes a sizable investment in the development and exposure of advertising communications intended to portray the Army favorably and to increase the enlistment propensity of eligible youth.

While in-house assessments have been conducted by the Army and its advertising contractor, and advertising has been touched upon by other youth surveys such as the Youth Attitude Tracking Survey (YATS), to date there has been no in-depth, independent examination of the effectiveness of Army communications. The Army Communications Objectives Measurement System (ACOMS) is such an effort, designed to help the Army monitor and evaluate its advertising communications program. ACOMS is a multi-year project providing ongoing measurement of the extent to which Army communications meet the communications objectives for different target groups.

The ACOMS Project Design Process

The development of the ACOMS project design has been a collaborative and interactive enterprise involving the Westat Project Team, the U.S. Army Research Institute Contracting Officer's Representative (ARI COR), the ACOMS Special Advisory Group (SAG) composed of representatives of the various Army components, and the Statistical Advisory Panel, a group of experts providing the project with consultation advice concerning sample design, sample adjustment weighting, and analysis. The design process began in September 1985, with the start of the contract, and continued intensively for about a year until the start of survey data collection in October 1986.

The ACOMS project design was developed in consideration of a number of factors. The formulation of project issues and questions was based on a conceptual model of advertising effectiveness, a modified hierarchy of effects model adapted from Fishbein and Azjen (1975). Further, an extensive review of background documents and interviews with relevant Army personnel and experts ensured that analytic issues important to the client are addressed by the system. This preliminary exploration revealed the diversity and complexity of objectives that the project was expected to fulfill. Notably, the definition of project objectives broadened from its starting point of assessing the effectiveness of Army communications objectives to include additional analyses pertaining to Army advertising strategy and market segmentation.

The main thrust of the ACOMS development effort has focused on specifying the design and analysis plan for the survey component of ACOMS, which is by far the largest component of the system. Because of the multiple constituencies interested in ACOMS and the relative priorities among population groups, the design of the sample was a major issue. Similarly, because of cost and respondent burden concerns, extensive discussion occurred on the relative priorities among various question areas and on the allocation of specific questions to particular sub-populations. In addition, the design efforts for both the sample and the questionnaires were affected by requirements to maintain comparability in certain key aspects to the Youth Attitude Tracking Survey (YATS), which covers many complementary areas related to enlistment decision-making.

The design process is currently continuing on two other components of ACOMS, the measurement of fit between intended and actual Army communications messages, and the measurement of the extent of exposure which each of these messages receives in television and print media. Also remaining for further development is a final component, the Areas of Dominant Influence (ADI) special studies, which will be used to examine specific advertising campaigns or advertisements.

It should be emphasized that, even with completion of these latter design elements, the ACOMS design process does not end. The design process will again be entered for the planning of the longitudinal ACOMS survey. Because the ACOMS project is intended to provide useful management information in a timely fashion, a small percentage (10%) of the main survey instrument is variable or "floating." The availability of "floating" questions gives ACOMS the capacity to respond to events as they occur in "real time."

ACOMS Objectives

The ACOMS objectives are:

- To support Army assessments of advertising program effectiveness in a timely fashion;
- To support Army assessments of advertising strategy in an integrated framework; and
- To support Army advertising management and planning for future strategy.

The major task of ACOMS is to monitor and assess the effectiveness of the Army's advertising communications program. Data are used to track changes over time in levels of advertising recall, and subsequent effects on the knowledge, attitudes, intentions, and actions of youth and their parents. In addition, the analysis of ACOMS data will allow better understanding of the delayed and cumulative effects of advertising and of the relationships between advertising and other factors that influence the eventual decision to enlist.

The ACOMS effort will contribute to the development of behavioral and economic models of the decision-making process of young people considering military enlistment. As better models of the enlistment decision process are developed, more effective marketing strategies can be applied to help the Army meet its annual recruiting goals.

A second set of goals for ACOMS involves the use of ACOMS data to assess the Army's advertising strategy. ACOMS examines the extent to which the Army's intended messages are actually being exposed to, and perceived by, their proposed audiences. Analysis of ACOMS data will also help to refine the definitions of the Army's major market segments. The major demographic segments of interest to the Army's recruiting categories, broken down by geographic regions, are being examined for reactions to advertising, media habits, and other variables. In addition, analytical effort will focus on the identification and validation of new market segments that can be defined by attitudes and demographics. This information will be important to determining the nature and extent of advertising to be directed at each segment.

Finally, ACOMS data is also being used to examine "brand differentiation"--that is, comparison of image elements--at several levels: differentiation among the active Army, Reserve, National Guard, and ROTC attributes; differentiation between the Army and other services' attributes; and differentiation between the Army's position and distinctive advantages in comparison with civilian alternatives (i.e., college and civilian employment). This information will help the Army make decisions on relative emphasis of

various communications about different attributes and offers of the Army components.

Most importantly, ACOMS data and analyses are being provided to the managers of the Army's communications programs in a time-frame that allows maximum utilization of results for management and planning. The ACOMS reporting schedules are arranged in order to provide timely information to the Department of the Army's planning cycle. Therefore, information on current topics of interest and on reactions to advertising approaches among specific populations can be incorporated into advertising development and placement.

The Fit-Exposure-Change Framework

ACOMS objectives is being achieved through the implementation of a three-pronged "fit-exposure-change" approach that involves a mix of data collection and analytic methods.

Taken as a whole, the ACOMS system involves the sequential coordination and evaluation of many conceptual elements: (1) the messages conveyed by Army advertisements, (2) the exposure of youth to these advertisements, and (3) changes in youth perceptions of the Army over time as a result of advertising. Fit addresses the first of these elements. This component of the ACOMS analysis framework assesses the degree to which the Army's intended advertising messages are, in fact, communicated to youth.

During the initial planning stages of ACOMS, a series of meetings were held with representatives of the active Army, the Army Reserve, the National Guard, and ROTC, as well as with the COR and SAG. These meetings resulted in the construction of a matrix of 17 communications objectives/messages. While this list is not claimed to be inclusive of all communications objectives for all Army components, it is felt that these attributes do represent the major current communications objectives of the Army.

Fit measures are obtained through mall intercept interviews, in which youth are shown different advertisements (both print and television), including Army advertisements, and asked to indicate what messages they think the advertisements were communicating. Since Army advertisements are far from homogeneous in their intended message content (i.e., both within and across components--different advertisements stress different messages), we expect to obtain differential message profiles for Army advertisements.

In addition to the fit of Army advertisements to their intended message content, the integrated ACOMS framework will consider the exposure of youth to Army advertising. Using syndicated

data sources, it will be possible to construct measures approximating the degree to which youth are exposed to Army advertisements. Syndicated data will allow the estimation of advertising exposure incidence for youths within specific geographic areas, by demographic characteristic. Further, using media schedules, the mix of media exposure as well as the mix of messages conveyed can be estimated. In short, for youth in distinct geographic areas, the message content of Army advertisements will be computed. The exposure component of the ACOMS analysis plan, therefore, assesses the coverage of Army communications objectives.

Finally, change measures are obtained from telephone surveys of youth and their parents. This last component of the ACOMS analytic framework will provide indications of how advertising strategy and scheduling affect the perceptions of youth and their parents regarding the Army and its components. This ongoing survey of youth and their parents forms the heart of the ACOMS project. These surveys elicit information regarding perceptions of the Army, its benefits and negative aspects, intentions and enlistment behaviors, and the attitudes of parents toward the Army and their youth's enlistment. The ACOMS survey, then, will provide a continuing indicator of attitudes about the Army for both youth and their parents. As such, this survey provides both a baseline for establishing current effects of advertising and the effects of changes in strategy implemented in the future.

The ACOMS Survey Overview

The ACOMS survey is a continuous data collection effort designed to monitor the Army's advertising program over time. A national probability sample of youth and their parents is interviewed using computer-assisted telephone interviewing (CATI) technology. The Waksberg Random Digit Dialing (RDD) method is used to locate households with youth who fulfill ACOMS eligibility criteria.

The respondents are questioned regarding a variety of issues related to advertising, e.g., their media habits, knowledge about various Army components and offers, perceptions of various Army attributes, and enlistment intentions and behaviors. The survey instruments for the youth and parental respondents are divided into a number of topical modules, the majority of which are parallel in form and content for the two groups. Because of the nature of the survey objectives and pragmatic limitations on respondent burden, the instruments have complex structures involving branching, random allocation of questions to subpopulations, and randomized ordering of list presentations. To a great extent, such a degree of instrument complexity was made possible by the sophistication of CATI technology.

The ACOMS survey will produce a variety of work products. Quarterly reports of ACOMS data provide an ongoing system to track changes in the perceptions, attitudes, and enlistment-related intentions and actions of the various market segments at which advertising is targeted. In addition, the survey data will be used to model the effects of Army advertising among youth and among linked pairs of youth and their parents. Data will also be analyzed to examine the utility of existing market segmentation schemes used by the Army, as well as to identify new market segments.

GENERAL INTRODUCTION
TO ACOMS QUARTERLY REPORTS

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GENERAL INTRODUCTION TO ACOMS QUARTERLY REPORTS

The quarterly reports summarize the major variables that the Army will track in assessing the effectiveness of Army advertising. They provide timely information for Army policymakers and advertising planners regarding key market responses that are expected to be sensitive to changes in the Army's advertising plans. The data "snapshots" provided by the quarterly reports are supplemented by in-depth analyses of various issues (described in separate volumes discussing the overall Army Communications Objectives Measurement System (ACOMS) design and analyses plans) to be provided to the Army as available on an ongoing basis. In addition, the data is being made available to the Army shortly after the close of each quarter, making it possible for the Army to do supplementary analyses as needed.

Contents of Quarterly Reports

The content and format of the quarterly reports were determined in consultation with the ACOMS Special Advisory Group (SAG). Each report includes an Executive Summary that presents the major highlights of the quarterly data and our interpretation of the findings vis' a vis the Army's advertising plans. This summary is followed by a brief introduction, containing sample performance information for the quarter, a set of quarterly tables and summary text describing the major findings the tables contain.

The body of the report is accompanied by information cards for the eleven major quarterly tables (front pocket of the binder). On the front of each card are:

- A general statement describing the contents of the table;
- Respondents - A brief description of the relevant subpopulations represented in the table; and
- Special Notes and Cautions - Information about the data that are not immediately obvious, but are necessary for accurate interpretation of the findings.

The back of each information card is a Question Key containing a list of relevant questions matched with column headings and variable names. Each of the questions listed also includes a 3 to 5 character code (e.g., IP-1, PE-1A) that refers to the CATI Screen Name. The first two alphabetic characters indicate the question module. For example, IP indicates a question from the Intentions/Propensity Module. See the Interviewers' Training Manual for a complete list of questionnaire modules. The CATI

Screen Name can also be used to locate questions in the ACOMS Users' Manual.

The back pocket of the quarterly reports binder contains one additional information card, which is a glossary of the terms and acronyms in the quarterly reports including brief descriptions of each of the relevant sample groupings.

In addition to these information cards, the quarterly reports binder contains a set of appendices that include:

- An overview of the ACOMS sample groups (Appendix A);
- Maps of the Recruiting Brigades, and ROTC Regions (Appendix B);
- Brief explanations of several key statistical concepts (Appendix C);
- A list of references for readers who want more detailed technical information about various aspects of the ACOMS project (Appendix D); and
- An up-to-date list of changes in the youth questionnaire including wording and questionnaire administration changes as well as additions and deletions of items (Appendix E).

Each quarterly report contains the following tables:

QUARTERLY TABLES

TABLE 1: Percentage with Intention to Enlist in Army Components [Intention to Enlist]

TABLE 2: Percentage Rating Opportunities "Important" or "Very Important" to Plans for the Next Year [Importance of Attributes]

TABLE 3: Percentage "Agree" or "Strongly Agree" with Active Army Attribute Statements [Perceptions - Active Army]

TABLE 4: Percentage "Agree" or "Strongly Agree" with Army Reserve Attribute Statements [Perceptions - Army Reserve]

TABLE 5: Percentage "Agree" or "Strongly Agree" with Army National Guard Attribute Statements [Perceptions - Army National Guard]

TABLE 6: Percentage "Agree" or "Strongly Agree" with Army ROTC Attribute Statements

Percentage Rating ROTC Opportunities "Important" or "Very Important" to Plans for the Next Year [Perceptions and Importance - Army ROTC]

TABLE 7: Percentage Taking Actions Relating to Enlistment During the Past Six Months [Behavior]

TABLE 8: Percentage Seeing/Hearing Military Advertising [Knowledge/Recall - Unaided]

TABLE 9: Percentage Seeing/Hearing Military Advertising [Knowledge/Recall - Unaided plus Aided]

TABLE 10: Percentage Answering Knowledge of Army Offers and Benefits Questions Correctly [Knowledge]

TABLE 11: Percentage Regularly Viewing or Listening to Various Types of Programming [Media Habits]

TABLE 12: Percentage with Intention to Enlist in Army Components [Intention to Enlist] -- PMAS Monthly Totals

TABLE 13: Percentage "Agree" or "Strongly Agree" with Active Army Attribute Statements [Perceptions - Active Army] -- PMAS Monthly Totals

TABLE 14: Percentage Seeing/Hearing Military Advertising [Knowledge/Recall - Unaided] -- PMAS Monthly Totals

Format of Quarterly Reports

General Table Structure. Tables 1-11 present data for youth interviews conducted during the quarter, while Tables 12-14 provide monthly data for selected variables. Table numbers are preceded by F in Fall quarter (e.g., Table F-1), by W in Winter quarter (e.g., Table W-1), and by Sp in spring quarter (e.g., Table Sp-1. The quarterly table structures are generally uniform, and are described briefly below. Tables 4 and 5 and the monthly tables present less detailed sample breakdowns because sample sizes are too small to obtain reliable estimates for the subgroups. Table 6 is unique in including sample groups most relevant to the Army ROTC.

Columns. The columns in all tables represent alternative responses to a question, or responses to a series of questions about a general topic. For example, Table 8 shows the percentages of youth who stated, in response to a general question, that they recalled advertising for any of the Army components or other military services. The possible alternative responses are shown as columns in Table 8. As another type, Table 3 shows the percentages of youth who agreed with a list of statements regarding various Army attributes. The table columns represent the various attributes (e.g., job variety, physical challenge, mental challenge) to which youth are responding.

Rows. The table rows represent different subpopulations of interest to the Army advertising and recruiting effort. For each row, the number of respondents who answered the questions is indicated in the "N" column. These numbers differ across tables for the same subgroups because some core questions were asked of all youth, whereas others were "rotating," i.e., asked only of subsets of respondents. Details on the questionnaire structure can be found in The ACOMS Survey Design and The ACOMS Survey Analysis Plan (Westat, in preparation). The information cards accompanying the quarterly reports provide further detail about who responded to the questions in each table.

Most of the tables (except Tables 4, 5, 6 and the monthly tables) are comprised of two panels that represent two major subpopulations: (1) the main Army Recruiting Market, and (2) the Primary Male Analytic Sample (PMAS). Definitions and further subdivisions for each is provided below:

- The RECRUITING MARKET panel includes non-prior service male and female youth between 16 and 24 years of age who fit into either of two main sample categories:
  - Primary Male Analytic Sample (PMAS) and Primary Female Analytic Sample (PFAS) youth are those who have obtained a regular high school diploma or who are currently enrolled in high school. Youth in

the primary analytic samples have never taken a college ROTC course and have not yet completed their sophomore year in college.

- Secondary Male Sample (SMS) and Secondary Female Sample (SFS) youth are those who have dropped out of high school before finishing or who have a certificate of high school completion such as the General Educational Development (GED), but who have not earned a regular high school diploma and have completed less than one year of college.

- The second panel focuses on PMAS youth alone, and shows separate breakdowns by educational level, region, and age. Age categories are self-explanatory. The regional breakdown corresponds to the Army's Recruiting Brigades (See Appendix B for a map of the Recruiting Brigades). Definitions for the educational categories are as follows:

  - College Freshmen and Sophomores - This subgroup includes freshmen and sophomores currently enrolled in a four year university or a two or four year college. Freshman and sophomore status is determined by credit completed rather than by number of years in attendance.

  - High School Students (College-Oriented) - Students currently enrolled in a regular high school program who answered either DEFINITELY or PROBABLY when asked how likely it is that they will attend college are included in this subgroup.

  - High School Students (Work-Oriented) - Currently enrolled regular high school students who answered either DEFINITELY NOT or PROBABLY NOT when asked how likely it is that they will attend college, those who do not know if they will attend college, and those who refused to answer questions about future college plans are included in this subgroup.

  - High School Graduates, Not Currently Enrolled - This subgroup is composed of high school diploma graduates who are not currently enrolled in a two or four year college or university. Also included are non-diploma graduates (e.g., those who received a GED) who have completed at least one but less than two full years of college and who are not currently enrolled.

Tables 4, 5 and the monthly tables contain data from the same sample groups as those described above. However, because of small sample sizes, the educational, regional, and age level breakdowns are not included in these tables.

Table 6 reports data on subgroups that are most relevant to the ROTC.

- The ROTC SAMPLE includes male and female youth who have no prior military service and who have not taken college ROTC courses. The sample includes three educational subcategories:

  - College Juniors and Seniors - This subgroup includes juniors and seniors currently enrolled in a four year college or university. Junior and senior status is determined by credit completed rather than by number of years in attendance. These respondents are not included in any other quarterly tables.

  - College Freshmen and Sophomores - This subgroup includes freshmen and sophomores currently enrolled in a four year university or a two or four year college. Freshman and sophomore status is determined by credit completed rather than by number of years in attendance. Youth in this group are comparable to those included in the same subgroup in other tables.

  - High School Students (College-Oriented) - Students who are currently enrolled in a regular high school program who answered either DEFINITELY or PROBABLY when asked how likely it is that they will attend college are included in this subgroup. Youth in this subgroup are comparable to those included in the same subgroup in other tables.

- Youth in the ROTC Sample groups described above are also categorized by age level as shown in Table 6.

- Table 6 includes a regional breakdown by ROTC Regions (See Appendix B for a map of the ROTC Regions).

- Finally, Table 6 includes PMAS TOTALS to facilitate comparison of findings with those shown in other tables.

Table Entries. Table entries consist of percentages of youth in the various subgroups who have responded as indicated in the table title along with the standard errors for each of the percentages. All percentages are based on the number of respondents weighted up to their estimated number in the U.S. population (for

a discussion of the rationale and process of sample weighting, see The ACOMS Survey Design). Percentages are calculated on the basis of the weighted number of youth found within the subpopulation represented in the row. For example, the 369 cases listed in the N column of Table F-1 for college-oriented high school students represent 2,894,792 in the U.S. population. Thus, the entry showing that 33.6% of college-oriented males have General Aided Intention of enlisting in the Army is an estimate of the proportion of 2,894,792 male youth in the population who would report having these intentions if all could respond.

The numbers appearing in parentheses below each percentage are standard errors calculated by the method of balanced repeated replications (BRR), a technique appropriate for variance estimation for weighted data. The standard errors can be used to construct confidence intervals around the estimates as described in Appendix C.

Summary Text. Several conventions have been adopted in writing the text that summarizes each of the eleven major quarterly tables. Statements of differences between proportions such as "college-oriented high school students differ from those who are work-oriented" should be assumed to represent statistically significant differences. Similarly, statements such as "no regional differences are shown" should be assumed to mean that appropriate significance tests were conducted and no statistically significant difference was found. Often, a general summary statement implies numerous comparisons including some that are not statistically significant. If a clear trend is apparent and most of the comparisons are statistically significant, we note a "tendency", a "trend" or a "pattern" in the summary text.

Examples. A walk-through of portions from two tables will help in the correct interpretation of all quarterly report tables. The portions were taken from the first report which covers the October-December 1986 collection period.

Figure 1 is an example of a core module data table. It is from Table F-8 titled "Percentage Seeing/Hearing Military Advertising" and presents the responses given to the question: "Now, thinking about TV, radio, newspapers, magazines, and any other sources of advertising, for which military service or services do you recall seeing or hearing any advertising?" This table is based on responses of the full Recruiting Market (N=1,497) as shown in the N column of the TOTAL RECRUITING MARKET row. (All are module data tables, i.e., Tables 1, 2, 7, 8, and 9 are based on responses of the full Recruiting Market.) Six other aspects of the table are highlighted in the figure, showing the reader how to interpret row and column headings, N's, and table values.

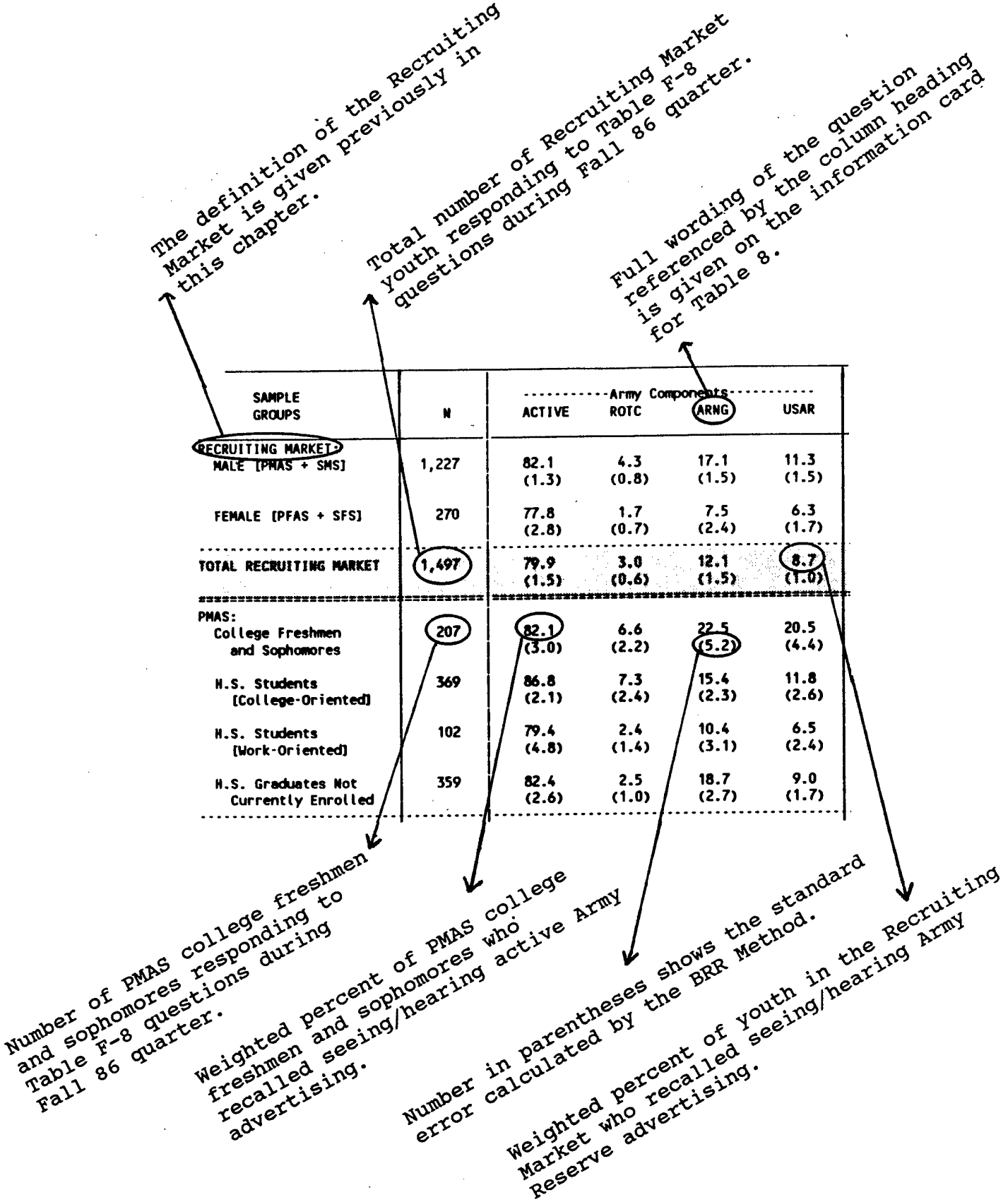
It is important for the reader to remember that the N's in every table are actual numbers of youth interviewed during the quarter while the percentages are weighted to be nationally representative of the subgroups. This means that the weighted number of cases underlying a percentage cannot be determined from the table.

A second important feature of all tables is that percentages are <u>not</u> calculated either within columns or across rows, and therefore do not sum to 100%. Rather they are based on the number of respondents offering a particular response, as in Figure 1, or replying yes to a question as in Figure 2. The weighted percent of 82.1 highlighted in Figure 1 is the proportion of college freshmen and sophomores who recalled advertising for the active Army; by implication, a weighted percent of 17.9 did not recall such advertising. The number does not represent the proportion of respondents mentioning the active Army who are college freshmen and sophomores, and neither does it represent the proportion of college freshmen and sophomores recalling any advertising who mentioned the active Army specifically.

Unlike the table in Figure 1, Figure 2 is an example of a rotating module data table. It is based on a subsample of respondents who answered questions regarding their media habits. The complete table is Table F-11 and is titled "Percentage Regularly Viewing or Listening to Various Types of Programming." Less than the full sample was asked the questions because (1) the questions are part of a rotating module administered to a randomly selected half of the youth, and (2) a "gate" question preceded the tabled questions which pared down the number of respondents even further. Only youth who answered yes to the gate question, "Do you regularly watch TV?" were asked about specific types of programs. The values in the table, therefore, do not reveal the program preferences of people who did not describe themselves as regular viewers or listeners.

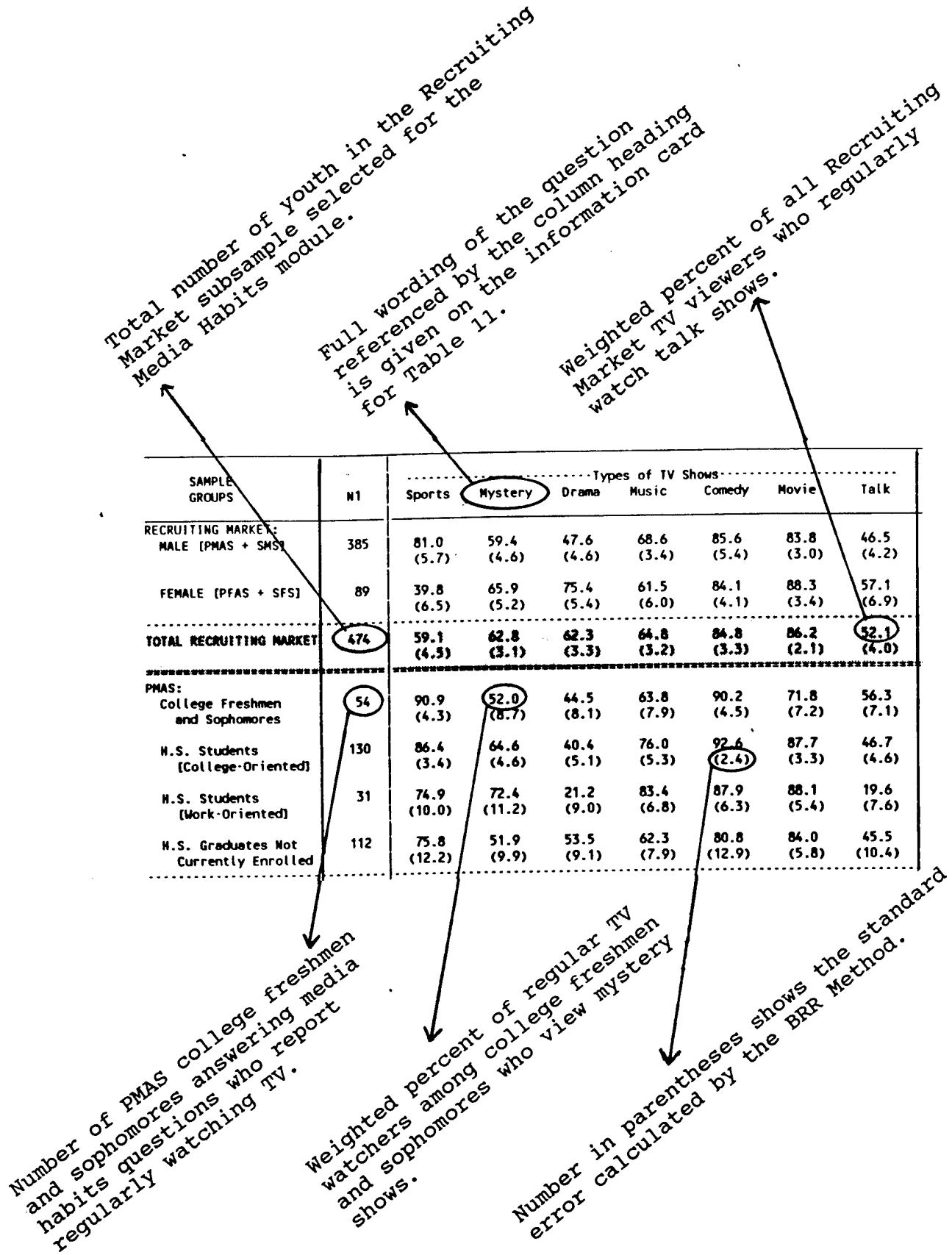
Both of these sample-limiting factors are described on the information card for Table 11, contained in the front pocket of this binder. The cards are designed to quickly inform the reader of the sample underlying each table and are invaluable for accurate interpretation of table contents.

Six aspects of the table portion in Figure 2 are highlighted, most providing the correct interpretation of a number. If a reader were to plunge into reading the table without benefit of its information card, the first hint that the respondents are a subsample would come from the N1 column of the TOTAL RECRUITING MARKET row. Instead of 1,497 as shown in the Figure 1 table based on the entire sample, it numbers only 474. One consequence of the smaller N is larger standard errors and correspondingly larger confidence intervals around all of the sample estimates, as discussed in Appendix C.



SAMPLE GROUPS	N	Army Components: ACTIVE	ROTC	ARNG	USAR
RECRUITING MARKET:					
MALE [PMAS + SMS]	1,227	82.1 (1.3)	4.3 (0.8)	17.1 (1.5)	11.3 (1.5)
FEMALE [PFAS + SFS]	270	77.8 (2.8)	1.7 (0.7)	7.5 (2.4)	6.3 (1.7)
TOTAL RECRUITING MARKET	1,497	79.9 (1.5)	3.0 (0.6)	12.1 (1.5)	8.7 (1.0)
PMAS:					
College Freshmen and Sophomores	207	82.1 (3.0)	6.6 (2.2)	22.5 (5.2)	20.5 (4.4)
H.S. Students [College-Oriented]	369	86.8 (2.1)	7.3 (2.4)	15.4 (2.3)	11.8 (2.6)
H.S. Students [Work-Oriented]	102	79.4 (4.8)	2.4 (1.4)	10.4 (3.1)	6.5 (2.4)
H.S. Graduates Not Currently Enrolled	359	82.4 (2.6)	2.5 (1.0)	18.7 (2.7)	9.0 (1.7)

Figure 1. Example of core module data table (from Table F-8) with interpretations.



SAMPLE GROUPS	N1	Types of TV Shows: Sports	Mystery	Drama	Music	Comedy	Movie	Talk
RECRUITING MARKET:								
MALE [PMAS + SMS]	385	81.0 (5.7)	59.4 (4.6)	47.6 (4.6)	68.6 (3.4)	85.6 (5.4)	83.8 (3.0)	46.5 (4.2)
FEMALE [PFAS + SFS]	89	39.8 (6.5)	65.9 (5.2)	75.4 (5.4)	61.5 (6.0)	84.1 (4.1)	88.3 (3.4)	57.1 (6.9)
TOTAL RECRUITING MARKET	474	59.1 (4.3)	62.8 (3.1)	62.3 (3.3)	64.8 (3.2)	84.8 (3.3)	86.2 (2.1)	52.1 (4.0)
PMAS:								
College Freshmen and Sophomores	54	90.9 (4.3)	52.0 (8.7)	44.5 (8.1)	63.8 (7.9)	90.2 (4.5)	71.8 (7.2)	56.3 (7.1)
H.S. Students [College-Oriented]	130	86.4 (3.4)	64.6 (4.6)	40.4 (5.1)	76.0 (5.3)	92.6 (2.4)	87.7 (3.3)	46.7 (4.6)
H.S. Students [Work-Oriented]	31	74.9 (10.0)	72.4 (11.2)	21.2 (9.0)	83.4 (6.8)	87.9 (6.3)	88.1 (5.4)	19.6 (7.6)
H.S. Graduates Not Currently Enrolled	112	75.8 (12.2)	51.9 (9.9)	53.5 (9.1)	62.3 (7.9)	80.8 (12.9)	84.0 (5.8)	45.5 (10.4)

Figure 2. Example of rotating module data table (from Table F-11) with interpretations.

ACOMS QUARTERLY REPORT
FALL 1986

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ACOMS QUARTERLY REPORT: FALL 1986

EXECUTIVE SUMMARY

Requirement:

To provide timely information to Army policymakers and advertising planners regarding key market responses that are expected to be sensitive to changes in the Army's advertising plans.

Procedure:

Computer-assisted telephone interviews were conducted with 1,787 youth between the ages of 16 and 24 during the quarter. Each interview lasted approximately 30 minutes. Youth were asked about their education and employment history, career plans for the future, intentions to enlist in the Army, enlistment-related activities undertaken during the prior six months, and what opportunities they regard as important to their future plans. They were also asked about their media monitoring habits, recall of military advertising, knowledge and perceptions of the Army and its components, and their attitudes toward Army advertisements. Demographic information was collected and, for selected youth, parental location and tracking information was requested to be used for parental and longitudinal interviewing.

In this report, data tables with accompanying text summarize the results of the first quarter's interviews on key indicators of the current state of the recruiting market. This quarter's findings also provide baseline data that will be used in comparison with future findings to track emerging trends.

Results:

Since this is the first quarter of data collection, the following observations should be treated as tentative guideposts to subsequent interpretation. Further, since there are changes to the ACOMS interview which were made in the beginning of Winter quarter, we have tried not to overinterpret these first quarter results.

Recall and Brand Image:

- Recall of active Army advertising is highest among all services.
  - Both aided and unaided recall of active Army advertising is higher than recall of other services, by margins of 18 to 25% for unaided recall, and 6 to 14% for aided recall.
  - The G.I.Bill is more likely to be associated with the Army than with other services, again by large margins.
- General knowledge of the Army's offers and benefits is high but knowledge of specifics is less widespread.
  - Knowledge of the delayed entry program is generally high. Since DEP was an important advertising message during the quarter, it will be important to watch this total next quarter when the delayed entry program is not being advertised as heavily.
  - Knowledge that the Army offers money for education is well known although fewer respondents know how much is available or that the Army offers more money than other services. Since the G.I.Bill and the Army College Fund are major components of next quarter's advertising plans, increases in the more specific knowledge may occur.
- Brand image and recall of advertising for the Army Reserve Officers' Training Corps, Army National Guard, and Army Reserve lag behind the active Army.
  - Brand image differences are shown in the relatively high percentages of respondents who agree with statements about the attributes of the active Army (Table F-3) compared with the percentages agreeing with statements about the Army ROTC (Table F-6), Army Reserve (Table F-4), and Army National Guard (Table F-5). Further, there appears to be less variability of proportions agreeing with different attributes for the ROTC, ARNG, and USAR, suggesting that the images are more diffuse.
  - Advertisements for the components are recognized when probed (aided recall) but appear not to be salient enough to elicit unaided recall. This may be because the components are not clearly distinguishable from the Army.

- Although unaided recall of ROTC advertising is generally low, it is highest among the sample groups targeted by the ROTC (college-oriented high school students and college freshmen and sophomores).

Market Segmentation:

- College-oriented and work-oriented high school students appear to have similar values, but the work-oriented seem more likely to see the Army as a place to get what they want.
  - An important exception to the above general statement is that college-oriented high school students are more likely to value money for education and mental challenge than students who are work-oriented. Interestingly, however, work-oriented students are more likely than college-oriented to perceive the Army as offering a mental challenge and the two groups do not differ in likelihood of thinking that the Army offers money for education.
- High school diploma graduates not currently enrolled were the primary target market segment during the quarter. The main message targeted to this group was that the Army offers opportunities to use high-tech equipment.
  - High school diploma graduates are relatively unlikely to perceive that the Army offers opportunities they value.
  - HSDGs are also least likely of all PMAS groups to perceive that the Army offers high-tech opportunities. This view is, however, in line with their generally lower perceptions of most Army attributes.

Disparities Between Perceptions of Active Army and Importance:

- Several attributes that are highly likely to be seen as important by youth are considerably less likely to be seen as offered by the active Army. For PMAS youth, the largest overall differences between perceptions of active Army and importance are associated with civilian career development (a difference of 38.8%), opportunity to develop potential (24.0%), mental challenge (18.5%), and experiences to be proud of (13.3%).

- PMAS youth are more likely to agree that the Army offers the opportunity to work with high-tech equipment than to see it as important for themselves (a difference of 14%).

- The mismatches between perceptions of the active Army and rated importance of attributes are generally greater for college-oriented youth than for work-oriented. This is true for civilian career development (the difference for the college-oriented is 35.3% compared with 16.2% for work-oriented), mental challenge, experiences to be proud of, and developing self-confidence.

- For one attribute, money for education, the mismatch is greater for work-oriented than college-oriented youth. College-oriented high school students are about as likely to think that the Army offers money for education as to think it is valuable to their own future plans. However, work-oriented youth are more likely to think that the Army offers education money than to think it is important. HSDGs are also more likely to perceive the Army as offering money for education than to value it.

Other Highlights and Hypotheses:

- Groups with high measured intention to enlist do not necessarily act on those intentions.

  - This may reflect a break between intentions and action or a weakness in the measurement of intention. However, it could also mean intention is not the only cause of measured behavior. For example, it appears that a large percentage of respondents who report having talked with an Army recruiter during the past six months were contacted first by the recruiter. This may reflect a different level of motivation than if the respondents themselves had initiated contact with the recruiter.

- Youth in the Southeast and Southwest (2nd and 5th Recruiting Brigades) are generally more favorably inclined toward the Army than youth in other regions. They are more likely to agree with active Army attribute statements, and to have aided intentions to enlist.

Utilization:

These findings will be useful to Army advertising planners who need information about the perceptions, intentions, and enlistment-related behaviors of youth in the Army's Recruiting

Market. The first quarter's findings will also provide baseline information for comparisons with data collected in future quarters of the ACOMS survey.

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INTRODUCTION TO FALL 1986 QUARTERLY REPORT

This report presents data collected from the inception of survey data collection on October 13, 1986 through December 31, 1986.

Sample Groups in the Quarterly Report

During the first quarter of data collection, a total of 1,787 youth interviews were completed. All of the tables in the quarterly report except Table 6 [Perceptions - Army ROTC] focus on the main Army Recruiting Market, a subset of 1,497 of the total youth interviews. Table 6 includes data on the perceptions of the ROTC Sample, a subset of 348 of the total youth interviews. The following table lists the subgroups within the Recruiting Market. It shows the total number of interviews conducted with youth in each of the subgroups during the first quarter of data collection and the weighted percentages of respondents within each grouping category (e.g., education, region, age, etc.).

Sample Groups	N	Weighted Percentage
RECRUITING MARKET:		
MALES [PMAS + SMS]	1,227	47.9
FEMALES [PFAS + SFS]	270	52.1
TOTAL RECRUITING MARKET	1,497	
PMAS:		
College Freshmen and Sophomores	207	21.7
H.S. Students [College-Oriented]	369	28.6
H.S. Students [Work-Oriented]	102	7.9
H.S. Graduates Not Currently Enrolled	359	41.8
1st Rctg Bde	202	19.4
2nd Rctg Bde	181	20.3
4th Rctg Bde	313	26.1
5th Rctg Bde	212	18.2
6th Rctg Bde	129	16.0
16-17 Years Old	431	32.8
18-19 Years Old	278	27.9
20-21 Years Old	155	17.3
22-24 Years Old	173	22.0
TOTAL PMAS	1,037	

The interview totals and weighted percentages in the table above are provided as a general guide to sample sizes. It should be noted, however, that the numbers of interviews and weighted

percentages are different for each of the tables containing data from rotating modules (e.g., Table F-11: Media Habits) and perceptions modules (e.g., Table F-4: Perceptions - Army Reserve). Additionally, of course, the sample sizes and weighted percentages for Table 6: Perceptions - Army ROTC are quite different since they include different subpopulations.

Sample Performance

The chart below shows response rates for household screeners and youth interviews for the first quarter of ACOMS data collection. The monthly response rate for household screeners is calculated as a percentage of completed screening calls to identified households in the month's sample of randomly selected telephone numbers. The monthly response rate for youth interviews is calculated as a percentage of completed youth interviews among identified eligible youth in the month's sample.[1]

Response Rates for ACOMS - Fall Quarter
Percentage Completed

	October	November	December
Household Screener	86.4	82.8	83.5
Youth Interviews	74.0	70.9	75.9

[1]Interviewers have a total of eight weeks to close out each monthly sample of telephone numbers. This process includes identifying all non-working and non-residential numbers in addition to completing household screeners on all identified households and completing interviews with all eligible respondents. Therefore, the respondents included in the response rate calculations are somewhat different than those included in the quarterly report itself. In particular, since the December monthly sample was not closed out until late in January, interviewing continued for this sample past the December 31 cutoff date used for reporting purposes. Interviews in this category will be included in the Winter 1987 quarterly report.

QUARTERLY TABLES

FALL 1986

PERCENTAGE WITH INTENTION TO ENLIST IN ARMY COMPONENTS
(Standard Error)

SAMPLE GROUPS	N1	Unaided Intention: General Intention	Unaided Intention: Active Army	Unaided Intention: USAR	Unaided Intention: ARNG	Aided Intention: General Intention	Aided Intention: Active Army	Aided Intention: USAR	Aided Intention: ARNG	N2	Army ROTC
RECRUITING MARKET:											
MALE [PMAS + SMS]	1,227	1.8 (0.4)	1.1 (0.3)	0.3 (0.1)	0.4 (0.2)	25.7 (1.5)	14.8 (1.0)	13.2 (1.2)	11.9 (1.1)	830	16.9 (1.6)
FEMALE [PFAS + SFS]	270	0.4 (0.4)	0.0 n.e.	0.4 (0.4)	0.0 n.e.	8.5 (2.1)	4.4 (1.4)	5.9 (1.9)	3.6 (1.3)	189	8.5 (2.8)
TOTAL RECRUITING MARKET	1,497	1.1 (0.4)	0.5 (0.1)	0.4 (0.3)	0.2 (0.1)	16.8 (1.3)	9.4 (0.9)	9.4 (1.1)	7.6 (0.8)	1,019	12.4 (1.7)
PMAS:											
College Freshmen and Sophomores	207	0.3 (0.3)	0.0 n.e.	0.0 n.e.	0.3 (0.3)	11.7 (2.9)	4.8 (1.8)	4.9 (1.5)	4.4 (1.6)	201	6.6 (2.1)
H.S. Students [College-Oriented]	369	2.2 (0.8)	1.5 (0.7)	0.5 (0.4)	0.2 (0.2)	33.6 (2.9)	19.0 (2.4)	17.0 (2.8)	12.9 (2.1)	369	22.8 (2.7)
H.S. Students [Work-Oriented]	102	7.4 (2.7)	5.8 (2.2)	0.0 n.e.	1.5 (1.5)	41.6 (4.4)	33.3 (3.9)	23.3 (3.9)	19.9 (4.4)	N/A	N/A N/A
H.S. Graduates Not Currently Enrolled	359	0.5 (0.5)	0.0 n.e.	0.2 (0.2)	0.3 (0.3)	19.0 (3.1)	10.4 (2.3)	9.6 (2.2)	10.1 (2.2)	180	14.2 (3.7)
1st Rctg Bde	202	0.6 (0.6)	0.0 n.e.	0.0 n.e.	0.6 (0.6)	14.8 (3.1)	5.5 (2.0)	7.5 (1.9)	6.5 (1.8)	148	9.7 (3.1)
2nd Rctg Bde	181	2.3 (1.7)	1.2 (0.7)	0.5 (0.5)	0.6 (0.7)	32.8 (5.5)	19.5 (5.0)	17.0 (3.3)	18.9 (3.9)	125	22.8 (4.9)
4th Rctg Bde	313	1.4 (0.6)	0.7 (0.4)	0.5 (0.4)	0.2 (0.2)	17.0 (2.3)	10.2 (1.6)	9.1 (2.2)	5.6 (1.3)	221	14.2 (3.1)
5th Rctg Bde	212	1.8 (0.9)	1.4 (0.8)	0.0 n.e.	0.4 (0.4)	30.0 (4.4)	23.3 (4.1)	13.7 (2.9)	10.1 (2.9)	153	17.7 (3.1)
6th Rctg Bde	129	1.4 (1.0)	1.4 (1.0)	0.0 n.e.	0.0 n.e.	24.8 (4.4)	9.6 (2.4)	12.4 (3.6)	12.7 (4.0)	103	13.8 (3.7)
16-17 Years Old	431	4.0 (1.1)	2.5 (0.8)	0.7 (0.4)	0.7 (0.5)	30.7 (2.8)	18.0 (2.1)	15.4 (2.3)	11.8 (1.8)	347	19.7 (2.9)
18-19 Years Old	278	0.7 (0.5)	0.3 (0.3)	0.0 n.e.	0.5 (0.5)	22.2 (3.0)	13.9 (2.5)	11.7 (2.1)	10.6 (2.0)	219	13.6 (2.9)
20-21 Years Old	155	0.0 n.e.	0.0 n.e.	0.0 n.e.	0.0 n.e.	19.5 (5.0)	12.7 (3.8)	13.9 (3.7)	11.5 (4.4)	100	11.1 (5.2)
22-24 Years Old	173	0.0 n.e.	0.0 n.e.	0.0 n.e.	0.0 n.e.	16.9 (4.8)	6.6 (3.3)	4.7 (2.0)	7.4 (2.3)	84	12.5 (4.8)
TOTAL PMAS	1,037	1.5 (0.5)	0.9 (0.3)	0.2 (0.1)	0.4 (0.2)	23.4 (1.6)	13.5 (1.1)	11.8 (1.2)	10.4 (1.2)	750	15.4 (1.6)

Note: n.e. indicates standard error is not estimable.

TABLE F-1 INTENTION TO ENLIST

- Aided and unaided general intentions to enlist in the Army are highest among males who are still in high school.
  - Aided intentions to enlist in all Army components are higher for high school students than for college freshmen and sophomores or graduates not currently enrolled.
  - High school students also show higher unaided intentions to enlist in the active Army but no differences appear among the educational groups for intentions to enlist in the Army Reserve or Army National Guard.
  - Among those not in high school, graduates not currently enrolled report higher aided intentions to enlist in the Army National Guard than college students.
- Among those still in high school, work-oriented students are more likely to show aided intention to enlist in the active Army than those who are college-oriented. A similar, though non-significant, trend is shown for unaided active Army intentions to enlist.
  - 33.3% of work-oriented high school students show a general aided intention and 5.8% a general unaided intention to enlist in the active Army compared to 19.0% and 1.5%, respectively, for college-oriented students.
  - While work-oriented high school students are more likely to report intention to enlist in the active Army than in other components, other groups seem as likely to show intention to enlist in other components as in the active Army.
- Comparing aided to unaided intention, specifying components by name when asking respondents about intention to enlist (aided intention) yields large increases in reported intentions to enlist across all educational groups over unaided questions.
- In general, males are more likely than females to report intentions to enlist.
  - Males are over four times more likely than females to report a general intention to enlist in the Army unaided, and over three times as likely aided. Active Army intentions are also higher for males both unaided and aided.
  - Males are more likely to report aided intentions to enlist in the Reserve and Guard but there are no significant differences between the sexes in unaided intentions to enlist in either of these two components.
- Youth in the Southeast (2nd Recruiting Brigade) and the Southwest (5th Recruiting Brigade) report the highest aided general intentions to enlist in the Army and the highest intention to enlist in the active Army. No significant regional differences are shown for unaided intentions.

Table F-2

PERCENTAGE RATING OPPORTUNITIES "IMPORTANT" OR "VERY IMPORTANT" TO PLANS FOR THE NEXT YEAR
(Standard Error)

SAMPLE GROUPS	N	* Job Variety	Physical Challenge	△ Proud Experience	Step Btwn HS & Col.	Leader Skills	△ Hi-Tech Equipment	Civilian Career	Self Confidence	Develop Potential	Mental Challenge	Mature & Responsible	Skill Training	Hi-Trained Co-Workers	Money for Ed.	Serve Country	△ Exciting Weekends	* Part-Time Work	△ Live in Hometown	N*
RECRUITING MARKET:																				
MALE [PMAS + SMS]	1,227	N/A	78.0	87.9	45.8	79.0	65.7	92.4	87.7	92.3	82.4	85.3	81.1	77.9	63.5	62.4	75.6	N/A	40.7	N/A
		N/A	(1.6)	(1.3)	(2.0)	(1.4)	(2.0)	(0.9)	(1.2)	(0.8)	(1.5)	(1.3)	(1.6)	(1.8)	(2.0)	(2.1)	(1.5)	N/A	(1.5)	
FEMALE [PFAS + SFS]	270	N/A	67.6	88.2	52.2	74.4	57.9	91.5	91.7	89.1	79.8	90.2	77.9	74.4	70.3	52.6	70.2	N/A	51.0	N/A
		N/A	(2.6)	(2.4)	(2.6)	(3.0)	(3.5)	(2.0)	(1.9)	(2.3)	(3.2)	(2.2)	(2.5)	(2.9)	(2.2)	(3.9)	(3.5)	N/A	(3.8)	
TOTAL RECRUITING MARKET	1,497	N/A	72.6	88.0	49.1	76.6	61.7	91.9	89.8	90.6	81.0	87.8	79.4	76.1	67.1	57.3	72.8	N/A	46.1	N/A
		N/A	(1.7)	(1.4)	(1.7)	(1.6)	(2.2)	(1.1)	(1.1)	(1.2)	(1.8)	(1.2)	(1.5)	(1.7)	(1.6)	(2.3)	(2.0)	N/A	(2.1)	
PMAS:																				
College Freshmen and Sophomores	207	N/A	76.0	86.1	36.2	83.2	63.2	93.8	87.4	94.6	89.3	83.8	75.8	80.3	68.6	57.0	74.4	N/A	25.3	N/A
		N/A	(3.2)	(2.9)	(4.7)	(3.4)	(3.8)	(2.4)	(2.8)	(1.7)	(2.7)	(3.8)	(3.3)	(4.0)	(4.3)	(6.2)	(4.2)	N/A	(3.4)	
H.S. Students [College-Oriented]	369	N/A	80.9	88.2	56.3	80.6	72.4	92.5	88.0	91.9	85.2	88.8	85.2	80.0	83.0	68.6	77.8	N/A	35.2	N/A
		N/A	(2.4)	(1.9)	(3.1)	(2.5)	(3.1)	(1.6)	(2.1)	(1.6)	(1.9)	(1.8)	(2.3)	(3.1)	(2.3)	(2.8)	(2.6)	N/A	(3.4)	
H.S. Students [Work-Oriented]	102	N/A	83.5	91.2	54.9	75.2	76.0	91.4	88.3	90.5	75.3	90.2	84.6	81.6	68.5	68.5	80.4	N/A	43.3	N/A
		N/A	(3.1)	(3.6)	(5.0)	(3.8)	(4.6)	(2.9)	(4.0)	(3.2)	(3.6)	(3.9)	(3.1)	(3.7)	(4.8)	(5.2)	(4.4)	N/A	(5.8)	
H.S. Graduates Not Currently Enrolled	359	N/A	78.1	87.2	40.5	78.7	58.3	93.0	88.9	94.0	84.6	83.2	81.5	74.6	50.1	59.0	76.2	N/A	48.8	N/A
		N/A	(2.9)	(2.2)	(4.0)	(2.9)	(3.6)	(1.5)	(1.8)	(1.4)	(2.3)	(2.4)	(2.8)	(3.2)	(4.3)	(4.2)	(3.0)	N/A	(3.5)	
1st Rctg Bde	202	N/A	80.1	85.9	40.4	76.1	62.0	96.2	88.7	95.6	84.2	85.2	82.2	77.1	66.7	56.3	78.5	N/A	41.9	N/A
		N/A	(3.9)	(3.8)	(5.3)	(3.9)	(4.5)	(1.4)	(2.6)	(1.7)	(3.1)	(3.3)	(3.1)	(3.9)	(5.8)	(6.0)	(3.1)	N/A	(4.5)	
2nd Rctg Bde	181	N/A	80.5	91.5	46.3	86.2	72.4	93.5	92.7	94.8	84.6	90.4	82.4	84.8	71.4	76.0	77.7	N/A	35.3	N/A
		N/A	(3.4)	(2.4)	(6.3)	(3.1)	(5.2)	(2.4)	(2.2)	(1.7)	(3.7)	(2:4)	(4.5)	(3.0)	(4.8)	(4.4)	(4.1)	N/A	(5.5)	
4th Rctg Bde	313	N/A	80.1	85.2	42.3	77.2	66.0	90.9	87.5	92.1	85.8	82.2	80.4	72.6	63.6	53.3	77.1	N/A	35.5	N/A
		N/A	(2.9)	(2.2)	(4.7)	(3.1)	(2.8)	(2.2)	(2.3)	(2.2)	(2.1)	(2.9)	(2.2)	(4.0)	(3.7)	(5.4)	(3.2)	N/A	(3.3)	
5th Rctg Bde	212	N/A	81.7	91.6	51.7	85.9	64.1	94.5	91.1	92.7	84.4	90.1	86.0	77.3	65.8	71.0	76.5	N/A	48.7	N/A
		N/A	(2.5)	(2.2)	(4.4)	(2.4)	(4.0)	(1.6)	(2.3)	(1.9)	(3.0)	(2.4)	(2.4)	(4.0)	(4.2)	(3.2)	(4.1)	N/A	(4.0)	
6th Rctg Bde	129	N/A	70.4	83.8	47.1	74.4	57.5	89.7	80.1	91.0	86.2	79.8	76.7	79.9	56.1	55.8	72.3	N/A	37.1	N/A
		N/A	(6.2)	(4.8)	(3.9)	(4.4)	(4.8)	(2.9)	(4.8)	(2.1)	(3.9)	(5.3)	(4.4)	(3.7)	(6.1)	(4.4)	(5.7)	N/A	(3.6)	
16-17 Years Old	431	N/A	81.6	89.9	53.8	80.2	73.6	93.9	88.5	92.2	83.7	88.5	84.8	79.4	78.7	67.6	78.6	N/A	35.2	N/A
		N/A	(2.2)	(1.6)	(3.1)	(2.3)	(2.4)	(1.3)	(1.8)	(1.5)	(1.7)	(1.8)	(2.0)	(2.9)	(2.7)	(2.4)	(2.3)	N/A	(3.1)	
18-19 Years Old	278	N/A	76.7	85.7	42.3	78.8	62.6	90.2	87.8	92.1	85.6	85.5	78.8	79.8	71.4	63.0	74.5	N/A	37.1	N/A
		N/A	(3.2)	(2.4)	(4.2)	(2.8)	(3.3)	(2.3)	(2.0)	(1.8)	(2.1)	(3.1)	(2.4)	(2.7)	(3.1)	(4.3)	(3.3)	N/A	(3.3)	
20-21 Years Old	155	N/A	75.5	86.8	35.9	84.1	64.6	95.9	86.1	92.9	84.2	86.1	82.0	78.2	59.8	61.4	79.1	N/A	35.5	N/A
		N/A	(5.6)	(4.0)	(6.9)	(4.4)	(7.0)	(1.8)	(3.5)	(1.9)	(4.0)	(3.6)	(4.6)	(5.4)	(7.4)	(7.2)	(4.4)	N/A	(6.4)	
22-24 Years Old	173	N/A	80.3	87.0	43.5	77.7	54.7	92.5	90.2	96.6	87.0	80.5	79.9	73.3	40.5	53.3	74.5	N/A	51.5	N/A
		N/A	(2.9)	(3.4)	(4.8)	(3.4)	(4.5)	(2.0)	(2.3)	(1.5)	(2.5)	(3.6)	(3.5)	(4.3)	(4.7)	(5.0)	(3.9)	N/A	(4.8)	
TOTAL PMAS	1,037	N/A	78.9	87.6	45.2	79.9	64.8	92.9	88.3	93.3	85.0	85.5	81.6	78.0	65.0	62.1	76.6	N/A	39.4	N/A
		N/A	(1.6)	(1.4)	(2.4)	(1.5)	(2.0)	(0.9)	(1.2)	(0.9)	(1.4)	(1.4)	(1.7)	(1.9)	(2.1)	(2.4)	(1.7)	N/A	(1.7)	

* indicates variable was added Winter 87.

△ indicates wording for question item(s) was changed significantly. See Appendix E.

TABLE F-2

IMPORTANCE OF ATTRIBUTES

- The great majority of youth in all sample groups (80% - 98%) consider career and self-development opportunities important. Specifically, in the Recruiting Market generally and in the PMAS, the attributes most likely to be valued are opportunities for career development, developing potential, having experiences to be proud of, gaining self-confidence, and becoming more mature and responsible. Having a mental challenge is also highly likely to be valued by youth in the PMAS.

- In the Recruiting Market generally and in the PMAS, the attributes least likely to be valued (23%-56%) are staying in one's own hometown and having a stepping-stone between high school and college.

- Very few differences are shown between work-oriented and college-oriented high school students on the importance of attributes.

  - Two notable exceptions are that college-oriented students are more likely than work-oriented to value money for education and mental challenge.

- Advertising plans appear to be focused on important youth values. Some of the messages aimed at particular market segments are right on target while others appeal to a different (often broader) audience than expected.

  - Work-oriented high school students are less likely than the other educational groups to consider having a mental challenge important.

  - Money for education is most likely to be important among college-oriented high school students and males who are younger than 22.

  - Skills training opportunities are more likely to be valued by high school students than by college freshmen and sophomores.

  - The opportunity to use high-tech equipment appeals particularly to both college-oriented and work-oriented high school students. The high-tech appeal appears to decrease with age and HSDGs and women are especially unlikely to value it. Regional patterns show youth in the Southeast (2nd Recruiting Brigade) are most likely and those in the West (6th Recruiting Brigade) are least likely to consider this opportunity important.

  - The importance of serving the country varies regionally, having higher value among youth in the Southeast (2nd Recruiting Brigade) and Southwest (5th Recruiting Brigade) than in other regions.

PERCENTAGE "AGREE" OR "STRONGLY AGREE" WITH ACTIVE ARMY ATTRIBUTE STATEMENTS
(Standard Error)

SAMPLE GROUPS	N	Job Variety	Physical Challenge	Proud Experience	Step Btwn HS & Col.	Leader Skills	Hi-Tech Equipment	Civilian Career	△ Self Confidence	Develop Potential	Mental Challenge	△ Mature & Responsible	Skill Training	Hi-Trained Co-Workers	△ Money for Ed.
RECRUITING MARKET:															
MALE [PMAS + SMS]	1,168	57.2 (1.7)	83.2 (1.5)	71.2 (1.8)	45.6 (2.3)	72.1 (1.6)	78.4 (1.7)	55.0 (2.1)	71.4 (1.9)	69.4 (1.8)	66.5 (2.0)	77.3 (1.6)	72.4 (1.7)	74.6 (1.5)	74.9 (1.7)
FEMALE [PFAS + SFS]	264	63.0 (3.5)	81.6 (2.4)	76.5 (3.1)	52.9 (3.3)	71.8 (3.6)	84.0 (2.5)	63.5 (3.1)	71.3 (3.5)	68.4 (3.9)	70.0 (2.8)	77.9 (3.0)	76.7 (2.9)	77.7 (3.1)	71.3 (3.2)
TOTAL RECRUITING MARKET	1,432	60.2 (2.0)	82.3 (1.5)	74.0 (1.8)	49.5 (2.0)	71.9 (2.1)	81.3 (1.5)	59.5 (2.0)	71.3 (1.9)	68.9 (2.3)	68.4 (1.4)	77.6 (1.8)	74.7 (1.6)	76.2 (1.7)	73.0 (1.8)
PMAS:															
College Freshmen and Sophomores	148	47.9 (4.9)	88.1 (3.3)	65.2 (5.4)	31.5 (5.2)	73.0 (4.3)	80.6 (4.3)	51.1 (5.2)	71.1 (4.8)	62.6 (5.5)	59.4 (5.8)	73.6 (4.9)	66.8 (5.5)	68.4 (5.1)	75.7 (4.3)
H.S. Students [College-Oriented]	369	62.1 (2.9)	85.1 (1.7)	71.7 (2.6)	43.1 (3.1)	73.5 (3.2)	83.0 (1.8)	57.2 (3.0)	72.6 (2.5)	76.2 (2.4)	67.0 (3.2)	80.8 (2.0)	76.9 (2.6)	79.3 (2.3)	81.7 (2.4)
H.S. Students [Work-Oriented]	102	72.4 (4.2)	84.3 (3.8)	82.4 (4.0)	62.3 (5.4)	78.8 (5.7)	88.6 (2.8)	75.2 (5.3)	78.6 (5.5)	79.6 (3.9)	82.6 (4.4)	91.5 (2.9)	86.2 (2.8)	80.8 (4.9)	87.2 (3.4)
H.S. Graduates Not Currently Enrolled	359	55.3 (3.8)	80.4 (3.2)	69.5 (3.6)	48.3 (3.8)	69.2 (3.7)	73.2 (3.3)	49.5 (4.5)	67.0 (3.7)	65.8 (4.0)	66.4 (3.5)	72.0 (3.7)	67.1 (3.5)	71.7 (3.3)	69.4 (3.6)
1st Rctg Bde	191	45.1 (5.1)	86.8 (3.3)	70.8 (5.8)	35.5 (3.5)	70.0 (4.5)	76.6 (4.4)	45.5 (4.5)	71.8 (4.4)	63.3 (4.9)	65.7 (5.1)	69.5 (5.3)	67.7 (5.2)	69.5 (5.1)	74.4 (4.9)
2nd Rctg Bde	170	68.7 (5.7)	89.7 (2.4)	79.7 (4.0)	57.5 (7.0)	82.6 (3.4)	88.0 (2.7)	68.6 (6.2)	80.1 (3.9)	76.6 (4.4)	76.9 (4.2)	85.9 (3.1)	81.8 (3.4)	84.5 (3.3)	82.6 (3.9)
4th Rctg Bde	298	59.9 (3.2)	80.5 (2.8)	64.8 (4.2)	40.6 (3.4)	70.0 (2.6)	80.2 (2.4)	53.3 (4.0)	66.6 (3.5)	66.7 (3.9)	66.5 (3.4)	74.2 (3.3)	70.7 (3.3)	74.8 (2.9)	75.0 (2.8)
5th Rctg Bde	197	62.3 (4.2)	86.4 (2.4)	75.9 (3.3)	51.9 (5.7)	78.0 (3.8)	78.1 (4.5)	60.0 (4.5)	68.8 (5.0)	76.1 (4.3)	68.2 (5.1)	82.0 (3.1)	78.4 (3.5)	76.9 (4.1)	80.0 (3.6)
6th Rctg Bde	122	47.5 (5.1)	74.2 (7.3)	60.3 (6.0)	37.4 (4.9)	57.7 (6.1)	68.8 (7.0)	41.5 (4.3)	64.3 (6.9)	64.0 (6.3)	52.4 (6.3)	70.8 (6.1)	56.6 (5.8)	61.8 (7.1)	65.1 (6.8)
16-17 Years Old	429	61.8 (2.6)	83.9 (1.9)	71.7 (2.4)	45.6 (3.1)	71.7 (2.8)	82.4 (2.1)	57.8 (2.9)	71.4 (2.4)	74.4 (2.4)	68.6 (3.0)	80.2 (2.1)	77.1 (2.2)	77.2 (2.2)	81.8 (2.1)
18-19 Years Old	237	57.3 (4.0)	86.9 (2.5)	72.0 (4.4)	39.1 (4.0)	77.4 (3.3)	81.9 (3.1)	58.2 (4.9)	72.3 (4.0)	68.7 (4.2)	63.1 (4.4)	77.7 (4.0)	71.7 (4.2)	73.9 (4.3)	78.9 (3.7)
20-21 Years Old	142	54.9 (8.9)	79.9 (5.8)	66.0 (7.0)	50.6 (9.3)	67.3 (7.0)	69.8 (7.0)	47.5 (9.4)	68.4 (6.7)	62.0 (7.9)	65.6 (7.0)	72.7 (6.7)	64.1 (7.2)	70.2 (6.6)	73.0 (6.6)
22-24 Years Old	170	51.7 (4.3)	82.3 (3.8)	69.4 (4.6)	44.6 (4.0)	69.5 (4.6)	76.7 (4.1)	48.8 (4.7)	68.1 (4.5)	67.8 (4.5)	68.0 (4.3)	72.3 (4.4)	68.1 (4.0)	72.1 (4.3)	64.8 (4.2)
TOTAL PMAS	978	57.1 (2.0)	83.7 (1.6)	70.3 (2.1)	44.5 (2.4)	72.0 (1.6)	78.8 (1.9)	54.1 (2.5)	70.4 (2.1)	69.3 (2.1)	66.5 (2.2)	76.5 (1.8)	71.4 (1.9)	74.0 (1.8)	75.7 (1.9)

△ indicates wording for question item(s) was changed significantly. See Appendix E.

TABLE F-3

PERCEPTIONS - ACTIVE ARMY

- Perceptions of the active Army are generally in close accord with the Army's communications objectives.
  - For PMAS respondents, the most widespread perceptions of the active Army are that it provides a physically challenging environment (83.7%), opportunities to work with high-tech equipment (78.8%), to become more mature and responsible (76.5%), to earn money for education (75.7%), to work with highly trained people (74.0%), to develop leadership skills (72.0%), and to get training in useful skill areas (71.4%).
  - Comparatively infrequent perceptions are that the Army offers an advantage over going right from high school to college (44.5%), a great value to civilian career development (54.1%), and a wide variety of job opportunities (57.1%).
- Work-oriented high school students have generally different, stronger, and more favorable perceptions of the Army than other segments.
  - They are most likely to see the Army as offering a chance to become more mature and responsible (91.5%), to work with high-tech equipment (88.6%), to earn money for education (87.2%), and to get useful skill training (86.2%).
  - These perceptions are in close accord with messages targeted to this group under the dual market concept.
- College-oriented high school students have generally lower ratings of the Army's attributes than work-oriented high school students (although only half of these differences are statistically significant), and their perceptions are not as closely matched to the Army's communications objectives.
  - Their predominant perceptions are that the Army presents a physical challenge (85.1%), opportunities to work with high-tech equipment (83%), to earn money for education (81.7%), and to become more mature and responsible (80.8%).
  - Least frequent perceptions of the college-oriented are that the Army offers an advantage over going straight from high school to college (43.1%), that it is of great value for civilian career development (57.2%), and that it offers a wide variety of job opportunities (62.1%).
- Women tend to have more favorable perceptions of the Army than men, especially in regard to jobs and occupations. Women are more likely than men to see the Army as offering an advantage over going right from high school to college, chances to work with high-tech equipment, and benefits to civilian career development.
- Perceptions of the Army tend to be more favorable among men in the Southeast (2nd Recruiting Brigade) and the Southwest (5th Recruiting Brigade).

Table F-4

PERCENTAGE "AGREE" OR "STRONGLY AGREE" WITH ARMY RESERVE ATTRIBUTE STATEMENTS
(Standard Error)

SAMPLE GROUPS	N	Job Variety	Proud Experience	Leader Skills	Civilian Career	Self Confidence	Develop Potential	Mental Challenge	Mature & Responsible	Skill Training	Hi-Trained Co-Workers	△ Money for Ed.	Exciting Weekends	* Part-Time Work	△ Live in Hometown	N*
MALES [PMAS + SMS]	169	43.3 (5.9)	59.1 (5.0)	60.3 (5.6)	51.1 (5.6)	62.9 (5.8)	56.8 (5.7)	54.5 (5.6)	60.5 (6.2)	61.8 (5.8)	67.4 (4.8)	61.6 (5.5)	38.2 (5.4)	N/A N/A	63.6 (4.8)	N/A
FEMALES [PFAS + SFS]	34	59.6 (11.3)	72.1 (9.9)	80.4 (9.1)	65.9 (12.1)	82.2 (8.6)	70.0 (11.2)	77.1 (10.8)	81.4 (9.5)	76.7 (11.9)	82.3 (9.8)	61.4 (12.1)	62.9 (10.6)	N/A N/A	71.3 (10.0)	N/A
TOTAL RECRUITING MARKET	203	51.0 (6.0)	65.2 (4.7)	69.8 (5.5)	58.0 (6.5)	72.0 (5.0)	63.0 (5.5)	65.1 (4.7)	70.3 (6.1)	68.8 (6.1)	74.4 (5.5)	61.5 (5.8)	49.8 (5.7)	N/A N/A	67.2 (5.5)	N/A
TOTAL PMAS	150	43.2 (5.5)	66.1 (5.3)	69.4 (5.5)	56.1 (5.7)	67.8 (5.9)	63.1 (5.2)	61.4 (5.4)	70.3 (6.0)	65.7 (5.6)	67.9 (5.5)	63.6 (5.7)	41.8 (5.1)	N/A N/A	68.8 (4.8)	N/A

* indicates variable was added Winter 87.

△ indicates wording for question item(s) was changed significantly. See Appendix E.

- The Army Reserve does not appear to have a very strong brand image. Agreement with statements about Army Reserve attributes by PMAS youth ranges from approximately 40% agreement to 70%.
  - PMAS youth are most likely to perceive the Army Reserve as offering opportunities for becoming more mature and responsible (70.3%), developing leadership skills (69.4%), and staying in one's own hometown (68.8%).
  - Least frequent agreement by PMAS youth is shown with statements that the Army Reserve offers job variety (43.2%) and interesting and exciting weekends (41.8%).
- Females are significantly more likely to agree that the Army Reserve offers interesting and exciting weekends, mental challenge, and opportunities for gaining self-confidence, maturity and leadership skills.

Table F-5

PERCENTAGE "AGREE" OR "STRONGLY AGREE" WITH ARMY NATIONAL GUARD ATTRIBUTE STATEMENTS
(Standard Error)

SAMPLE GROUPS	N	Job Variety	Proud Experience	Leader Skills	Civilian Career	Self Confidence	Develop Potential	Mental Challenge	Mature & Responsible	Skill Training	Hi-Trained Co-Workers	△ Money for Ed.	Exciting Weekends	* Part-Time Work	△ Live in Hometown	N*
MALES [PMAS + SMS]	150	44.5 (7.0)	63.1 (6.4)	62.1 (5.3)	47.0 (6.0)	63.1 (6.4)	58.9 (5.5)	60.4 (6.2)	68.9 (5.2)	56.4 (6.9)	56.1 (6.3)	57.3 (5.5)	53.6 (6.8)	N/A N/A	67.0 (5.7)	N/A
FEMALES [PFAS + SFS]	46	44.0 (9.8)	68.4 (8.2)	64.0 (11.0)	51.3 (9.5)	58.6 (6.7)	65.7 (8.9)	62.1 (11.8)	74.8 (7.7)	67.4 (8.9)	72.1 (7.5)	61.2 (9.2)	36.0 (7.9)	N/A N/A	62.9 (7.1)	N/A
TOTAL RECRUITING MARKET	196	44.2 (6.5)	66.2 (5.1)	63.2 (6.6)	49.5 (5.6)	60.5 (4.5)	62.8 (5.0)	61.4 (7.2)	72.3 (4.4)	62.7 (5.9)	65.3 (5.1)	59.6 (6.2)	43.4 (5.4)	N/A N/A	64.6 (4.5)	N/A
TOTAL PMAS	131	45.9 (7.8)	63.1 (7.2)	62.8 (6.0)	47.6 (6.8)	61.0 (6.8)	58.5 (6.0)	60.6 (7.0)	68.9 (5.9)	55.7 (7.3)	56.3 (6.7)	56.9 (6.1)	53.7 (7.5)	N/A N/A	68.7 (6.5)	N/A

* indicates variable was added Winter 87.

△ indicates wording for question item(s) was changed significantly. See Appendix E.

- The Army National Guard does not appear to have a very strong brand image. Agreement with statements about Army National Guard attributes by PMAS youth ranges from approximately 45% agreement to 70%.
  - Agreement is highest for PMAS youth with statements that the Army National Guard provides opportunities for becoming more mature and responsible (68.9%), and for serving America while remaining at home (68.7%).
  - Least frequent agreement is shown for statements that the Army National Guard provides job variety (45.9%), civilian career development (47.6%), and interesting and exciting weekends (53.7%).

PERCENTAGE "AGREE" OR "STRONGLY AGREE" WITH ARMY ROTC ATTRIBUTE STATEMENTS
PERCENTAGE RATING ROTC OPPORTUNITIES "IMPORTANT" OR "VERY IMPORTANT" TO PLANS FOR THE NEXT YEAR
(Standard Error)

SAMPLE GROUPS	N1	ROTC PERCEPTIONS: ROTC Offers: Leader/Mgmt Training	ROTC Offers: Self Confidence	ROTC Offers: College Elective	ROTC Offers: Officer's Commission	Officer Benefits: △ Job Variety	Officer Benefits: Proud△ Experience	Officer Benefits: Use College Skills	Officer Benefits: Use Own Judgment	N2	ROTC IMPORTANCE: Leader Skills	ROTC IMPORTANCE: Self Confidence	ROTC IMPORTANCE: * Job Variety	ROTC IMPORTANCE: △ Proud Experience	ROTC IMPORTANCE: Use Own Judgment	N*
ROTC MALE SAMPLE:																
College Juniors and Seniors	92	57.5 (7.4)	52.9 (8.8)	71.6 (5.2)	72.0 (6.9)	42.0 (5.9)	65.8 (4.7)	43.7 (8.4)	44.0 (8.8)	119	85.2 (3.4)	85.3 (3.8)	N/A N/A	83.2 (3.4)	86.8 (3.4)	N/A
College Freshmen and Sophomores	92	48.8 (6.7)	67.3 (5.1)	72.6 (6.1)	75.4 (6.9)	59.2 (6.3)	78.8 (6.1)	66.5 (6.0)	57.6 (7.6)	207	83.2 (3.4)	87.4 (2.8)	N/A N/A	86.1 (2.9)	87.9 (2.7)	N/A
H.S. Students [College-Oriented]	128	56.3 (6.2)	74.6 (4.5)	77.0 (4.1)	75.2 (4.1)	72.6 (4.8)	74.7 (3.8)	75.9 (3.7)	74.4 (4.7)	369	80.6 (2.5)	88.0 (2.1)	N/A N/A	88.2 (1.9)	90.3 (1.8)	N/A
1st ROTC Region	92	41.1 (7.7)	65.2 (8.2)	75.5 (5.5)	72.7 (7.0)	65.3 (8.1)	71.1 (6.4)	69.4 (6.1)	52.5 (6.4)	218	80.6 (3.1)	87.0 (2.3)	N/A N/A	88.5 (2.8)	88.9 (2.0)	N/A
2nd ROTC Region	81	54.1 (6.7)	63.2 (5.0)	62.7 (7.2)	78.4 (8.7)	56.5 (6.1)	81.6 (6.1)	53.0 (7.8)	61.8 (6.1)	190	83.2 (3.7)	90.6 (2.9)	N/A N/A	86.1 (2.9)	90.2 (2.4)	N/A
3rd ROTC Region	75	74.5 (8.3)	67.6 (7.3)	79.5 (4.9)	84.9 (5.0)	55.1 (7.9)	83.3 (5.3)	74.4 (6.2)	72.4 (7.4)	150	86.7 (4.1)	89.3 (2.4)	N/A N/A	87.7 (3.2)	90.1 (2.5)	N/A
4th ROTC Region	64	47.9 (7.1)	65.6 (7.6)	76.2 (6.9)	61.2 (7.4)	54.0 (6.6)	59.8 (6.1)	51.9 (11.4)	50.1 (9.9)	137	80.5 (3.7)	81.5 (4.3)	N/A N/A	82.3 (3.8)	85.5 (3.7)	N/A
16-17 Years Old	118	55.9 (6.5)	73.5 (5.1)	78.9 (4.2)	75.0 (4.2)	69.9 (5.4)	73.8 (4.3)	76.6 (4.0)	75.0 (4.8)	340	80.4 (2.7)	87.4 (2.1)	N/A N/A	89.2 (1.9)	90.9 (1.6)	N/A
18-19 Years Old	74	48.7 (8.8)	70.7 (5.5)	69.9 (9.2)	79.0 (6.9)	64.1 (7.6)	82.4 (6.6)	63.9 (9.2)	55.9 (9.1)	178	83.4 (3.0)	88.6 (2.1)	N/A N/A	86.2 (2.9)	88.3 (2.6)	N/A
20-21 Years Old	81	52.5 (5.8)	52.1 (7.5)	72.4 (5.2)	66.7 (5.4)	37.8 (7.3)	61.5 (7.0)	41.9 (6.5)	39.8 (6.8)	115	81.4 (4.4)	78.5 (4.8)	N/A N/A	77.9 (5.1)	81.2 (4.9)	N/A
22-24 Years Old	39	60.4 (10.8)	60.4 (10.3)	73.3 (7.8)	75.8 (10.9)	57.7 (11.4)	76.3 (7.9)	68.8 (11.1)	65.1 (12.0)	62	88.7 (4.1)	96.1 (2.3)	N/A N/A	90.8 (3.7)	94.1 (3.1)	N/A
TOTAL ROTC MALE SAMPLE	312	53.5 (4.0)	65.4 (3.6)	73.6 (3.1)	74.4 (3.5)	58.4 (3.8)	73.9 (3.0)	62.9 (4.1)	58.8 (3.7)	695	82.5 (1.7)	87.1 (1.6)	N/A N/A	86.4 (1.6)	88.7 (1.4)	N/A
TOTAL ROTC FEMALE SAMPLE	36	68.8 (10.6)	70.7 (10.2)	84.9 (8.0)	54.4 (10.7)	51.2 (8.0)	83.7 (7.7)	77.5 (8.2)	54.8 (9.1)	124	75.8 (4.4)	89.1 (2.9)	N/A N/A	88.8 (3.4)	89.8 (2.8)	N/A
TOTAL ROTC SAMPLE [MALES + FEMALES]	348	58.6 (4.6)	67.2 (4.1)	77.4 (3.3)	67.7 (4.3)	56.0 (3.6)	77.2 (3.4)	67.8 (4.1)	57.5 (4.0)	819	79.4 (2.2)	88.1 (1.6)	N/A N/A	87.5 (1.8)	89.2 (1.6)	N/A
TOTAL PMAS	240	62.2 (5.3)	74.1 (4.7)	72.0 (6.2)	76.8 (5.2)	69.7 (4.7)	77.6 (4.2)	72.3 (4.9)	69.4 (4.4)	1,037	79.9 (1.5)	88.3 (1.2)	N/A N/A	87.6 (1.4)	89.6 (1.1)	N/A

* indicates variable was added Winter 87.

△ indicates wording for question item(s) was changed significantly. See Appendix E.

TABLE F-6 PERCEPTIONS & IMPORTANCE - ARMY ROTC

ROTC Perceptions

- Among college-oriented youth, some perceptions of the Army ROTC are common to all three educational groups in the ROTC Male Sample while other perceptions vary with educational level.
  - ROTC males clearly perceive that the ROTC provides an officer's commission (74.4%), a college elective that can be taken with other courses (73.6%), and experiences to be proud of (73.9%). Fewer agree that the ROTC provides leadership and management training (53.5%).
  - As education level rises, certain perceptions are less common. College-oriented high school students are more likely to agree that the Army ROTC offers a wide variety of job opportunities (72.6%), than college freshmen and sophomores (59.2%) and college juniors and seniors (42.0%). A similar pattern is shown for perceptions that the Army ROTC offers opportunities to use one's own judgment, to use college acquired skills, and to develop self-confidence.
  - A greater tendency to agree with statements about ROTC attributes is found in the 3rd ROTC Region. Specifically, youth in this region show higher levels of agreement that the ROTC offers leadership and management training, opportunities for using one's own judgment, and for using college acquired skills than youth in other areas.
- Older respondents are less likely than younger respondents to agree that the ROTC offers experiences to be proud of, a wide variety of job opportunities, and opportunities for gaining self-confidence and using college acquired skills.
- Women are less likely than men (54.4% vs. 74.4%) to be aware that the ROTC provides an officer's commission.

ROTC Importance

- All four relevant importance items are highly valued by youth in the ROTC Sample. Opportunities for using one's own judgment (89.2%), gaining self-confidence (88.1%), and having experiences to be proud of (87.5%) are valued by the vast majority of youth. Only leadership and management training opportunity (79.4%) is somewhat less likely to be considered important by ROTC youth.
- No differences are shown among educational groups, ROTC regions, or sexes on the importance items.
- Opportunity for gaining self-confidence is more likely to be valued by 22- to 24-year olds than younger age groups. Having experiences to be proud of is less likely to be valued by 20- to 21-year olds than youth in the remaining age categories.

Comparison of Perceptions and Importance

- The opportunities are all more likely to be valued by ROTC Sample youth than to be perceived as available in the Army ROTC.

PERCENTAGE TAKING ACTIONS RELATING TO ENLISTMENT DURING THE PAST SIX MONTHS
(Standard Error)

SAMPLE GROUPS	N	Talked to Anyone of Joining Army	Talked to an Army Recruiter	Taken ASVAB	Visited Army Recruiting Station	Toll-Free Call Sent for Gift
RECRUITING MARKET: MALE [PMAS + SMS]	1,227	25.4 (1.5)	13.2 (1.1)	11.1 (1.0)	6.5 (0.8)	4.5 (0.7)
FEMALE [PFAS + SFS]	270	11.4 (2.1)	5.1 (1.5)	4.6 (1.3)	5.0 (1.7)	1.8 (1.0)
TOTAL RECRUITING MARKET	**1,497**	**18.1 (1.2)**	**9.0 (0.9)**	**7.7 (0.9)**	**5.7 (1.0)**	**3.1 (0.6)**
PMAS:						
College Freshmen and Sophomores	207	23.3 (3.9)	15.3 (3.0)	14.6 (2.6)	6.7 (2.2)	2.6 (1.2)
H.S. Students [College-Oriented]	369	37.1 (3.1)	15.3 (2.2)	15.6 (2.3)	7.7 (3.0)	6.1 (1.2)
H.S. Students [Work-Oriented]	102	32.4 (4.5)	14.0 (3.1)	13.5 (4.0)	6.9 (2.9)	8.4 (3.4)
H.S. Graduates Not Currently Enrolled	359	19.4 (2.4)	12.9 (2.0)	8.0 (1.7)	4.4 (0.9)	3.6 (1.4)
1st Rctg Bde	202	22.7 (4.2)	17.0 (3.4)	10.2 (2.4)	9.6 (2.8)	2.0 (0.7)
2nd Rctg Bde	181	31.4 (5.3)	15.5 (3.3)	16.5 (3.6)	7.1 (2.1)	6.5 (2.4)
4th Rctg Bde	313	20.4 (3.2)	9.9 (2.2)	11.0 (1.9)	5.2 (1.3)	4.3 (1.3)
5th Rctg Bde	212	41.5 (4.4)	20.7 (4.3)	15.2 (3.1)	5.5 (1.5)	6.9 (2.3)
6th Rctg Bde	129	16.6 (2.7)	8.6 (2.0)	6.8 (2.3)	2.3 (1.4)	2.6 (1.2)
16-17 Years Old	431	36.0 (2.6)	16.6 (2.1)	14.5 (1.8)	7.9 (2.3)	5.6 (1.1)
18-19 Years Old	278	31.9 (3.6)	19.2 (3.0)	15.3 (2.5)	6.9 (1.5)	5.8 (2.1)
20-21 Years Old	155	19.4 (4.9)	12.1 (3.7)	12.1 (3.8)	4.1 (1.6)	5.2 (2.6)
22-24 Years Old	173	10.2 (3.5)	5.9 (3.2)	4.1 (1.5)	3.7 (1.4)	0.6 (0.6)
TOTAL PMAS	**1,037**	**26.3 (1.7)**	**14.2 (1.3)**	**12.0 (1.1)**	**6.0 (0.8)**	**4.5 (0.8)**

- In general, enlistment-related actions are relatively infrequent among youth in the groups sampled.
  - For PMAS youth, talking to someone about joining the Army is the behavior reported most frequently (26.3%); talking to an Army recruiter (14.2%) and taking a written test used for the Army (12.0%) are about half as likely. Visiting an Army recruiting station (6.0%) and making a toll-free call or sending for a gift (4.5%) are the least frequent behaviors reported. This same pattern holds true across ages, regions and sexes.
- Differences among groups are apparent within each of the four sample breakdowns.
  - High school students, both work-oriented and college-oriented, are more likely to report having talked to someone about joining the Army than the remaining two educational groups.
  - Men are generally at least twice as likely as women to have taken action with respect to enlistment during the past six months except that visiting a recruiting station is about equally likely for both.
  - Behaviors related to joining the Army show consistent tendencies to decrease with increasing age. 22- to 24-year olds are consistently low in comparison with the younger age groups.
  - Not much regional variability is observed except that youth in the West (6th Recruiting Brigade) tend to report less enlistment-related action than those in other regions, and youth in the Southwest (5th Recruiting Brigade) are relatively more likely to have talked to someone about joining the Army and to have talked to an Army recruiter.

PERCENTAGE SEEING/HEARING MILITARY ADVERTISING
(Standard Error)

SAMPLE GROUPS	N	Army Components				Other Military Branches				JRAP	NONE
		ACTIVE	ROTC	ARNG	USAR	USAF	NAVY	USMC	USCG		
RECRUITING MARKET:											
MALE [PMAS + SMS]	1,227	82.1 (1.3)	4.3 (0.8)	17.1 (1.5)	11.3 (1.5)	63.0 (1.7)	56.8 (2.0)	65.1 (1.7)	15.8 (1.8)	9.1 (1.0)	2.7 (0.7)
FEMALE [PFAS + SFS]	270	77.8 (2.8)	1.7 (0.7)	7.5 (2.4)	6.3 (1.7)	42.4 (3.5)	43.0 (3.9)	52.3 (3.0)	7.2 (1.8)	7.2 (1.9)	4.4 (1.6)
TOTAL RECRUITING MARKET	1,497	79.9 (1.5)	3.0 (0.6)	12.1 (1.5)	8.7 (1.0)	52.3 (1.8)	49.6 (2.2)	58.4 (1.8)	11.3 (1.2)	8.2 (1.0)	3.6 (0.9)
PMAS:											
College Freshmen and Sophomores	207	82.1 (3.0)	6.6 (2.2)	22.5 (5.2)	20.5 (4.4)	67.3 (3.4)	63.4 (5.1)	66.1 (3.7)	20.4 (4.1)	11.8 (2.6)	1.0 (0.6)
H.S. Students [College-Oriented]	369	86.8 (2.1)	7.3 (2.4)	15.4 (2.3)	11.8 (2.6)	70.3 (2.6)	60.5 (3.3)	70.3 (2.6)	15.9 (2.6)	7.4 (1.4)	1.7 (0.8)
H.S. Students [Work-Oriented]	102	79.4 (4.8)	2.4 (1.4)	10.4 (3.1)	6.5 (2.4)	59.9 (5.5)	60.0 (4.8)	55.7 (5.3)	8.8 (3.3)	4.2 (1.9)	2.2 (1.5)
H.S. Graduates Not Currently Enrolled	359	82.4 (2.6)	2.5 (1.0)	18.7 (2.7)	9.0 (1.7)	62.2 (4.1)	53.7 (4.1)	65.5 (3.6)	17.1 (3.2)	13.1 (2.4)	2.6 (1.5)
1st Rctg Bde	202	86.9 (2.5)	6.1 (3.5)	20.5 (5.2)	15.9 (7.4)	67.2 (4.2)	65.7 (3.9)	69.3 (4.5)	27.4 (6.7)	7.7 (2.0)	0.6 (0.6)
2nd Rctg Bde	181	87.0 (3.1)	7.3 (2.1)	18.7 (2.9)	9.9 (2.6)	73.1 (4.8)	53.6 (8.0)	69.7 (4.9)	14.3 (3.4)	9.0 (2.1)	1.4 (0.8)
4th Rctg Bde	313	78.6 (2.7)	3.0 (1.1)	20.8 (3.3)	14.1 (2.2)	63.6 (2.8)	57.0 (3.7)	63.6 (3.0)	11.6 (1.9)	12.0 (2.5)	1.4 (0.6)
5th Rctg Bde	212	84.2 (3.5)	2.7 (0.9)	13.7 (2.8)	8.1 (2.9)	64.1 (5.0)	60.9 (4.8)	64.9 (4.1)	11.6 (2.3)	14.4 (4.1)	0.9 (0.7)
6th Rctg Bde	129	81.0 (4.2)	5.0 (2.5)	13.8 (3.3)	11.5 (3.7)	58.3 (4.0)	53.9 (4.0)	63.7 (4.1)	21.4 (6.9)	9.1 (2.6)	6.4 (3.6)
16-17 Years Old	431	86.6 (1.7)	5.7 (2.1)	14.5 (2.1)	12.2 (2.6)	67.8 (2.3)	59.7 (3.0)	65.4 (2.7)	15.8 (2.6)	8.3 (1.4)	2.6 (0.8)
18-19 Years Old	278	81.8 (2.3)	5.2 (1.6)	22.1 (3.5)	17.1 (3.6)	66.6 (3.2)	64.6 (3.5)	68.9 (3.6)	17.8 (3.3)	9.4 (2.0)	0.3 (0.3)
20-21 Years Old	155	87.6 (4.1)	5.2 (2.4)	12.5 (3.0)	8.0 (2.7)	64.3 (6.5)	53.1 (8.8)	65.3 (6.8)	17.2 (4.7)	8.1 (2.1)	3.3 (3.3)
22-24 Years Old	173	76.9 (3.2)	2.3 (1.2)	21.9 (3.6)	8.6 (2.4)	61.4 (4.6)	51.9 (4.3)	64.6 (4.1)	16.6 (4.1)	17.2 (3.8)	2.1 (1.2)
TOTAL PMAS	1,037	83.3 (1.4)	4.7 (0.9)	17.9 (1.6)	12.1 (1.7)	65.5 (1.9)	58.2 (2.2)	66.2 (1.8)	16.8 (2.0)	10.5 (1.2)	2.0 (0.8)

TABLE F-8

KNOWLEDGE/RECALL - UNAIDED

- Unaided recall of active Army advertising is highest among all services.
  - Of PMAS youth, 83.3% recall seeing Army advertising, compared with 66.2% for Marines, 65.5% for Air Force, and 58.2% for Navy. This difference is consistent across educational segments, sexes, regions, and age groups.
  - Comparatively few youth (10.5%) spontaneously recall advertising for "all the services in one ad."
  - Unaided recall of advertising for the other services is less for females than for males, while unaided recall of Army advertising shows little difference by sex.
- Unaided recall of advertising for Army components is less than recall of advertising for the active Army.
  - Of PMAS youth, 17.9% recall Army National Guard advertising unaided, compared with 12.1% for Army Reserve and 4.7% for Army ROTC.
  - Recall of ROTC advertising is highest among college-oriented high school students (7.3%) and among college freshmen and sophomores (6.6%).
  - Recall of both Reserve and Guard advertising tends to be strongest among college freshmen and sophomores, and among 18- to 19-year olds. Guard advertising recall is also strong among 22- to 24-year olds.
- Unaided recall of military advertising seems to vary with education.
  - College freshmen and sophomores are more likely than work-oriented high school students to recall Army National Guard, Army Reserve, Coast Guard, and joint recruiting advertising program (JRAP) ads.
  - College-oriented high school students are more likely than those who are work-oriented to recall advertising for the Army ROTC, Air Force, Marine Corps, and Coast Guard.

PERCENTAGE SEEING/HEARING MILITARY ADVERTISING
(Standard Error)

SAMPLE GROUPS	N	Army Components				Other Military Branches				JRAP
		ACTIVE	ROTC	ARNG	USAR	USAF	NAVY	USMC	USCG	
RECRUITING MARKET:										
MALE [PMAS + SMS]	1,227	93.3 (1.0)	45.4 (1.9)	69.3 (1.8)	73.2 (1.8)	87.1 (1.1)	78.7 (2.1)	85.7 (1.3)	51.5 (2.1)	56.5 (2.0)
FEMALE [PFAS + SFS]	270	90.8 (2.0)	45.0 (3.2)	61.4 (3.4)	71.6 (3.0)	71.8 (3.9)	69.5 (3.6)	76.1 (2.6)	43.7 (3.8)	42.9 (3.6)
TOTAL RECRUITING MARKET	1,497	92.0 (1.2)	45.2 (1.8)	65.1 (2.0)	72.4 (1.8)	79.1 (2.0)	73.9 (2.2)	80.7 (1.6)	47.4 (2.3)	49.4 (2.3)
PMAS:										
College Freshmen and Sophomores	207	91.6 (2.2)	56.4 (4.0)	72.0 (4.1)	73.9 (3.6)	87.5 (2.5)	84.6 (3.8)	89.7 (2.6)	56.0 (3.8)	65.9 (4.2)
H.S. Students [College-Oriented]	369	95.7 (1.1)	46.5 (3.1)	67.9 (2.6)	73.3 (2.9)	90.1 (1.5)	83.8 (2.1)	88.5 (1.9)	45.8 (2.7)	61.0 (2.8)
H.S. Students [Work-Oriented]	102	94.8 (2.9)	46.6 (4.9)	62.9 (4.9)	74.2 (5.9)	86.5 (3.6)	83.3 (3.5)	79.0 (4.7)	56.1 (5.5)	47.5 (5.3)
H.S. Graduates Not Currently Enrolled	359	94.2 (1.8)	38.7 (4.0)	69.8 (3.6)	75.5 (3.2)	88.2 (2.1)	75.7 (5.3)	86.0 (2.5)	53.1 (4.4)	57.3 (4.6)
1st Rctg Bde	202	96.5 (1.5)	47.1 (4.2)	71.5 (3.8)	80.1 (3.5)	92.2 (2.5)	86.7 (2.3)	88.1 (2.9)	61.3 (4.3)	69.6 (4.1)
2nd Rctg Bde	181	95.6 (1.7)	48.9 (7.2)	78.2 (4.1)	80.4 (3.8)	90.0 (2.5)	71.2 (9.2)	90.8 (2.3)	49.5 (6.9)	48.5 (6.6)
4th Rctg Bde	313	92.0 (2.0)	49.5 (3.9)	70.9 (3.7)	71.9 (2.8)	85.4 (2.0)	86.5 (2.1)	87.8 (2.2)	47.2 (3.9)	60.5 (3.4)
5th Rctg Bde	212	95.6 (1.6)	34.8 (3.9)	60.7 (4.8)	63.5 (4.6)	93.0 (1.7)	80.8 (4.1)	85.7 (4.2)	51.5 (4.9)	58.3 (4.7)
6th Rctg Bde	129	91.3 (4.0)	44.0 (6.2)	61.7 (4.9)	76.5 (5.0)	81.8 (4.1)	75.0 (4.5)	80.5 (3.6)	51.6 (7.1)	60.5 (6.2)
16-17 Years Old	431	96.4 (0.9)	48.2 (2.9)	66.5 (2.5)	74.1 (2.7)	89.3 (1.5)	82.7 (2.0)	85.1 (2.0)	49.7 (2.5)	59.4 (2.6)
18-19 Years Old	278	92.7 (2.1)	47.8 (3.0)	70.8 (3.5)	71.5 (3.8)	87.5 (2.7)	85.2 (2.6)	89.5 (2.0)	55.1 (3.8)	59.9 (3.7)
20-21 Years Old	155	91.7 (3.7)	41.5 (6.8)	74.3 (5.8)	75.3 (5.6)	84.1 (4.3)	70.9 (10.8)	84.3 (4.1)	43.2 (7.6)	51.3 (9.1)
22-24 Years Old	173	94.4 (1.7)	41.1 (4.7)	67.0 (4.6)	77.8 (3.8)	91.9 (2.5)	78.9 (4.1)	88.5 (3.6)	58.0 (5.1)	65.3 (3.5)
TOTAL PMAS	1,037	94.1 (1.0)	45.4 (2.1)	69.2 (2.0)	74.4 (2.0)	88.5 (1.1)	80.5 (2.3)	86.9 (1.4)	51.9 (2.4)	59.4 (2.4)

TABLE F-9

KNOWLEDGE/RECALL - UNAIDED PLUS AIDED

- Combined aided and unaided recall of active Army advertising is highest among all services.
  - Of PMAS youth, 94.1% recall seeing or hearing Army advertising, compared with 88.5% for Air Force, 86.9% for Marine Corps, and 80.5% for Navy.
- Comparing the combined recall percentages with those shown in Table F-8 for unaided recall alone, it is apparent that asking respondents about service branches and components by name results in large increases in recall in all categories.
- Combined recall increases most when unaided recall levels are very low as shown, for example, by the large increase in recall of Army Reserve advertising. Combined recall increases least when unaided recall levels are very high as shown, for example, by the comparatively modest increase in recall of active Army advertising.
- There is some indication that combined recall is highest for prospect component markets as shown especially by college students' greater recall of ROTC advertising.

Table F-10

PERCENTAGE ANSWERING KNOWLEDGE OF ARMY OFFERS AND BENEFITS QUESTIONS CORRECTLY
(Standard Error)

SAMPLE GROUPS	N	Active Army Knowledge: If Enlist Eligible for College $	Total Education Benefits	Army Benefits Better?	Offer GI Bill: ARMY	USAF	NAVY	USMC	Minimum Duty Tour	△ Delayed Entry Allowed	Army Reserve and Army National Guard Knowledge: 17 Year Old Eligible to Join	H.S. Graduation Required	Scholar Athlete Sponsor	If Enlist Eligible for College $	Maximum GI Bill College $
RECRUITING MARKET:															
MALES [PMAS + SMS]	614	93.9 (1.2)	22.5 (2.3)	12.3 (1.8)	85.6 (1.5)	49.5 (3.2)	50.0 (3.0)	58.5 (2.6)	36.6 (2.8)	84.1 (1.8)	60.6 (3.6)	74.8 (3.7)	31.3 (2.6)	86.6 (1.4)	11.3 (1.6)
FEMALES [PFAS + SFS]	131	92.5 (2.2)	16.6 (3.8)	12.7 (3.2)	75.9 (4.2)	53.7 (4.8)	49.2 (5.3)	48.7 (5.6)	31.2 (4.5)	79.2 (4.3)	59.9 (5.3)	71.4 (4.6)	25.5 (4.7)	82.2 (4.3)	11.6 (3.1)
TOTAL RECRUITING MARKET	745	93.1 (1.4)	19.4 (2.3)	12.5 (1.8)	80.5 (2.3)	51.7 (3.0)	49.6 (2.8)	53.3 (3.1)	33.8 (3.0)	81.5 (2.4)	60.2 (3.1)	73.0 (3.0)	28.3 (3.0)	84.3 (2.3)	11.5 (2.0)
PMAS:															
College Freshmen and Sophomores	104	93.5 (2.8)	29.3 (5.5)	11.2 (3.5)	84.4 (4.4)	53.2 (5.8)	54.3 (5.9)	59.6 (5.1)	33.8 (5.2)	90.4 (3.6)	63.1 (6.7)	78.4 (5.8)	30.3 (5.2)	92.7 (3.2)	16.9 (4.5)
H.S. Students [College-Oriented]	181	94.4 (2.0)	27.5 (4.3)	16.1 (3.4)	90.3 (2.3)	48.0 (5.0)	42.3 (5.0)	60.3 (4.1)	41.2 (4.7)	84.7 (3.3)	60.0 (5.1)	79.5 (3.3)	34.6 (4.1)	88.2 (2.8)	9.9 (2.3)
H.S. Students [Work-Oriented]	50	89.2 (5.2)	23.4 (7.3)	14.4 (6.2)	89.0 (4.1)	61.7 (9.2)	61.8 (6.4)	68.2 (6.2)	29.1 (6.7)	80.0 (5.0)	59.6 (7.9)	79.6 (5.9)	37.6 (8.3)	83.5 (6.0)	13.6 (5.5)
H.S. Graduates Not Currently Enrolled	189	96.3 (1.5)	20.4 (4.4)	10.8 (2.5)	86.2 (3.1)	45.3 (6.4)	50.8 (7.5)	55.4 (7.0)	37.9 (6.1)	88.3 (2.7)	59.1 (7.5)	69.3 (8.5)	29.8 (4.8)	84.9 (3.2)	10.0 (2.7)
1st Rctg Bde	104	96.1 (2.0)	26.4 (6.0)	13.9 (4.2)	82.3 (4.3)	50.0 (6.6)	48.5 (5.5)	51.3 (5.7)	43.2 (7.2)	84.9 (4.6)	61.5 (7.0)	73.0 (5.8)	29.8 (4.7)	89.8 (3.2)	18.5 (4.2)
2nd Rctg Bde	87	94.3 (3.0)	26.9 (7.8)	13.5 (5.3)	94.2 (2.2)	40.6 (11.3)	54.8 (11.5)	75.1 (6.6)	26.0 (7.5)	86.3 (5.4)	51.1 (12.4)	64.8 (15.1)	30.3 (7.9)	84.9 (4.6)	8.3 (3.7)
4th Rctg Bde	160	95.4 (1.7)	23.3 (3.9)	10.4 (2.8)	83.7 (3.8)	50.4 (4.6)	41.1 (5.8)	55.1 (5.1)	37.1 (4.1)	93.0 (1.9)	65.1 (5.4)	80.5 (3.5)	31.1 (5.1)	87.1 (3.4)	8.5 (1.8)
5th Rctg Bde	109	97.3 (1.5)	25.5 (8.0)	12.5 (4.3)	89.3 (3.5)	54.5 (7.0)	54.8 (5.8)	54.2 (6.9)	48.0 (6.2)	87.1 (3.8)	68.0 (6.0)	81.7 (4.6)	40.1 (7.3)	89.5 (3.0)	14.8 (4.5)
6th Rctg Bde	64	88.7 (4.2)	19.2 (6.3)	13.9 (5.3)	87.2 (4.5)	49.5 (9.0)	55.9 (8.0)	56.8 (7.0)	32.6 (6.4)	80.3 (5.0)	52.4 (6.1)	71.9 (8.6)	27.5 (4.8)	85.1 (4.9)	9.7 (4.2)
16-17 Years Old	214	93.8 (2.0)	26.8 (3.9)	14.2 (2.7)	89.6 (2.0)	52.0 (4.7)	47.9 (4.3)	63.9 (3.4)	37.0 (4.2)	82.6 (3.0)	57.7 (5.0)	79.8 (3.0)	31.5 (3.5)	86.8 (2.6)	10.4 (1.8)
18-19 Years Old	143	95.2 (2.3)	23.5 (3.9)	16.6 (3.8)	87.0 (3.4)	47.5 (4.3)	47.4 (5.2)	56.1 (4.5)	42.7 (4.6)	90.8 (2.5)	69.9 (4.5)	81.6 (3.5)	38.7 (4.4)	88.3 (3.0)	14.7 (4.0)
20-21 Years Old	76	94.2 (2.8)	22.5 (8.0)	12.5 (5.6)	87.5 (4.8)	37.1 (12.1)	54.0 (12.9)	64.3 (10.4)	27.1 (9.3)	83.2 (6.8)	49.3 (14.7)	61.7 (17.0)	23.6 (8.0)	90.7 (4.4)	14.0 (6.0)
22-24 Years Old	91	95.6 (2.1)	23.4 (6.3)	6.2 (2.3)	83.6 (4.2)	54.9 (7.1)	53.0 (8.0)	49.6 (7.3)	39.4 (6.9)	92.5 (3.0)	61.4 (7.0)	70.3 (6.9)	31.1 (5.9)	84.4 (4.2)	8.5 (3.0)
TOTAL PMAS	524	94.7 (1.1)	24.4 (2.7)	12.6 (1.8)	87.2 (1.5)	48.9 (3.8)	50.1 (3.5)	58.6 (3.1)	37.3 (3.1)	87.1 (1.8)	60.2 (4.1)	74.8 (4.1)	31.8 (2.8)	87.3 (1.6)	11.7 (1.7)

△ indicates wording for question item(s) was changed significantly. See Appendix E.

TABLE F-10

KNOWLEDGE

- Knowledge of the Army offers is broad-based.
  - Of PMAS youth, 94.7% are aware that Army enlistment makes one eligible for educational benefits, and 87.1% are aware of the delayed entry program. These messages were emphasized in advertisements that ran during the quarter.
  - However, only 24.4% of PMAS youth can correctly identify the maximum amount of educational benefits available, only 12.6% are aware that Army benefits are greater than those available through enlistment in other services, and 37.3% know that the minimum tour of duty is two years.
  - PMAS youth are more likely to identify the G.I. Bill with the Army (87.2%) than with other services.
  - There are few differences among sample groups in knowledge of Army offers.
- Knowledge of Army Reserve and Army National Guard eligibility requirements is also high.
  - Of PMAS youth, 74.8% are aware that high school graduation is not required for enlistment, and 60.2% are aware that 17-year olds may enlist.
  - Of PMAS youth, 87.3% are aware that money for education is available in the Guard and Reserve, but relatively few (11.7%) can correctly identify the maximum amount.
  - Awareness of Guard and Reserve offers tends to be highest among 18- to 19-year olds, and in the Southwest (5th Recruiting Brigade).

PERCENTAGE REGULARLY VIEWING OR LISTENING TO VARIOUS TYPES OF PROGRAMMING
(Standard Error)

SAMPLE GROUPS	N1	Types of TV Shows: Sports	Mystery	Drama	Music	Comedy	Movie	Talk	N2	Types of Radio Programs: News	Classical	Pop	Country	Sports	Talk	Rock	Easy
RECRUITING MARKET:																	
MALE [PMAS + SMS]	385	81.0 (5.7)	59.4 (4.6)	47.6 (4.6)	68.6 (3.4)	85.6 (5.4)	83.8 (3.0)	46.5 (4.2)	531	54.0 (3.7)	17.3 (1.8)	55.9 (3.5)	36.0 (3.5)	54.4 (3.6)	16.2 (1.9)	82.2 (2.9)	44.5 (3.8)
FEMALE [PFAS + SFS]	89	39.8 (6.5)	65.9 (5.2)	75.4 (5.4)	61.5 (6.0)	84.1 (4.1)	88.3 (3.4)	57.1 (6.9)	126	50.6 (5.5)	18.4 (4.0)	65.4 (5.0)	32.6 (4.2)	15.4 (3.3)	23.5 (4.2)	68.7 (5.3)	48.5 (5.1)
TOTAL RECRUITING MARKET	474	59.1 (4.5)	62.8 (3.1)	62.3 (3.3)	64.8 (3.2)	84.8 (3.3)	86.2 (2.1)	52.1 (4.0)	657	52.2 (3.2)	17.9 (2.4)	61.1 (3.0)	34.1 (2.9)	33.3 (2.4)	20.2 (2.5)	74.9 (3.0)	46.7 (3.4)
PMAS:																	
College Freshmen and Sophomores	54	90.9 (4.3)	52.0 (8.7)	44.5 (8.1)	63.8 (7.9)	90.2 (4.5)	71.8 (7.2)	56.3 (7.1)	87	58.3 (7.5)	22.4 (5.6)	63.9 (7.8)	17.7 (4.4)	59.2 (7.0)	19.0 (5.0)	89.7 (4.4)	38.4 (6.6)
H.S. Students [College-Oriented]	130	86.4 (3.4)	64.6 (4.6)	40.4 (5.1)	76.0 (5.3)	92.6 (2.4)	87.7 (3.3)	46.7 (4.6)	161	43.1 (3.9)	10.6 (3.3)	65.2 (3.9)	19.7 (3.2)	62.1 (4.4)	12.9 (2.9)	80.5 (3.3)	39.1 (4.1)
H.S. Students [Work-Oriented]	31	74.9 (10.0)	72.4 (11.2)	21.2 (9.0)	83.4 (6.8)	87.9 (6.3)	88.1 (5.4)	19.6 (7.6)	40	35.4 (9.0)	11.9 (4.8)	65.4 (7.2)	38.2 (10.2)	38.9 (8.7)	15.1 (5.7)	89.6 (5.1)	37.7 (10.2)
H.S. Graduates Not Currently Enrolled	112	75.8 (12.2)	51.9 (9.9)	53.5 (9.1)	62.3 (7.9)	80.8 (12.9)	84.0 (5.8)	45.5 (10.4)	161	56.6 (8.3)	19.2 (4.1)	47.0 (7.7)	48.4 (7.5)	49.7 (7.1)	17.0 (4.2)	77.6 (5.9)	52.0 (8.3)
1st Rctg Bde	59	91.4 (4.9)	61.0 (8.0)	45.5 (6.3)	60.0 (10.4)	92.9 (2.7)	80.8 (6.0)	35.7 (7.4)	93	53.5 (7.8)	14.1 (4.2)	52.8 (7.7)	10.2 (4.4)	59.7 (7.3)	21.3 (6.4)	86.0 (4.2)	34.0 (7.7)
2nd Rctg Bde	61	72.4 (20.5)	56.5 (16.9)	56.0 (14.0)	83.8 (6.4)	73.7 (21.5)	87.2 (5.7)	68.2 (10.8)	87	54.0 (12.4)	18.9 (5.3)	59.9 (12.9)	51.3 (10.7)	56.3 (12.3)	15.1 (5.4)	83.5 (5.4)	50.8 (11.3)
4th Rctg Bde	89	89.9 (4.4)	54.8 (7.7)	43.1 (7.4)	64.9 (6.3)	89.3 (4.4)	83.9 (4.9)	41.9 (5.8)	121	46.7 (4.7)	15.1 (3.4)	59.0 (5.1)	22.4 (4.9)	52.0 (5.8)	17.2 (4.2)	87.2 (3.9)	52.3 (5.7)
5th Rctg Bde	81	84.1 (5.0)	58.7 (8.1)	45.6 (7.6)	65.9 (6.7)	92.4 (3.5)	82.6 (8.4)	36.1 (6.3)	96	54.0 (6.9)	17.5 (4.1)	64.8 (7.0)	51.9 (6.6)	58.0 (7.5)	15.3 (4.9)	73.0 (7.6)	47.8 (6.9)
6th Rctg Bde	37	69.6 (12.7)	55.0 (8.9)	33.3 (7.8)	59.1 (9.9)	87.0 (7.0)	79.5 (9.4)	41.0 (9.0)	52	50.9 (7.6)	19.9 (6.5)	43.9 (9.3)	24.9 (8.4)	43.7 (9.6)	11.5 (4.4)	76.9 (9.6)	33.9 (9.6)
16-17 Years Old	152	83.3 (3.6)	67.4 (4.3)	38.9 (4.6)	79.0 (3.9)	93.8 (1.9)	88.0 (2.9)	39.4 (4.1)	191	43.1 (4.1)	12.1 (3.3)	66.1 (3.1)	21.5 (3.4)	56.4 (3.8)	11.8 (2.1)	84.3 (3.0)	40.6 (4.1)
18-19 Years Old	72	87.1 (4.3)	63.2 (6.2)	37.4 (7.1)	71.0 (6.8)	90.4 (3.7)	78.0 (5.7)	49.6 (5.5)	107	48.6 (5.9)	19.1 (4.6)	65.2 (6.7)	21.2 (4.3)	58.1 (6.7)	16.1 (4.3)	83.4 (3.6)	41.4 (5.6)
20-21 Years Old	45	62.5 (23.6)	30.7 (13.0)	56.1 (17.1)	73.1 (13.5)	62.2 (23.4)	85.1 (8.1)	58.1 (17.4)	76	46.6 (12.6)	17.3 (6.3)	43.3 (12.2)	49.5 (14.0)	43.4 (12.1)	17.1 (6.4)	83.8 (7.5)	50.6 (14.2)
22-24 Years Old	58	89.7 (3.9)	59.1 (9.3)	55.1 (8.3)	44.9 (8.7)	92.8 (3.7)	80.1 (8.4)	40.6 (8.2)	75	73.7 (7.3)	21.5 (4.8)	47.1 (7.1)	48.4 (6.5)	58.4 (6.7)	21.6 (5.6)	74.0 (8.0)	48.3 (7.0)
TOTAL PMAS	327	81.5 (6.5)	57.1 (5.0)	45.7 (5.2)	68.1 (3.9)	86.4 (6.2)	83.3 (3.4)	45.9 (4.9)	449	51.9 (4.1)	17.1 (2.0)	56.8 (4.0)	33.4 (4.2)	54.4 (4.0)	16.2 (2.2)	81.7 (3.2)	44.7 (4.4)

TABLE F-11 MEDIA HABITS

- Youth are more likely to describe themselves as regular radio listeners than as regular television viewers.
  - Of PMAS youth, 77.4% say they listen to radio regularly, compared with 64.4% who say they watch television regularly. This difference is consistent across educational segments, sexes, regions, and age groups.
- In terms of viewership of the different types of television shows:
  - For PMAS youth generally, comedy (86.4%), movies (83.3%), and sports (81.5%) are clearly the most popular kinds of shows. Least popular are drama (45.7%) and talk (45.9%) shows.
  - High school students are more likely to watch movies regularly than are college freshmen and sophomores. Work-oriented high school students are less likely than the other three educational groups to watch dramatic programs and talk shows.
  - Few regional differences are shown in viewing habits except that both music and talk shows are more popular among youth in the Southeast (2nd Recruiting Brigade) than elsewhere.
  - Age differences are also relatively rare. 22- to 24-year olds are less likely than younger respondents to watch music programs; mystery shows are least popular among 20- to 21-year olds.
  - Males are more likely than females to watch sports programs while females more often report watching drama than males do.
- In terms of the audience for the various types of radio programs:
  - For PMAS youth, rock shows (81.7%) clearly enjoy the largest audience with pop (56.8%), sports (54.4%) and news (51.9%) next most popular. Least popular are radio talk shows (16.2%) and classical music programs (17.1%).
  - High school graduates who are not currently enrolled are more likely than the two college-oriented groups to listen to country music. They also tend to be less likely to listen to rock music than work-oriented high school students or college freshmen and sophomores and less likely than all other groups to listen to pop.
  - Work-oriented high school students are less likely than non-enrolled grads or college freshmen and sophomores to listen to news on the radio and less likely than college-oriented high school students to listen to radio sports programs.
  - Regionally, country music is much more popular among youth in the Southeast (2nd Recruiting Brigade) and Southwest (5th Recruiting Brigade) than elsewhere. Also, Midwesterners (4th Recruiting Brigade) tend to be more likely than either Northeasterners (1st Recruiting Brigade) or Westerners (6th Recruiting Brigade) to regularly monitor easy listening programs.
  - Age is a factor in the popularity of radio news with 22- to 24-year olds more likely to tune in regularly. The popularity of country music increases with age while pop is preferred by the two younger age groups.
  - Males are much more likely than females to listen to radio sports broadcasts and rock music while females tend to have a greater preference than males for talk shows.

PERCENTAGE WITH INTENTION TO ENLIST IN ARMY COMPONENTS

[PMAS MONTHLY TOTALS]

(Standard Error)

MONTHS	N1	Unaided Intention: General Intention	Unaided Intention: Active Army	Unaided Intention: USAR	Unaided Intention: ARNG	Aided Intention: General Intention	Aided Intention: Active Army	Aided Intention: USAR	Aided Intention: ARNG	N2	Army ROTC
October	231	2.0 (0.9)	2.0 (0.9)	0.0 n.e.	0.0 n.e.	21.5 (4.1)	12.9 (2.6)	9.8 (2.0)	9.8 (2.9)	166	10.4 (2.8)
November	473	1.2 (0.5)	0.7 (0.4)	0.3 (0.2)	0.1 (0.2)	21.1 (2.1)	12.5 (1.3)	9.3 (1.3)	9.3 (1.4)	343	15.6 (2.3)
December	333	1.6 (1.0)	0.5 (0.3)	0.3 (0.3)	0.9 (0.5)	27.1 (2.7)	14.9 (2.2)	15.7 (2.6)	12.1 (2.3)	241	18.1 (3.2)
TOTAL	1,037	1.5 (0.5)	0.9 (0.3)	0.2 (0.1)	0.4 (0.2)	23.4 (1.6)	13.5 (1.1)	11.8 (1.2)	10.4 (1.2)	750	15.4 (1.6)

NOTE: n.e. indicates standard error is not estimable.

PERCENTAGE "AGREE" OR "STRONGLY AGREE" WITH ACTIVE ARMY ATTRIBUTE STATEMENTS

[PMAS MONTHLY TOTALS]

(Standard Error)

MONTHS	N	Job Variety	Physical Challenge	Proud Experience	Step Btwn HS & Col.	Leader Skills	Hi-Tech Equipment	Civilian Career	△ Self Confidence	Develop Potential	Mental Challenge	△ Mature & Responsible	Skill Training	Hi-Trained Co-Workers	△ Money for Ed.
October	219	57.7 (5.9)	87.1 (3.5)	75.1 (3.9)	42.0 (7.8)	69.5 (4.9)	77.8 (4.2)	53.7 (7.1)	72.6 (4.5)	72.9 (4.5)	66.3 (5.1)	81.0 (3.7)	77.1 (3.9)	73.8 (3.9)	76.0 (4.6)
November	446	55.7 (2.9)	83.0 (1.7)	66.1 (3.2)	41.6 (2.5)	72.3 (2.5)	80.7 (2.1)	50.2 (3.3)	71.9 (2.7)	68.1 (3.3)	65.6 (3.0)	74.8 (3.2)	69.2 (3.5)	73.8 (3.2)	74.6 (2.6)
December	313	58.5 (3.0)	82.2 (3.3)	72.1 (3.5)	49.3 (3.4)	73.1 (3.1)	77.3 (3.9)	58.9 (3.4)	67.4 (3.2)	68.3 (3.5)	67.6 (3.5)	75.5 (2.9)	70.4 (3.3)	74.3 (2.9)	76.8 (3.6)
TOTAL	978	57.1 (2.0)	83.7 (1.6)	70.3 (2.1)	44.5 (2.4)	72.0 (1.6)	78.8 (1.9)	54.1 (2.5)	70.4 (2.1)	69.3 (2.1)	66.5 (2.2)	76.5 (1.8)	71.4 (1.9)	74.0 (1.8)	75.7 (1.9)

△ indicates wording for question item(s) was changed significantly. See Appendix E.

Table F-14

PERCENTAGE SEEING/HEARING MILITARY ADVERTISING
[PMAS MONTHLY TOTALS]
(Standard Error)

MONTHS	N	Army Components				Other Military Branches				JRAP	NONE
		ACTIVE	ROTC	ARNG	USAR	USAF	NAVY	USMC	USCG		
October	231	83.4 (4.0)	8.7 (3.2)	12.9 (3.0)	14.8 (3.5)	68.2 (5.1)	54.5 (7.5)	66.4 (4.6)	16.0 (3.6)	15.5 (3.1)	3.2 (2.7)
November	473	83.7 (1.9)	5.1 (1.2)	21.8 (3.0)	10.2 (2.4)	65.5 (2.4)	58.9 (2.8)	64.0 (2.5)	14.5 (2.6)	10.8 (1.5)	1.3 (0.5)
December	333	82.9 (2.1)	1.9 (0.8)	16.6 (2.5)	12.6 (1.9)	63.8 (2.8)	59.8 (2.8)	68.6 (2.7)	19.9 (3.4)	7.2 (2.2)	1.9 (0.8)
TOTAL	1,037	83.3 (1.4)	4.7 (0.9)	17.9 (1.6)	12.1 (1.7)	65.5 (1.9)	58.2 (2.2)	66.2 (1.8)	16.8 (2.0)	10.5 (1.2)	2.0 (0.8)

Note. Summary text and interpretation of the PMAS monthly totals shown in Tables F-12, F-13, and F-14 will be deferred until sufficient data accumulate.

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ACOMS QUARTERLY REPORT
WINTER 1987

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ACOMS QUARTERLY REPORT: WINTER 1987

EXECUTIVE SUMMARY

Requirement:

To provide timely information to Army policymakers and advertising planners regarding key market responses that are expected to be sensitive to changes in the Army's advertising plans.

Procedure:

Computer-assisted telephone interviews were conducted with 2,312 youth between the ages of 16 and 24 during the quarter. Each interview lasted approximately 30 minutes. Youth were asked about their education and employment history, career plans for the future, intentions to enlist in the Army, enlistment-related activities undertaken during the prior six months, and what opportunities they regard as important to their future plans. They were also asked about their media monitoring habits, recall of military advertising, knowledge and perceptions of the Army and its components, and their attitudes toward Army advertisements. Demographic information was collected and, for selected youth, parental location and tracking information was requested to be used for parental and longitudinal interviewing.

In this report, data tables with accompanying text summarize the results of the current quarter's interviews on key indicators of the present state of the recruiting market. Tables and accompanying text also highlight significant trends in these key indicators from the previous quarter.

Results:

Winter 1987, represents the second quarter of data collection under the ACOMS project and thus allows the first interpretation of changes in key items over time. These interpretations should be taken as tentative, however, for two reasons. First, we cannot yet discriminate between seasonal change in items and secular trends unique to this year. Second, statistical significance is only one guide to interpretation, so that some non-significant changes may bear watching while some significant changes may not have substantive interpretations. Caution is also required for interpreting changes in perceptions because of the change in administration method described in Appendix E. With subsequent data collection and analysis, confidence in the stability of findings and trends will increase.

Overall Results:

- Key male market groups, in order by favorability of perceptions of the Army and intention to enlist in the Army and its components are:

  - Work-oriented high school students
  - College-oriented high school students
  - High school graduates, not currently enrolled
  - College freshmen and sophomores

- Ranking of components by strength of brand image (in terms of average percent agreement with attributes for PMAS respondents) is:

  - Active Army (67.7%)
  - ROTC (63.2%)
  - USAR (56.3%)
  - ARNG (53.7%)

- Intention to enlist in the Army and its components edged marginally upwards between Fall and Winter quarters, due mainly to significant increases in intention to enlist in the Reserve. There were also non-significant increases in intention to enlist in the Army National Guard, and for 18- to 19-year olds to enlist in the active Army.

- Again this quarter, a large majority of youth in all sample groups value career and self-development opportunities, such as developing maturity, potential, self-confidence, and career. Opportunities least likely to be considered important are living in one's own hometown and having a stepping-stone between high school and college.

  In Winter quarter, college-oriented and work-oriented high school students began to diverge in what they value. While the two groups remain quite similar overall, differences appeared in valuing a stepping-stone between high school and college (college-oriented 10.2% more likely to value), money for education (college-oriented 18.6% more likely to value), service to country (work-oriented 16.7% more likely to value), and exciting weekends (work-oriented 14.5% more likely to value).

- Behaviors relating to enlistment appear to be moving from the preliminary actions of discussing enlistment possibilities toward more direct actions such as visiting recruiting stations (especially among 18- to 19-year olds) and calling the Army's toll-free number. This trend may reflect the upcoming end of the school year.

- Radio remains more popular than television, although listening to radio sports decreased heavily among college students and college-oriented high school students, possibly reflecting the end of the football season.

- Aided and unaided recall of Army advertising is highest among all services again this quarter. General knowledge of Army offers remains high while specific information is less widespread.

Results for Active Army:

- Intentions to enlist, both aided and unaided, were basically stable over Fall and Winter quarters.

- Perceptions of work-oriented high school males weakened between Fall and Winter quarters, suggesting a convergence among high school students' attitudes toward the active Army. However, the rank order of key male markets in terms of favorability in perceptions and intentions remains work-oriented, college-oriented, grads not enrolled, and college freshmen and sophomores.

  - Perceptions of the active Army also weakened in the Southeast (2nd Recruiting Brigade).

  - There is greater agreement this quarter that the Army offers money for education, especially among 22- to 24-year old male respondents and females generally. This was one of the quarter's main advertising messages.

- While active Army advertising appears to focus on important youth values, several large disparities remain between attributes valued by youth and those seen as present in the active Army. For example, 90.6% of PMAS rate civilian career development as important, while only 51.1% agree it is offered by the active Army, a difference of 39.5%. Importance is also greater than perceptions for developing one's potential (difference of 24.3%), providing mental challenge (difference of 29.3%) and experience to be proud of (difference of 26.3%).

- Recall of active Army advertising is stable and very high in both Fall and Winter quarters. However, there was a pattern of increases in unaided recall of Navy and Air Force advertising, perhaps due to their new advertising campaigns.

  - The Army's lead in identification with the G.I. Bill increased between the Fall and Winter quarters, primarily because of drops in Navy and Marine Corps identification.

Results for Army Reserve:

- Intention to enlist in the Army Reserve increased significantly from Fall to Winter quarters especially in the older male groups.

  - This increase is, perhaps, linked to the slight increases in aided and unaided recall of Reserve advertising.

- The Army Reserve brand image continues to be moderate in strength. Predominant perceptions are that the Reserve offers the opportunity to become more mature and responsible and to earn money for education. Agreement is again low that the Army Reserve offers interesting and exciting weekends.

Results for Army National Guard:

- Intention to enlist in the Army National Guard showed an upward pattern although differences between Fall and Winter quarter were generally not significant.

- The brand image of the Army National Guard continues to be moderate in strength. Predominant perceptions are that it provides opportunities for becoming more mature and responsible and for serving America while living at home. Least frequent agreement is found with statements that the National Guard provides interesting and exciting weekends and opportunities for career development or for finding an enjoyable job.

- There appears to be some deterioration in perceptions of the Guard among males and some increase among females.

Results for Army ROTC:

- Agreement with statements about attributes of the Army ROTC is generally moderate. Younger respondents (especially 16- to 17-year old males) are more likely to agree that the ROTC offers valued attributes.

- Youth seem attracted to the attributes to which the ROTC directs its advertising but, generally, seem unlikely to see them as present in the ROTC. This is particularly so for leadership skills and training (difference is 20.8%), job variety (difference is 34.4%), and opportunities to use one's own judgment (difference is 26.2%).

- Unaided recall of ROTC advertising fell significantly overall and especially among college-oriented high school students and college freshmen and sophomores, between Fall and Winter quarters. These differences probably reflect decreases in advertising during the Winter quarter. Knowledge of ROTC offers seems to have declined as well.

Utilization:

These findings are intended for use by Army policymakers and advertising planners who need information about the perceptions, intentions and enlistment-related behaviors of youth in the Army's recruiting market. Subsequent data collection and analytic reporting should facilitate identification of stable results and trends.

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INTRODUCTION TO WINTER 1987 QUARTERLY REPORT

This report presents data collected between January 1 and March 31, 1987.

Sample Groups in the Quarterly Report

During the second quarter of data collection, a total of 2,312 youth interviews were completed. All of the tables in the quarterly report except Table W-6 [Perceptions - Army ROTC] focus on the main Army Recruiting Market, a subset of 2,010 of the total youth interviews. Table W-6 includes data on the perceptions of the ROTC Sample, a subset of 611 of the total youth interviews. The following chart lists the subgroups within the Recruiting Market. It shows the total number of interviews conducted among youth in each of the subgroups during the second quarter of data collection and the weighted percentages of respondents within each grouping category (e.g., education, region, age, etc.).

Sample Groups	N	Weighted Percentage
RECRUITING MARKET:		
MALES [PMAS + SMS]	1,670	48.8
FEMALES [PFAS + SFS]	340	51.2
TOTAL RECRUITING MARKET	2,010	
PMAS:		
College Freshmen and Sophomores	268	20.9
H.S. Students [College-Oriented]	563	31.5
H.S. Students [Work-Oriented]	133	7.2
H.S. Graduates Not Currently Enrolled	481	40.4
1ST Rctg Bde	336	22.3
2ND Rctg Bde	280	20.0
4TH Rctg Bde	414	20.9
5TH Rctg Bde	200	20.5
6TH Rctg Bde	215	16.3
16-17 Years Old	583	31.1
18-19 Years Old	365	24.6
20-21 Years Old	235	18.9
22-24 Years Old	262	25.4
TOTAL PMAS	1,445	

The interview totals and weighted percentages in the chart above are provided as a general guide to sample sizes. It should be noted, however, that the numbers of interviews and weighted percentages are different for each of the tables containing data from rotating modules (i.e., Table W-10 (Knowledge) and Table W-11 (Media Habits)) and Perceptions modules (e.g., Table W-3 (Perceptions - Active Army), Table W-4 (Perceptions - Army Reserve), and Table W-5 (Perceptions - Army National Guard)). Additionally, of course, the sample sizes and weighted percentages for Table W-6 (Perceptions - Army ROTC) are quite different since they include different subpopulations.

It should also be noted that some respondents who were part of the sample drawn in December were actually interviewed during the month of January. These respondents received the Q87-1 questionnaire rather than the Q87-2 instrument administered to the youth in the Winter quarter sample draw. A total of 247 respondents in the Recruiting Market, 187 of whom are in the PMAS, were interviewed during Winter quarter using the first version of the questionnaire. Their responses are included in the Winter quarter percentages shown in the quarterly tables.

Sample Performance

The chart below shows response rates for household screeners and youth interviews for the second quarter of ACOMS data collection. The monthly response rate for household screeners is the percentage of total identified households for which the screening instrument was successfully completed. The monthly response rate for youth interviews is the percentage of completed youth interviews out of the total eligible youth in the month's sample[1].

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[1]Interviewers have a total of eight weeks to close out each monthly sample of telephone numbers. This process includes identifying all non-working and non-residential numbers in addition to completing household screeners on all identified households and completing interviews with all eligible respondents. Therefore, the respondents included in the response rate calculations are somewhat different than those included in the quarterly report itself. In particular, since the March monthly sample was not closed out until late in April, interviewing continued for this sample past the March 31 cutoff date used for reporting purposes. Interviews in this category will be included in the third quarterly report though they are included in the response rates reported here.

Response Rates for ACOMS - Winter 1987
Percentage Completed

	January	February	March
Household Screener	78.0	83.2	81.2
Youth Interviews	72.7	79.2	77.9

Change Tables

Beginning this quarter, an additional set of data tables (Table C-1 through Table C-11) is included in the quarterly report showing changes from the previous to the current quarter. The row labels and column headings of the change tables are identical to the corresponding quarterly tables. Numbers appear in the change tables only if comparisons between Fall and Winter percentages show significant change ($p \leq 0.05$; $\pm$ 2 standard errors). Signs (+ and -) show the direction of non-significant changes. The direction of change is determined by subtracting Fall percentages from Winter percentages. Thus, a positive change indicates an increase for Winter quarter and a negative change means the Winter percentage is lower than the Fall percentage in that cell. When the percentage has not changed, a 0 appears in that cell.

The size of the change should not be confused with its level of significance. Sample sizes and weighting considerations are different across tables and among cells within tables. Thus, for example, in Table C-2 the +2.8% increase in **Develop Potential** for the **TOTAL RECRUITING MARKET** has almost the same z score (z=1.97) as the +10.0% increase under **Skill Training** for the **6th Rctg Bde** (z=2.02).

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QUARTERLY TABLES

WINTER 1987

PERCENTAGE WITH INTENTION TO ENLIST IN ARMY COMPONENTS
(Standard Error)

SAMPLE GROUPS	N1	Unaided Intention: General Intention	Unaided Intention: Active Army	Unaided Intention: USAR	Unaided Intention: ARNG	Aided Intention: General Intention	Aided Intention: Active Army	Aided Intention: USAR	Aided Intention: ARNG	N2	Army ROTC
RECRUITING MARKET:											
MALES [PMAS + SMS]	1,670	2.9 (0.4)	1.2 (0.3)	0.9 (0.3)	0.6 (0.3)	27.6 (1.5)	14.6 (1.2)	17.1 (1.2)	13.3 (1.3)	1,155	17.0 (1.6)
FEMALES [PFAS + SFS]	340	0.0 n.e.	0.0 n.e.	0.0 n.e.	0.0 n.e.	8.2 (2.1)	3.1 (1.1)	3.0 (1.2)	3.4 (1.1)	273	7.5 (2.5)
TOTAL RECRUITING MARKET	2,010	1.4 (0.2)	0.6 (0.1)	0.5 (0.1)	0.3 (0.1)	17.7 (1.3)	8.7 (0.7)	9.8 (0.8)	8.3 (0.8)	1,428	11.8 (1.5)
PMAS:											
College Freshmen and Sophomores	268	0.7 (0.5)	0.2 (0.2)	0.0 n.e.	0.4 (0.4)	15.6 (3.0)	5.1 (1.6)	9.3 (2.2)	8.2 (2.0)	262	6.7 (2.1)
H.S. Students [College-Oriented]	563	4.4 (1.0)	1.9 (0.6)	1.7 (0.7)	0.7 (0.4)	34.7 (2.6)	19.4 (2.1)	20.3 (2.3)	15.5 (1.9)	563	22.6 (2.2)
H.S. Students [Work-Oriented]	133	6.8 (2.7)	4.4 (2.4)	2.0 (1.3)	0.5 (0.4)	51.0 (5.0)	29.5 (4.9)	27.7 (4.1)	23.7 (3.5)	0	N/A N/A
H.S. Graduates Not Currently Enrolled	481	1.3 (0.4)	0.6 (0.4)	0.4 (0.3)	0.1 (0.1)	20.5 (2.2)	10.6 (1.8)	14.1 (1.9)	10.5 (1.7)	254	16.0 (3.3)
1st Rctg Bde	336	2.8 (0.7)	1.1 (0.6)	1.3 (0.6)	0.0 n.e.	21.5 (3.0)	9.9 (2.1)	15.9 (2.5)	10.0 (2.6)	258	13.0 (3.3)
2nd Rctg Bde	280	3.7 (1.2)	1.9 (0.9)	1.1 (0.6)	0.7 (0.5)	30.3 (2.9)	14.5 (2.3)	15.6 (2.8)	12.8 (2.1)	189	19.1 (3.2)
4th Rctg Bde	414	2.8 (0.8)	2.1 (0.8)	0.2 (0.2)	0.5 (0.4)	21.3 (2.6)	13.3 (2.2)	11.8 (2.0)	11.1 (1.7)	298	12.9 (2.0)
5th Rctg Bde	200	2.4 (1.0)	0.8 (0.5)	1.0 (0.8)	0.5 (0.6)	31.0 (4.1)	16.2 (3.2)	19.7 (2.8)	17.5 (3.0)	154	19.3 (3.5)
6th Rctg Bde	215	0.9 (0.5)	0.0 n.e.	0.7 (0.5)	0.1 (0.1)	27.7 (4.0)	14.6 (2.4)	17.7 (3.0)	11.5 (2.4)	180	17.8 (3.8)
16-17 Years Old	583	4.3 (0.8)	2.2 (0.6)	1.4 (0.5)	0.7 (0.4)	36.5 (2.5)	21.6 (2.0)	19.5 (2.0)	16.3 (1.6)	471	21.0 (2.1)
18-19 Years Old	365	3.3 (0.9)	2.0 (0.7)	1.0 (0.6)	0.3 (0.2)	23.3 (2.5)	9.7 (1.7)	13.0 (2.1)	10.6 (2.1)	311	13.4 (2.4)
20-21 Years Old	235	1.7 (0.6)	0.3 (0.3)	0.9 (0.6)	0.0 n.e.	21.5 (3.4)	11.9 (2.4)	15.8 (3.3)	12.4 (3.0)	160	13.8 (3.3)
22-24 Years Old	262	0.3 (0.3)	0.0 n.e.	0.0 n.e.	0.3 (0.3)	19.9 (3.2)	8.7 (2.2)	14.9 (2.7)	9.9 (1.9)	137	14.2 (3.7)
TOTAL PMAS	1,445	2.5 (0.4)	1.2 (0.3)	0.9 (0.2)	0.4 (0.2)	26.2 (1.7)	13.6 (1.2)	16.0 (1.3)	12.6 (1.2)	1,079	16.3 (1.6)

Note: n.e. indicates standard error is not estimable.

Similar to Last Quarter

- High school students have the highest aided and unaided general intentions to enlist in the Army of PMAS youth.
  - Aided intentions to enlist in all Army components are again higher for high school students than for college freshmen and sophomores or high school graduates not currently enrolled in school.
  - Unaided intentions to enlist in the active Army also tend to be higher for high school students than for other educational groups but there are no differences among educational groups in unaided intentions to enlist in the Reserve or National Guard.
- The pattern of differences between college- and work-oriented high school students is very similar to that found during the last quarter.
  - Work-oriented respondents report higher aided intention to enlist in the Army generally and in all Army components than college-oriented respondents.
  - 29.5% of work-oriented high school students report an aided intention to enlist in the active Army and 4.4% an unaided intention to join the active Army compared to 19.4% and 1.9%, respectively, for college-oriented students. This pattern is very similar to last quarter.
- Again this quarter, aided intention measures yield large increases over unaided intention measures for all components.
- Males are much more likely than females to indicate intention to enlist.
- Youth in the Southeast (2nd Recruiting Brigade) and Southwest (5th Recruiting Brigade) have the highest general aided intentions to enlist.

Different from Last Quarter

- There are significant increases in aided intention to enlist in the Army Reserve overall, especially for 22- to 24-year olds (+10.2%) and youth in the Northeast (1st Recruiting Brigade) (+8.3%).
- The above pattern is repeated for aided intention to enlist in the National Guard, though not as strongly as for Reserve. However, no corresponding increases in active Army intentions are observed.
- For the active Army and in general, 18- to 19-year olds show increases in unaided intention to enlist, possibly the effect of approaching high school graduation.

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WINTER - FALL DIFFERENCES IN
PERCENTAGE WITH INTENTION TO ENLIST IN ARMY COMPONENTS

SAMPLE GROUPS	N1	Unaided Intention: General Intention	Unaided Intention: Active Army	Unaided Intention: USAR	Unaided Intention: ARNG	Aided Intention: General Intention	Aided Intention: Active Army	Aided Intention: USAR	Aided Intention: ARNG	N2	Army ROTC
RECRUITING MARKET: MALES (PMAS + SMS)		+	+	+0.7	+	+	−	+3.9	+		+
FEMALES (PFAS + SFS)		−	0	−	0	−	−	−	−		−
TOTAL RECRUITING MARKET		+	+	+	+	+	−	+	+		−
PMAS: College Freshmen and Sophomores		+	+	0	+	+	+	+	+		+
H.S. Students (College-Oriented)		+	+	+	+	+	+	+	+		N/A
H.S. Students (Work-Oriented)		−	−	+	−	+	−	+	+		−
H.S. Graduates Not Currently Enrolled		+	+	+	−	+	+	+	+		+
1st Rctg Bde		+2.1	+	+	−	+	+	+8.3	+		+
2nd Rctg Bde		+	+	+	+	−	−	−	−		−
4th Rctg Bde		+	+	−	+	+	+	+	+5.4		−
5th Rctg Bde		+	−	+	+	+	−	+	+		+
6th Rctg Bde		−	−	+	+	+	+	+	−		+
16-17 Years Old		+	−	+	−	+	+	+	+		+
18-19 Years Old		+2.6	+1.7	+	−	+	−	+	+		−
20-21 Years Old		+	+	+	0	+	−	+	+		+
22-24 Years Old		+	0	0	+	+	+	+10.2	+		+
TOTAL PMAS		+	+	+0.6	−	+	+	+4.3	+		+

Note: Numbers are significant quarter-to-quarter differences (i.e., $p \leq 0.05$; $\pm$ 2 s.e.)
Signs indicate direction of insignificant changes.

Table W-2

PERCENTAGE RATING OPPORTUNITIES "IMPORTANT" OR "VERY IMPORTANT" TO PLANS FOR THE NEXT YEAR
(Standard Error)

SAMPLE GROUPS	N	* Job Variety	Physical Challenge	△ Prvd Experience	Step Btwn HS & Col.	Leader Skills	△ Hi-Tech Equipment	Civilian Career	Self Confidence	Develop Potential	Mental Challenge	Mature & Responsible	Skill Training	Hi-Trained Co-Workers	Money for Ed.	Serve Country	△ Exciting Weekends	* △ Part-Time Work	Live in Hometown	N*
RECRUITING MARKET:																				
MALES [PMAS + SMS]	1,670	89.0 (0.9)	79.0 (1.1)	91.1 (0.8)	53.2 (1.4)	76.5 (1.2)	64.7 (1.3)	90.0 (0.9)	87.2 (1.0)	91.8 (0.9)	81.8 (0.9)	87.9 (1.1)	84.1 (1.1)	79.9 (1.1)	64.6 (1.2)	56.8 (1.4)	75.9 (1.3)	41.4 (1.5)	50.7 (1.7)	1,459
FEMALES [PFAS + SFS]	340	87.5 (2.4)	70.3 (3.1)	93.0 (1.6)	65.5 (3.1)	75.7 (2.9)	56.4 (3.3)	89.6 (1.7)	90.7 (2.1)	94.9 (1.3)	87.7 (2.1)	91.7 (1.7)	83.1 (2.5)	81.3 (2.1)	73.2 (2.3)	50.1 (3.2)	71.6 (2.4)	53.1 (4.3)	48.4 (3.1)	304
TOTAL RECRUITING MARKET	2,010	88.2 (1.3)	74.5 (1.7)	92.1 (1.0)	59.5 (1.6)	76.1 (1.5)	60.5 (1.7)	89.8 (1.1)	89.0 (1.2)	93.4 (0.8)	84.8 (1.2)	89.8 (1.1)	83.6 (1.5)	80.6 (1.1)	69.0 (1.4)	53.4 (1.6)	73.7 (1.5)	47.5 (2.3)	49.6 (1.7)	1,763
PMAS:																				
College Freshmen and Sophomores	268	90.1 (2.6)	78.1 (3.6)	92.3 (2.0)	47.5 (3.4)	76.5 (3.4)	59.7 (3.4)	92.4 (2.1)	83.6 (2.5)	91.2 (2.1)	87.6 (2.2)	84.6 (2.7)	84.0 (2.4)	80.5 (2.8)	73.8 (2.7)	53.0 (3.2)	72.1 (3.7)	52.1 (3.6)	43.1 (3.9)	227
H.S. Students [College-Oriented]	563	91.4 (1.4)	79.8 (1.8)	91.9 (1.4)	62.7 (2.3)	77.9 (2.2)	69.3 (3.1)	91.5 (1.3)	89.6 (1.4)	91.7 (1.7)	78.6 (2.1)	91.2 (1.7)	85.5 (1.7)	80.3 (1.9)	79.7 (2.0)	60.6 (2.1)	74.3 (2.1)	56.3 (2.5)	40.2 (2.8)	501
H.S. Students [Work-Oriented]	133	93.0 (2.6)	83.9 (3.3)	92.9 (2.4)	52.5 (4.6)	74.7 (3.6)	70.5 (5.2)	88.8 (2.7)	92.9 (2.4)	90.0 (2.8)	79.8 (4.3)	93.6 (2.2)	90.1 (3.1)	80.1 (3.5)	61.1 (4.6)	77.3 (4.0)	86.8 (3.1)	52.3 (5.5)	48.7 (4.7)	115
H.S. Graduates Not Currently Enrolled	481	85.5 (2.1)	78.1 (1.9)	91.1 (2.1)	49.9 (3.4)	76.6 (2.0)	62.1 (2.4)	89.4 (2.0)	87.2 (1.7)	91.9 (1.9)	84.2 (1.8)	87.1 (1.7)	82.9 (2.7)	80.6 (2.0)	52.5 (2.6)	50.3 (2.4)	77.7 (1.9)	26.8 (2.7)	58.5 (2.9)	415
1st Rctg Bde	336	87.4 (2.1)	76.2 (2.5)	90.7 (2.0)	50.6 (3.0)	73.5 (3.0)	60.3 (3.1)	89.4 (2.5)	86.2 (2.1)	88.6 (2.0)	81.1 (1.9)	84.2 (2.7)	81.3 (2.4)	77.4 (2.3)	64.4 (3.2)	45.4 (2.3)	76.0 (3.4)	41.5 (4.2)	46.4 (2.9)	294
2nd Rctg Bde	280	89.2 (3.0)	83.9 (2.3)	93.4 (1.3)	59.1 (4.2)	81.1 (3.7)	71.1 (3.1)	93.5 (1.4)	92.1 (1.8)	94.8 (1.4)	83.7 (2.6)	90.2 (1.6)	89.3 (2.0)	85.6 (2.6)	63.0 (3.3)	62.7 (3.3)	79.9 (2.2)	40.7 (4.0)	58.4 (4.0)	245
4th Rctg Bde	414	88.4 (1.3)	77.9 (2.2)	90.2 (1.6)	50.8 (3.0)	75.4 (3.0)	60.0 (3.3)	88.8 (1.5)	87.4 (1.8)	91.2 (1.7)	81.7 (1.6)	87.4 (2.4)	83.5 (1.7)	75.3 (2.8)	66.4 (3.1)	55.9 (2.4)	72.4 (2.3)	42.3 (3.0)	42.2 (2.6)	366
5th Rctg Bde	200	92.4 (2.4)	80.3 (3.2)	94.8 (1.7)	57.0 (3.5)	80.7 (2.8)	68.2 (3.5)	93.0 (2.9)	86.3 (2.3)	92.7 (2.3)	84.5 (3.0)	91.9 (1.8)	82.6 (2.3)	81.8 (3.2)	71.6 (3.4)	64.0 (3.4)	77.4 (3.1)	48.2 (4.5)	55.7 (4.8)	168
6th Rctg Bde	215	87.3 (3.6)	77.1 (3.6)	89.3 (1.9)	50.3 (4.4)	73.5 (3.2)	63.3 (3.9)	88.3 (2.5)	85.9 (2.3)	90.5 (2.5)	83.3 (3.4)	88.6 (2.5)	86.7 (2.3)	83.3 (2.0)	65.4 (4.0)	52.6 (3.5)	74.8 (3.6)	45.3 (4.6)	39.9 (4.5)	185
16-17 Years Old	583	91.7 (1.4)	79.4 (1.5)	91.2 (1.2)	60.9 (2.1)	76.2 (1.8)	67.4 (2.5)	90.8 (1.3)	89.4 (1.2)	90.1 (1.7)	77.6 (1.8)	90.5 (1.6)	85.4 (1.6)	80.1 (1.9)	77.5 (2.0)	62.1 (2.1)	75.6 (2.2)	57.3 (2.3)	43.0 (2.5)	516
18-19 Years Old	365	91.9 (1.5)	82.2 (2.9)	93.0 (1.4)	49.5 (2.8)	77.1 (3.0)	63.5 (2.6)	92.2 (1.3)	85.9 (2.3)	91.4 (1.6)	84.9 (2.1)	86.1 (2.5)	86.8 (1.7)	82.6 (2.1)	71.5 (2.3)	57.0 (2.9)	78.9 (2.8)	51.4 (3.8)	40.3 (3.1)	311
20-21 Years Old	235	88.2 (2.4)	78.6 (2.9)	91.5 (1.8)	55.2 (3.3)	76.1 (3.5)	61.6 (3.6)	88.5 (2.6)	84.5 (2.4)	91.6 (2.6)	84.3 (2.3)	90.8 (1.7)	86.2 (2.6)	80.8 (3.0)	60.7 (3.3)	55.6 (3.7)	75.5 (3.8)	34.2 (4.1)	54.3 (3.8)	204
22-24 Years Old	262	83.1 (3.1)	76.0 (2.7)	91.4 (2.1)	47.5 (4.6)	78.1 (2.9)	64.0 (3.6)	90.6 (2.1)	89.3 (2.0)	93.4 (1.7)	86.0 (2.6)	86.1 (2.3)	79.9 (3.0)	78.5 (2.3)	51.1 (3.6)	48.1 (3.2)	74.6 (3.0)	25.0 (3.2)	60.0 (3.8)	227
TOTAL PMAS	1,465	88.9 (1.0)	79.1 (1.2)	91.7 (0.8)	53.6 (1.7)	76.9 (1.3)	64.5 (1.4)	90.6 (1.0)	87.6 (1.0)	91.5 (1.0)	82.8 (0.9)	88.3 (1.1)	84.5 (1.1)	80.5 (1.1)	66.2 (1.3)	56.0 (1.4)	76.1 (1.3)	43.5 (1.8)	48.8 (2.0)	1,258

* indicates variable was added Winter 87.

△ indicates wording for question item(s) was changed significantly. See Appendix E.

TABLE W-2 IMPORTANCE OF ATTRIBUTES

Similar to Last Quarter

- Again this quarter, a large majority of youth in all sample groups (83% - 95%) consider career and self-development opportunities important. The attributes most likely to be valued are again having experiences to be proud of and having opportunities for developing potential, maturity, self-confidence, and career. Having a wide variety of opportunities to find an enjoyable job (added this quarter) is valued by a high percentage of youth in all sample groups.

- The opportunities least likely to be considered important (25% - 66%) are living in one's own hometown and having a stepping-stone between high school and college, like last quarter, and working part-time, an attribute added to the questionnaire this quarter.

- Advertising plans appear to be focused on important youth values.

  - College freshmen and sophomores and college-oriented high school students are most likely to value money for education. The value of earning money for school decreases with increasing age as it did last quarter.

  - High school students are more likely than other educational groups to consider a chance to work with the latest high-tech equipment important. Youth in the Southeast (2nd Recruiting Brigade) are especially likely to value this opportunity while women are especially unlikely to value it.

  - The importance of service to country is again highest among Southeastern (2nd Recruiting Brigade) and Southwestern (5th Recruiting Brigade) youth.

Different from Last Quarter

- Although valued opportunities for college-oriented and work-oriented high school students are still very similar, several additional differences between the two groups have appeared this quarter.

  - College-oriented high school students are still more likely than work-oriented to value money for education. They are also more likely this quarter to consider having a stepping-stone between high school and college important. This change may reflect a seasonal trend as the end of the school year draws nearer.

  - College-oriented high school students are less likely this quarter to value a mental challenge than they were last quarter (-6.6%) resulting in the disappearance of the significant difference between the college- and work-oriented for this opportunity.

  - Work-oriented high school students now are more likely to value service to country and having interesting and exciting weekends than the college-oriented (possible instrumentation effect).

TABLE W-2 (continued) IMPORTANCE OF ATTRIBUTES

- Variations in importance also emerged for several other opportunities this quarter.
  - The opportunity to have an experience to be proud of is significantly higher this quarter than last quarter for males (+3.2%) and especially for 18- to 19-year olds (+7.4%) (possible instrumentation effect). Non-significant increases occurred for all remaining sample groups.
  - Service to country appears less likely to be valued this quarter than last.
  - The likelihood of considering a stepping-stone between high school and college important increased significantly for both males (+7.4%) and females (+13.3%) and for 20- to 21-year old PMAS youth (+19.3%).
  - The opportunity to obtain skills training is more likely to be valued this quarter than last especially by college freshmen and sophomores (+8.2%), Westerners (6th Recruiting Brigade) (+10.0%), and 18- to 19-year olds (+8.0%).
  - The significant increase in valuing living in one's own hometown this quarter appears to be an instrumentation effect of wording changes between quarters.

Table C-2

WINTER - FALL DIFFERENCES IN

PERCENTAGE RATING OPPORTUNITIES "IMPORTANT" OR "VERY IMPORTANT" TO PLANS FOR THE NEXT YEAR

SAMPLE GROUPS	N	* Job Variety	Physical Challenge	Δ Proud Experience	Step Btwn HS & Col.	Leader Skills	Δ Hi-Tech Equipment	Civilian Career	Self Confidence	Develop Potential	Mental Challenge	Mature & Responsible	Skill Training	Hi-Trained Co-Workers	Money for Ed.	Serve Country	Δ Exciting Weekends	* Part-Time Work	Δ Live in Hometown	N*
RECRUITING MARKET: MALES (PMAS + SMS)		N/A	+	+3.2	+7.4	–	–	–	–	–	–	+	+	+	+	-5.6	+	N/A	+10.0	
FEMALES (PFAS + SFS)		N/A	+	+	+13.3	+	–	–	–	+5.8	+7.9	+	+	+	+	–	+	N/A	–	
TOTAL RECRUITING MARKET		N/A	+	+4.1	+10.0	–	–	–	–	+2.8	+	+	+4.2	+4.5	+	–	+	N/A	+	
PMAS: College Freshmen and Sophomores		N/A	+	+	+	–	–	–	–	–	–	+	+8.2	+	+	–	–	N/A	+17.8	
H.S. Students (College-Oriented)		N/A	–	+	+	–	–	–	+	–	-6.6	+	+	+	–	-8.0	–	N/A	+	
H.S. Students (Work-Oriented)		N/A	+	+	–	–	–	–	+	–	+	+	+	–	–	+	+	N/A	+	
H.S. Graduates Not Currently Enrolled		N/A	–	+	+	–	+	–	–	–	–	+	+	+	+	–	+	N/A	+9.7	
1st Rctg Bde		N/A	–	+	+	–	–	-6.7	–	-7.0	–	–	–	+	–	–	–	N/A	+	
2nd Rctg Bde		N/A	+	+	+	–	–	–	–	–	–	–	+	+	--13.3		+	N/A	+23.1	
4th Rctg Bde		N/A	–	+	+	–	–	–	–	–	–	+	+	+	+	+	–	N/A	+	
5th Rctg Bde		N/A	–	+	+	–	+	–	–	+	+	+	–	+	+	–	+	N/A	+	
6th Rctg Bde		N/A	+	+	+	–	+	–	+	–	–	+	+10.0	+	+	–	+	N/A	+	
16-17 Years Old		N/A	–	+	+	–	–	–	+	–	-6.0	+	+	+	–	–	–	N/A	+7.8	
18-19 Years Old		N/A	+	+7.4	+	–	+	+	–	–	–	+	+8.0	+	+	–	+	N/A	+	
20-21 Years Old		N/A	+	+	+19.3	–	–	-7.3	–	–	+	+	+	+	+	–	–	N/A	+18.8	
22-24 Years Old		N/A	–	+	+	+	+	–	–	–	–	+	+	+	+	–	+	N/A	+	
TOTAL PMAS		N/A	+	+4.2	+8.4	–	–	–	–	–	–	+	+	+	+	-6.1	–	N/A	+9.4	

* indicates variable was added Winter 87.

Δ indicates wording for question item(s) was changed significantly. See Appendix E.

Note: Numbers are significant quarter-to-quarter differences (i.e., $p \leq 0.05$; $\pm$ 2 s.e.)
Signs indicate direction of insignificant changes.

PERCENTAGE "AGREE" OR "STRONGLY AGREE" WITH ACTIVE ARMY ATTRIBUTE STATEMENTS
(Standard Error)

SAMPLE GROUPS	N	Job Variety	Physical Challenge	Proud Experience	Step Btwn HS & Col.	Leader Skills	Hi-Tech Equipment	Civilian Career	△ Self Confidence	Develop Potential	Mental Challenge	△ Mature & Responsible	Skill Training	Hi-Trained Co-Workers	△ Money for Ed.
RECRUITING MARKET:															
MALES [PMAS + SMS]	1,584	59.5 (1.6)	79.7 (1.3)	66.9 (1.8)	47.9 (2.0)	70.9 (1.4)	77.7 (1.4)	53.0 (1.8)	71.2 (1.4)	67.9 (1.5)	64.9 (1.5)	75.2 (1.5)	74.5 (1.2)	73.4 (1.6)	78.4 (1.5)
FEMALES [PFAS + SFS]	320	58.3 (3.5)	77.2 (3.1)	71.4 (3.4)	53.3 (3.2)	72.8 (2.9)	83.9 (2.6)	59.6 (3.2)	72.5 (3.3)	73.0 (2.9)	71.1 (2.9)	79.0 (2.9)	82.2 (2.2)	76.2 (3.4)	80.0 (2.2)
TOTAL RECRUITING MARKET	1,904	58.9 (2.0)	78.4 (1.7)	69.2 (1.9)	50.7 (1.9)	71.9 (1.8)	80.9 (1.4)	56.4 (2.0)	71.9 (1.8)	70.5 (1.5)	68.1 (1.7)	77.1 (1.5)	76.5 (1.3)	74.9 (1.7)	79.2 (1.3)
PMAS:															
College Freshmen and Sophomores	182	46.9 (4.2)	80.5 (4.2)	59.4 (4.1)	35.5 (4.4)	66.8 (3.5)	71.5 (4.1)	35.6 (4.2)	64.1 (5.4)	58.9 (4.6)	56.3 (4.2)	69.7 (4.0)	65.3 (3.5)	65.5 (3.6)	80.7 (3.5)
H.S. Students [College-Oriented]	563	68.5 (2.5)	82.2 (1.8)	70.9 (2.7)	47.5 (2.6)	73.9 (2.2)	81.4 (1.9)	59.3 (2.5)	74.9 (2.5)	72.3 (2.4)	66.6 (2.1)	78.7 (2.2)	78.4 (2.2)	74.0 (2.4)	79.1 (2.3)
H.S. Students [Work-Oriented]	133	71.5 (4.6)	77.5 (6.2)	69.2 (4.6)	60.4 (4.6)	71.7 (3.9)	80.2 (4.0)	62.6 (4.7)	80.2 (3.8)	76.8 (3.3)	73.0 (4.5)	75.3 (3.9)	79.9 (3.5)	79.9 (3.8)	78.1 (3.5)
H.S. Graduates Not Currently Enrolled	481	53.2 (2.7)	76.8 (2.4)	63.6 (2.4)	47.7 (3.0)	68.8 (2.3)	76.6 (2.2)	50.8 (2.8)	69.6 (2.5)	66.0 (2.5)	63.2 (2.7)	73.2 (2.8)	73.1 (2.7)	72.2 (2.4)	78.0 (2.8)
1st Rctg Bde	314	51.9 (4.2)	79.3 (2.8)	61.5 (3.5)	40.1 (4.2)	70.5 (2.8)	76.0 (3.4)	48.5 (3.6)	70.6 (3.1)	64.9 (2.5)	62.1 (2.7)	74.5 (2.2)	74.7 (2.1)	73.1 (2.7)	76.6 (3.2)
2nd Rctg Bde	262	62.3 (3.6)	80.4 (2.4)	74.5 (3.7)	54.6 (4.3)	73.7 (2.7)	80.3 (3.0)	55.9 (3.6)	77.3 (2.3)	76.5 (2.3)	67.6 (3.2)	84.1 (2.8)	77.6 (3.1)	75.9 (2.6)	86.7 (2.9)
4th Rctg Bde	390	56.6 (3.1)	77.8 (3.3)	69.2 (2.9)	42.4 (4.0)	68.8 (2.8)	74.8 (2.5)	49.2 (3.0)	67.9 (2.5)	61.2 (2.8)	60.5 (3.1)	74.3 (2.1)	68.9 (2.8)	66.4 (3.0)	81.0 (2.0)
5th Rctg Bde	187	68.5 (4.3)	84.3 (3.3)	68.5 (4.3)	52.8 (4.0)	77.3 (3.5)	80.2 (4.5)	59.6 (5.8)	75.9 (4.2)	75.6 (3.2)	72.4 (3.9)	74.7 (3.6)	79.7 (3.4)	78.6 (3.6)	80.7 (3.5)
6th Rctg Bde	206	50.4 (4.1)	74.4 (3.6)	51.6 (4.2)	39.9 (4.9)	58.9 (4.2)	75.0 (4.8)	41.2 (3.8)	61.4 (3.9)	57.2 (4.3)	53.6 (3.9)	62.6 (4.8)	66.3 (4.1)	64.7 (3.5)	68.2 (4.5)
16-17 Years Old	581	68.0 (2.4)	81.5 (2.1)	67.4 (2.8)	47.1 (2.5)	74.3 (2.0)	80.5 (1.7)	57.3 (2.3)	74.1 (2.5)	71.0 (2.2)	67.3 (2.3)	77.4 (2.4)	77.8 (2.1)	73.3 (2.1)	78.6 (2.0)
18-19 Years Old	316	60.5 (3.9)	82.7 (3.0)	70.6 (3.1)	43.3 (3.3)	73.0 (2.5)	76.9 (2.9)	51.5 (3.3)	72.7 (3.2)	69.3 (2.4)	66.1 (3.1)	76.9 (2.6)	76.1 (2.3)	77.0 (2.4)	81.0 (2.5)
20-21 Years Old	211	51.2 (3.8)	75.4 (3.8)	60.1 (4.1)	44.8 (4.1)	64.9 (3.7)	73.4 (4.4)	47.0 (3.8)	65.5 (4.5)	60.1 (4.2)	56.1 (3.5)	70.6 (4.7)	68.5 (4.4)	66.2 (3.8)	76.7 (4.1)
22-24 Years Old	251	48.3 (3.0)	76.4 (3.0)	61.9 (3.5)	48.1 (3.6)	66.2 (3.0)	76.5 (3.7)	46.1 (3.5)	69.1 (3.9)	65.9 (3.1)	61.7 (3.5)	71.0 (3.2)	69.8 (3.7)	69.5 (2.9)	79.0 (3.9)
TOTAL PMAS	1,359	58.0 (1.7)	79.3 (1.4)	65.4 (1.9)	46.0 (2.0)	70.2 (1.5)	77.3 (1.5)	51.1 (1.8)	70.9 (1.5)	67.2 (1.5)	63.5 (1.6)	74.4 (1.5)	73.6 (1.4)	71.9 (1.5)	78.9 (1.8)

△ indicates wording for question item(s) was changed significantly. See Appendix E.

TABLE W-3 PERCEPTIONS - ACTIVE ARMY

Similar to Last Quarter

- There is widespread agreement by PMAS youth that the Army provides opportunities for physical challenge (79.3%), for earning money for education (78.9%), for working with high-tech equipment (77.3%), for becoming more mature and responsible (74.4%), and for skills training (73.6%). The same perceptions have widespread agreement among all other sample groups.

- Agreement is least likely in the PMAS with statements that the Army offers an advantage over going right from high school to college (46.0%), value in civilian career development (51.1%), and a wide variety of opportunities to find an enjoyable job (58.0%). The same perceptions are least frequent among all other sample groups.

- Perceptions of the Army tend, again this quarter, to be more favorable among youth in the Southeast (2nd Recruiting Brigade) and the Southwest (5th Recruiting Brigade) although the differences among regions are smaller this quarter than last.

Different from Last Quarter

- There is a tendency for greater agreement this quarter that the Army offers money for education, one of the quarter's main advertising messages. However, this change should be interpreted cautiously since the wording of the question was altered this quarter (see Appendix E).

  - 22- to 24-year old PMAS youth show a large increase in agreement with this statement (+14.2%) and non-significant increases also occurred among college freshmen and sophomores and non-enrolled high school grads.

  - Women are also significantly more likely to think the Army offers money for school this quarter than they were last quarter (+8.7%).

- Perceptions of the active Army are lower this quarter especially for work-oriented high school students and youth in the Southeast (2nd Recruiting Brigade). These shifts suggest a convergence among educational and regional groups in their perceptions of the active Army.

  - The predominant perceptions of work-oriented high school students are still that the Army offers a chance to work with high-tech equipment (80.2%) and to get useful skill training (79.9%) though the levels of agreement with these statements appear to have have dropped somewhat. Additionally, large decreases in agreement that the Army provides opportunities for becoming mature and responsible (-16.2%) and money for education occurred (-9.1%, non-significant) (possible instrumentation effects). These shifts diminish the picture of the work-oriented as more favorable toward the Army than other educational groups.

- In contrast to last quarter, women are no longer more likely to agree with statements about the Army's attributes.

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Table C-3

WINTER - FALL DIFFERENCES IN

PERCENTAGE "AGREE" OR "STRONGLY AGREE" WITH ACTIVE ARMY ATTRIBUTE STATEMENTS

SAMPLE GROUPS	N	Job Variety	Physical Challenge	Proud Experience	Step Btwn HS & Col.	Leader Skills	Hi-Tech Equipment	Civilian Career	Δ Self Confidence	Develop Potential	Mental Challenge	Δ Mature & Responsible	Skill Training	Hi-Trained Co-Workers	Δ Money for Ed.
RECRUITING MARKET: MALES [PMAS + SMS]		+	–	–	+	–	–	–	–	–	–	–	+	–	+
FEMALES [PFAS + SFS]		–	–	–	+	+	–	–	+	+	+	+	+	–	+8.7
TOTAL RECRUITING MARKET		–	–	–	+	–	–	–	+	+	–	–	+	–	+6.2
PMAS: College Freshmen and Sophomores		–	–	–	+	–	–	-15.5	–	–	–	–	–	–	+
H.S. Students [College-Oriented]		+	–	–	+	+	–	+	+	–	–	–	+	–	–
H.S. Students [Work-Oriented]		–	–	-13.1	–	–	–	–	+	–	–	-16.2	–	–	–
H.S. Graduates Not Currently Enrolled		–	–	–	–	–	+	+	+	+	–	+	+	+	+
1st Rctg Bde		+	–	–	+	+	–	+	–	+	–	+	+	+	+
2nd Rctg Bde		–	-9.3	–	–	-8.9	–	–	–	–	–	–	–	-8.5	+
4th Rctg Bde		–	–	+	+	–	–	–	+	–	–	+	–	-8.4	+
5th Rctg Bde		+	–	–	+	–	+	–	+	–	+	–	+	+	+
6th Rctg Bde		+	+	–	+	+	+	–	–	–	+	–	+	+	+
16-17 Years Old		+	–	–	+	+	–	–	+	–	–	–	+	–	–
18-19 Years Old		+	–	–	+	–	–	–	+	+	+	–	+	+	+
20-21 Years Old		–	–	–	–	–	+	–	–	–	–	–	+	–	+
22-24 Years Old		–	–	–	+	–	–	–	+	–	–	–	+	–	+14.2
TOTAL PMAS		+	-4.3	–	+	–	–	–	+	–	–	–	+	–	+

Δ indicates wording for question item(s) was changed significantly. See Appendix E.

Note: Numbers are significant quarter-to-quarter differences (i.e., $p \leq 0.05$; $\pm$ 2 s.e.)
Signs indicate direction of insignificant changes.

Table W-4

PERCENTAGE "AGREE" OR "STRONGLY AGREE" WITH ARMY RESERVE ATTRIBUTE STATEMENTS
(Standard Error)

SAMPLE GROUPS	N	Job Variety	Proud Experience	Leader Skills	Civilian Career	Self Confidence	Develop Potential	Mental Challenge	Mature & Responsible	Skill Training	Hi-Trained Co-Workers	△ Money for Ed.	Exciting Weekends	* Part-Time Work	△ Live in Hometown	N*
MALES [PMAS + SMS]	252	50.0 (4.9)	57.2 (4.5)	59.6 (4.8)	41.0 (4.9)	61.2 (5.3)	58.3 (4.5)	53.0 (4.9)	67.1 (4.8)	62.7 (3.8)	64.4 (4.1)	66.0 (4.0)	46.0 (4.8)	55.9 (5.2)	58.6 (4.2)	231
FEMALES [PFAS + SFS]	48	58.9 (10.0)	72.7 (7.9)	67.4 (9.1)	58.4 (9.4)	58.5 (11.3)	49.9 (11.8)	63.0 (9.2)	73.0 (10.1)	77.1 (9.0)	61.8 (10.3)	81.8 (7.2)	36.8 (10.6)	56.6 (12.6)	43.6 (9.6)	45
TOTAL RECRUITING MARKET	300	54.0 (5.0)	64.3 (3.9)	63.1 (4.9)	49.0 (4.6)	59.9 (5.7)	54.4 (6.2)	57.6 (4.6)	69.8 (4.9)	69.3 (4.3)	63.2 (5.4)	73.3 (4.1)	41.8 (5.4)	56.2 (6.4)	51.7 (4.8)	276
TOTAL PMAS	231	50.3 (4.4)	54.5 (4.9)	60.1 (4.5)	37.5 (4.5)	61.3 (4.9)	55.3 (4.9)	51.1 (4.6)	70.5 (4.1)	61.3 (4.2)	62.3 (4.4)	66.1 (4.8)	43.4 (5.0)	55.2 (5.0)	59.1 (4.4)	215

* indicates variable was added Winter 87.

△ indicates wording for question item(s) was changed significantly. See Appendix E.

Similar to Last Quarter

- The Army Reserve brand image continues to be moderate in strength. Agreement with statements about the Army Reserve by PMAS youth ranges from approximately 40% to 70%.
- Predominant perceptions of the Army Reserve for PMAS youth are that it offers the opportunity to become more mature and responsible (70.5%) and to earn money for education (66.1%).
- Agreement is again low for PMAS youth with the statement that the Army Reserve offers interesting and exciting weekends (43.4%).

Different from Last Quarter

- In general, the percentages of youth in all sample groups who agree with the Army Reserve attribute statements tend to have decreased from last quarter.
  - A significant drop from last quarter is shown for PMAS youth in the perception that the Army Reserve offers value in the development of one's career (-18.5%).
  - A large decrease is also shown for females in agreement that the Army Reserve offers the opportunity to serve America while living in your own hometown (-27.7%). It is likely that this decrease is caused by wording changes in the question from Fall to Winter quarter.

Table C-4

WINTER - FALL DIFFERENCES IN
PERCENTAGE "AGREE" OR "STRONGLY AGREE" WITH ARMY RESERVE ATTRIBUTE STATEMENTS

SAMPLE GROUPS	N	Job Variety	Proud Experience	Leader Skills	Civilian Career	Self Confidence	Develop Potential	Mental Challenge	Mature & Responsible	Skill Training	Hi-Trained Co-Workers	Δ Money for Ed.	Exciting Weekends	* Part-Time Work	Δ Live in Hometown	N*
MALES [PMAS + SMS]		+	-	-	-	-	+	-	+	+	-	+	+	N/A	-	
FEMALES [PFAS + SFS]		-	+	-	-	-	-	-	-	+	-	+	-	N/A	-27.7	
TOTAL RECRUITING MARKET		+	-	-	-	-	-	-	-	+	-	+	-	N/A	-15.5	
TOTAL PMAS		+	-	-	-18.5	-	-	-	+	-	-	+	+	N/A	-	

* indicates variable was added Winter 87.

△ indicates wording for question item(s) was changed significantly. See Appendix E.

Note: Numbers are significant quarter-to-quarter differences (i.e., $p \leq 0.05$; $\pm$ 2 s.e.)
Signs indicate direction of insignificant changes.

Table W-5

PERCENTAGE "AGREE" OR "STRONGLY AGREE" WITH ARMY NATIONAL GUARD ATTRIBUTE STATEMENTS
(Standard Error)

SAMPLE GROUPS	N	Job Variety	Proud Experience	Leader Skills	Civilian Career	Self Confidence	Develop Potential	Mental Challenge	Mature & Responsible	Skill Training	Hi-Trained Co-Workers	△ Money for Ed.	Exciting Weekends	* Part-Time Work	△ Live in Hometown	N*
MALES [PMAS + SMS]	239	39.5 (4.2)	56.8 (3.9)	56.7 (3.8)	40.0 (4.8)	59.9 (3.7)	53.9 (3.7)	44.6 (3.4)	68.5 (4.7)	62.5 (3.6)	61.6 (4.2)	59.0 (3.9)	36.2 (5.3)	52.9 (4.9)	65.8 (3.6)	209
FEMALES [PFAS + SFS]	51	47.3 (11.1)	70.2 (6.6)	75.1 (7.7)	65.3 (8.4)	71.6 (8.3)	81.8 (6.3)	64.9 (8.6)	78.6 (6.0)	77.6 (5.6)	82.2 (6.3)	63.2 (8.9)	32.1 (10.2)	64.5 (10.6)	67.9 (9.1)	46
TOTAL RECRUITING MARKET	290	43.9 (6.3)	64.2 (4.2)	66.9 (4.8)	54.1 (6.0)	66.4 (4.7)	69.4 (4.8)	55.9 (5.2)	74.1 (4.2)	70.9 (4.0)	73.0 (4.4)	61.3 (5.2)	33.9 (6.5)	59.5 (6.0)	67.0 (5.1)	255
TOTAL PMAS	219	38.7 (4.4)	56.9 (4.1)	56.0 (4.0)	38.6 (5.9)	59.6 (4.0)	55.2 (4.0)	45.3 (3.8)	68.3 (5.2)	62.0 (4.2)	61.5 (4.5)	60.4 (4.0)	33.2 (5.4)	51.8 (5.7)	64.4 (3.8)	190

* indicates variable was added Winter 87.

△ indicates wording for question item(s) was changed significantly. See Appendix E.

Similar to Last Quarter

- The brand image of the Army National Guard continues to be moderate in strength for PMAS youth ranging from approximately 35% to 70%.
  - For PMAS youth, the predominant perceptions of the National Guard are that it provides opportunities for becoming more mature and responsible (68.3%) and for serving America while living at home (64.4%).
  - Least frequent agreement is found for PMAS youth with statements that the National Guard provides interesting and exciting weekends (33.2%), value in career development (38.6%), and opportunities for finding an enjoyable job (38.7%).

Different from Last Quarter

- There is an apparent general tendency toward a downward shift in perceptions of the Army National Guard for males. This is especially shown in the significant decreases in agreement with the statements that the National Guard offers interesting and exciting weekends (-20.6% for PMAS, -17.4% for PMAS+SMS) and that it offers a mental challenge (-15.8% for PMAS+SMS).

- Females, on the other hand, show a tendency toward greater agreement with statements about the Army National Guard. This quarter, females are significantly more likely than males to agree with seven of the fourteen attribute statements.

Table C-5

WINTER - FALL DIFFERENCES IN
PERCENTAGE "AGREE" OR "STRONGLY AGREE" WITH ARMY NATIONAL GUARD ATTRIBUTE STATEMENTS

SAMPLE GROUPS	N	Job Variety	Proud Experience	Leader Skills	Civilian Career	Self Confidence	Develop Potential	Mental Challenge	Mature & Responsible	Skill Training	Hi-Trained Co-Workers	△ Money for Ed.	Exciting Weekends	* Part-Time Work	△ Live in Hometown	N*
MALES (PMAS + SMS)		-	-	-	-	-	-	-15.8	-	+	+	+	-17.4	N/A	-	
FEMALES (PFAS + SFS)		+	+	+	+	+	+	+	+	+	+	+	-	N/A	+	
TOTAL RECRUITING MARKET		-	-	+	+	+	+	-	+	+	+	+	-	N/A	+	
TOTAL PMAS		-	-	-	-	-	-	-	-	+	+	+	-20.6	N/A	-	

* indicates variable was added Winter 87.

△ indicates wording for question item(s) was changed significantly. See Appendix E.

Note: Numbers are significant quarter-to-quarter differences (i.e., $p \leq 0.05$; $\pm$ 2 s.e.)
Signs indicate direction of insignificant changes.

PERCENTAGE "AGREE" OR "STRONGLY AGREE" WITH ARMY ROTC ATTRIBUTE STATEMENTS
PERCENTAGE RATING ROTC OPPORTUNITIES "IMPORTANT" OR "VERY IMPORTANT" TO PLANS FOR THE NEXT YEAR
(Standard Error)

SAMPLE GROUPS	N1	ROTC PERCEPTIONS: ROTC Offers: Leader/Mgmt Training	ROTC Offers: Self Confidence	ROTC Offers: College Elective	ROTC Offers: Officer's Commission	Officer Benefits: △ Job Variety	Officer Benefits: Proud △ Experience	Officer Benefits: Use College Skills	Officer Benefits: Use Own Judgment	N2	ROTC IMPORTANCE: Leader Skills	ROTC IMPORTANCE: Self Confidence	ROTC IMPORTANCE: * Job Variety	ROTC IMPORTANCE: △ Proud Experience	ROTC IMPORTANCE: Use Own Judgment	N*
ROTC MALE SAMPLE:																
College Juniors and Seniors	108	54.9 (6.1)	68.7 (5.0)	68.3 (5.8)	66.4 (5.6)	43.7 (4.4)	64.4 (5.1)	52.0 (6.1)	46.6 (5.5)	130	75.7 (5.2)	83.4 (4.0)	95.0 (2.5)	86.0 (3.2)	92.7 (1.9)	106
College Freshmen and Sophomores	132	49.2 (5.7)	64.8 (4.9)	56.2 (5.3)	62.0 (4.6)	51.4 (5.2)	69.4 (5.7)	52.7 (5.6)	65.6 (6.9)	268	76.5 (3.4)	83.6 (2.5)	90.1 (2.6)	92.3 (2.0)	93.4 (1.6)	227
H.S. Students (College-Oriented)	263	64.6 (3.7)	79.5 (2.5)	70.5 (3.4)	71.6 (2.8)	71.1 (2.9)	84.0 (2.3)	72.0 (3.0)	77.8 (2.5)	563	77.9 (2.2)	89.6 (1.4)	91.4 (1.4)	91.9 (1.4)	91.3 (1.1)	501
1st ROTC Region	182	52.4 (4.3)	69.4 (4.0)	65.9 (5.0)	63.3 (5.6)	53.2 (4.1)	72.3 (5.2)	53.0 (5.3)	64.6 (4.2)	342	74.6 (3.4)	84.8 (2.6)	91.3 (2.0)	89.1 (1.8)	91.0 (1.5)	298
2nd ROTC Region	130	58.5 (5.1)	66.7 (5.8)	63.1 (6.7)	63.6 (4.5)	61.7 (5.2)	75.6 (5.6)	58.4 (6.2)	60.7 (5.7)	254	78.6 (3.1)	89.5 (2.2)	93.0 (1.3)	88.5 (2.8)	91.8 (1.5)	219
3rd ROTC Region	79	67.1 (7.5)	82.2 (4.7)	63.2 (7.8)	76.6 (5.8)	66.6 (6.4)	79.6 (6.6)	70.9 (7.4)	77.1 (8.5)	143	83.2 (3.4)	89.1 (2.2)	92.1 (2.9)	97.2 (1.1)	96.4 (1.7)	123
4th ROTC Region	112	50.8 (5.8)	68.1 (5.3)	63.4 (4.5)	65.8 (5.8)	51.2 (6.4)	69.3 (5.1)	62.8 (4.3)	63.0 (4.9)	222	74.5 (3.1)	84.5 (2.7)	90.2 (2.4)	91.0 (1.9)	91.0 (2.2)	194
16-17 Years Old	210	62.1 (3.8)	77.4 (2.9)	68.0 (4.1)	69.3 (3.2)	68.6 (3.1)	83.9 (2.8)	69.3 (3.4)	78.0 (3.0)	466	77.0 (2.4)	89.0 (1.5)	91.5 (1.6)	91.1 (1.5)	91.8 (1.3)	416
18-19 Years Old	135	53.8 (6.4)	70.8 (4.2)	62.2 (4.7)	62.1 (3.8)	62.1 (5.0)	72.9 (6.0)	60.7 (6.4)	64.5 (6.8)	253	79.1 (3.2)	85.1 (2.5)	93.0 (1.8)	93.5 (1.5)	92.6 (1.6)	215
20-21 Years Old	103	60.6 (5.7)	64.9 (4.9)	66.2 (6.7)	73.8 (6.0)	46.3 (6.3)	62.3 (5.9)	46.4 (6.1)	64.7 (6.7)	155	76.2 (4.1)	86.7 (2.9)	90.7 (3.0)	90.2 (3.1)	90.9 (2.2)	129
22-24 Years Old	55	43.5 (8.4)	70.2 (8.6)	58.4 (8.2)	58.9 (10.5)	43.0 (6.9)	74.3 (9.0)	61.1 (8.5)	48.9 (8.6)	87	74.3 (6.0)	81.8 (4.7)	90.3 (4.5)	86.9 (3.6)	94.7 (2.9)	74
TOTAL ROTC MALE SAMPLE	503	56.3 (2.9)	71.2 (2.5)	64.3 (3.3)	66.6 (2.9)	57.2 (2.9)	73.8 (3.2)	59.8 (3.3)	66.0 (3.3)	961	77.1 (1.7)	86.5 (1.4)	91.6 (1.1)	91.0 (1.1)	92.2 (0.9)	834
TOTAL ROTC FEMALE SAMPLE	108	63.3 (4.6)	78.7 (3.9)	76.1 (5.5)	67.6 (5.5)	62.6 (5.2)	82.9 (3.5)	76.8 (4.6)	63.8 (4.6)	213	83.8 (3.3)	92.8 (2.6)	92.5 (2.9)	95.0 (1.3)	95.8 (1.4)	184
TOTAL ROTC SAMPLE (MALES + FEMALES)	611	60.0 (2.9)	75.2 (2.6)	70.6 (3.4)	67.1 (3.4)	60.1 (3.0)	78.6 (2.3)	68.8 (2.8)	64.9 (2.9)	1,174	80.7 (2.0)	89.9 (1.4)	92.1 (1.7)	93.2 (0.9)	94.2 (0.9)	1,018
TOTAL PNAS	422	54.3 (5.1)	59.3 (4.4)	61.8 (5.1)	62.4 (5.0)	61.4 (5.7)	71.5 (5.3)	68.0 (4.7)	66.7 (5.5)	1,445	76.9 (1.3)	87.6 (1.0)	88.9 (1.0)	91.7 (0.8)	92.0 (0.7)	1,258

* indicates variable was added Winter 87.

△ indicates wording for question item(s) was changed significantly. See Appendix E.

TABLE W-6 PERCEPTIONS - ARMY ROTC

Similar to Last Quarter

Perceptions

- Agreement with statements about attributes of the Army ROTC for males in the ROTC Sample is generally moderate ranging from approximately 55% to 75%.

  - For youth in the ROTC Male Sample, the highest proportions of agreement are with statements that the ROTC offers experiences to be proud of (73.8%), and opportunities for gaining self-confidence (71.2%). This pattern is consistent across all educational groups. College-oriented high school students are also highly likely to agree that the Army ROTC offers opportunities for using one's own judgment and making changes (77.8%).

  - Least agreement is found for ROTC males with statements that the Army ROTC offers leadership and management training (56.3%), job variety (57.2%), and opportunities to use college acquired skills (59.8%).

  - As education level rises, there is less agreement on some attributes. College-oriented high school students are more likely to agree that the Army ROTC offers a wide variety of job opportunities (71.1%) than college freshmen and sophomores (51.4%) and college juniors and seniors (43.7%). A similar pattern is shown for perceptions that the Army ROTC offers opportunities to use one's own judgment, to use college acquired skills, and to develop self-confidence.

  - Agreement with ROTC attribute statements again tends to be strongest for males in the 3rd ROTC Region though these regional differences are not as strong this quarter as last.

- Younger respondents (especially 16- to 17- year old males) are more likely than older respondents to agree that the ROTC offers an experience to be proud of, a wide variety of job opportunities, and opportunities for gaining self-confidence and using college acquired skills.

Importance

- All of the opportunities relevant to the ROTC are highly likely to be considered important by youth in the ROTC Male Sample. Opportunities for using one's own judgment (92.2%), having a wide variety of job choices (91.6%), having an experience to be proud of (91.0%), and gaining self-confidence (86.5%) are all highly valued. Leadership and management training opportunity is least likely to be considered important by males in the ROTC Sample (77.1%). A similar pattern is evident among all educational and age groups and for both sexes.

Comparison of Perceptions and Importance Items

- In all cases, opportunities are more likely to be valued by youth than to be perceived as available in the ROTC.
  - In particular, there are large discrepancies between perceptions and importance for job variety, use of one's own judgment, and leadership and management training.

Different from Last Quarter

Perceptions

- There is a pattern of increase in the perception that the ROTC offers the opportunity to use one's own judgment, but it is significant only for 20- to 21-year olds (+25.0%).
- Significant increases in agreement that becoming an officer is an experience to be proud of are also found for college-oriented high school students (+19.3%) and 16- to 17-year olds (+10.1%) (possible instrumentation effect).
- Respondents are less aware this quarter that ROTC courses can be taken as college electives especially college freshmen and sophomores (-16.3%). Less awareness is also shown for the perception that the ROTC offers an officer's commission, especially by 18- to 19-year olds (-16.9%). Since ROTC did not advertise during this quarter, these decreases are not surprising.

Importance

- Having an experience to be proud of is more likely to be considered important this quarter by youth in the ROTC Sample (possible instrumentation effect). Use of one's own judgment also appears more likely to be valued.
- Leadership and management training is less likely to be valued this quarter by ROTC males, especially 22- to 24-year olds (-14.4%). The opportunity to gain self-confidence is also less likely to be considered important by 22- to 24-year old youth (-14.3%).
- Youth in the 3rd ROTC Region differ from those in other regions by being more likely to consider an experience to be proud of and use of their own judgment important. There are no other regional differences in the importance items.

WINTER - FALL DIFFERENCES IN

PERCENTAGE "AGREE" OR "STRONGLY AGREE" WITH ARMY ROTC ATTRIBUTE STATEMENTS
PERCENTAGE RATING ROTC OPPORTUNITIES "IMPORTANT" OR "VERY IMPORTANT" TO PLANS FOR THE NEXT YEAR

SAMPLE GROUPS	N1	ROTC PERCEPTIONS: ROTC Offers: Leader/Mgmt Training	ROTC Offers: Self Confidence	ROTC Offers: College Elective	ROTC Offers: Officer's Commission	Officer Benefits: Δ Job Variety	Officer Benefits: Proud Experience	Officer Benefits: Δ Use College Skills	Officer Benefits: Use Own Judgment	N2	ROTC IMPORTANCE: Leader Skills	Self Confidence	* Job Variety	Δ Proud Experience	Use Own Judgment	N*
ROTC MALE SAMPLE: College Juniors and Seniors		-	+	-	-	+	-	+	+		-	-	N/A	+	+	
College Freshmen and Sophomores		+	-	-16.3	-	-	-	-	+		-	-	N/A	+	+	
N.S. Students [College-Oriented]		+	+	-	-	-	+19.3	-	+		-	+	N/A	+	+	
1st ROTC Region		+	+	-	-	-	+	-16.4	+		-	-	N/A	+	+	
2nd ROTC Region		+	+	+	-	+	-	+	-		-	-	N/A	+	+	
3rd ROTC Region		-	+	-	-	+	-	-	+		-	-	N/A	+9.6	+6.3	
4th ROTC Region		+	+	-	+	-	+	+	+		-	+	N/A	+8.7	+	
16-17 Years Old		+	+	-	-	-	+10.1	-	+		-	+	N/A	+	+	
18-19 Years Old		+	+	-	-16.9	-	-	-	+		-	-	N/A	+7.3	+	
20-21 Years Old		+	+	-	+	+	+	+	+25.0		-	+	N/A	+12.3	+	
22-24 Years Old		-	+	-	-	-	-	-	-		-14.4	-14.3	N/A	-	+	
TOTAL ROTC MALE SAMPLE		+	+	-9.3	-	-	-	-	+		-5.4	-	N/A	+4.7	+3.5	
TOTAL ROTC FEMALE SAMPLE		-	+	-	+	+	-	-	+		+	+	N/A	+	+	
TOTAL ROTC SAMPLE (MALES + FEMALES)		+	+	-	-	+	+	+	+		+	+	N/A	+5.7	+4.9	
TOTAL PNAS		-	-14.7	-	-14.5	-	-	-	-		-	-	N/A	+4.2	+	

* indicates variable was added Winter 87.

Δ indicates wording for question item(s) was changed significantly. See Appendix E.

Note: Numbers are significant quarter-to-quarter differences (i.e., $p \leq 0.05$; $\pm$ 2 s.e.)
Signs indicate direction of insignificant changes.

PERCENTAGE TAKING ACTIONS RELATING TO ENLISTMENT DURING THE PAST SIX MONTHS
(Standard Error)

SAMPLE GROUPS	N	Talked to Anyone of Joining Army	Talked to an Army Recruiter	Taken ASVAB	Visited Army Recruiting Station	Toll-Free Call Sent for Gift
RECRUITING MARKET:						
MALES [PMAS + SMS]	1,670	23.7 (1.6)	12.3 (0.9)	11.6 (0.8)	8.0 (0.8)	5.4 (0.6)
FEMALES [PFAS + SFS]	340	10.0 (2.3)	3.5 (1.4)	4.4 (1.3)	2.9 (0.7)	2.4 (0.9)
TOTAL RECRUITING MARKET	2,010	16.7 (1.5)	7.8 (0.9)	7.9 (0.8)	5.4 (0.5)	3.8 (0.5)
PMAS:						
College Freshmen and Sophomores	268	18.8 (3.2)	10.3 (2.3)	10.1 (2.5)	7.3 (2.0)	7.1 (2.0)
H.S. Students [College-Oriented]	563	33.4 (2.9)	16.2 (2.0)	19.2 (1.9)	9.2 (1.3)	8.3 (1.2)
H.S. Students [Work-Oriented]	133	35.7 (3.9)	17.4 (3.3)	12.1 (3.7)	8.8 (2.7)	10.7 (3.2)
H.S. Graduates Not Currently Enrolled	481	16.2 (2.2)	10.3 (1.7)	8.1 (1.2)	7.1 (1.3)	2.7 (1.0)
1st Rctg Bde	336	19.5 (2.5)	10.3 (2.2)	9.5 (2.1)	7.2 (1.4)	7.7 (1.8)
2nd Rctg Bde	280	22.9 (3.9)	12.6 (2.1)	13.3 (2.3)	8.1 (1.8)	3.8 (1.3)
4th Rctg Bde	414	26.1 (2.9)	15.4 (2.2)	13.0 (2.0)	9.0 (1.6)	5.7 (1.2)
5th Rctg Bde	200	24.5 (4.4)	11.9 (2.8)	12.3 (2.4)	8.0 (2.5)	6.9 (2.0)
6th Rctg Bde	215	25.5 (3.2)	13.4 (2.3)	13.8 (2.7)	7.3 (1.7)	5.4 (1.5)
16-17 Years Old	583	32.7 (2.4)	15.7 (1.7)	13.9 (1.6)	7.7 (1.1)	7.4 (1.0)
18-19 Years Old	365	29.5 (3.3)	18.3 (2.1)	17.1 (2.1)	12.2 (2.0)	9.3 (1.8)
20-21 Years Old	235	17.3 (3.1)	10.7 (2.3)	11.9 (2.3)	7.7 (2.0)	3.9 (1.5)
22-24 Years Old	262	11.4 (2.4)	5.1 (1.9)	6.0 (1.5)	4.3 (1.6)	2.5 (1.3)
TOTAL PMAS	1,445	23.6 (1.7)	12.7 (0.9)	12.3 (0.9)	7.9 (0.7)	6.0 (0.7)

Similar to Last Quarter

- Enlistment-related actions by youth in all sample groups are relatively infrequent.
  - The most common behavior for PMAS youth is talking to someone about joining the Army (23.6%). Talking to a recruiter (12.7%) and taking a written test (12.3%) are each about half as likely while visiting a recruiting station (7.9%) and sending for a gift or making a telephone call are least likely (6.0%).
- Although the above pattern is consistent across sample groups, there are relative differences among the groups as well.
  - High school students tend to be more likely than the other educational groups to have done all of the activities except visit a recruiting station.
  - More males than females report having done all of the enlistment-related activities.
  - In general, enlistment-related behaviors tend to be more likely for younger respondents especially 18- to 19-year olds.

Different from Last Quarter

- The general pattern of changes across quarters in activity levels suggests that youth are moving from the preliminary actions of discussing enlistment possibilities toward more direct actions like visiting a recruiting station and sending for a gift or making a phone call.
  - For example, 18- to 19-year olds show an increased tendency toward enlistment-related action especially visiting recruiting stations (+5.3).
  - A pattern suggesting increases in visiting recruiting stations and calling or sending for a gift is shown in the regional breakdown. It is especially apparent in the significant increases this quarter in visits to recruiting stations among youth in the West (6th Recruiting Brigade) (+5.0%) and in calling or sending for a gift among Northeasterners (1st Recruiting Brigade) (+5.8%).
- In general, the regional variations reported last quarter have faded and enlistment-related behaviors appear to be converging among the recruiting brigades.

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Table C-7

WINTER - FALL DIFFERENCES IN

PERCENTAGE TAKING ACTIONS RELATING TO ENLISTMENT DURING THE PAST SIX MONTHS

SAMPLE GROUPS	N	Talked to Anyone of Joining Army	Talked to an Army Recruiter	Taken ASVAB	Visited Army Recruiting Station	Toll-Free Call Sent for Gift
RECRUITING MARKET: MALES (PMAS + SMS)		-	-	+	+	+
FEMALES (PFAS + SFS)		-	-	-	-	+
TOTAL RECRUITING MARKET		-	-	+	-	+
PMAS: College Freshmen and Sophomores		-	-	-	+	+
H.S. Students (College-Oriented)		-	+	+	+	+
H.S. Students (Work-Oriented)		+	+	-	+	+
H.S. Graduates Not Currently Enrolled		-	-	+	+	-
1st Rctg Bde		-	-	-	-	+5.8
2nd Rctg Bde		-	-	-	+	-
4th Rctg Bde		+	+	+	+	+
5th Rctg Bde		-17.1	-	-	+	+
6th Rctg Bde		+8.9	+	+	+5.0	+
16-17 Years Old		-	-	-	-	+
18-19 Years Old		-	-	+	+5.3	+
20-21 Years Old		-	-	-	+	-
22-24 Years Old		+	-	+	+	+
TOTAL PMAS		-	-	+	+	+

Note: Numbers are significant quarter-to-quarter differences (i.e., $p \leq 0.05$; $\pm$ 2 s.e.)
Signs indicate direction of insignificant changes.

Table W-8

PERCENTAGE SEEING/HEARING MILITARY ADVERTISING
(Standard Error)

SAMPLE GROUPS	N	Army Components				Other Military Branches				JRAP	NONE
		ACTIVE	ROTC	ARNG	USAR	USAF	NAVY	USMC	USCG		
RECRUITING MARKET: MALES [PMAS + SMS]	1,670	82.6 (1.3)	1.4 (0.3)	14.2 (1.0)	11.8 (0.8)	64.3 (1.4)	61.6 (1.5)	67.1 (1.5)	13.2 (1.1)	7.5 (0.7)	2.1 (0.4)
FEMALES [PFAS + SFS]	340	79.9 (3.0)	1.6 (0.8)	6.4 (1.6)	8.1 (2.0)	54.2 (3.5)	54.6 (3.1)	55.6 (2.9)	6.2 (1.6)	7.7 (1.8)	3.6 (1.2)
TOTAL RECRUITING MARKET	2,010	81.3 (1.6)	1.5 (0.5)	10.2 (1.0)	9.9 (1.1)	59.1 (1.9)	58.0 (1.8)	61.2 (1.7)	9.6 (1.0)	7.6 (0.8)	2.9 (0.7)
PMAS: College Freshmen and Sophomores	268	81.8 (3.1)	1.6 (0.7)	10.4 (1.9)	13.0 (2.0)	72.5 (3.1)	67.5 (3.0)	69.8 (3.7)	17.8 (3.7)	5.4 (1.3)	2.1 (1.2)
N.S. Students [College-Oriented]	563	84.0 (1.7)	0.9 (0.4)	13.9 (1.8)	11.2 (1.5)	69.5 (2.4)	69.0 (2.2)	72.2 (1.8)	13.2 (1.7)	5.8 (1.1)	2.5 (0.9)
N.S. Students [Work-Oriented]	133	80.2 (3.7)	0.6 (0.6)	17.2 (3.9)	12.2 (3.3)	62.6 (3.8)	60.0 (4.5)	64.5 (5.0)	11.1 (3.0)	3.6 (1.9)	4.0 (1.9)
N.S. Graduates Not Currently Enrolled	481	83.1 (2.3)	2.2 (0.8)	16.7 (1.9)	14.1 (1.8)	60.4 (2.5)	56.0 (2.8)	61.6 (3.0)	13.1 (1.9)	10.4 (1.7)	1.8 (0.8)
1st Rctg Bde	336	83.6 (2.0)	1.1 (0.6)	15.6 (2.3)	15.8 (2.1)	68.7 (2.9)	68.9 (2.6)	71.6 (2.3)	16.4 (2.6)	4.5 (1.2)	2.1 (1.2)
2nd Rctg Bde	280	83.7 (2.6)	2.2 (1.0)	12.9 (2.9)	11.3 (1.9)	67.6 (2.8)	63.6 (3.6)	67.7 (4.0)	16.0 (2.6)	9.1 (2.0)	2.0 (1.0)
4th Rctg Bde	414	86.0 (2.0)	0.8 (0.4)	15.6 (2.3)	13.3 (1.5)	63.3 (3.0)	63.3 (2.8)	63.6 (2.3)	11.8 (2.1)	8.5 (1.7)	2.6 (1.1)
5th Rctg Bde	200	78.9 (3.8)	1.1 (0.7)	15.9 (3.5)	13.2 (2.1)	67.1 (3.5)	61.0 (3.9)	69.1 (3.8)	14.0 (3.0)	5.6 (2.4)	2.1 (1.4)
6th Rctg Bde	215	82.0 (3.2)	2.8 (1.5)	12.1 (2.7)	9.5 (1.9)	62.2 (3.3)	55.1 (4.1)	60.8 (4.6)	11.1 (2.3)	10.3 (2.0)	2.3 (1.1)
16-17 Years Old	583	84.9 (1.5)	0.9 (0.4)	15.4 (1.6)	12.3 (1.4)	69.9 (1.9)	68.7 (2.2)	70.3 (1.6)	13.7 (1.6)	5.2 (1.0)	2.6 (0.7)
18-19 Years Old	365	84.4 (2.3)	1.1 (0.6)	13.9 (2.7)	13.1 (2.0)	67.9 (2.5)	66.6 (2.7)	68.9 (3.1)	17.3 (2.4)	5.6 (1.2)	2.1 (0.8)
20-21 Years Old	235	80.8 (2.8)	2.3 (1.2)	11.1 (2.1)	12.0 (2.2)	64.1 (4.2)	56.1 (3.1)	63.5 (3.6)	12.0 (2.0)	7.3 (1.7)	1.6 (1.1)
22-24 Years Old	262	80.5 (3.1)	2.2 (0.9)	16.6 (2.7)	13.6 (2.2)	60.7 (3.4)	56.8 (4.0)	63.3 (3.7)	12.6 (3.0)	12.0 (2.2)	2.3 (1.1)
TOTAL PMAS	1,445	82.9 (1.4)	1.5 (0.4)	14.6 (1.1)	12.8 (0.9)	66.0 (1.4)	62.8 (1.5)	66.9 (1.6)	14.0 (1.2)	7.4 (0.8)	2.2 (0.5)

TABLE W-8 KNOWLEDGE/RECALL - UNAIDED

Similar to Last Quarter

- Unaided recall of Army advertising is highest across all services again this quarter.
  - Of PMAS youth, 82.9% recall seeing or hearing Army ads compared with 66.9% for the Marine Corps, 66.0% for Air Force, and 62.8% for Navy. This pattern is consistent among all sample groups.
  - Very few youth (7.4% for PMAS) recall joint recruiting advertising.
  - Unaided recall of advertising for the other services is again less for females than for males, while unaided recall of Army advertising is similar for both.
- Unaided recall is lower for advertising by the Army's components than for the active Army ads.
  - Of PMAS youth, 14.6% recall Army National Guard advertising without aid, compared with 12.8% for the Army Reserve ads and only 1.5% for Army ROTC.
- Levels of unaided recall of advertising for both the active Army and the Army Reserve was relatively stable across quarters.

Different from Last Quarter

- In contrast to last quarter, unaided recall of ROTC advertising is not higher for the college-oriented groups than for the other educational groups.
  - Significant decreases in unaided recall of ROTC ads are shown for both college freshmen and sophomores (-5.0%) and college-oriented high school students (-6.4%). These decreases are part of a general decline in levels of unaided recall for ROTC advertising among youth in all sample groups.
- Fewer educational or age differences are shown this quarter for recall of Reserve or Guard ads.
  - A large decrease in unaided recall of Army National Guard advertising by college freshmen and sophomores (-12.2%) and a sizable, though non-significant, increase among work-oriented high school students accounts for the convergence among educational groups.
  - A similar pattern is shown for unaided recall of Reserve advertising. A significant increase in unaided recall of Reserve ads among high school graduates (+5.1) is also shown.
  - Converging patterns of unaided recall for Reserve and Guard advertising are also shown among age categories.
- There is a tendency this quarter for levels of unaided recall to be higher than last quarter for advertising by the other services, especially by females for Air Force (+11.8%) and Navy (+11.6%) ads.

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Table C-8

WINTER - FALL DIFFERENCES IN

PERCENTAGE SEEING/HEARING MILITARY ADVERTISING

SAMPLE GROUPS	N	Army Components				Other Military Branches					
		ACTIVE	ROTC	ARNG	USAR	USAF	NAVY	USMC	USCG	JRAP	NONE
RECRUITING MARKET:											
MALES [PMAS + SMS]		+	-2.9	-	+	+	+	+	-	-	-
FEMALES [PFAS + SFS]		+	-	-	+	+11.8	+11.6	+	-	+	-
TOTAL RECRUITING MARKET		+	-1.4	-	+	+6.8	+8.4	+	-	-	-
PMAS:											
College Freshmen and Sophomores		-	-5.0	-12.2	-	+	+	+	-	-6.4	+
H.S. Students [College-Oriented]		-	-6.4	-	-	-	+8.5	+	-	-	+
H.S. Students [Work-Oriented]		+	-	+	+	+	+	+	+	-	+
H.S. Graduates Not Currently Enrolled		+	-	-	+5.1	-	+	-	-	-	-
1st Rctg Bde		-	-	-	-	+	+	+	-	-	+
2nd Rctg Bde		-	-5.1	-	+	-	+	-	+	+	+
4th Rctg Bde		+7.4	-	-	-	-	+	-	+	-	+
5th Rctg Bde		-	-	+	+	+	+	+	+	-	+
6th Rctg Bde		+	-	-	-	+	+	-	-	+	-
16-17 Years Old		-	-4.8	+	+	+	+9.0	+	-	-	-
18-19 Years Old		+	-4.1	-	-	+	+	-	-	-	+1.9
20-21 Years Old		-	-	-	+	-	+	-	-	-	-
22-24 Years Old		+	-	-	+	-	+	-	-	-	+
TOTAL PMAS		-	-3.2	-	+	+	+	+	-	-3.1	+

Note: Numbers are significant quarter-to-quarter differences (i.e., $p \leq 0.05$; $\pm$ 2 s.e.)
Signs indicate direction of insignificant changes.

Table W-9

PERCENTAGE SEEING/HEARING MILITARY ADVERTISING
(Standard Error)

SAMPLE GROUPS	N	Army Components				Other Military Branches				JRAP
		ACTIVE	ROTC	ARNG	USAR	USAF	NAVY	USMC	USCG	
RECRUITING MARKET:										
MALES [PMAS + SMS]	1,670	94.1 (0.7)	45.0 (1.9)	67.2 (1.4)	72.8 (1.4)	86.7 (1.0)	81.9 (1.2)	86.4 (1.1)	53.5 (1.3)	61.5 (1.2)
FEMALES [PFAS + SFS]	340	96.7 (1.4)	55.6 (3.2)	57.9 (3.4)	73.7 (2.9)	81.5 (3.1)	74.0 (3.1)	82.6 (2.8)	46.4 (3.1)	47.9 (4.0)[1]
TOTAL RECRUITING MARKET	2,010	95.6 (0.8)	50.5 (1.8)	62.5 (1.8)	73.3 (1.5)	84.0 (1.7)	77.8 (1.7)	84.4 (1.5)	49.9 (1.9)	56.6 (2.0)
PMAS:										
College Freshmen and Sophomores	268	91.0 (2.4)	52.3 (3.3)	62.6 (3.1)	68.0 (3.9)	87.5 (2.3)	80.9 (2.8)	88.8 (2.1)	54.0 (4.7)	57.7 (3.6)
H.S. Students [College-Oriented]	563	96.1 (0.9)	42.7 (2.0)	66.1 (2.4)	72.4 (1.7)	90.3 (1.4)	88.1 (1.6)	89.3 (1.4)	52.9 (2.3)	66.6 (2.2)
H.S. Students [Work-Oriented]	133	88.5 (3.2)	56.6 (4.2)	67.9 (4.9)	69.8 (3.9)	83.4 (3.1)	77.4 (4.3)	84.0 (3.7)	54.3 (4.5)	53.2 (6.4)
H.S. Graduates Not Currently Enrolled	481	94.7 (1.4)	41.7 (3.3)	70.1 (2.5)	76.1 (2.5)	85.2 (1.7)	79.4 (2.2)	82.7 (2.5)	52.5 (2.5)	63.5 (2.3)
1st Rctg Bde	336	92.8 (1.4)	47.8 (2.5)	67.7 (2.8)	74.9 (3.1)	88.6 (2.3)	87.1 (2.1)	88.4 (1.8)	56.1 (2.5)	60.9 (2.1)
2nd Rctg Bde	280	96.2 (1.1)	48.7 (2.7)	75.0 (2.9)	72.4 (3.1)	90.6 (1.3)	85.4 (3.0)	89.2 (1.9)	56.0 (2.8)	61.4 (3.0)
4th Rctg Bde	414	95.7 (1.2)	47.5 (2.8)	66.0 (2.7)	72.0 (1.9)	82.6 (2.0)	82.5 (1.8)	82.2 (1.8)	48.9 (2.7)	64.8 (2.5)
5th Rctg Bde	200	94.6 (1.8)	43.3 (4.5)	63.4 (4.3)	75.2 (4.4)	87.8 (2.6)	76.8 (3.5)	87.1 (2.7)	50.8 (4.1)	60.0 (3.7)
6th Rctg Bde	215	89.7 (2.8)	37.5 (4.1)	62.8 (4.4)	68.3 (4.0)	86.1 (2.4)	78.6 (3.5)	83.2 (3.1)	53.4 (3.2)	66.4 (4.6)
16-17 Years Old	583	95.3 (0.8)	45.3 (2.1)	67.9 (2.1)	71.0 (1.7)	89.6 (1.2)	87.0 (1.7)	87.4 (1.5)	54.0 (2.1)	63.1 (2.3)
18-19 Years Old	365	94.8 (1.3)	47.3 (3.1)	64.5 (2.7)	76.4 (2.9)	87.5 (1.9)	84.3 (1.9)	87.6 (1.7)	54.1 (3.7)	64.9 (2.9)
20-21 Years Old	235	93.4 (1.9)	41.3 (3.2)	61.1 (3.9)	68.4 (4.0)	86.5 (2.9)	75.8 (3.6)	81.8 (3.0)	51.9 (3.8)	61.1 (3.9)
22-24 Years Old	262	91.9 (1.8)	46.4 (4.5)	73.3 (2.3)	74.7 (3.2)	84.4 (2.5)	79.5 (2.8)	86.5 (3.0)	51.7 (4.0)	60.6 (2.8)
TOTAL PMAS	1,445	93.9 (0.8)	45.3 (1.8)	67.1 (1.5)	72.8 (1.5)	87.2 (0.9)	82.3 (1.2)	86.2 (1.2)	53.1 (1.7)	62.5 (1.3)

TABLE W-9 KNOWLEDGE/RECALL - UNAIDED PLUS AIDED

Similar to Last Quarter

- Combined unaided and aided recall of active Army advertising is again highest across all services.
  - Of PMAS youth, combined recall for Army advertising is 93.9% compared with 87.2% for Air Force, 86.2% for the Marine Corps, and 82.3% for the Navy.
- Large increases are again observed in all categories when responses to aided recall questions are added to unaided recall (Table W-8). The largest increases are observed in those categories with the lowest levels of unaided recall such as the Army ROTC and the smallest increases are in categories with the highest unaided recall levels such as the active Army.

Different from Last Quarter

- College-oriented high school students have higher levels of combined recall for Army advertising than work-oriented.
- The general downward shift in ROTC advertising recall shown in Table W-8 is modified somewhat when aided recall is added.
  - Work-oriented high school students are more likely than college-oriented to recall ROTC ads. This contrast to last quarter's findings is accounted for by a downward shift in ROTC recall for the college-oriented and a relatively large upward shift for the work-oriented.
  - Combined recall of ROTC advertising by females increased significantly this quarter over last (+10.6%) making females more likely than males to recall ROTC ads.

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Table C-9

Knowledge/Recall - Unaided plus Aided

WINTER - FALL DIFFERENCES IN
PERCENTAGE SEEING/HEARING MILITARY ADVERTISING

SAMPLE GROUPS	N	Army Components				Other Military Branches				JRAP
		ACTIVE	ROTC	ARNG	USAR	USAF	NAVY	USMC	USCG	
RECRUITING MARKET:										
MALES [PMAS + SMS]		+	−	−	−	−	+	+	+	+5.0
FEMALES [PFAS + SFS]		+5.9	+10.6	−	+	+	+	+	+	+
TOTAL RECRUITING MARKET		+3.4	+5.3	−	+	+	+	+	+	+
PMAS:										
College Freshmen and Sophomores		−	−	−	−	−	−	−	−	−
H.S. Students [College-Oriented]		+	−	−	−	+	+	+	+	+
H.S. Students [Work-Oriented]		−	+	+	−	−	−	+	−	+
H.S. Graduates Not Currently Enrolled		+	+	+	+	−	+	−	−	+
1st Rctg Bde		−	+	−	−	−	+	+	−	−
2nd Rctg Bde		+	−	−	−	+	+	−	+	+
4th Rctg Bde		+	−	−	+	−	−	-5.7	+	+
5th Rctg Bde		−	+	+	+	−	−	+	−	+
6th Rctg Bde		−	−	+	−	+	+	+	+	+
16-17 Years Old		−	−	+	−	+	+	+	+	+
18-19 Years Old		+	−	−	+	+	−	−	−	+
20-21 Years Old		+	−	−	−	+	+	−	+	+
22-24 Years Old		−	+	+	−	-7.5	+	−	−	−
TOTAL PMAS		−	−	−	−	−	+	−	+	+

Note: Numbers are significant quarter-to-quarter differences (i.e., $p \leq 0.05$; $\pm$ 2 s.e.)
Signs indicate direction of insignificant changes.

PERCENTAGE ANSWERING KNOWLEDGE OF ARMY OFFERS AND BENEFITS QUESTIONS CORRECTLY
(Standard Error)

SAMPLE GROUPS	N	Active Army Knowledge: If Enlist Eligible for College $	Total Education Benefits	Army Benefits Better?	Offer GI Bill: ARMY	USAF	NAVY	USMC	Minimum Duty Tour	△ Delayed Entry Allowed	Army Reserve and Army National Guard Knowledge: 17 Year Old Eligible to Join	H.S. Graduation Required	Scholar Athlete Sponsor	If Enlist Eligible for College $	Maximum GI Bill College $
RECRUITING MARKET:															
MALES [PMAS + SMS]	861	94.2 (1.1)	25.4 (1.4)	14.8 (1.5)	83.4 (1.8)	45.1 (2.0)	44.2 (2.2)	51.4 (2.3)	40.7 (1.8)	83.7 (1.3)	64.0 (2.4)	77.4 (1.4)	28.7 (2.0)	84.1 (1.4)	8.6 (0.9)
FEMALES [PFAS + SFS]	175	89.3 (3.1)	9.8 (2.7)	9.0 (2.3)	68.9 (4.9)	49.7 (6.4)	55.1 (5.4)	51.1 (5.5)	32.5 (6.5)	79.9 (4.8)	57.3 (5.2)	72.8 (5.2)	23.7 (3.9)	87.2 (2.7)	11.1 (3.0)
TOTAL RECRUITING MARKET	1,036	91.6 (1.6)	17.4 (1.7)	11.8 (1.3)	75.9 (2.5)	47.5 (3.3)	49.8 (3.1)	51.3 (3.1)	36.4 (3.6)	81.7 (2.3)	60.6 (3.2)	75.8 (2.8)	26.1 (2.2)	85.7 (1.5)	9.9 (1.6)
PMAS:															
College Freshmen and Sophomores	139	96.2 (2.6)	34.5 (4.2)	19.5 (4.2)	89.4 (3.3)	46.7 (4.5)	41.9 (5.4)	45.9 (4.8)	45.9 (4.5)	88.0 (3.9)	64.6 (5.2)	76.0 (4.0)	28.1 (5.3)	82.8 (4.4)	6.6 (2.5)
H.S. Students [College-Oriented]	283	95.5 (1.7)	29.1 (2.8)	20.5 (2.9)	84.7 (2.6)	40.4 (3.4)	41.1 (3.2)	50.5 (3.4)	36.2 (3.1)	78.1 (3.2)	58.6 (3.8)	79.0 (2.8)	34.2 (2.6)	89.4 (2.6)	10.3 (2.5)
H.S. Students [Work-Oriented]	75	92.9 (3.8)	18.7 (5.2)	7.9 (3.4)	88.6 (4.6)	42.0 (6.5)	41.7 (5.6)	45.2 (6.1)	32.2 (5.1)	82.9 (5.0)	59.4 (6.2)	71.9 (5.5)	44.2 (6.3)	89.1 (3.5)	2.0 (1.5)
H.S. Graduates Not Currently Enrolled	250	95.4 (1.8)	22.5 (2.7)	9.9 (1.6)	84.1 (2.6)	50.8 (3.9)	49.5 (3.7)	59.1 (4.0)	45.5 (3.0)	89.5 (1.8)	69.2 (3.5)	79.1 (2.8)	24.8 (3.0)	83.4 (3.0)	9.7 (1.8)
1st Rctg Bde	179	94.2 (2.8)	26.9 (3.8)	13.7 (2.8)	87.1 (2.7)	48.9 (4.5)	46.8 (5.1)	48.6 (4.6)	39.9 (4.2)	83.3 (3.1)	62.8 (4.2)	72.0 (4.4)	34.6 (3.5)	86.9 (3.3)	10.2 (2.1)
2nd Rctg Bde	128	95.8 (1.6)	26.3 (4.8)	17.3 (4.2)	81.4 (3.8)	45.3 (5.2)	43.0 (3.9)	56.6 (4.3)	33.6 (4.1)	87.2 (3.0)	66.6 (4.1)	81.1 (4.7)	28.5 (3.8)	88.3 (3.1)	7.4 (2.0)
4th Rctg Bde	224	97.4 (1.2)	28.6 (3.4)	13.4 (2.3)	90.1 (3.0)	48.3 (4.1)	46.5 (3.9)	56.9 (3.6)	42.7 (4.5)	82.0 (2.8)	64.6 (3.5)	78.0 (2.3)	31.4 (3.3)	83.8 (3.1)	9.5 (2.4)
5th Rctg Bde	99	92.2 (3.5)	29.5 (4.1)	12.6 (3.7)	81.4 (4.0)	42.1 (6.4)	41.5 (4.6)	49.4 (6.6)	43.7 (5.7)	87.1 (3.5)	68.2 (7.5)	82.7 (4.8)	23.7 (4.6)	83.5 (4.2)	6.9 (3.1)
6th Rctg Bde	117	97.4 (1.4)	21.5 (3.7)	19.5 (4.3)	87.9 (3.4)	44.6 (4.8)	44.9 (6.2)	51.8 (6.1)	47.8 (5.0)	87.3 (3.3)	58.5 (5.5)	76.3 (4.2)	30.8 (5.0)	86.1 (3.1)	8.8 (2.2)
16-17 Years Old	309	95.2 (1.5)	26.3 (2.7)	18.1 (2.9)	84.3 (2.5)	43.5 (3.7)	42.0 (3.3)	50.2 (3.2)	33.6 (3.0)	76.7 (2.9)	56.1 (3.1)	75.9 (2.7)	34.7 (3.1)	88.3 (2.3)	7.9 (2.3)
18-19 Years Old	180	96.6 (1.7)	32.8 (3.2)	18.5 (3.3)	92.6 (2.4)	45.1 (3.6)	41.7 (3.9)	47.7 (3.6)	42.3 (3.9)	90.9 (1.9)	69.0 (3.9)	80.8 (2.6)	35.5 (3.8)	89.5 (2.3)	9.7 (2.2)
20-21 Years Old	122	98.6 (1.0)	25.1 (4.3)	17.7 (3.6)	86.9 (3.2)	53.0 (5.7)	50.3 (5.6)	58.7 (5.4)	37.9 (4.5)	88.9 (3.8)	70.2 (4.5)	80.2 (3.8)	20.2 (4.8)	87.2 (4.1)	10.4 (3.1)
22-24 Years Old	136	91.9 (3.2)	22.7 (3.7)	5.6 (2.0)	80.2 (3.9)	45.0 (4.9)	46.7 (4.9)	55.7 (5.4)	54.3 (4.2)	87.8 (3.8)	65.6 (4.5)	75.6 (3.8)	25.8 (3.7)	77.0 (4.4)	7.1 (2.3)
TOTAL PMAS	747	95.4 (1.1)	26.8 (1.5)	15.0 (1.5)	85.8 (1.6)	46.0 (2.1)	44.7 (2.3)	52.5 (2.3)	41.6 (1.8)	85.1 (1.4)	64.2 (2.3)	77.8 (1.6)	30.0 (1.7)	85.6 (1.6)	8.6 (1.0)

△ indicates wording for question item(s) was changed significantly. See Appendix E.

Similar to Last Quarter

- General knowledge of Army offers is widespread while specific information is less well known.
  - Of youth in the PMAS, 95.4% know that the Army offers educational benefits for enlistment and 85.1% know of the delayed entry program.
  - However, only 26.8% correctly name the maximum amount of educational benefits available, only 15.0% know that the educational benefits available through Army enlistment are better than those offered by other services, and 41.6% are aware that the minimum tour of duty in the Army is two years.
  - Youth in all sample groups again are more likely to associate the G.I. Bill with the Army than with other services. Of the PMAS, for example, 85.8% answered correctly that the Army offers the G.I. Bill while only 46.0% were correct when asked about the Air Force, 44.7% about the Navy, and 52.5% about the Marine Corps.
- Knowledge of the eligibility requirements and educational benefits offered by the Army Reserve and National Guard are also relatively high in all sample groups.
  - Of PMAS youth, for example, 77.8% are aware that high school graduation is not required before enlisting, and 64.2% know that 17-year-olds may join.
  - Of PMAS youth, 85.6% know that the Army Reserve and National Guard offer educational benefits but only 8.6% can specify the correct amount of maximum benefits available.

Different from Last Quarter

- Unlike last quarter, differences in knowledge of the Army's offers have emerged among educational groups.
  - College freshmen and sophomores and college-oriented high school students tend to be more likely than the other educational groups to know how much money is available for education through enlistment in the Army and to know that the Army's educational benefits are better than those offered by other services.
  - Knowledge of the amount of Reserve and Guard educational benefits decreased significantly for work-oriented high school students (-11.6%) this quarter making them least likely of the PMAS educational groups to have this information. A significant decrease also occurred for college freshmen and sophomores (-10.3%) on this item.
- In contrast to last quarter, no significant regional or age differences in knowledge of the eligibility requirements for the Reserve and Guard are shown.
- Several significant decreases in percentage of youth who correctly identify the services with the G.I. Bill occurred. The decrease is especially large for the Marine Corps.

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Table C-10

WINTER - FALL DIFFERENCES IN

PERCENTAGE ANSWERING KNOWLEDGE OF ARMY OFFERS AND BENEFITS QUESTIONS CORRECTLY

SAMPLE GROUPS	N	Active Army Knowledge: If Enlist Eligible for College $	Total Education Benefits	Army Benefits Better?	Offer GI Bill: ARMY	USAF	NAVY	USMC	Minimum Duty Tour	△ Delayed Entry Allowed	Army Reserve and Army National Guard Knowledge: 17 Year Old Eligible to Join	H.S. Graduation Required	Scholar Athlete Sponsor	If Enlist Eligible for College $	Maximum GI Bill College $
RECRUITING MARKET: MALES [PMAS + SMS]		+	+	+	–	–	–	-7.0	+	–	+	+	–	–	–
FEMALES [PFAS + SFS]		–	–	–	–	–	+	+	+	+	–	+	–	+	–
TOTAL RECRUITING MARKET		–	–	–	–	–	+	–	+	+	+	+	–	+	–
PMAS: College Freshmen and Sophomores		+	+	+	+	–	–	–	+	–	+	–	–	–	-10.3
H.S. Students (College-Oriented)		+	+	+	–	–	–	–	–	–	–	–	–	+	+
H.S. Students (Work-Oriented)		+	–	–	–	–	-20.0	-22.9	+	+	–	–	+	+	-11.6
H.S. Graduates Not Currently Enrolled		–	+	–	–	+	–	+	+	+	+	+	–	–	–
1st Rctg Bde		–	+	–	+	–	–	–	–	–	+	–	+	–	–
2nd Rctg Bde		+	–	+	-12.8	+	–	-18.6	+	+	+	+	–	+	–
4th Rctg Bde		+	+	+	+	–	+	+	+	-11.0	–	–	+	–	+
5th Rctg Bde		–	+	+	–	–	–	–	–	–	+	+	–	–	–
6th Rctg Bde		+8.7	+	+	+	–	–	–	+	+	+	+	+	+	–
16-17 Years Old		+	–	+	–	–	–	-13.8	–	–	–	–	+	+	–
18-19 Years Old		+	+	+	+	–	–	–	–	+	–	–	–	+	–
20-21 Years Old		+	+	+	–	+	–	–	+	+	+	+	–	–	–
22-24 Years Old		–	–	–	–	–	–	+	+	–	+	+	–	–	–
TOTAL PMAS		+	+	+	–	–	–	–	+	–	+	+	–	–	–

Note: Numbers are significant quarter-to-quarter differences (i.e., $p \leq 0.05$; $\pm$ 2 s.e.)
Signs indicate direction of insignificant changes.

△ indicates wording for question item(s) was changed significantly. See Appendix E.

PERCENTAGE REGULARLY VIEWING OR LISTENING TO VARIOUS TYPES OF PROGRAMMING
(Standard Error)

SAMPLE GROUPS	N1	Types of TV Shows: Sports	Mystery	Drama	Music	Comedy	Movie	Talk	N2	Types of Radio Programs: News	Classical	Pop	Country	Sports	Talk	Rock	Easy
RECRUITING MARKET:																	
MALES [PMAS + SMS]	570	82.8 (2.0)	58.8 (2.4)	41.4 (2.4)	66.2 (2.2)	89.5 (1.5)	84.7 (1.7)	45.5 (3.0)	722	53.9 (2.1)	17.3 (1.7)	60.1 (2.1)	33.1 (1.9)	46.5 (2.4)	20.3 (2.6)	80.5 (2.2)	43.1 (2.3)
FEMALES [PFAS + SFS]	114	45.0 (6.5)	65.4 (6.1)	86.6 (3.9)	71.3 (5.6)	89.7 (4.3)	86.7 (3.8)	62.4 (5.7)	160	54.1 (4.3)	11.4 (2.7)	65.5 (5.0)	32.9 (4.5)	22.0 (3.5)	27.2 (4.3)	79.3 (3.6)	64.6 (3.6)
TOTAL RECRUITING MARKET	684	64.0 (3.8)	62.1 (3.4)	64.0 (1.9)	68.7 (2.7)	89.6 (2.1)	85.7 (1.9)	53.9 (3.1)	882	54.0 (2.4)	14.2 (1.6)	62.9 (3.1)	33.0 (2.6)	33.5 (2.2)	23.9 (2.4)	79.9 (2.3)	54.5 (2.1)
PMAS:																	
College Freshmen and Sophomores	88	84.3 (5.3)	59.3 (6.3)	38.3 (5.0)	62.5 (5.4)	85.5 (5.6)	81.0 (4.2)	55.0 (5.3)	116	55.4 (5.0)	25.7 (5.7)	67.5 (5.2)	24.2 (5.2)	37.0 (5.6)	21.7 (4.3)	79.3 (5.5)	48.7 (5.9)
H.S. Students [College-Oriented]	213	83.3 (3.3)	62.4 (3.3)	41.3 (4.3)	69.7 (3.8)	91.4 (1.9)	83.6 (2.7)	36.0 (4.1)	253	42.5 (3.2)	9.6 (2.3)	64.8 (3.2)	20.3 (2.9)	49.6 (3.7)	19.1 (3.1)	85.3 (2.4)	33.1 (3.5)
H.S. Students [Work-Oriented]	40	74.0 (8.0)	56.2 (8.3)	33.8 (6.3)	80.1 (6.2)	91.4 (3.6)	88.7 (5.0)	36.9 (10.0)	49	41.7 (8.1)	13.9 (6.4)	56.2 (7.4)	38.1 (8.3)	37.2 (8.6)	15.2 (5.5)	88.5 (4.7)	42.6 (7.4)
H.S. Graduates Not Currently Enrolled	154	83.7 (3.4)	57.3 (4.6)	43.4 (4.5)	64.9 (5.3)	91.2 (2.0)	87.3 (3.0)	48.7 (3.8)	204	65.3 (3.7)	17.0 (3.2)	60.7 (3.9)	44.3 (3.6)	53.6 (4.8)	22.3 (4.0)	77.9 (4.5)	47.4 (4.6)
1st Rctg Bde	110	85.6 (2.8)	61.9 (6.0)	42.2 (5.3)	65.6 (5.0)	92.1 (3.4)	84.9 (4.0)	52.5 (4.9)	138	55.6 (4.3)	14.3 (3.8)	57.4 (7.2)	16.5 (3.2)	50.8 (5.0)	20.6 (4.7)	81.2 (4.1)	40.2 (7.9)
2nd Rctg Bde	119	85.6 (4.3)	64.7 (5.3)	51.6 (5.6)	70.2 (3.9)	84.5 (4.1)	87.2 (2.6)	46.9 (4.7)	139	55.1 (4.5)	13.9 (3.5)	74.6 (4.0)	37.3 (3.6)	48.9 (4.5)	22.8 (4.8)	80.1 (5.8)	42.4 (4.4)
4th Rctg Bde	124	82.9 (3.6)	60.9 (6.0)	36.4 (4.9)	58.2 (8.8)	93.7 (2.0)	84.9 (4.3)	40.6 (5.6)	165	52.0 (4.8)	16.9 (5.2)	54.2 (4.6)	31.3 (4.1)	53.3 (4.5)	22.1 (3.5)	85.5 (3.4)	42.2 (4.6)
5th Rctg Bde	74	79.3 (4.3)	48.1 (6.1)	34.0 (5.4)	71.9 (6.0)	93.0 (4.4)	83.8 (4.0)	33.2 (5.9)	95	59.2 (5.1)	18.0 (3.4)	65.7 (6.2)	47.7 (6.2)	42.2 (7.2)	23.1 (7.7)	81.8 (5.3)	41.1 (4.6)
6th Rctg Bde	68	81.4 (6.4)	62.2 (8.8)	39.1 (5.1)	67.7 (7.1)	87.7 (4.2)	82.7 (4.8)	53.1 (7.1)	85	47.1 (7.2)	19.5 (5.2)	60.5 (6.1)	23.1 (5.5)	43.2 (6.0)	11.8 (3.9)	77.0 (4.9)	50.7 (6.1)
16-17 Years Old	210	82.5 (2.8)	65.8 (3.0)	39.1 (3.7)	69.8 (3.3)	92.6 (1.7)	81.8 (2.6)	34.4 (4.0)	243	37.8 (3.0)	8.1 (2.0)	60.2 (3.9)	22.1 (3.1)	48.4 (3.7)	17.4 (2.7)	85.5 (2.6)	31.9 (2.7)
18-19 Years Old	125	88.9 (3.6)	54.5 (4.5)	40.6 (4.3)	70.2 (5.5)	87.7 (3.6)	89.4 (2.6)	47.6 (5.7)	178	51.4 (3.7)	17.5 (2.9)	65.7 (4.2)	26.8 (3.4)	44.4 (4.9)	16.8 (3.0)	83.5 (4.5)	40.9 (3.6)
20-21 Years Old	77	75.3 (5.6)	54.1 (6.5)	43.8 (5.7)	60.7 (7.8)	83.0 (5.5)	79.9 (6.3)	46.3 (6.1)	99	55.8 (7.3)	21.5 (4.4)	67.6 (4.3)	38.0 (6.1)	46.9 (6.5)	21.6 (6.0)	82.2 (5.2)	54.8 (4.7)
22-24 Years Old	83	84.3 (5.6)	59.9 (6.5)	42.1 (7.5)	64.9 (6.9)	95.1 (2.4)	88.5 (3.6)	55.5 (6.0)	102	76.3 (3.7)	20.2 (5.5)	60.4 (5.3)	44.5 (4.6)	51.9 (6.8)	28.4 (5.7)	73.0 (5.3)	48.2 (6.1)
TOTAL PMAS	495	83.1 (2.2)	59.4 (2.7)	41.1 (2.6)	67.0 (2.4)	90.1 (1.4)	84.9 (1.5)	44.8 (2.7)	622	54.4 (2.0)	16.2 (1.8)	63.2 (2.5)	31.9 (1.9)	47.9 (2.7)	20.7 (2.6)	81.2 (2.5)	42.8 (2.5)

Similar to Last Quarter

- Youth are more likely to describe themselves as regular radio listeners than as regular television viewers.
  - Of PMAS youth, 87.1% say they listen to radio regularly, compared with only 67.5% who say they watch television regularly. This difference is consistent among educational segments, sexes, regions, and age groups.

Television

- Overall, PMAS youth have the highest preferences for comedy (90.1%), movies (84.9%), and sports (83.1%) programs. They are least likely to regularly watch dramatic (41.1%) and talk (44.8%) shows.
- Males are more likely than females to watch sports programs on TV while females are more likely than males to prefer dramatic and talk shows.

Radio

- For PMAS youth generally, radio rock programs are clearly the most popular (81.2%) with pop (63.2%) programming a fairly distant second. Classical (16.2%) and talk (20.7%) are least preferred.
- The popularity of country music programs varies both regionally and by level of education. Southeastern (2nd Recruiting Brigade) and Southwestern (5th Recruiting Brigade) youth and work-oriented high school students and graduates who are not currently enrolled are more likely than the other regional and educational groups to report regularly listening to country music.
- The popularity of news and classical programming tends to increase with age.
- Males are more likely than females to listen to radio sports.
- In general, the patterns of programming preferences are fairly stable across quarters.

Different from Last Quarter

Television

- There are no clear pattern of preferences for types of television programming among groups in the PMAS educational, regional, and age categories. Rather, there are isolated differences among groups in the popularity of particular types of television programming.
  - For example, comedy shows, while most popular overall, are less likely to be watched regularly by 20- to 21-year-olds.
  - Talk shows, while relatively unpopular overall, have stronger appeal for Northeasterners (1st Recruiting Brigade) and Westerners (6th Recruiting Brigade) than for Southwesterners (5th Recruiting Brigade). Additionally, talk shows tend to be most popular among older viewers who are out of high school.

Radio

- Regular listening to radio sports broadcasts is significantly down this quarter among college freshmen and sophomores (-22.2%) and college-oriented high school students (-12.5%), presumably reflecting the end of the football season.
- Easy listening programs show a significant increase in popularity among women (+16.1%) making females more likely than males to listen to this type of programming.

Table C-11

WINTER - FALL DIFFERENCES IN

PERCENTAGE REGULARLY VIEWING OR LISTENING TO VARIOUS TYPES OF PROGRAMMING

SAMPLE GROUPS	N1	Types of TV Shows: Sports	Mystery	Drama	Music	Comedy	Movie	Talk	N2	Types of Radio Programs: News	Classical	Pop	Country	Sports	Talk	Rock	Easy
RECRUITING MARKET:																	
MALES [PNAS + SNS]		+	–	–	–	+	+	–		–	+	+	–	–	+	–	–
FEMALES [PFAS + SFS]		+	–	+	+	+	–	+		+	–	+	+	+	+	+	+16.1
TOTAL RECRUITING MARKET		+	–	+	+	+	–	+		+	–	+	–	+	+	+	+
PNAS:																	
College Freshmen and Sophomores		–	+	–	–	–	+	–		–	+	+	+	-22.2	+	–	+
N.S. Students [College-Oriented]		–	–	+	–	–	–	–		–	–	–	+	-12.5	+	+	–
N.S. Students [Work-Oriented]		–	–	+	–	+	+	+		+	+	–	–	–	+	–	+
N.S. Graduates Not Currently Enrolled		+	+	–	+	+	+	+		+	–	+	–	+	+	+	–
1st Rctg Bde		–	+	–	+	–	+	+		+	+	+	+	–	–	–	+
2nd Rctg Bde		+	+	–	–	+	–	–		+	–	+	–	–	+	–	–
4th Rctg Bde		–	+	–	–	+	+	–		+	+	–	+	+	+	–	–
5th Rctg Bde		–	–	–	+	+	+	–		+	+	+	–	–	+	+	–
6th Rctg Bde		+	+	+	+	+	+	+		–	–	+	–	–	+	+	+
16-17 Years Old		–	–	+	–	–	–	–		–	–	–	+	–	+	+	–
18-19 Years Old		+	–	+	–	–	+	–		+	–	+	+	–	+	+	–
20-21 Years Old		+	+	–	–	+	–	–		+	+	+	–	+	+	–	+
22-24 Years Old		–	+	–	+	+	+	+		+	–	+	–	–	+	–	–
TOTAL PNAS		+	+	–	–	+	+	–		+	–	+	–	–	+	–	–

Note: Numbers are significant quarter-to-quarter differences (i.e., $p \leq 0.05$; $\pm$ 2 s.e.)
Signs indicate direction of insignificant changes.

Table W-12

PERCENTAGE WITH INTENTION TO ENLIST IN ARMY COMPONENTS

[PMAS MONTHLY TOTALS]

(Standard Error)

MONTHS	N1	Unaided Intention: General Intention	Unaided Intention: Active Army	Unaided Intention: USAR	Unaided Intention: ARNG	Aided Intention: General Intention	Aided Intention: Active Army	Aided Intention: USAR	Aided Intention: ARNG	N2	Army ROTC
January	344	2.6 (0.7)	1.2 (0.6)	0.9 (0.6)	0.5 (0.3)	31.4 (4.8)	18.0 (4.1)	20.8 (3.6)	18.2 (3.4)	256	19.0 (4.4)
February	579	2.7 (0.7)	1.0 (0.4)	1.0 (0.5)	0.6 (0.4)	24.8 (2.4)	12.6 (1.7)	13.5 (1.6)	10.1 (1.4)	433	17.0 (2.5)
March	522	2.3 (0.7)	1.6 (0.6)	0.7 (0.3)	0.1 (0.1)	24.2 (2.6)	11.8 (1.8)	15.7 (2.2)	11.6 (1.6)	390	13.7 (2.2)
TOTAL	1,445	2.5 (0.4)	1.2 (0.3)	0.9 (0.2)	0.4 (0.2)	26.2 (1.7)	13.6 (1.2)	16.0 (1.3)	12.6 (1.2)	1,079	16.3 (1.6)

Table W-13

PERCENTAGE "AGREE" OR "STRONGLY AGREE" WITH ACTIVE ARMY ATTRIBUTE STATEMENTS

[PMAS MONTHLY TOTALS]

(Standard Error)

MONTHS	N	Job Variety	Physical Challenge	Proud Experience	Step Btwn HS & Col.	Leader Skills	Hi-Tech Equipment	Civilian Career	△ Self Confidence	Develop Potential	Mental Challenge	△ Mature & Responsible	Skill Training	Hi-Trained Co-Workers	△ Money for Ed.
January	327	57.1 (2.9)	79.9 (2.7)	65.9 (2.2)	44.0 (2.9)	69.5 (1.8)	79.9 (2.4)	53.8 (2.8)	72.0 (2.4)	72.6 (2.0)	66.5 (2.8)	75.2 (1.8)	74.2 (4.2)	74.4 (2.1)	78.9 (4.4)
February	547	59.9 (2.4)	80.0 (2.1)	65.7 (2.9)	47.0 (3.1)	72.3 (2.5)	76.0 (2.5)	51.6 (2.9)	73.9 (2.3)	66.4 (2.6)	64.0 (2.5)	76.8 (2.3)	73.3 (2.3)	73.6 (2.7)	80.6 (2.0)
March	485	56.4 (3.0)	78.2 (2.4)	64.8 (3.0)	46.1 (3.3)	68.1 (2.5)	76.9 (2.7)	48.7 (3.3)	66.7 (2.6)	64.7 (2.5)	60.9 (2.7)	71.1 (2.4)	73.6 (2.2)	68.3 (2.5)	77.2 (2.3)
TOTAL	1,359	58.0 (1.7)	79.3 (1.4)	65.4 (1.9)	46.0 (2.0)	70.2 (1.5)	77.3 (1.5)	51.1 (1.8)	70.9 (1.5)	67.2 (1.5)	63.5 (1.6)	74.4 (1.5)	73.6 (1.4)	71.9 (1.5)	78.9 (1.8)

△ indicates wording for question item(s) was changed significantly. See Appendix E.

Table W-14

PERCENTAGE SEEING/HEARING MILITARY ADVERTISING

[PMAS MONTHLY TOTALS]

(Standard Error)

MONTHS	N	Army Components				Other Military Branches				JRAP	NONE
		ACTIVE	ROTC	ARNG	USAR	USAF	NAVY	USMC	USCG		
January	344	84.0 (2.4)	2.1 (1.0)	15.2 (2.1)	12.5 (1.7)	63.4 (2.7)	60.8 (2.8)	68.4 (3.2)	13.4 (1.6)	6.5 (1.6)	1.7 (1.0)
February	579	82.5 (2.1)	1.9 (0.6)	13.2 (1.6)	13.6 (1.7)	67.5 (2.0)	65.0 (2.3)	65.8 (1.9)	14.9 (2.2)	7.4 (1.2)	2.7 (0.7)
March	522	82.5 (2.4)	0.8 (0.4)	15.6 (2.3)	12.0 (1.5)	66.0 (2.6)	61.6 (2.7)	67.1 (2.9)	13.4 (1.9)	8.1 (1.5)	2.1 (0.9)
TOTAL	1,445	82.9 (1.4)	1.5 (0.4)	14.6 (1.1)	12.8 (0.9)	66.0 (1.4)	62.8 (1.5)	66.9 (1.6)	14.0 (1.2)	7.4 (0.8)	2.2 (0.5)

Note. Summary text and interpretation of the monthly PMAS totals shown in Tables W-12, W-13, and W-14 will be deferred until sufficient data accumulate.

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APPENDIX A

THE YOUTH AND PARENTAL SAMPLES

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Appendix A

THE YOUTH AND PARENTAL SAMPLES

Sample design for ACOMS was guided by two main criteria--the objectives of the research and the need to retain comparability with extant research (e.g., the Youth Attitude Tracking Study, the New Recruit Survey). In line with these dual objectives, the final youth sample design for ACOMS consists of 16- to 24-year old males and females who have neither served nor contracted to serve in the Armed Forces and have not yet graduated from college. This overall sample is broken into four groups:

- The Primary Male Sample (PMS):
  Male high school diploma graduates and those currently enrolled in regular high school or college.

- The Secondary Male Sample (SMS):
  Male high school non-completers not currently enrolled in regular high school or college.

- The Female Sample (FS):
  Female high school diploma graduates and those currently enrolled in regular high school or college (PFS) and high school non-completers not currently enrolled in regular high school (SFS).

- Supplementary Samples:
  Male Hispanics in all of the above categories and the Areas of Dominant Influence (ADI) supplement (PMS only), described further in Chapter 3 of The ACOMS Survey Design (Westat, in preparation), are supplementary samples to those listed above. Since the supplements are not used in the quarterly reports, we do not cover them further in this appendix.

In addition, the PMS and PFS samples are further subdivided. All 16- to 20-year old PMS/PFS sample members become part of a parental-linked sample from which target youths will be selected for interview of a pre-designated parent. Half of the parental-linked target youths are designated for participation in a longitudinal sample to be reinterviewed.

We discuss each of the main sample groups and the operationalization of their eligibility requirements below.

The Overall Youth Sample

While the definition of eligibility requirements is apparently straightforward, the operational definition of the sample is a bit more complex. Age is defined by date of birth rather than self-reported years of age. Each potential respondent

between 16- and 24-years of age is asked whether he/she has served in the military (Army, Navy, Air Force, Marines, the Reserve, or the National Guard), or is currently in the Delayed Entry Program. These persons are excluded. Finally, youth are asked the highest level of education they completed and for which they received credit. Those persons indicating they have graduated from college are excluded.

Youth currently enrolled in college present special problems in establishing household residency, since it is desirable to avoid double eligibility for students living away from home while at college. In collaboration with the SAG, it was decided that students living in college-sponsored housing would be reached through their parents (and therefore excluded in the screening interview), while those living on their own would be eligible for interview directly (and therefore not traced through their parents).

The Primary Male Sample and Primary Female Sample

In addition to the age and prior service qualifications of the overall sample, eligibility for PMS/PFS requires an assessment of educational attainment. High school diploma graduates are defined as those earning a regular high school diploma, thus excluding those with GED and other certificates (classified as SMS unless they are enrolled in a 2- or 4-year college; see below). Current enrollment during the school year is ascertained directly, and, as above, requires enrollment in a regular high school or a 2- or 4-year college, thus excluding enrollment in training and vocational/technical non-degree programs (considered SMS if they did not complete a regular high school diploma). Enrollment status for youths interviewed from July 1 through September 1 is defined by plans to be enrolled in September.

The PMS and PFS encompass many of the Army's prime recruiting groups, not only for the active Army but also for ROTC, ARNG and USAR, and thus conform to the research objectives for ACOMS. However, the inclusion of youth with two or more years of college or youth taking a college ROTC course in the primary samples is at variance with the market for enlisted personnel. Consequently, for more precise reporting of enlisted market groups, we define a subset of the PMS as the Primary Male Analytic Sample (PMAS), consisting of PMS members who have not yet begun their junior year in college and have never taken a college ROTC course.

Note that no sample group reported in these quarterly reports parallels the sample definition for the Youth Attitude Tracking Study II (YATS II). The male sample of YATS II can be approximated by a combination of the PMAS and SMS samples. (For females a similar parallel sample could be constructed by excluding from the FS, respondents who have begun their junior year in

college or who have enrolled in a college ROTC program.) Note also that the YATS II sample is restricted to September and October interviewing periods.

The Parental-linked Sample

PMS and PFS eligibles between the ages of 16 and 20 inclusive are designated for participation in the parental-linked sample. The parent will be interviewed regarding his/her own awareness of and attitudes towards Army and other military advertising, Army offers and images, as well as hopes and attempts to influence the target youth. Thus, for households with more than one PMS/PFS eligible, one would be designated randomly as the target youth for the parental interview.

The Longitudinal Sample

A randomly chosen half of the parental-linked target youths are selected for participation in the longitudinal sample. Longitudinal sample youths will be re-interviewed annually in the years following their original interviews. Further, their first interviews are slightly longer than those of non-longitudinal sample participants, since tracing information and information on social influences are collected from them as well.

The Secondary Male Sample and Secondary Female Sample

Logically, these samples represent the complements of their respective Primary Samples--that is, youths not currently enrolled in regular high school or college and not having completed a regular high school diploma. These youths do not participate in the parental-linked or longitudinal samples.

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APPENDIX B

MAP OF RECRUITING BRIGADES

AND ROTC REGIONS

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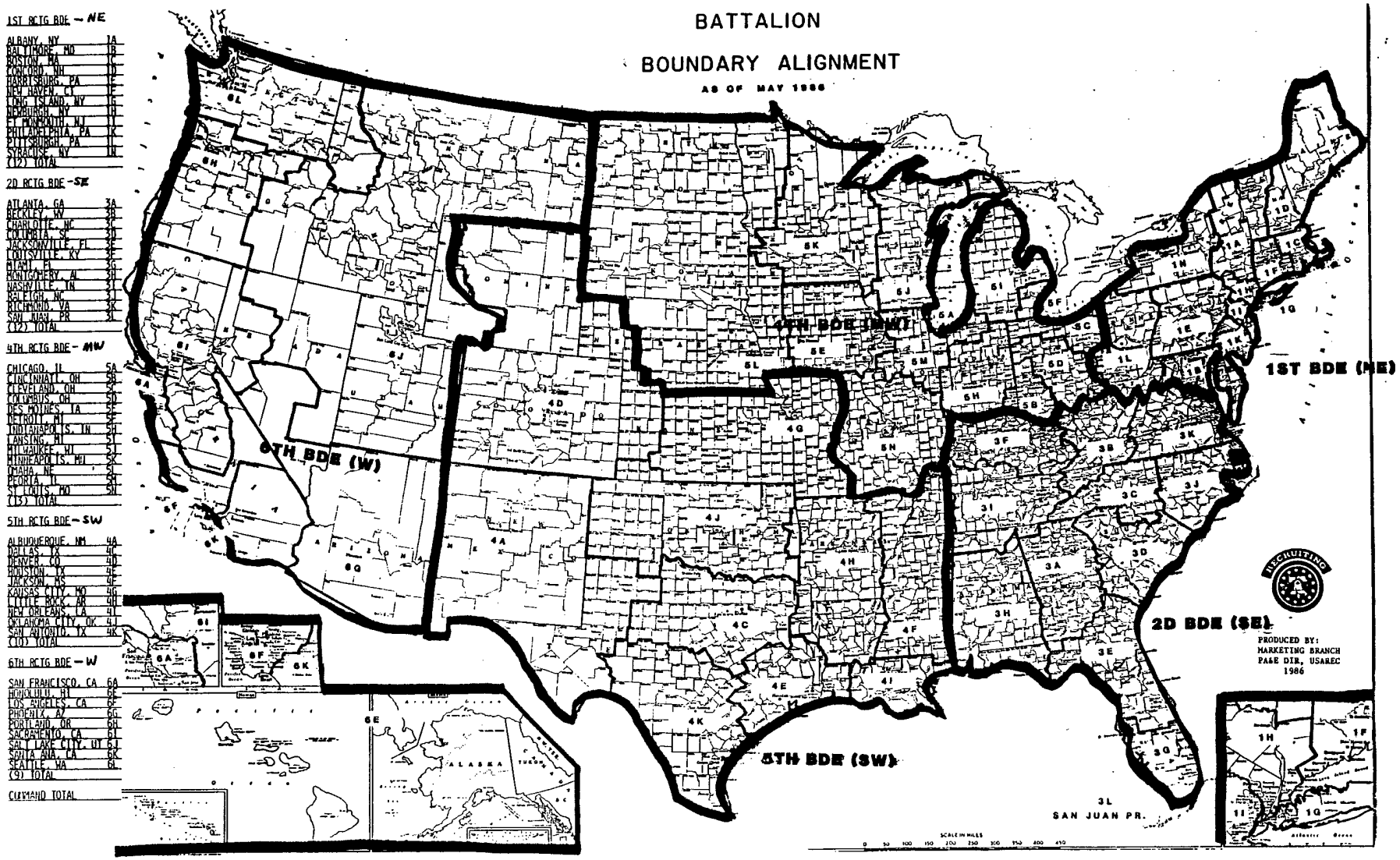
BATTALION
BOUNDARY ALIGNMENT
AS OF MAY 1986
1ST RCTG BDE – NE
ALBANY, NY 1A
BALTIMORE, MD 1B
BOSTON, MA 1C
CONCORD, NH 1D
HARRISBURG, PA 1E
NEW HAVEN, CT 1F
LONG ISLAND, NY 1G
NEWBURGH, NY 1H
FT MONMOUTH, NJ 1J
PHILADELPHIA, PA 1K
PITTSBURGH, PA 1L
SYRACUSE, NY 1M
(12) TOTAL
2D RCTG BDE – SE
ATLANTA, GA 3A
BECKLEY, WV 3B
CHARLOTTE, NC 3C
COLUMBIA, SC 3D
JACKSONVILLE, FL 3E
LOUISVILLE, KY 3F
MIAMI, FL 3G
MONTGOMERY, AL 3H
NASHVILLE, TN 3I
RALEIGH, NC 3J
RICHMOND, VA 3K
SAN JUAN, PR 3L
(12) TOTAL
4TH RCTG BDE – MW
CHICAGO, IL 5A
CINCINNATI, OH 5B
CLEVELAND, OH 5C
COLUMBUS, OH 5D
DES MOINES, IA 5E
DETROIT, MI 5F
INDIANAPOLIS, IN 5H
LANSING, MI 5I
MILWAUKEE, WI 5J
MINNEAPOLIS, MN 5K
OMAHA, NE 5L
PEORIA, IL 5M
ST LOUIS, MO 5N
(13) TOTAL
5TH RCTG BDE – SW
ALBUQUERQUE, NM 4A
DALLAS, TX 4C
DENVER, CO 4D
HOUSTON, TX 4E
JACKSON, MS 4F
KANSAS CITY, MO 4G
LITTLE ROCK, AR 4H
NEW ORLEANS, LA 4I
OKLAHOMA CITY, OK 4J
SAN ANTONIO, TX 4K
(10) TOTAL
6TH RCTG BDE – W
SAN FRANCISCO, CA 6A
HONOLULU, HI 6E
LOS ANGELES, CA 6F
PHOENIX, AZ 6G
PORTLAND, OR 6H
SACRAMENTO, CA 6I
SALT LAKE CITY, UT 6J
SANTA ANA, CA 6K
SEATTLE, WA 6L
(9) TOTAL
COMMAND TOTAL
6TH BDE (W)
4TH BDE (MW)
1ST BDE (NE)
5TH BDE (SW)
2D BDE (SE)
RECRUITING
PRODUCED BY:
MARKETING BRANCH
PASE DIR, USAREC
1986
ALASKA
3L
SAN JUAN PR.
SCALE IN MILES

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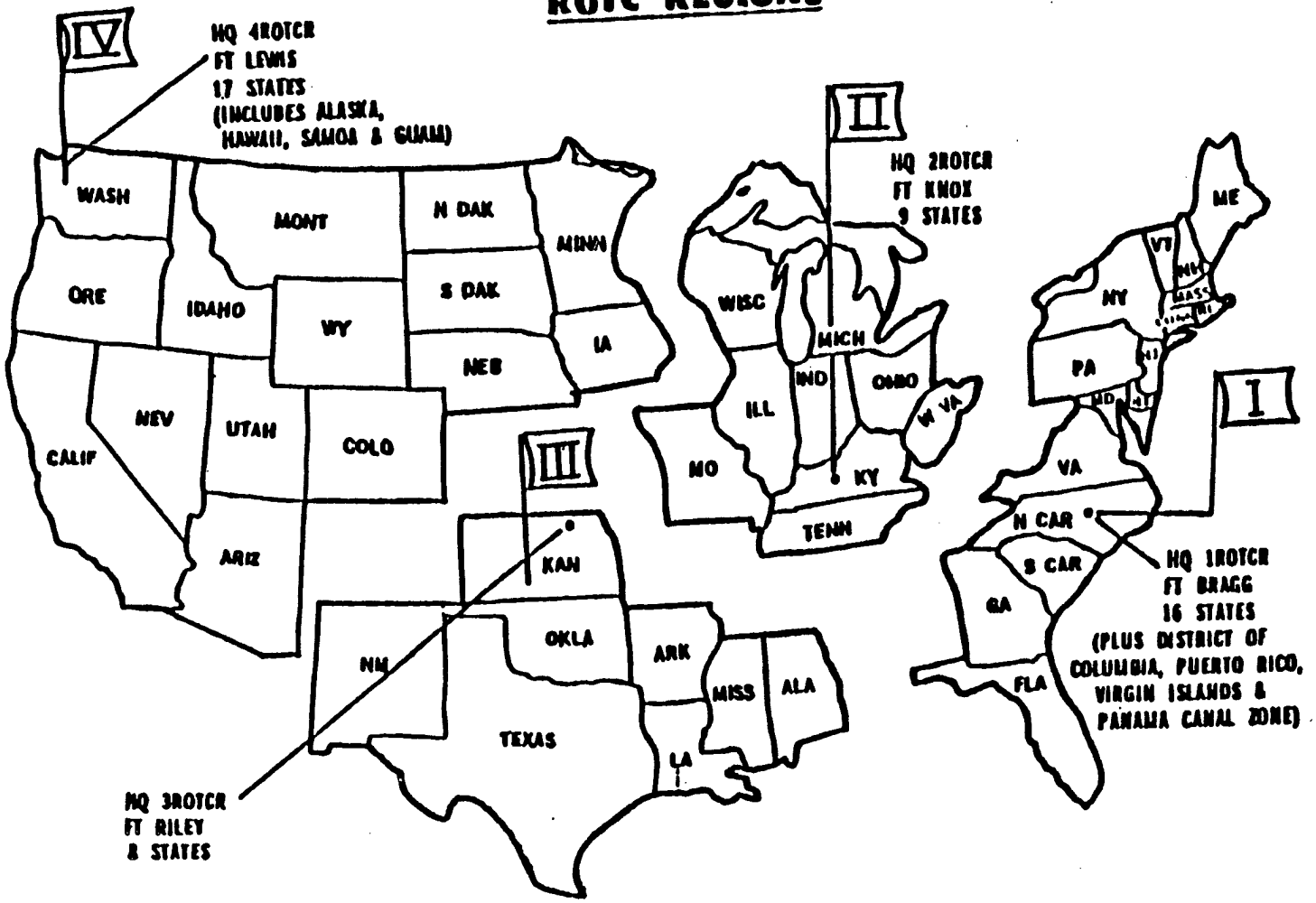
ROTC REGIONS



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APPENDIX C

SOME STATISTICAL CONCEPTS: STANDARD ERRORS, CONFIDENCE INTERVALS, AND TESTING THE SIGNIFICANCE OF DIFFERENCES BETWEEN PERCENTAGES

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Appendix C

SOME STATISTICAL CONCEPTS: STANDARD ERRORS, CONFIDENCE INTERVALS, AND TESTING THE SIGNIFICANCE OF DIFFERENCES BETWEEN PERCENTAGES

The data included in the quarterly tables are percentages with associated standard errors shown below the percentages in parentheses. This appendix defines a standard error, explains how standard errors are used to determine the reliability of percentages, and gives step by step instructions for constructing confidence intervals around percentages, and testing the significance of differences between two percentages.

What is a standard error? A standard error is a measure of the variability of sample estimates around a population parameter, such as a percentage. In theory, if we could survey the entire population of youth between the ages of 16 and 24, we would know the true population proportions of their answers to the survey questions. In practice, it is usually impossible to survey entire populations and we must sample from the population, then estimate the true population proportions of interest.

Sample proportions, such as those reported in the quarterly reports, are estimates of the true population proportions based on the data gathered by surveying a sample of youth. If you selected many different samples of individuals, administered the ACOMS questionnaire to them, and computed proportions for a given question for each sample, you would find many different estimates of the true population proportion because each sample would be somewhat different from the others. What this means is that variability among sample proportions would always be expected to occur. In fact, the way we compute the standard error of a percentage in the quarterly tables is to draw repeated independent sub-samples from the total quarterly sample of interviews, compute that percentage in each sub-sample and calculate the standard deviation of the percentages computed in each sub-sample. This method is called balanced repeated replication (BRR) and was covered in ACOMS analyst training.

Depending on the size of a given sample, we can have more or less confidence that the sample proportion is a reliable estimate of the population proportion. This means, among other things, that the variability among sample proportions will be less if the sample sizes are large and more if the sample sizes are small. Further, it turns out that very large and very small proportions are easier to estimate reliably than proportions around 0.5. So, variability in estimates of a proportion of 0.5 will be larger than variability in estimates of more extreme proportions.

What is a confidence interval? A confidence interval is a range of percentages based on the sample percentage and the sample size that will include the true percentage with known probability. Standard errors (derived from BRR computations) are used to construct confidence intervals using the following rules:

1. **Sample proportion ± 1 standard error**

   Approximately **68%** of the time the interval defined by the sample proportion minus one standard error and the sample proportion plus one standard error will include the true population proportion.

2. **Sample proportion ± 2 standard errors**

   Approximately **95%** of the time the interval defined by the sample proportion minus two standard errors and the sample proportion plus two standard errors will include the true population proportion.

3. **Sample proportion ± 3 standard errors**

   Approximately **99%** of the time the interval defined by the sample proportion minus three standard errors and the sample proportion plus three standard errors will include the true population proportion.

To construct a confidence interval around proportions reported in the quarterly tables, follow the steps shown in the following example. The example is drawn from Table F-2 [Importance of Attributes], Fall quarter. The percentage is shown in the column headed **Mental Challenge** and the row for **H.S. Graduates Not Currently Enrolled.**

Step 1: Choose an acceptable error rate (i.e., the likelihood that your confidence interval will not include the true percentage).

The most commonly used error rates, by convention, are 5% and 1%. If an acceptable error rate is 5%, a confidence interval covering 95% of the distribution must be constructed. If 1%, a confidence interval must be constructed to cover 99% of the distribution.

EXAMPLE: The level of acceptable error is set at no greater than 5% which requires constructing a 95% confidence interval.

Step 2: Select the proportion of interest with its corresponding standard error.

EXAMPLE: Proportion = 84.6 (H.S. Graduates not currently enrolled who value having a mental challenge)
Standard error = (2.3)

Step 3: Use the rule chosen in Step 1 to construct the confidence interval by adding and subtracting the appropriate multiple of the standard error to the percentage.

EXAMPLE: Decision rule #2 is selected for a 95% confidence interval.

Sample proportion $\pm$ 2 standard errors = 95% confidence interval. So,

$$2.3 \times 2 = 4.6$$

and

$$84.6 \pm 4.6 = 80.0 - 89.2$$

Conclusion: We can have confidence that the true population proportion will fall within the above range 95% of the time.

Testing the Significance of a Difference Between Two Proportions

It is often desirable to know whether one can be confident that two sample proportions are reliably different from one another. For example, before saying with confidence that college-oriented high school students are more likely than work-oriented to perceive that the Army offers skills training opportunities, it would be desirable to know how confidently the assertion could be made.

What follows is a step by step procedure for determining the significance of observed differences between proportions shown in the quarterly report data tables. It should be noted that this procedure produces an estimate of the significance level and is not exact. It should also be noted that this procedure is applicable to two independent proportions. Thus, the procedure described here is most appropriate for comparing across rows in the same table and for comparing percentages in the same cell across quarters. For other types of comparisons, the assumption of independence is often not met in the quarterly reports data. For example, comparisons of table columns and comparisons of percentages in different tables involve samples that are completely or partially overlapping. For such non-independent comparisons, it is necessary to use the method of balanced repeated replications.

To help you follow the procedure, an example drawn from Fall quarter, Table F-3 is used. Suppose you are interested in knowing if a significant difference exists between college-oriented and work-oriented high school students' perceptions of the opportunities for skills training in the active Army.

Step 1: Select the two proportions of interest and subtract one from the other.

In this example, they are 86.2% for work-oriented and 76.9% for college-oriented high school students.

$$86.2 - 76.9 = 9.3$$

Step 2: Identify the standard error corresponding to each of the two proportions.

From Table F-3 we see that:

Proportion	Standard Error
86.2	2.8
76.9	2.6

Step 3: Square each of the two standard errors identified in Step 2. (These are the variances of the respective proportions.)

$$2.8^2 = 7.84$$
$$2.6^2 = 6.76$$

Step 4: Add the two squared standard errors together. (This produces the sum of the variances.)

$$7.84 + 6.76 = 14.60$$

Step 5: Find the square root of the result of Step 4. (This produces the standard error of the difference of proportions.)

$$\sqrt{14.60} = 3.82$$

Step 6: Divide the result of Step 1 by the result of Step 5. (This produces the ratio of the difference to its standard error, known as a z score. If the difference is more than two standard deviations larger (or smaller) than zero, the difference between percentages is statistically significant.)

$$9.3/3.82 = 2.43$$

Step 7: Compare the result of Step 6 with the following cutoffs to estimate its level of significance.

Two numbers (z scores) are given below as cutoff points for deciding if the difference between the two percentages is significant. Accompanying each is a p-value indicating the likelihood that a difference this large would occur by chance. In this example, the z score of 2.43 indicates that the probability of a difference this large occurring simply by sampling error is less than 0.05%.

If $z \geq +1.96$ or if $z \leq -1.96$, then $p < 0.05$.

If $z \geq +2.58$ or if $z \leq -2.58$, then $p < 0.01$.

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APPENDIX D

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Appendix D

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The ACOMS Survey Design

Chapters 1 & 2: Introduction and ACOMS Survey Overview

General overview of ACOMS objectives, survey design, sampling, questionnaires, and data collection and processing procedures.

Chapter 3: Sample Design

Discussion of RDD method of sample selection, the sampling frame, sampling selection procedures, and the weighting of sample data.

Chapter 4: ACOMS Questionnaire

Presentation of the conceptual model for ACOMS and discussion of the contents of the questionnaire.

Chapter 5: Data Collection and Processing

Description of CATI system used for ACOMS, interviewer selection, data processing and editing procedures, and issues involved in the preparation, delivery, and documentation of data tapes and users' manuals.

Chapter 6: Formal Pretest

Discussion of interviewer training and administration of the formal pretest for ACOMS along with the results of the pretest including lessons that were learned for the main study.

Appendix A

Contains a series of memoranda concerning design issues that have been resolved including exclusion of Puerto Rico from the sampling frame, the variance increase that occurs with differential sampling rates, and each of the following special problems: Hispanic sampling, college students' residency, and monthly reports.

The Request for OMB Review

Contains a brief summary of the background and justification for ACOMS, sampling and data collection procedures, and complete hard copies of the questionnaires.

ACOMS Interviewers' Training Manual

Contains a very brief overview of the ACOMS project and the question-by-question specifications for the screener, youth, and parental interviews.

ANALYST TRAINING MATERIALS

ACOMS Analyst Training Session I: Overview

Chapter 1: The ACOMS Project

Contains background information about the objectives of ACOMS, the project design process, the Fit-Exposure-Change framework, and gives an overview of the ACOMS survey.

Chapter 2: A Conceptual Model of Advertising Effectiveness

Describes the basic model and its applications.

Chapter 3: The ACOMS Survey Samples

Defines the youth and parental samples, describes the method of sample selection, the CATI system operation, and gives further technical detail on the sample selection process.

Chapter 4: The ACOMS Questionnaire

Contains a brief description of the three parts of the ACOMS survey: the household screener, youth and parental interviews.

Chapter 5: ACOMS Research Products

Lists the contents of the major ACOMS research products that have been produced: ACOMS Analysis Plan, ACOMS Interviewers' Training Manual, Quarterly Reports, and analyst training materials.

Chapter 6: Survey Analysis

Details some consequences of the sample design and describes sample weighting and the estimation of standard errors by the method of balanced repeated replication.

Appendix A: ACOMS Annotated Questionnaire

Contains the interview questions with annotation explaining how the CATI system directs the flow of the interview.

ACOMS Analyst Training Session II: Data and Analytic Procedures

Chapter 1: Overview of Topics in Sampling Theory

Introduces the major concepts needed to understand ACOMS sampling.

Chapter 2: Sample Design

Describes in technical detail the important sampling concepts that have been included in the design of the ACOMS sample.

Chapter 3: Sample Selection Procedures

Explains the procedures for drawing samples from lists of telephone numbers including the concept of telephone clusters, selection of primes, and the strategy for selecting eligibles within sample households.

Chapter 4: Weighting the Sample Data

Details the steps involved in calculating the sampling rate adjustments at the household and person levels and the post-stratification adjustments that are used to weight the ACOMS data.

Chapter 5: The Method of Balanced Repeated Replications

Brief introduction to the method that is used in ACOMS to estimate variance.

Chapter 6: Analysis of ACOMS Data

Explains use of weighted data and use of balanced repeated replication methodology.

Chapter 7: The Wesvar Procedure

Explains the computer procedures needed to employ the BRR techniques.

Appendix A: Use of Summation Signs

Appendix B: Computation of Sample Adjustment Weights

Appendix C: The Method of Raking (Iterative Proportional Fitting)

ANALYSIS PLAN

The plan for the analysis is presented in two volumes. The first volume presents plans for analysis of the data gathered through the ACOMS interviews. The second volume will deal with the analysis of data collected through the analyses of the message content of Army advertising executions, through syndicated sources of data on advertising exposure, and through the special ADI studies of particular advertising campaigns. Volume 2 also will present plans for integrated analyses of Fit Exposure and Change.

Volume 1: The ACOMS Survey Analysis Plan

Chapter 1: Introduction

Provides an overview of the ACOMS conceptual model, data sources and analytic deliverables and summarizes the basic design decisions reached during the design phase.

Chapter 2: Tracking Audience Response

Discusses scale construction, trending analysis, and quarterly report table shells and narratives.

Chapter 3: Market Segmentation Analyses

Reviews various strategies for segmenting the prospect audience, analytical techniques for segmentation, and likely segmentation classes and what they might imply.

Chapter 4: Brand Differentiation Analyses

Reviews strategies for identifying the images of the various components and services and other civilian activities held by youth and parental respondents and identifying dimensions of knowledge and attitude differentiation.

Chapter 5: Analysis of Influence Process

Discusses the analysis of the parental influencer data, as describing both a cognition/decision process operating parallel to the youth process, and as one which influences the youth process. The chapter also includes discussion of the social influences data collected in the main youth interviews.

Chapter 6: Modeling the Effects of Army Advertising

Includes discussion of the integrated analysis of the youth interview data across awareness, recall, perceptions, importance, propensity and subsequent behavior, outlining the basic correlational structure of the youth cognition/decision process.

Volume 2: The ACOMS Integrated Analysis Plans (Forthcoming)

Chapter 1: Introduction and Overview

Provides an overview of the non-interview components of the ACOMS system. Detailed design and analysis plans for the non-interview data make up the balance of Volume 2.

Chapter 2: Design of Message Content Analyses

Describes the program of mall intercept interviews which will be conducted to ascertain the message content of Army advertising executions. The discussion includes data collection methodology, sample selection, questionnaire instrument, and field procedures.

Chapter 3: Fit of Advertising to Communication Objectives

Discusses the proposed analyses to be undertaken of the message content data to be collected under ACOMS, both as a separate data base and integrated with other sources of information.

Chapter 4: Exposure of Army Communications Messages

Discusses the methods for assessing exposure to the Army's advertising messages and the likely outcomes in terms of exposure, and how the exposure data will be incorporated into quarterly reports (Vol. 1, Chapter 2) and the integrated ACOMS analyses (Vol. 2, Chapter 6).

Chapter 5: Tracking the Impact of Particular Campaigns and Events

Discusses the ADI sample and its uses in measuring short-term focused changes in awareness, recall and attitudes in response to advertising campaigns and events.

Chapter 6: Analysis of Fit Exposure and Change

Discusses the integrated analyses of fit (Vol 2, Chapters 2 and 3), and exposure (Vol. 2, Chapter 4) as inputs and moderators to the cognition/decision process outlined in Vol. 1, Chapter 6.

APPENDIX E

CHANGES IN ACOMS YOUTH INTERVIEW ACROSS QUARTERS

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Appendix E

CHANGES IN ACOMS YOUTH INTERVIEW ACROSS QUARTERS

This appendix is intended to document meaningful changes in the wording and/or administration of questionnaire items from quarter to quarter. Occasional slight editorial changes meant to correct grammar or smooth the flow of a question, but which do not change its meaning are not included here. For example, Fall quarter, respondents were asked to rate the importance of "the opportunity to make changes and use your own judgment." Winter quarter, they were asked about the importance of "being able to make changes and use your own judgment." The change does not, in our judgment, alter the question's meaning. Clearly, however, there is some measure of subjectivity in such judgments. The reader is referred to the ACOMS Users' Manuals for complete documentation of all changes.

Changes Fall to Winter Quarter

Table 1. Intention to Enlist

Beginning in Winter quarter, the aided intention questions are introduced with the following statement:

> IP-7: Now, I'm going to ask you about several things young (men/women) your age might do in the next few years. Please tell me whether you will definitely, probably, probably not, or definitely not be doing the following things.

Then, the questions are asked as shown on the information card for Table 1 (IP-8, IP-10, IP-9, IP-11A) except that the response categories are not provided each time.

Table 2. Importance of Attributes

Wording changes were made to four items on the opportunities list:

Hi-Tech Equipment

Fall: a chance to work with the latest high-tech equipment?
Winter: working with the latest high-tech equipment?

Proud Experience

Fall: having experiences you can be proud of?
Winter: having an experience you can be proud of?

Exciting Weekends

Fall: having weekend excitement?
Winter: having interesting and exciting weekends?

Live in Hometown

Fall: staying in your own hometown?
Winter: living in your own hometown?

One opportunity was left off the list during Fall quarter. It was added at the beginning of Winter quarter.

Job Variety - having a wide variety of opportunities to find a job you can enjoy?

One new opportunity was added to the list and one was dropped beginning in Winter quarter:

Added: **Part-Time Work** - working part-time?

Dropped: **Serve Community** - serving your own community?

Table 3. Perceptions - Active Army

A major change was made Winter quarter in the administration of perceptions questions. As before, some respondents receive one set of perceptions while others receive two or three sets. During Fall quarter, each of the sets of perceptions questions was separately administered and each of the Army components' question sets was preceded by a gate question asking the respondent if he/she had ever heard of the component. Beginning in Winter quarter, all appropriate gate questions are asked at the beginning of the perceptions module. Then, if more than one set is administered, the perceptions questions are chained together. For example, respondents are asked to rate their agreement with the statement "The Army offers a physically challenging environment." Then, they are asked to rate another service/component/option on the same attribute (e.g., "How about the Army Reserve?"). After the respondent answers both questions, the interviewer asks about the next attribute for both referents and continues in this way until the entire list of perceptions has been administered. In cases where three sets of perceptions questions are administered to a single respondent, the third set always refers to the Army ROTC. Since the ROTC Perceptions questions are different from those for the other components, these questions are always asked separately after the other perceptions sets.

In cases where two sets of perceptions questions are administered, their order of presentation varies across respondents to avoid order effects. Specifically, for any given pair of services/components/options, half of the respondents are asked

first about one service/component/option (e.g., Army) and second about the other (e.g., Army Reserve) while half receive the questions in the reverse order.

Wording of the introduction to the perceptions questions also changed from Fall to Winter to better fit the new method of administration. During Fall quarter, each set of perceptions items was introduced separately but beginning Winter quarter, a general statement was used to introduce the chained sets. This general statement is shown on the information card for Table 3. For purposes of comparison, the introduction used during Fall quarter is shown below. Notice that the meanings attached to the scale points were also altered as shown on the Table 3 information card.

Fall Quarter Introduction Wording

> I am going to read you a list of statements describing different things the Army might offer. Please tell me how much you disagree or agree that the Army offers each item on the list. A "1" means that you disagree completely, a "2" means you disagree somewhat, a "3" means you neither agree nor disagree, a "4" means you agree somewhat, and a "5" means you agree completely. The Army offers..."

The wording of three items on the of active Army perceptions list changed from Fall to Winter quarters:

Self Confidence

Fall: an excellent opportunity to develop self-confidence?
Winter: an opportunity to develop self-confidence?

Mature & Responsible

Fall: an opportunity for you to become more mature and responsible?
Winter: an opportunity to become more mature and responsible?

Money for Ed.

Fall: an excellent opportunity to obtain money for a college or vocational education?
Winter: an opportunity to obtain money for college or vocational school?

The word "excellent" was erroneously dropped from this question Winter quarter and has been added again for Spring quarter. The information card for Table 3 shows Fall and Spring wording.

Table 4. Perceptions - Army Reserve

Beginning Winter quarter, questions about perceptions of the Army Reserve were chained together with other perceptions questions as described under Table 3 above. The revised introduction to perceptions items and the revised five point rating scale is the same, with appropriate name substitution, for Army Reserve perceptions as for the active Army perceptions described above. Similarly, the introduction used for Army Reserve questions during Fall quarter is consistent with Fall wording for the active Army introduction.

Two Table 4 items were changed beginning in Winter quarter:

Money for Ed.

Fall: an excellent opportunity to obtain money for a college or vocational education?
Winter: an opportunity to obtain money for college or vocational school?

The word "excellent" was erroneously dropped from this question Winter quarter and will be added again during the Spring quarter. The information card for Table 4 shows the Fall and Spring wording.

Live in Hometown

Fall: an opportunity to serve America while staying in your own hometown?
Winter: an opportunity to serve America while living in your own hometown?

One item was added to the list of Army Reserve Attribute statements, and one was dropped:

Added: **Part-Time Work** - an excellent opportunity for part-time work?

Dropped: **Serve Community** - a chance to serve your own community?

Table 5. Perceptions - Army National Guard

Beginning Winter quarter, questions about perceptions of the Army National Guard were chained together with other perceptions questions as described under Table 3 above. The revised introduction to perceptions items and the revised five point rating scale is the same, with appropriate name substitution, for Army National Guard perceptions as for the active Army perceptions described above. Similarly, the introduction used for Army National Guard questions during Fall quarter is consistent with Fall wording for the active Army introduction.

Two Table 5 items were changed beginning in Winter quarter:

Money for Ed.

Fall: an excellent opportunity to obtain money for a college or vocational education?
Winter: an opportunity to obtain money for college or vocational school?

The word "excellent" was erroneously dropped from this question Winter quarter and has been added again for Spring quarter. The information card for Table 5 shows the Fall and Spring wording.

Live in Hometown

Fall: an opportunity to serve America while staying in your own hometown?
WInter: an opportunity to serve America while living in your own hometown?

One item was added to the list of Army National Guard attribute statements, and one was dropped:

Added: **Part-Time Work** - an excellent opportunity for part-time work?

Dropped: **Serve Community** - a chance to serve your own community?

Table 6. Perceptions - Army ROTC

Since the ROTC perceptions items are different from those for other components, they were not incorporated in the chaining method described above. Wording changes were made, however, in the introduction. The current wording of the introduction is shown on the information card for Table 6. For comparison purposes, the Fall quarter introduction is shown below.

Fall Quarter Introduction Wording

> Next I will read you a few statements describing different things that the Army Reserve Officers' Training Corps on the college campus might offer. Please tell me how much you disagree or agree that officers' training offers each item on the list. A "1" means you disagree completely, a "2" means you disagree somewhat, a "3" means you neither agree nor disagree, a "4" means you agree somewhat, and a "5" means you agree completely. The Army Reserve Officers' Training Corps on the college campus provides...

The wording on two of the **ROTC Perceptions** items was also changed:

Job Variety

Fall: a wide variety of job opportunities?
Winter: a wide variety of opportunities to find a job you can enjoy?

Proud Experience

Fall: experiences you can be proud of?
Winter: an experience you can be proud of?

One of the ROTC-relevant importance (**ROTC Importance**) items was changed:

Proud Experience

Fall: experiences you can be proud of?
Winter: an experience you can be proud of?

One ROTC-relevant opportunity (**ROTC Importance**) was left off the list during Fall quarter. It was added Winter quarter.

Added: **Job Variety** - having a wide variety of opportunities to find a job you can enjoy?

Tables 7. Enlistment-Related Behaviors

No changes were made in administration or wording of items in this table.

Table 8. Recall (Unaided)

The introduction to the unaided recall question (KR-1) changed from Fall to Winter quarters. Winter quarter wording is shown on the information card for Table 8. For purposes of comparison, the Fall quarter wording is included below:

> Now, thinking about TV, radio, newspapers, magazines, and any other sources of advertising, for which Military Service or services do you recall seeing or hearing any advertising"

Table 9. Recall (Unaided plus Aided)

The introduction to the unaided recall question discussed under Table 8 applies to Table 9 as well.

Table 10. Knowledge

The wording was changed for one item in this table:

Delayed Entry Allowed

Fall:	Is it possible to sign up for the Army and actually start serving up to one year later?
Winter:	Is it possible to sign up for the Army and start serving up to one year later?

Table 11. Media Habits

No changes were made in administration or wording of items in this table.

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TABLE 1

PERCENTAGE WITH INTENTION TO ENLIST IN ARMY COMPONENTS

Table 1 shows the percentages of youth in each sample group classified as having Army enlistment intentions. When asked about their future career plans, respondents who volunteered that they might be enlisting in any of the Army components were considered to have Unaided Intention to Enlist. Aided Intention includes those who said they would definitely or probably enlist when asked directly whether they planned to join the Army.

RESPONDENTS

- o **N1** includes all youth in the Recruiting Market and provides the case bases for all of the data columns in Table 1 except **Army ROTC**.

- o **N2** provides the case base only for **Army ROTC**. Since college attendance is mandatory for participating in Reserve Officers' Training courses, only those youth in the Recruiting Market who said they would definitely or probably attend college were asked about their ROTC intentions. None of the work-oriented high school students were asked about ROTC intentions so N/A appears in that cell of the table.

SPECIAL NOTES AND CAUTIONS

- o None of the percentages reported here is exactly comparable to the propensity measures reported in the Youth Attitude Tracking Study. However, **Aided Intention - Active Army** is based on the same measure as the YATS Army propensity. The **RECRUITING MARKET: MALES [PMAS + SMS]** is very close to the full YATS male sample. The YATS total, however, also includes youth who have completed the sophomore year in college but have not yet attended a class as a junior while ACOMS excludes those who have completed the sophomore year. The difference is approximately 50 cases a quarter.

- o Computation of Unaided Intention

  - Respondents were considered to have General Unaided Intention to Enlist in the Army if they volunteered that they might be joining the military service within the next few years and if they named the Army when asked which branch.

  - Active Army, Army Reserve, and Army National Guard intentions were distinguished by asking respondents who had indicated General Unaided Intention to Enlist in the Army what type of service they might join.

- o Computation of Aided Intention

  - Four of the interview questions named the Army components and asked respondents how likely it was that they would be serving in that component during the next few years. Answers of DEFINITELY or PROBABLY were counted as Aided Intention to Enlist in that particular component.

  - General Aided Intention is a measure composed of responses to the four individual component questions. Respondents who answered DEFINITELY or PROBABLY to one or more of the four questions were considered to have a General Aided Intention to Enlist in the Army.

(TURN OVER FOR QUESTION KEY)

TABLE 1

PERCENTAGE WITH INTENTION TO ENLIST IN ARMY COMPONENTS

QUESTION KEY

Table Column Headings	Questionnaire Item	Variable Name
--Unaided Intention--		
	IP-1: Now let's talk about your plans for the next few years. What do you think you might be doing?	YIPDOMIL
	(IF ANSWERS JOINING THE MILITARY OR SERVICE TO IP-1) IP-3: You said you might be joining the military. Which branch of the service would that be?	YPBRAN1
General Intention	(IF ANSWER TO IP-3 IS:) Army	
	(IF ANSWERS ARMY TO IP-3) IP-4: Which type of service would that be? Would it be...	YPCOMP1
Active Army	(IF ANSWER TO IP-4 IS:) Active Duty	
USAR	(IF ANSWER TO IP-4 IS:) the Reserve, or	
ARNG	(IF ANSWER TO IP-4 IS:) the National Guard?	

--Aided Intention--		
General Intention	(IF ANSWERS "DEFINITELY" OR "PROBABLY" TO ONE OR MORE OF THE FOLLOWING QUESTIONS)	
Active Army	IP-8: How likely is it that you will be serving on active duty in the Army? Would you say definitely, probably, probably not, or definitely not?	YPROBAR
USAR	IP-10: How likely is it that you will be serving in the Army Reserve? Would you say definitely, probably, probably not, or definitely not?	YPROBARV
ARNG	IP-9: How likely is it that you will be serving in the Army National Guard? Would you say definitely, probably, probably not, or definitely not?	YPROBANG
Army ROTC	IP-11A: How likely is it that you will receive an officer's commission through participation in the Army Reserve Officers' Training Corps, or Army ROTC?	YPROBCOM

TABLE 2

PERCENTAGE RATING OPPORTUNITIES "IMPORTANT" OR "VERY IMPORTANT" TO PLANS FOR THE NEXT YEAR

Table 2 shows the percentages of youth in each sample group who rated each of eighteen opportunities as either important or very important to their plans for the next year.

RESPONDENTS

- **N** provides the case bases for all unstarred columns in the table and includes all youth in the Recruiting Market.
- **N*** provides the case base only for starred columns. These columns represent new variables added to the questionnaire during the quarter. **N*** is smaller than **N** because it does not include respondents who were drawn in the previous quarter but interviewed during the current quarter using the old version of the questionnaire.
- N/A appearing in a column means none of the quarter's respondents received the question. For example, **PART-TIME WORK** was added Winter quarter so none of the Fall respondents received the question.
- Opportunities were presented using a random start during the interview to avoid order effects. The order of columns in Table 2 is consistent with the column order in Tables 3, 4, and 5 to facilitate cross-table comparisons.

SPECIAL NOTES AND CAUTIONS

- indicates that the question wording has changed from one quarter to the next. Appendix E contains a list of all such wording changes.
- Appendix E also shows opportunities added to the Question Key list or dropped from the list each quarter.

(TURN OVER FOR QUESTION KEY)

TABLE 2

PERCENTAGE RATING OPPORTUNITIES "IMPORTANT"
OR "VERY IMPORTANT" TO PLANS FOR THE NEXT YEAR

QUESTION KEY

Table Column Headings	Questionnaire Item	Variable Name
	IA-1: In thinking about your plans for the next year, please tell me how important it is that you have opportunities for the following things? Use a scale from 1 to 5 where a "1" means it is not at all important and "5" means it is very important.	
Job* Variety	having a wide variety of opportunities to find a job you can enjoy?	YIWIDE
Physical Challenge	having a physical challenge?	YIPHYS
Proud* Experience	having an experience you can be proud of?	YIPROUD
Step Btwn HS & Col.	having a stepping-stone between high school and college?	YISTEP
Leader* Skills	developing leadership skills?	YILEADER
Hi-Tech Equipment	working with the latest high-tech equipment?	YIHITECH
Civilian Career	helping your career development?	YICIVCAR
Self* Confidence	developing self-confidence?	YISELCON
Develop Potential	developing your potential?	YIPOTEN
Mental Challenge	having a mental challenge?	YIMENTAL
Mature & Responsible	becoming more mature and responsible?	YIMATURE
Skill Training	training in useful skill areas?	YITRAIN
Hi-Trained Co-Workers	working with highly-trained people?	YIHIQUAL
Money for Ed.	earning money for college or vocational education?	YICASHED
Serve Country	serving your country?	YICNTRY
Exciting Weekends	having interesting and exciting weekends?	YIWEEKEN
Part-Time Work	working part-time?	YISERPAR
Live in Hometown	living in your own hometown?	YIHOME
Use Own Judgment**	being able to make changes and use your own judgment?	YIINNOV

*These variables also appear on Table 6 (ROTC Table).
**This variable appears only on Table 6 (ROTC Table).

TABLE 3

PERCENTAGE "AGREE" OR "STRONGLY AGREE" WITH ACTIVE ARMY ATTRIBUTE STATEMENTS

Table 3 shows the percentages of youth in selected sample groups who agreed or strongly agreed with statements about attributes of the active Army.

RESPONDENTS

- To reduce respondent burden, a subsample of youth received questions about their perceptions of active Army attributes. The likelihood of selection was dependent on educational category and the sample design for the Perceptions module. For example, all high school students and graduates not currently enrolled were selected but only some college freshmen and sophomores received the active Army perceptions questions. (See The ACOMS Survey Design for greater detail.)

SPECIAL NOTES AND CAUTIONS

- Attribute statements were presented using a random start during the interview to avoid order effects. The order of columns in Table 3 is consistent with the column order of Tables 2, 4, and 5 to facilitate cross-table comparisons.
- indicates that the question wording has changed from one quarter to the next. Appendix E contains a list of all such wording changes.
- Appendix E also shows attributes added to the Question Key list or dropped from the list each quarter.

(TURN OVER FOR QUESTION KEY)

TABLE 3

PERCENTAGE "AGREE" OR "STRONGLY AGREE"
WITH ACTIVE ARMY ATTRIBUTE STATEMENTS

QUESTION KEY

Table Column Headings	Questionnaire Item	Variable Name
	PE-INTRO: I'd like your opinion about several statements. Please use a scale of one to five where "1" means you strongly disagree with the statement, "2" means you disagree, "3" means you neither disagree nor agree, "4" means you agree, and "5" means you strongly agree with the statement.	
	PE-1: The Army offers...	
Job Variety	a wide variety of opportunities to find a job you can enjoy?	YAWIDE
Physical Challenge	a physically challenging environment?	YAPHYS
Proud Experience	an experience you can be proud of?	YAPROUD
Step Btwn HS & Col.	an advantage over going right from high school to college?	YASTEP
Leader Skills	an opportunity to develop leadership skills?	YALEADER
Hi-Tech Equipment	the chance to work with the latest high-tech equipment?	YAHITECH
Civilian Career	a great value in your civilian career development?	YACIVCAR
Self Confidence	an opportunity to develop self-confidence?	YASELCON
Develop Potential	the opportunity to develop your potential?	YAPOTEN
Mental Challenge	a mentally challenging experience?	YAMENTAL
Mature & Responsible	an opportunity to become more mature and responsible?	YAMATURE
Skill Training	many opportunities for training in useful skill areas?	YATRAIN
Hi-Trained Co-Workers	many chances to work with highly-trained people?	YAHIQUAL
Money for Ed.	an excellent opportunity to obtain money for college or vocational school?	YACASHED

TABLE 4

PERCENTAGE "AGREE" OR "STRONGLY AGREE" WITH ARMY RESERVE ATTRIBUTE STATEMENTS

Table 4 shows the percentages of youth in selected sample groups who agreed or strongly agreed with statements about attributes of the Army Reserve.

RESPONDENTS

- To reduce respondent burden, a subsample of youth were asked about their perceptions of Army Reserve attributes. The likelihood of selection was dependent on educational category and the sample design for the Perceptions module. (See The ACOMS Survey Design for more detail.)
- Respondents who indicated they had never heard of the Army Reserve were excluded.
- **N** provides the case bases for all unstarred columns in the table and includes all youth who answered Army Reserve perceptions questions during the quarter.
- **N*** provides the case base only for starred columns. These columns represent new variables added to the questionnaire during the quarter. **N*** is smaller than **N** because it does not include respondents who were drawn in the previous quarter but interviewed during the current quarter using the old version of the questionnaire.
- N/A appearing in a column means none of the quarter's respondents received the question. For example, **PART-TIME WORK** was added Winter quarter so none of the Fall respondents received the question.

SPECIAL NOTES AND CAUTIONS

- Table 4 includes only totals for the categories: **MALES [PMAS + SMS]**, **FEMALES [PFAS + SFS]**, **PMAS**, and **TOTAL RECRUITING MARKET**. Sample sizes are not sufficient to allow reliable estimates for the smaller subcategories.
- Attributes were presented using a random start during the interview to avoid order effects. The order of columns in Table 4 is consistent with the column order in Tables 2, 3, and 5 to facilitate cross-table comparisons.
- indicates that the question wording has changed from one quarter to the next. Appendix E contains a list of all such wording changes.
- Appendix E also shows attributes added to the Question Key list or dropped from the list each quarter.

(TURN OVER FOR QUESTION KEY)

TABLE 4

PERCENTAGE "AGREE" OR "STRONGLY AGREE"
WITH ARMY RESERVE ATTRIBUTE STATEMENTS

QUESTION KEY

Table Column Headings	Questionnaire Item	Variable Name
	PE-1A: Have you ever heard of the United States Army Reserve?	YHEARDAR
	(IF ANSWER YES OR DON'T KNOW TO PE-1A) PE-INTRO: I'd like you opinion about several statements. Please use a scale of one to five where "1" means you strongly disagree with the statement, "2" means you disagree, "3" means you neither disagree nor agree, "4" means you agree, and "5" means you strongly agree with the statement.	
	PE-4: The United States Army Reserve offers...	
Job Variety	a wide variety of opportunities to find a job you can enjoy?	YVWIDE
Proud Experience	an experience you can be proud of?	YVPROUD
Leader Skills	an opportunity to develop leadership skills?	YVLEADER
Civilian Career	a great value in your civilian career development?	YVCIVCAR
Self Confidence	an opportunity to develop self-confidence?	YVSELCON
Develop Potential	the opportunity to develop your potential?	YVPOTEN
Mental Challenge	a mentally challenging experience?	YVMENTAL
Mature & Responsible	an opportunity to become more mature and responsible?	YVMATURE
Skill Training	many opportunities for training in useful skill areas?	YVTRAIN
Hi-Trained Co-Workers	many chances to work with highly-trained people?	YVHIQUAL
Money for Ed.	an excellent opportunity to obtain money for college or vocational school?	YVCASHED
Exciting Weekends	interesting and exciting weekends?	YVWEEKEN
Part-Time Work	an excellent opportunity for part-time work?	YVSERPAR
Live in Hometown	an opportunity to serve America while living in your own hometown?	YVHOME

TABLE 5

PERCENTAGE "AGREE" OR "STRONGLY AGREE" WITH ARMY NATIONAL GUARD ATTRIBUTE STATEMENTS

Table 5 shows the percentages of youth in selected sample groups who agreed or strongly agreed with statements about attributes of the Army National Guard.

RESPONDENTS

- To reduce respondent burden, a subsample of youth received questions about their perceptions of Army National Guard attributes. The likelihood of selection was dependent on educational category and the sample design for the Perceptions module. (See The ACOMS Survey Design for more detail.)
- **N** provides the case bases for all unstarred columns in the table and includes all youth who answered Army National Guard perceptions questions during the quarter.
- **N*** provides the case base only for starred columns. These columns represent new variables added to the questionnaire during the quarter. **N*** is smaller than **N** because it does not include respondents who were drawn in the previous quarter but interviewed during the current quarter using the old version of the questionnaire.
- N/A appearing in a column means none of the quarter's respondents received the question. For example, **PART-TIME WORK** was added Winter quarter so none of the Fall respondents received the question.

SPECIAL NOTES AND CAUTIONS

- Table 5 includes only totals for the main Recruiting Market categories: **MALES [PMAS + SMS]**, **FEMALES [PFAS + SFS]**, **PMAS**, and **TOTAL RECRUITING MARKET**. Sample sizes were not sufficient to allow reliable estimates for the smaller subcategories.
- Attributes were presented using a random start during the interview to avoid order effects. The order of columns in Table 5 is consistent with the column order in Tables 2, 3, and 4 to facilitate cross-table comparisons.
- indicates that the question wording has changed from one quarter to the next. Appendix E contains a list of all such wording changes.
- Appendix E also shows attributes added to the Question Key list or dropped from the list each quarter.

(TURN OVER FOR QUESTION KEY)

TABLE 5

PERCENTAGE "AGREE" OR "STRONGLY AGREE"
WITH ARMY NATIONAL GUARD ATTRIBUTE STATEMENTS

QUESTION KEY

Table Column Headings	Questionnaire Item	Variable Name
	PE-4A: Have you ever heard of the United States Army National Guard?	YHEARDNG
	(IF ANSWER YES OR DON'T KNOW TO PE-4A) PE-INTRO: I'd like your opinion about several statements. Please use a scale of one to five where "1" means you strongly disagree with the statement, "2" means you disagree, "3" means you neither disagree nor agree, "4" means you agree, and "5" means you strongly agree with the statement.	
	PE-5: The Army National Guard offers...	
Job Variety	a wide variety of opportunities to find a job you can enjoy?	YGWIDE
Proud Experience	an experience you can be proud of?	YGPROUD
Leader Skills	an opportunity to develop leadership skills?	YGLEADER
Civilian Career	a great value in your civilian career development?	YGCIVCAR
Self Confidence	an excellent opportunity to develop self-confidence?	YGSELCON
Develop Potential	the opportunity to develop your potential?	YGPOTEN
Mental Challenge	a mentally challenging experience?	YGMENTAL
Mature & Responsible	an opportunity to become more mature and responsible?	YGMATURE
Skill Training	many opportunities for training in useful skill areas?	YGTRAIN
Hi-Trained Co-Workers	many chances to work with highly-trained people?	YGHIQUAL
Money for Ed.	an excellent opportunity to obtain money for college or vocational school?	YGCASHED
Exciting Weekends	interesting and exciting weekends?	YGWEEKEN
Part-Time Work	an excellent opportunity for part-time work?	YGSERPAR
Live in Hometown	an opportunity to serve America while living in your own hometown?	YGHOME

TABLE 6

PERCENTAGE "AGREE" OR "STRONGLY AGREE" WITH ARMY ROTC ATTRIBUTE STATEMENTS

PERCENTAGE RATING ROTC OPPORTUNITIES "IMPORTANT" OR "VERY IMPORTANT" TO PLANS FOR THE NEXT YEAR

Table 6 shows the percentages of youth in selected sample groups who agreed or strongly agreed with statements about the Army Reserve Officers' Training Corps. To facilitate interpretation, the table also shows the percentages of youth in the same sample groups who rated five corresponding opportunities as important or very important to their plans for the next year.

RESPONDENTS

- Table 6 focuses on responses of youth in the ROTC Sample, current and prospective college students. The last row in the table, however, reports data for PMAS youth.
- N1 provides the case bases for the **ROTC PERCEPTIONS** columns. To reduce respondent burden, a subsample of youth received questions about their perceptions of Army ROTC attributes (see The ACOMS Survey Design for details of the sample design for the Perceptions module).
- Respondents who indicated they had never heard of the Army Reserve Officers' Training Corps were not asked about their perceptions of the ROTC.
- N2 provides the case bases for all unstarred columns in the **ROTC IMPORTANCE** section. No subsampling was required for importance questions.
- N* provides the case base only for starred columns of the **ROTC IMPORTANCE** section. These columns represent new variables added to the questionnaire during the quarter. N* is smaller than N2 because it does not include respondents who were drawn in the previous quarter but interviewed during the current quarter using the old version of the questionnaire.
- N/A appearing in a column means none of the quarter's respondents received the question. For example, **JOB VARIETY** was added Winter quarter so none of the Fall respondents received the question.

SPECIAL NOTES AND CAUTIONS

- Attribute statements and opportunities were presented using a random start to avoid order effects.
- Note that the wording for **LEADER/MGMT TRAINING (ROTC PERCEPTIONS)**, while similar, is not the same as **LEADER SKILLS (ROTC IMPORTANCE)** (See Question Key).
- The sample breakdowns reported in Table 6 are generally different from those reported in the remaining tables of the quarterly report. Thus only the data reported for **College Freshmen and Sophomores, H.S.Students [College-Oriented], and TOTAL PMAS** should be directly compared with data in other tables.
- indicates that the question wording has changed from one quarter to the next. Appendix E contains a list of all such wording changes.
- Appendix E also shows attributes added to the Question Key list or dropped from the list each quarter.

(TURN OVER FOR QUESTION KEY)

TABLE 6

PERCENTAGE "AGREE" OR "STRONGLY AGREE" WITH ARMY ROTC ATTRIBUTE STATEMENTS

PERCENTAGE RATING ROTC OPPORTUNITIES "IMPORTANT"
OR "VERY IMPORTANT" TO PLANS FOR THE NEXT YEAR

QUESTION KEY

Table Column Headings	Questionnaire Item	Variable Name
--ROTC PERCEPTIONS--		
	PE-15A: Have you ever heard of the Army Reserve Officers' Training Corps on a college campus?	YHEARDRO
	(IF ANSWER YES OR DON'T KNOW TO PE-15A) PEY-2: Next, I'd like your opinion about several statements describing different things that the Army Reserve Officers' Training Corps on the college campus might offer you. Please use a scale of 1 to 5 where "1" means you strongly disagree with the statement, "2" means you disagree, "3" means you neither disagree nor agree, "4" means you agree, and "5" means you strongly agree with the statement. The Army Reserve Officers' Training Corps on a college campus offers you...	
--ROTC Offers--		
Leader/Mgmt Training	leadership and management training?	YRLEADER
Self Confidence	an opportunity to develop self-confidence?	YRSELCON
College Elective	a college elective that can be taken together with other college courses?	YRELECT
Officer's Commission	an officer's commission in the active Army, Army Reserve, or the Army National Guard?	YROFFCOM

	PEY-3: Being an officer in the United States Army means different things to different people. Please tell me how much you disagree or agree that <u>being an officer</u> offers you each item on the list. A "1" means you strongly disagree with the statement, "2" means you disagree, "3" means you neither disagree nor agree, "4" means you agree, and "5" means you strongly agree with the statement. Being an officer in the United States Army offers you...	
--Officer Benefits--		
Job Variety	a wide variety of opportunities to find a job you can enjoy?	YOWIDE
Proud Experience	an experience you can be proud of?	YOPROUD
Use College Skills	the opportunity to use your college acquired skills?	YOUSECOL
Use Own Judgment	the opportunity to make changes and use your own judgment?	YOINNOV
--ROTC IMPORTANCE--		

See Information Card for Table 2 for Table Column Headings, Questionnaire Item,

TABLE 7

PERCENTAGE TAKING ACTIONS RELATING TO ENLISTMENT DURING THE PAST SIX MONTHS

Table 7 shows the percentages of youth in each of the sample groups who had taken specified actions relating to enlistment during the six months preceding their interviews.

RESPONDENTS

- All youth in the Recruiting Market.

SPECIAL NOTES AND CAUTIONS

- Changes or substitutions across quarters to the behavior questions will be shown in Appendix E.

(TURN OVER FOR QUESTION KEY)

TABLE 7

PERCENTAGE TAKING ACTIONS RELATING TO ENLISTMENT
DURING THE PAST SIX MONTHS

QUESTION KEY

Table Column Headings	Questionnaire Item	Variable Name
Talked to Anyone of Joining Army	BE-1: In the past six months, have you talked with anyone about possibly joining the Army?	YBATALK

	BE-2: With whom have you talked?	YBAREC
	(IF ANSWER RECRUITER TO BE-2) BE-8: Was the recruiter you spoke with an Army Recruiter?	YBMRECAR
Talked to an Army Recruiter	OR	
	(IF RECRUITER NOT MENTIONED IN BE-2) BE-7: In the past six months, have you talked to an Armed Forces recruiter about military service?	YBMREC
	(IF ANSWER YES TO BE-7) BE-8: Was the recruiter you spoke with an... Army Recruiter?	YBMRECAR

	BE-10_12: In the past six months, have you...	
Taken ASVAB	taken a written test used for the Army, such as the Armed Services Vocational Aptitude Battery?	YBATEST
Visited Army Recruiting Station	visited an Army recruiting station?	YBAVISIT
Toll-Free Call Sent for Gift	responded to an Army ad by calling a toll-free number or sending for a gift?	YBAGIFT

TABLE 8

(UNAIDED RECALL)
PERCENTAGE SEEING/HEARING MILITARY ADVERTISING

Table 8 shows the percentages of youth in each of the sample groups who spontaneously named each of the service branches, Army components, and/or Joint Recruiting Advertising Program advertisements when asked what military advertising they recalled. It also lists the percentages who could not remember any military advertising.

RESPONDENTS

- All youth in the Recruiting Market

SPECIAL NOTES AND CAUTIONS

- None

(TURN OVER FOR QUESTION KEY)

TABLE 8

(UNAIDED RECALL)
PERCENTAGE SEEING/HEARING MILITARY ADVERTISING

QUESTION KEY

Table Column Headings	Questionnaire Item		Variable Name
--Army Components--			
	KR-1: Thinking about all forms of advertising, for which military services do you recall seeing or hearing any advertising?		
ACTIVE	(IF ANSWER TO KR-1 IS:)	Army	YUN12AR
	(IF ANSWERS ROTC TO KR-1) KR-2: You mentioned seeing or hearing advertising for the Reserve Officers' Training Corps. For which military service or services was this advertising?		YUN12RO
ROTC	(IF ANSWER TO KR-2 IS:)	Army	YKRROAR
	(IF ANSWERS NATIONAL GUARD TO KR-1) KR-3: You mentioned seeing or hearing advertising for the National Guard. For which service or services was this advertising?		YUN12NG
ARNG	(IF ANSWER TO KR-3 IS:)	Army	YKRNGAR
	(IF ANSWERS RESERVE TO KR-1) KR-4: You mentioned seeing or hearing advertising for the Reserve. For which military service or services was this advertising?		YUN12RV
USAR	(IF ANSWER TO KR-4 IS:)	Army	YKRRVAR
--Other Military Branches--			
USAF	(IF ANSWER TO KR-1 IS:)	Air Force	YUN12AF
NAVY	(IF ANSWER TO KR-1 IS:)	Navy	YUN12NA
USMC	(IF ANSWER TO KR-1 IS:)	Marine Corps	YUN12MC
USCG	(IF ANSWER TO KR-1 IS:)	Coast Guard	YUN12CG
JRAP	(IF ANSWER TO KR-1 IS:)	All the services in one ad (Joint Recruiting Advertising Program)	YUN12ALL
NONE	(IF ANSWER TO KR-1 IS:)	None	YUN12NON

TABLE 9

(UNAIDED PLUS AIDED RECALL)
PERCENTAGE SEEING/HEARING MILITARY ADVERTISING

Table 9 shows the percentages of youth in each sample group who spontaneously named each of the service branches, Army components, and/or Joint Recruiting Advertising Program advertisements when asked what military advertising they recalled (unaided) plus those who remembered each of the above when asked directly about them by name (aided).

RESPONDENTS

- All youth in the Recruiting Market.

SPECIAL NOTES AND CAUTIONS

- Aided recall questions were presented using a random start during the interview to avoid order effects.
- In most cases, the Question Key lists two variable names for each Table Column Heading, one for unaided recall and another for aided recall. Army ROTC, Army National Guard, and Army Reserve required three variables, one for unaided recall of the component, one to specify which service, and another for aided recall.

(TURN OVER FOR QUESTION KEY)

TABLE 9

(UNAIDED PLUS AIDED RECALL)
PERCENTAGE SEEING/HEARING MILITARY ADVERTISING

QUESTION KEY

Questionnaire Item

KR-1: Thinking about all forms of advertising, for which military services do you recall seeing or hearing any advertising?

KR-2: You mentioned seeing or hearing advertising for the Reserve Officers' Trainin Corps. For which military service or services was this advertising?

KR-3: You mentioned seeing or hearing advertising for the National Guard. For whic service or services was this advertising?

KR-4: You mentioned seeing or hearing advertising for the Reserve. For which servi or services was this advertising?

KR-5: Do you recall seeing or hearing any advertising for the Air Force?

KR-6: Do you recall seeing or hearing any advertising for the Army?

KR-7: Do you recall seeing or hearing any advertising for the Army Reserve Officers Training Corps, that is, the Army R.O.T.C.?

KR-8: Do you recall seeing or hearing any advertising for the Army National Guard?

KR-9: Do you recall seeing or hearing any advertising for the Army Reserve?

KR-10: Do you recall seeing or hearing any advertising for the Coast Guard?

KR-11: Do you recall seeing or hearing any advertising for the Marine Corps?

KR-12: Do you recall seeing or hearing any advertising for the Navy?

KR-13: Do you recall seeing or hearing any advertising for all the services in one a

Table Column Headings	Items Used in Calculating Unaided + Aided Recall	Variable Name
--Army Components--		
ACTIVE	KR-1 = Army OR KR-6 = yes	YUN12AR YAIDAR
ROTC	KR-1 = ROTC and KR-2 = Army OR KR-7 = yes	YUN12RO YKRROAR YAIDARO
ARNG	KR-1 = National Guard and KR-3 = Army OR KR-8 = yes	YUN12NG YKRNGAR YAIDANG
USAR	KR-1 = Reserve and KR-4 = Army OR KR-9 = yes	YUN12RV YKRRVAR YAIDARV
--Other Military Branches--		
USAF	KR-1 = USAF OR KR-5 = yes	YUN12AF YAIDAF
NAVY	KR-1 = Navy OR KR-12 = yes	YUN12NA YAIDNA
USMC	KR-1 = USMC OR KR-11 = yes	YUN12MC YAIDMC
USCG	KR-1 = USCG OR KR-10 = yes	YUN12CG YAIDCG
JRAP	KR-1 = one ad for all services OR KR-13 = yes	YUN12ALL

TABLE 10

PERCENTAGE ANSWERING KNOWLEDGE OF ARMY OFFERS AND BENEFITS QUESTIONS CORRECTLY

Table 10 shows the percentages of youth in each sample group who knew the correct answers to questions about Army eligibility and benefit offers.

RESPONDENTS

- Half of the youth sample was randomly selected to answer questions about their knowledge of Army offers and benefits. Table 10 reports responses of the selected youth in the Recruiting Market.

SPECIAL NOTES AND CAUTIONS

- Respondents who answered correctly that 17 year old high school juniors are eligible to join the Army Reserve or Army National Guard (KA-8) were assumed to know that high school graduation is not required before joining these Army components (KA-9). Although not asked question KA-9, these respondents were added to those who answered KA-9 correctly.

- Respondents who did not know that college money can be earned by enlisting in the Army (KA-7) were assumed not to know how much can be earned (KA-1) nor how the Army compares with other services in terms of education benefits (KA-3). Although not asked questions KA-1 and KA-3, these respondents were added to those who answered questions KA-1 and KA-3 incorrectly.

- Respondents who did not know that college money can be earned by enlisting in the Army Reserve or Army National Guard (KA-11) were assumed not to know how much can be earned (KA-12). Although not asked question KA-12, these respondents were added to those who answered the question incorrectly.

- Changes or substitutions across quarters to the knowledge questions will be shown in Appendix E.

(TURN OVER FOR QUESTION KEY)

TABLE 10

PERCENTAGE ANSWERING KNOWLEDGE OF ARMY OFFERS AND BENEFITS QUESTIONS CORRECTLY
[Correct Answers Shown in Brackets]

QUESTION KEY

Table Column Headings	Questionnaire Item	Variable Name
--Active Army Knowledge--		
If Enlist Eligible for College $	KA-7: Is it possible to earn money for college by enlisting in the Army? [Yes]	YKAEARN
Total Education Benefits	(IF YES TO KA-7) KA-1: How much do you think can be earned through Army education benefits? [$15,000+]	YKAEDBEN
Army Benefits Better?	(IF YES TO KA-7) KA-3: Do you think Army education benefits are more, less or about the same as the Navy, Air Force, or Marines offer? [More]	YKASAME
Offer GI Bill	KA-4: Please tell me whether or not each of the following offers the "GI Bill"?	
ARMY	Army [Yes]	YKAGIAR
USAF	Air Force [Yes]	YKAGIAF
NAVY	Navy [Yes]	YKAGINA
USMC	Marines [Yes]	YKAGIMA
Minimum Duty Tour	KA-5: What is the minimum number of years that a new recruit has to serve on active duty in the Army? [2]	YKAYEARS
Delayed Entry Allowed	KA-6: Is it possible to sign up for the Army and start serving up to one year later? [Yes]	YKADEP
--Army Reserve and Army National Guard Knowledge--		
17 Year Old Eligible to Join	KA-8: Are 17 year old high school juniors eligible to join the Army Reserve or Army National Guard? [Yes]	YKARGJUN
H.S. Graduation Required	(IF NO TO KA-8) KA-9: Is high school graduation required before joining the Army Reserve or Army National Guard? [No]	YKARGHS
Scholar Athlete Sponsor	KA-10: Who sponsors the "Scholar-Athlete Award Program"? Is it the Marine Corps, National Guard, Army Reserve, Air Force, or Navy? [Army Reserve]	YKAWARD
If Enlist Eligible for College $	KA-11: Can qualified people who join the Army Reserve or Army National Guard receive money for college? [Yes]	YKARGCOL
Maximum GI Bill College $	(IF YES TO KA-11) KA-12: What is the maximum amount of money for college that qualified people who join the Army Reserve or Army National Guard can receive under the "GI Bill"? [$4,000-$5,999]	YKARGGI

TABLE 11

PERCENTAGE REGULARLY VIEWING OR LISTENING TO VARIOUS TYPES OF PROGRAMMING

Table 11 shows the percentages of television viewers and radio listeners in the sample groups who regularly watch or listen to various types of programming.

RESPONDENTS

- Half of the youth sample was randomly selected to receive questions about viewing and listening habits. Of these, only respondents in the Recruiting Market who claimed to be regular television viewers (N1) or regular radio listeners (N2) are included in the table.

SPECIAL NOTES AND CAUTIONS

- None

(TURN OVER FOR QUESTION KEY)

TABLE 11

PERCENTAGE REGULARLY VIEWING OR LISTENING
TO VARIOUS TYPES OF PROGRAMMING

QUESTION KEY

Table Column Headings	Questionnaire Item	Variable Name
--Types of TV Shows--		
	MH-1: I'd like to ask a few questions about your TV, radio, and reading habits. Do you regularly watch TV?	YTVWATCH
	(IF YES TO MH-1) MH-2: How many hours per week do you spend watching...(a) programs on commercial networks, such as ABC, CBS, or NBC?; (b) programs on commercial cable stations, such as ESPN, MTV, USA, or TBS?	YTVHRREG YTVHRCAB
	(IF VIEWING HOURS FOR MH-2a AND b ARE NOT BOTH 0) MH-12: Do you frequently watch any of the following types of TV shows?	
Sports	Sports	YTVSPORT
Mystery	Suspense or mystery	YTVMYS
Drama	General drama	YTVDRAMA
Music	Music or music video	YTVMUSIC
Comedy	Situation comedy	YTVCOMDY
Movie	TV movies	YTVMOVIE
Talk	Talk shows	YTVTALK

--Types of Radio Programs--		
	MH-16: Now let's talk about radio listening. Do you regularly listen to the radio?	YRADLIS
	(IF YES TO MH-16) MH-17: How many hours per week do you listen to...(a) AM Radio?; (b) FM Radio?	YRADHRAM YRADHRFM
	(IF LISTENING HOURS FOR MH-17a AND b ARE NOT BOTH 0) MH-26: Do you frequently listen to any of the following types of radio programs?	
News	News	YRADNEWS
Classical	Classical music	YRADCLAS
Pop	Pop	YRADPOP
Country	Country	YRADCW
Sports	Sports	YRADSPOR
Talk	Talk shows	YRADTALK
Rock	Rock & roll	YRADROCK
Easy	"Easy listening"	YRADEASY

GLOSSARY OF TERMS AND ACRONYMS

ACOMS	Army Communications Objectives Measurement System
ADI Studies	Areas of Dominant Influence, special local area studies to be conducted as part of the ACOMS project.
ARI COR	U.S. Army Research Institute, Contracting Officer's Representative
BRR	The method of balanced repeated replication used in ACOMS to estimate variance.
CATI	Computer-assisted telephone interviewing, the method used for interviewing youth for the ACOMS survey.
CATI Screen Name	A 3 to 5 character code used to identify interview questions.
GED	General Educational Development, a certificate of high school completion.
HSDG	High school diploma graduate
PFAS	Primary Female Analytic Sample -- see reverse side for sample definitions.
PMAS	Primary Male Analytic Sample -- see reverse side for sample definitions.
Question Module	A related set of questions. The ACOMS youth interview contains 14 modules. Core modules are administered to all youth; rotating modules are administered to randomly selected subsets.
RDD	The modified Waksberg method of random digit dialing is used to identify youth eligible for ACOMS interviews.
SAG	Special Advisory Group
SFS	Secondary Female Sample -- see reverse side for sample definitions.
SMS	Secondary Male Sample -- see reverse side for sample definitions.
Standard Error	A statistical measure of the reliability of a sample estimate such as the percentages reported in the quarterly reports. See Appendix C.
YATS	Youth Attitude Tracking Study

SAMPLE GROUP DEFINITIONS

RECRUITING MARKET

Non-prior service male and female youth between 16 and 24 years of age who fit into either of two main sample categories:

PMAS (Primary Male Analytic Sample) and PFAS (Primary Female Analytic Sample) -- Have a regular high school diploma or currently in high school; have not taken college ROTC courses and have less than two years of college.

SMS (Secondary Male Sample) and SFS (Secondary Female Sample) -- High school non-completers with less than one year of college credit.

PMAS Categories:

College Freshmen & Sophomores -- Currently enrolled as a freshman or sophomore in a four year university or a two or four year college.

H.S. Students [College-Oriented] -- Currently enrolled in regular high school; answered DEFINITELY or PROBABLY when asked if they plan to attend college.

H.S. Students [Work-Oriented] -- Currently enrolled in regular high school; answered DEFINITELY NOT or PROBABLY NOT when asked if they plan to attend college or do not know about college plans or refused to answer.

H.S. Graduates Not Currently Enrolled -- High school diploma graduates not currently taking courses who have not completed more than two years of college.

ROTC Sample:

Male and female youth who have no prior military service and who have not taken college ROTC courses. The sample includes three educational subcategories:

College Juniors and Seniors -- Currently enrolled as a junior or senior in a four year college or university.

College Freshmen and Sophomores -- Currently enrolled as a freshman or sophomore in a two or four year college or university.

H.S. Students [College-Oriented] -- Currently enrolled in a regular high school; answered DEFINITELY or PROBABLY when asked if they plan to attend college.

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ARMY COMMUNICATIONS OBJECTIVES MEASUREMENT SYSTEM (ACOMS): QUARTERLY REPORT, SUMMER 1987

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November 1987

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ARMY COMMUNICATIONS OBJECTIVES MEASUREMENT SYSTEM (ACOMS): QUARTERLY REPORT, SUMMER 1987

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ARMY COMMUNICATIONS OBJECTIVES MEASUREMENT SYSTEM (ACOMS): QUARTERLY REPORT, SUMMER 1987

OVERVIEW OF FINDINGS

Purpose

To provide timely information to Army policymakers and advertising planners regarding key market responses that are expected to be sensitive to changes in the Army's advertising plans.

Methodology

During Summer Quarter 1987 (1 July through 30 September), computer-assisted 30-minute telephone interviews were conducted with 2,743 youth between the ages of 16 and 24. Youth were asked about their education and employment history, career plans, intentions to enlist in the Army, enlistment-related activities undertaken during the prior six months, and what opportunities they regard as important to their future plans. They were also asked about their media habits, recall of military advertising, knowledge and perceptions of the Army and its components, and their attitudes toward Army advertisements. Demographic information was collected and, for selected youth, parental location information was requested for use in parental interviewing.

The quarterly report focuses mainly on males in the Primary Male Analytic Sample (PMAS). The PMAS corresponds to the primary enlisted market and includes youth who have neither served nor been accepted for service in the military; who are either in high school or have a regular high school diploma; who have never taken a college ROTC course; and, who have not yet completed their sophomore year in college. This quarter 1,722 PMAS youth were interviewed. Data are reported by PMAS educational, regional, and age groups. Findings are reported by sex for the Recruiting Market as a whole, including both the primary and secondary enlisted markets. The secondary enlisted market includes high school non-completers and youth with a high school certificate other than a diploma (e.g., GED) who have not yet completed one year of college. Finally, data for youth in the officer market are reported for ROTC perceptions and ROTC-relevant importance items by education, region, age, and sex.

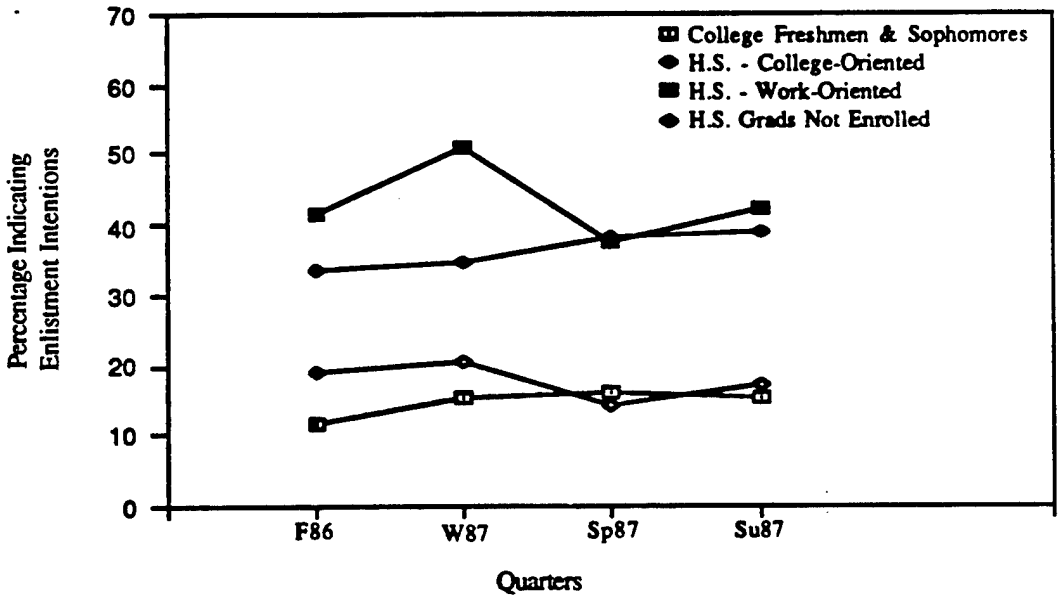
Findings

The overall pattern of results has been very stable between Spring and Summer quarters. However, there were changes in knowledge of the Army's educational benefits and knowledge of Army Reserve and National Guard eligibility requirements.

General Army Findings (All Components)

This quarter's findings are very similar to last quarter for enlistment intentions, behaviors, recall of Army advertising and the Army image.

Enlistment intentions and behaviors. High school students continue to have highest general aided intentions to enlist in the Army. No significant changes from last quarter in intentions to enlist are observed this quarter (see Figure 1). Enlistment-related actions by youth in the primary male enlisted market are also similar to last quarter (see Figure 2). Talking to someone about joining the Army is about twice as likely as talking to an Army recruiter (22.6% and 12.6% respectively). Less likely are taking an Army aptitude test (6.3%), visiting an Army recruiting station (5.7%), and making a toll free call or sending for a free gift (3.1%).



Note. Respondents answering DEFINITELY or PROBABLY to one or more of four questions about their intentions to enlist in the active Army, USAR, ARNG, and ROTC are included in percentage for General Aided Intention.

Figure 1. General Aided Intentions to enlist in the Army by educational groups in the Primary Male Enlisted Market (F86, W87, Sp87, Su87).

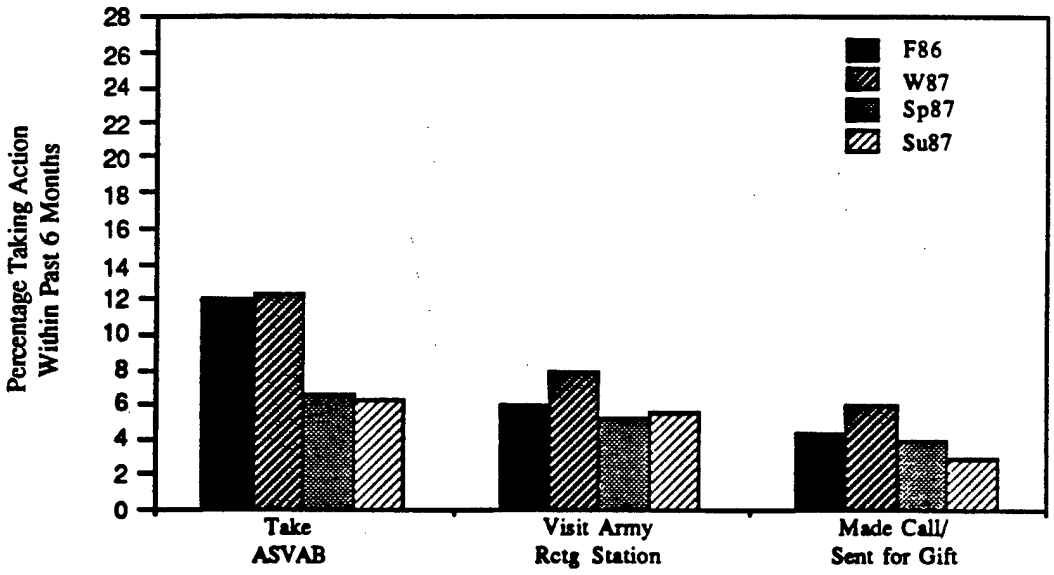
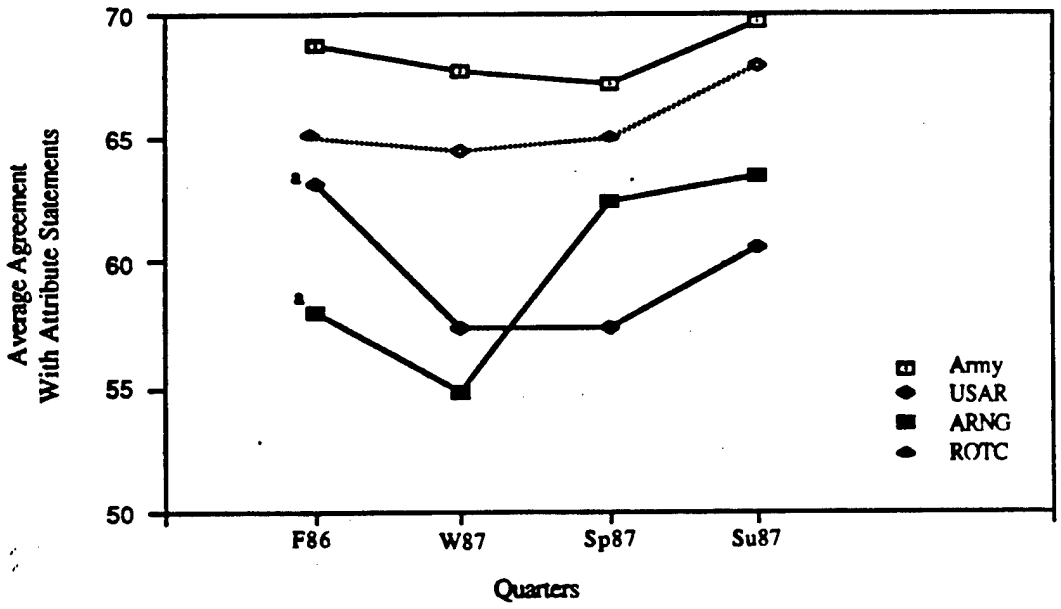


Figure 2. Actions relating to Army Enlistment by youth in the Primary Male Enlisted Market (F86, W87, Sp87, Su87).

The Army image. The Army image is defined in terms of agreement with statements that the Army, the Army Reserve (USAR), the Army National Guard (ARNG), and the Army Reserve Officers' Training Corps (ROTC) offer attributes emphasized in Army advertising. Among youth in the primary male enlisted market, the average percentage of youth agreeing with statements about Army attributes is 69.7% this quarter (see Figure 3). Average percentages agreeing with statements about USAR and ARNG attributes are 60.5% and 63.4% respectively. Among youth in the officer market, an average percentage of 67.9% agree with statements about the ROTC. This quarter's Army image percentages are very similar to those reported last quarter for all four components.



Note. ROTC line is dotted because percentages are for the ROTC Male Sample (Officer Market), not the Primary Male Enlisted Market, and are based on fewer and different attributes than the other components.

[a]Part-time work was not asked this quarter, thus average is computed with 13 rather than 14 attributes.

Figure 3. Army component images among youth in the Primary Male Enlisted Market (F86, W87, Sp87, Su87).

Recall of Army advertising. Again this quarter, a large majority of youth in the primary male enlisted market recall active Army advertising without aid (82.5%)(see Figure 4). Recall of other services' advertising is considerably lower: USMC=66.7%, USAF=66.4%, Navy=59.1%, and JRAP=5.3%. The active Army advertising recall level is also higher than those of the other Army components: ARNG=12.1%, USAR=8.8%, and ROTC=1.6%.

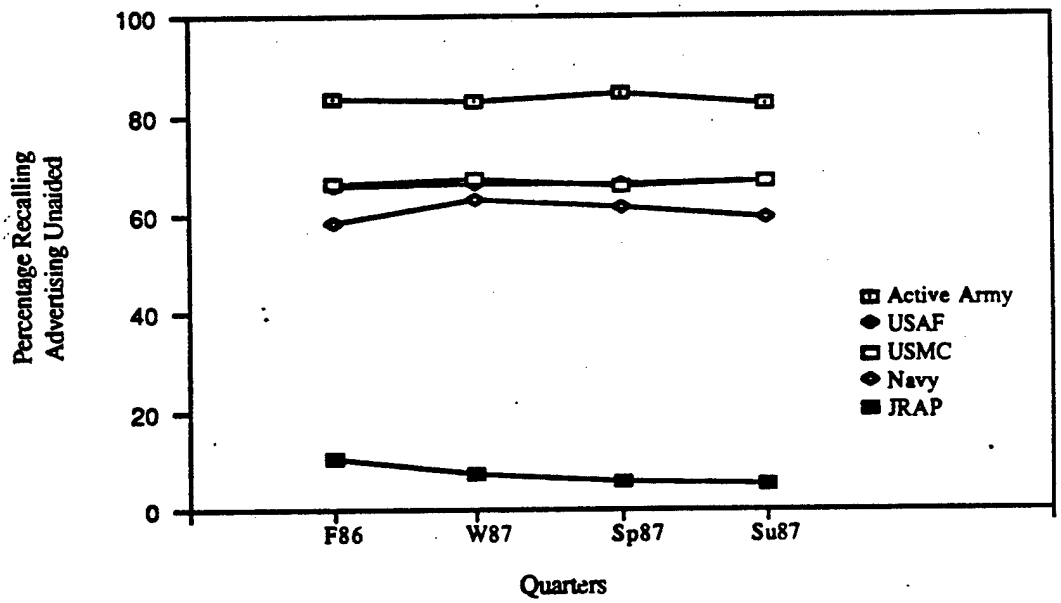


Figure 4. Unaided recall of advertising by youth in the Primary Male Enlistment Market (F86, W87, Sp87, Su87).

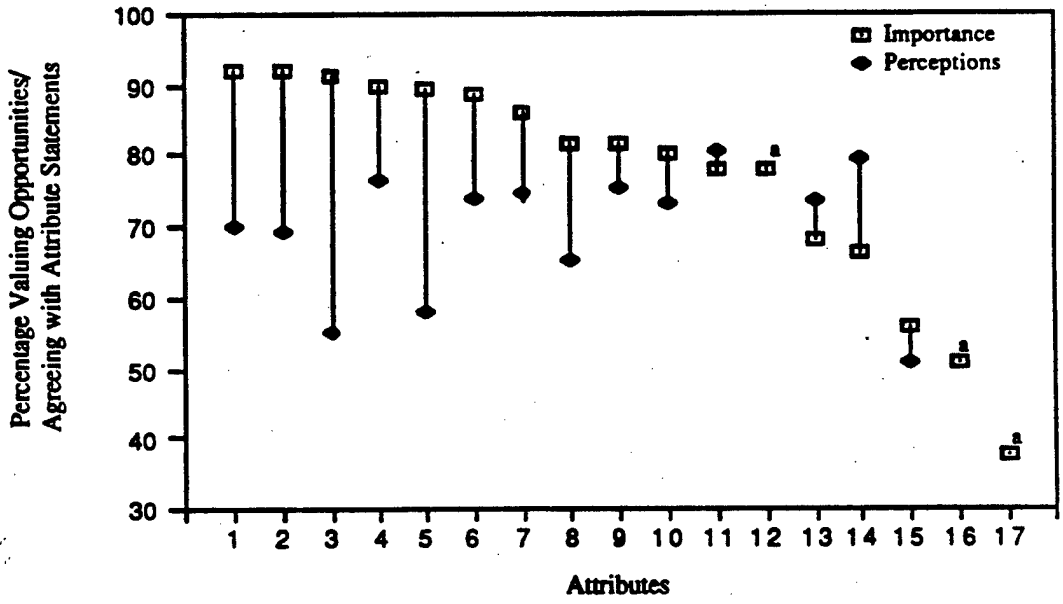
Active Army (Enlisted)

The overall pattern of results for the active Army is stable. However, there were significant shifts in knowledge about the Army's educational benefits.

Enlistment intentions. No significant changes were observed this quarter in the percentages of youth in the primary male enlisted market who said they probably or definitely would enlist in the active Army (15.2%).

Perceptions of opportunities compared to importance of opportunities. As shown in Figure 5, for youth in the primary male enlisted market, the largest gaps between importance of opportunities and perception of them as available in the Army are for developing civilian career and potential, having job variety and an experience to be proud of. The smallest gaps between importance and active Army perceptions are found for opportunities for physical challenge, working with highly-trained co-workers, developing leadership skills and having a stepping stone between high school and college. These findings are similar to those reported last quarter.

Recall and Knowledge. Recall of active Army advertising remains very high. General knowledge of Army offers and benefits also remains high but more specific knowledge (e.g., the total amount of educational benefits) remains considerably lower. Knowledge that the Army's educational benefits are greater than those offered by other services decreased significantly among youth in the primary enlisted market from Spring (16.3% correct) to Summer (11.3% correct).



Key:

1. Develop Potential
2. Proud Experience
3. Civilian Career
4. Mature & Responsible
5. Job Variety
6. Self-Confidence
7. Skill Training
8. Mental Challenge
9. Hi-Trained Co-Workers
10. Leader Skills
11. Physical Challenge
12. Exciting Weekends
13. Money for Ed.
14. Hi-Tech Equipment
15. Step Betwn HS & Col.
16. Live in Hometown
17. Part-time Work

Note. Attributes are presented in descending order of importance to aid interpretation.

[a]This attribute is not asked in the Army perceptions module.

Figure 5. Primary Male Enlisted Market importance-perception gaps for Army attributes.

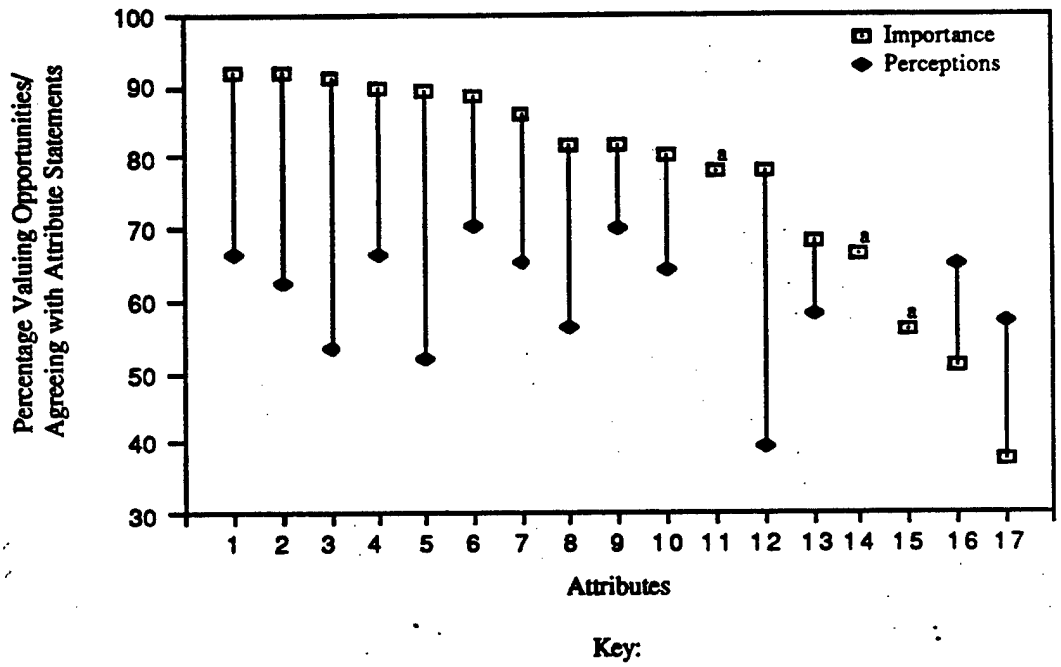
Army Reserve (USAR)

General. In general, the findings pertaining to the USAR are also stable this quarter. However, increases were found in knowledge of USAR and ARNG eligibility requirements.

Enlistment intentions. No significant changes were observed this quarter in the percentage of youth in the primary enlisted market who said they would probably or definitely enlist in the USAR (13.8%).

Perceptions of opportunities compared to importance of opportunities. As shown in Figure 6, the largest gaps between importance of opportunities and perceptions of their availability in the USAR are for having interesting and exciting weekends, developing one's civilian career and having a wide variety of opportunties to find an enjoyable job. Smallest gaps are for opportunities to earn money for education and to work with highly-trained co-workers. Opportunities for part-time work and for serving America while living in one's own hometown are perceived as available in the USAR by larger percentages of youth than the percentages who value these opportunities.

Recall and knowledge. Unaided recall of USAR advertising continues to be low (8.8%) but increases markedly when recall is aided (71.3%). General knowledge that educational money can be earned by enlisting in the USAR and ARNG remains high (85.1%) while specific knowledge of the maximum amount that can be earned continues to be low (6.7%). Knowledge of Army Reserve (USAR) and Army National Guard (ARNG) eligibility requirements increased this quarter among females in the recruiting market (17-year olds eligible: 71.7% vs. 56.5%; high school graduation not required: 84.3% vs. 73.1%).



Key:

1. Develop Potential
2. Proud Experience
3. Civilian Career
4. Mature & Responsible
5. Job Variety
6. Self-Confidence
7. Skill Training
8. Mental Challenge
9. Hi-Trained Co-Workers
10. Leader Skills
11. Physical Challenge
12. Exciting Weekends
13. Money for Ed.
14. Hi-Tech Equipment
15. Step Betwn HS & Col.
16. Live in Hometown
17. Part-time Work

Note. Attributes are presented in descending order of importance to aid interpretation.

[a]This attribute is not asked in the Army Reserve perceptions module.

Figure 6. Primary Male Enlisted Market importance-perception gaps for Army Reserve attributes.

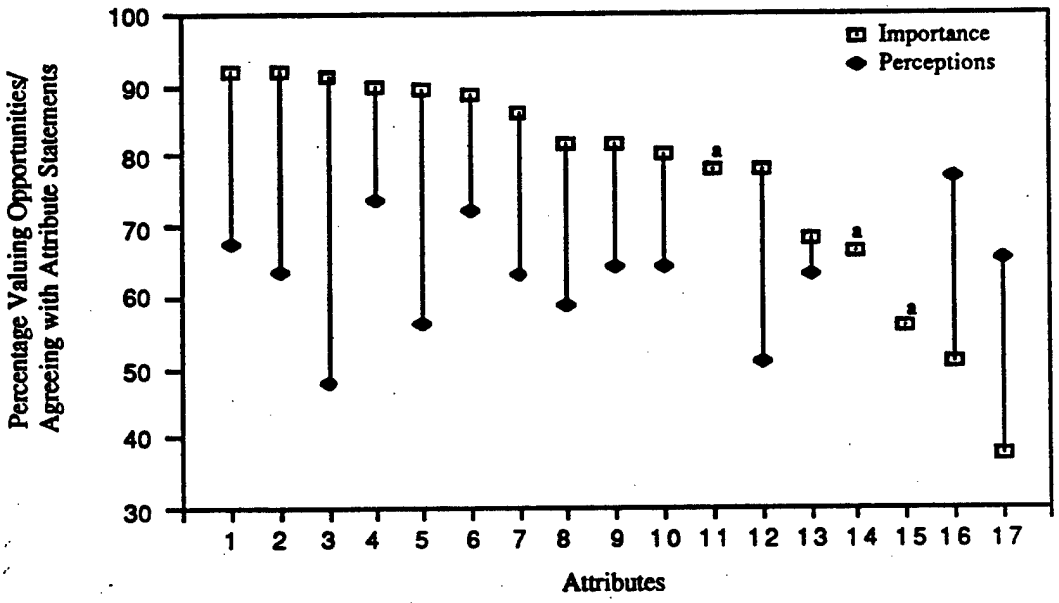
Army National Guard (ARNG)

General. In general, the findings pertaining to the ARNG are also stable this quarter. However, increases were found in knowledge of USAR and ARNG eligibility requirements.

Enlistment intentions. There were no significant changes this quarter in the percentages of youth in the primary enlisted market who said they would probably or definitely enlist in the ARNG (PMAS aided intentions = 11.2%). Unaided intentions, however, were significantly lower this quarter among college-oriented high school students.

Perceptions of opportunities and importance of opportunities. As shown in Figure 7, the largest gaps between importance of opportunities and perceptions that they are available in the ARNG are found for developing one's civilian career, having job variety, exciting weekends, and an experience to be proud of. The smallest gap is observed for earning money for education. Two opportunities, part-time work and serving America while living in one's own hometown, are perceived as available in the ARNG by larger percentages of youth than the percentages considering them important.

Recall and Knowledge. Unaided recall of ARNG advertising remains low (12.1%) but increases substantially when recall is aided (65.1%). General knowledge that educational money can be earned by enlisting in the USAR and ARNG remains high (85.1%) while specific knowledge of the maximum amount that can be earned continues to be low (6.7%). Knowledge of Army Reserve (USAR) and Army National Guard (ARNG) eligibility requirements increased this quarter among females in the recruiting market (17-year olds eligible: 71.7% vs. 56.5%; high school graduation not required: 84.3% vs. 73.1%).



Key:

1. Develop Potential
2. Proud Experience
3. Civilian Career
4. Mature & Responsible
5. Job Variety
6. Self-Confidence
7. Skill Training
8. Mental Challenge
9. Hi-Trained Co-Workers
10. Leader Skills
11. Physical Challenge
12. Exciting Weekends
13. Money for Ed.
14. Hi-Tech Equipment
15. Step Betwn HS & Col.
16. Live in Hometown
17. Part-time Work

Note. Attributes are presented in descending order of importance to aid interpretation.

[a]This attribute is not asked in the Army National Guard perceptions module.

Figure 7. Primary Male Enlisted Market importance-perception gaps for Army National Guard attributes.

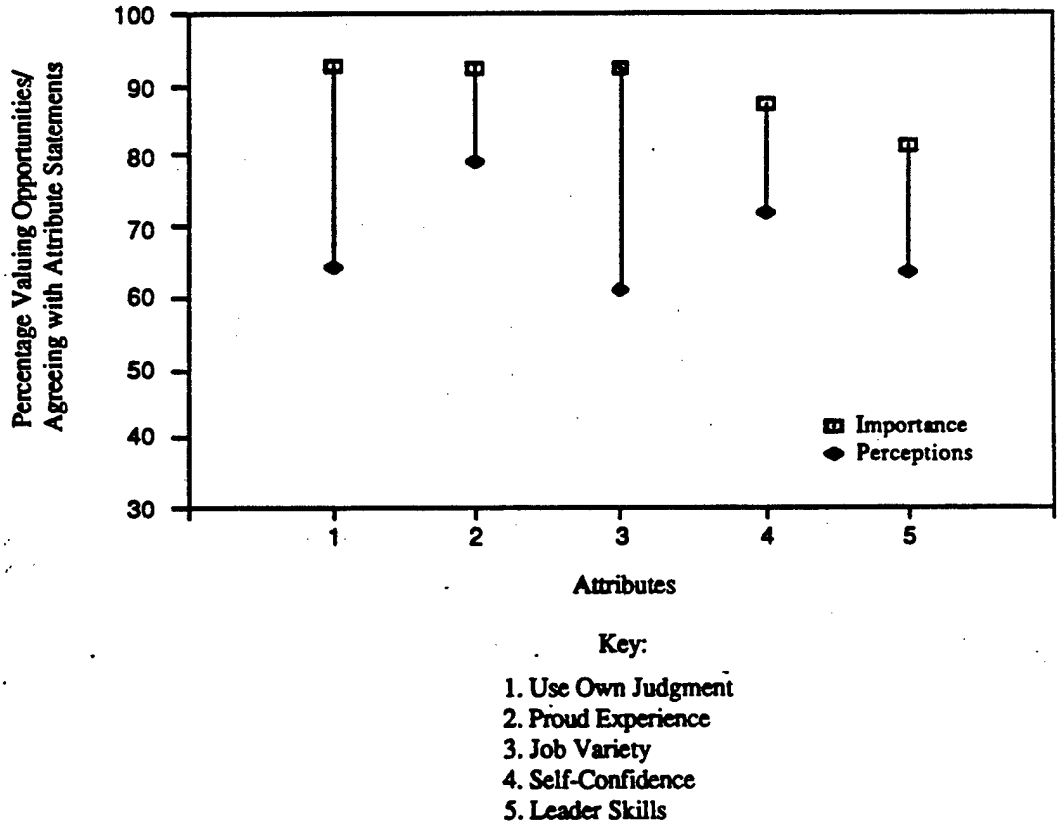
Army Reserve Officers' Training Corps (ROTC)

General. Stable findings also characterize the overall pattern of results for the ROTC this quarter.

Intention to join the ROTC. No significant changes were observed this quarter in the percentages of youth in the officer market who said they would probably or definitely receive an officer's commission through participation in the Army ROTC (15.1%).

Perceptions of opportunities compared to importance of opportunities. As shown in Figure 8, there are importance-perceptions gaps for all of the ROTC-relevant opportunities again this quarter. Largest gaps are observed for opportunities to find job variety and to use one's own judgment. The smallest gap appears for having an experience to be proud of.

Recall and Knowledge. Unaided recall of ROTC advertising continues to be very low (1.6%) but is substantially increased when recall is aided (45.9%). Approximately 70% of youth in the officer market know that ROTC courses can be taken as college electives and that an officer's commission can be earned through participation in the ROTC.



Note. Attributes are presented in descending order of importance to aid interpretation.

Figure 8. ROTC Male Sample (Officer Market) importance-perception gaps for ROTC attributes.

Explaining Spring-Summer Attitude Changes in College Freshmen and Sophomores

Beginning 1 July 1987, recent high school graduates who plan to attend college in the Fall are classified as college freshmen. Prior to this date, they were classified as college-oriented high school students. It is possible that this shift in classification to reflect the school year may underlie some of the quarter-to-quarter changes reported in the Summer quarter report. Thus, any increases or decreases from last quarter among college freshmen and sophomores should be interpreted in light of the classification shift.

Changes on four of the quarterly tables exemplify this issue. College freshmen and sophomores are significantly more likely this quarter than last to have combined aided and unaided recall of active Army advertising (Table C-9). Since high school students typically have somewhat higher recall levels than college students, it is likely that the increase results from the cohort shift. Tables C-2 and C-6 show that college freshmen and sophomores are more likely this quarter than last to value job variety, having an experience to be proud of, using their own judgment, and opportunities to work with high-tech equipment. Again, high school students are typically more likely to value these opportunities than college students so the effect of reclassifying recent college-oriented high school graduates as college freshmen is the most likely explanation of these increases. Finally, Table C-10 shows that college freshmen and sophomores are less likely this quarter than last to know the maximum amount of USAR and ARNG educational benefits. In two of the three previous quarters (Fall 86 and Spring 87), college freshmen and sophomores were more likely than college-oriented high school students to have this information. Thus, the cohort effect seems a likely cause of this decrease.

The Spring to Summer shift in classification of college-oriented high school graduates as college freshmen is an event that will recur each year and that may be expected to contribute to seasonality effects in two ways. Respondents surveyed in the Summer quarter are beginning or about to begin a new school year. When Summer respondents are compared by educational group to Spring respondents, they are being compared to respondents who have just finished that year of school. It may be that as they are assimilated into the college lifestyle, they will become increasingly similar to youth in last year's cohort. On the other hand, there may be differences between the cohorts that continue over time. In future reports, we will continue quarter-to-quarter comparisons but will add comparisons with the same quarter last year to assess the cohort effects.

INTRODUCTION

This report presents data collected from youth respondents to the main interview conducted for ACOMS between July 1 and September 30, 1987. This is the first report for School Year (SY) 87/88. The purpose and structure of quarterly reports are discussed by Keil, Gaertner, and Nieva (1987). Similar reports for the three quarters of data collected in SY 86/87, October 86 through June 87, were made by Keil, Gaertner, Nieva, and Gay (1987) and Keil, Gay, Nieva, and Gaertner (1987).

This report is intended only to convey topline results of important information to be tracked on a routine basis. Analyses of relationships found among the measures and their meaning for improving Army advertising are reported elsewhere (e.g., Nieva, Gaertner, Elig, & Benedict, in preparation).

METHODOLOGY

Respondents

During this quarter of data collection, a total of 2,743 youth interviews were completed. All of the tables in the quarterly report except Table Su-6, Perceptions - Army ROTC, focus on the Army Recruiting Market, a subset of 2,372 of the total youth interviews. Subgroups reported within the Army Recruiting Market and the Primary Male Analytic Sample (PMAS) are listed in Table 1. The composition of the subgroups is shown by number of respondents and the weighted percentage of respondents in each subgroup. Respondents have been weighted to represent the population eligible to be surveyed. (See Mohadjer & Waksberg (in preparation) for procedures and Keil, Gaertner, & Nieva (1987) for sample definitions). Weighted percentages in Table 1 reflect the (estimated) composition of the population of eligibles.

The number of interviews and the weighted percentages in Table 1 are provided as a general guide to sample sizes. It should be noted, however, that the number of interviews and weighted percentages are different for each of the tables containing data from rotating modules (Tables Su-3, Su-4, Su-5, Su-10, and Su-11, for Perceptions of the Army, USAR, and Army National Guard, Knowledge, and Media Habits, respectively).

The sample for Table Su-6, Perceptions - Army ROTC, is quite different because it reflects an Officer Market rather than a Recruiting Market.

Table 1

Summer 1987 Respondents by Market and Market Subgroup Percentages

Sample	Respondents	Weighted Percentage
RECRUITING MARKET (2,372 Respondents)		
Males [PMAS + SMS]	1,987	48.4
Females [PFAS + SFS]	385	51.6
TOTAL PMAS (1,722 Respondents)		
College Freshman and Sophomores	390	23.1
H.S. Students [College-Oriented]	578	28.5
H.S. Students [Work-Oriented]	168	8.9
H.S. Graduates Not Currently Enrolled	586	39.5
1st Rctg Bde	442	24.2
2nd Rctg Bde	308	20.8
4th Rctg Bde	392	20.7
5th Rctg Bde	340	18.5
6th Rctg Bde	240	15.8
16-17 Years Old	718	34.4
18-19 Years Old	459	26.9
20-21 Years Old	222	16.1
22-24 Years Old	323	22.6
OFFICER MARKET : TOTAL ROTC SAMPLE (1,412 Respondents)		
Total ROTC Male Sample	1,181	48.0
Total ROTC Female Sample	231	52.0
OFFICER MARKET: ROTC MALE SAMPLE (1,181 Respondents)		
College Juniors and Seniors	180	24.2
College Freshman and Sophomores	184	34.0
H.S. Students [College-Oriented]	292	41.9
1st ROTC Region	197	31.5
2nd ROTC Region	161	22.5
3rd ROTC Region	164	23.4
4th ROTC Region	134	22.7
16-17 Years Old	289	39.4
18-19 Years Old	150	25.2
20-21 Years Old	131	20.4
22-24 Years Old	86	15.0

Questionnaire

In general, the version of the questionnaire that a respondent receives is determined by the date an interview is conducted. Respondents interviewed on June 30th received the Spring version while those interviewed on July 1st received the Summer version. The Spring and Summer questionnaires can be found in the Users' Manuals (Westat, 1987a, 1987b). The only exceptions occurred when, for any reason, a June interview could not be completed during one telephone call, and the youth was not available to complete the interview until July. These youth received the Spring version of the questionnaire rather than the Summer version of the instrument. A total of 80 respondents in the Recruiting Market, 48 of whom are in the PMAS, were interviewed during Summer quarter using the Spring version of the questionnaire. Their responses are included in the Summer quarter data.

Sample Data

Table 2 shows response rates for household screeners, youth interviews, and a combined rate for samples initiated on 1 July, 1 August, and 1 September. The response rate for household screeners is the percentage of total identified households for which the screening instrument was completed to identify youths eligible for interviewing. The youth response rate is the percentage of youths eligible for interviewing for whom interviews were completed. The combined rate is the product of the household and youth-interview rates.

Table 2

Response Rates for Samples Drawn July, August, and September 1987

	July	August	September
Household Screener	81.31	78.89	85.28
Youth Interview	76.92	75.63	77.20
Combined	62.54	59.66	65.84

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RESULTS AND DISCUSSION

PERCENTAGE WITH INTENTION TO ENLIST IN ARMY COMPONENTS
(Standard Error)

SAMPLE GROUPS	n1	Unaided Intention: General Intention	Unaided Intention: Active Army	Unaided Intention: USAR	Unaided Intention: ARNG	Aided Intention: General Intention	Aided Intention: Active Army	Aided Intention: USAR	Aided Intention: ARNG	n2	Army ROTC
RECRUITING MARKET: MALES [PMAS + SMS]	1,987	2.3 (0.3)	1.5 (0.3)	0.4 (0.1)	0.3 (0.1)	26.9 (1.2)	17.1 (1.2)	14.7 (1.0)	12.6 (1.0)	1,327	16.6 (1.4)
FEMALES [PFAS + SFS]	385	2.2 (1.5)	0.7 (0.6)	0.0 n.e.	1.5 (1.4)	9.8 (2.1)	3.8 (1.1)	5.8 (1.7)	5.6 (2.0)	278	7.9 (2.6)
TOTAL RECRUITING MARKET	2,372	2.2 (0.8)	1.1 (0.4)	0.2 (0.1)	0.9 (0.8)	10.1 (1.2)	10.3 (0.8)	10.1 (1.2)	9.0 (1.2)	1,605	12.0 (1.6)
PMAS: College Freshmen and Sophomores	390	0.6 (0.4)	0.2 (0.2)	0.2 (0.2)	0.2 (0.2)	15.4 (2.1)	9.2 (2.0)	9.4 (1.8)	6.4 (1.5)	387	7.6 (1.4)
N.S. Students [College-Oriented]	578	3.1 (0.9)	2.3 (0.8)	0.7 (0.5)	0.1 (0.1)	39.0 (2.6)	24.8 (2.5)	21.6 (2.3)	16.6 (1.9)	578	23.8 (2.4)
N.S. Students [Work-Oriented]	168	7.2 (2.1)	3.1 (1.8)	2.4 (0.7)	0.7 (0.8)	42.2 (4.7)	31.8 (4.3)	20.7 (3.9)	20.1 (3.9)	0	N/A N/A
N.S. Graduates Not Currently Enrolled	586	1.5 (0.6)	1.2 (0.6)	0.0 n.e.	0.3 (0.3)	17.3 (1.6)	8.1 (1.3)	9.2 (1.2)	8.0 (1.2)	273	10.9 (2.4)
1st Rctg Bde	442	1.4 (0.6)	0.5 (0.3)	0.7 (0.4)	0.2 (0.2)	19.1 (2.1)	8.4 (1.9)	10.4 (1.8)	7.9 (1.7)	315	11.7 (2.4)
2nd Rctg Bde	308	4.0 (1.3)	3.5 (1.3)	0.2 (0.2)	0.0 n.e.	34.5 (3.1)	25.4 (2.3)	20.2 (2.5)	17.9 (2.3)	205	21.5 (4.2)
4th Rctg Bde	392	1.3 (0.6)	0.9 (0.5)	0.5 (0.3)	0.0 n.e.	19.4 (1.9)	11.6 (1.8)	9.2 (1.2)	9.1 (1.4)	275	12.5 (2.5)
5th Rctg Bde	340	3.6 (1.5)	2.2 (0.9)	0.8 (0.7)	0.6 (0.6)	27.7 (3.0)	14.8 (1.8)	14.5 (2.4)	10.9 (1.7)	249	18.1 (2.9)
6th Rctg Bde	240	0.9 (0.7)	0.3 (0.3)	0.0 n.e.	0.7 (0.7)	27.1 (3.8)	18.3 (3.6)	15.6 (3.7)	10.3 (3.0)	194	13.0 (2.7)
16-17 Years Old	718	3.4 (0.7)	2.1 (0.5)	1.1 (0.4)	0.3 (0.3)	37.8 (2.3)	23.6 (2.1)	20.1 (2.1)	16.0 (2.0)	580	21.1 (2.3)
18-19 Years Old	459	2.6 (1.0)	2.0 (1.0)	0.3 (0.3)	0.0 n.e.	23.6 (2.3)	15.1 (2.3)	13.2 (1.8)	10.8 (1.5)	359	12.3 (1.8)
20-21 Years Old	222	0.9 (0.7)	0.0 n.e.	0.0 n.e.	0.9 (0.7)	18.1 (2.9)	10.5 (2.7)	9.7 (2.2)	7.7 (2.0)	139	13.3 (3.6)
22-24 Years Old	323	1.0 (0.8)	1.0 (0.8)	0.0 n.e.	0.0 n.e.	13.2 (2.2)	6.0 (1.7)	7.8 (1.7)	6.8 (1.5)	160	7.4 (2.3)
TOTAL PMAS	1,722	2.3 (0.5)	1.5 (0.3)	0.5 (0.2)	0.3 (0.2)	25.2 (1.2)	15.2 (1.1)	13.8 (0.9)	11.2 (0.9)	1,238	15.1 (1.5)

Note: n.e. indicates standard error is not estimable.
n1 provides case bases for all Unaided Intention Measures and for all Aided Intention Measures except Army ROTC.
n2 provides case bases for Aided Intention - Army ROTC.

TABLE SU-1 INTENTIONS TO ENLIST

Similar to Last Quarter

- High school students continue to have the highest aided general intentions to enlist in the Army among PMAS youth ($p<.05$ for all 4 relevant comparisons).

  - Aided intentions to enlist in all Army components are again higher for high school students than for college freshmen and sophomores or high school graduates not currently enrolled in school ($p<.01$ for all 14 relevant comparisons).

  - Similarly, 16- to 17-year olds are significantly more likely than youth in the other three age groups to have aided intentions to enlist generally and in all Army components ($p<.05$ for 14 of the 15 relevant comparisons, 16- to 17-year olds are not significantly more likely than 20- to 21-year olds to intend to join the ROTC).

- Youth in the 2nd Recruiting Brigade (Southeast) have higher aided intentions to enlist generally and in all Army components than youth in the 1st Recruiting Brigade (Northeast) (Aided general intentions: 34.5% vs. 19.1%, $Z=4.11$, $p<.01$; Active Army: 25.4% vs. 8.4%, $Z=5.70$, $p<.01$; USAR: 20.2% vs. 10.4%, $Z=3.18$, $p<.01$; ARNG: 17.9% vs. 7.9%, $Z=3.50$, $p<.01$; ROTC: 21.5% vs.11.7%, $Z=2.03$, $p<.05$) and the 4th Recruiting Brigade (Midwest) (Aided general intentions: 34.5% vs. 19.4%, $Z=4.15$, $p<.01$; Active Army: 25.4% vs. 11.6%, $Z=4.73$, $p<.01$; USAR: 20.2% vs. 9.2%, $Z=3.97$, $p<.01$; ARNG: 17.9% vs. 9.1%, $Z=3.27$, $p<.01$; ROTC: 21.5 vs. 12.5%, $Z=1.84$, n.s.). Southeastern youth also have higher intentions to enlist in the ARNG than youth in the 5th Recruiting Brigade (Southwest) and 6th Recruiting Brigade (West) (17.9% vs. 10.9%, $Z=2.45$, $p<.05$ and 17.9% vs. 10.3%, $Z=2.01$, $p<.05$, respectively).

- Men continue to be significantly more likely than women to express aided intentions to enlist generally (26.9% vs. 9.8%) ($Z=7.07$, $p<.01$) and in all Army components (Active Army: 17.1% vs. 3.8%, $Z=8.17$, $p<.01$; USAR: 14.7% vs. 5.8%, $Z=4.51$, $p<.01$; ARNG: 12.6% vs. 5.6%, $Z=3.13$, $p<.01$; ROTC: 16.6% vs. 7.9%, $Z=2.95$, $p<.01$).

TABLE SU-1 (continued) INTENTIONS TO ENLIST

Different from Last Quarter

- None of the declines in enlistment intentions noted last quarter continued this quarter.
  - College-oriented high school students are less likely this quarter than last quarter to mention unaided intentions to enlist in the ARNG (0.1% vs. 0.8%) (Z=1.96, p<.05). This is the only significant quarter-to-quarter change observed.

SUMMER - SPRING DIFFERENCES IN
PERCENTAGE WITH INTENTION TO ENLIST IN ARMY COMPONENTS

SAMPLE GROUPS	n1	Unaided Intention: General Intention	Unaided Intention: Active Army	Unaided Intention: USAR	Unaided Intention: ARNG	Aided Intention: General Intention	Aided Intention: Active Army	Aided Intention: USAR	Aided Intention: ARNG	n2	Army ROTC
RECRUITING MARKET: MALES (PMAS + SMS)		-	+	+	-	+	+	+	-		-
FEMALES (PFAS + SFS)		-	-	0	+	-	-	-	-		+
TOTAL RECRUITING MARKET		-	-	+	+	-	-	-	-		+
PMAS: College Freshmen and Sophomores		-	-	+	+	-	+	-	-		-
H.S. Students (College-Oriented)		+	+	-	-1.96	+	+	+	-		+
H.S. Students (Work-Oriented)		+	-	+	+	+	+	-	+		0
H.S. Graduates Not Currently Enrolled		+	+	0	-	+	+	+	+		-
1st Rctg Bde		+	-	+	+	-	-	-	-		-
2nd Rctg Bde		+	+	-	-	-	+	+	-		-
4th Rctg Bde		+	+	+	0	-	+	-	+		+
5th Rctg Bde		-	-	+	-	+	-	-	-		+
6th Rctg Bde		-	-	-	+	+	+	-	-		-
16-17 Years Old		-	-	+	-	-	-	-	-		-
18-19 Years Old		+	+	+	-	+	+	+	-		-
20-21 Years Old		-	-	0	+	+	+	-	-		+
22-24 Years Old		+	+	0	0	-	+	+	-		-
TOTAL PMAS		+	+	+	-	+	+	+	-		-

Note: Numbers are Z-scores for significant quarter-to-quarter differences (i.e., $p < 0.05$; $\pm$ 2 s.e.)
Signs indicate the direction of changes that are not statistically significant.

PERCENTAGE RATING OPPORTUNITIES "IMPORTANT" OR "VERY IMPORTANT" TO PLANS FOR THE NEXT YEAR
(Standard Error)

SAMPLE GROUPS	N	Job Variety	Physical Challenge	Proud Experience	Step Stun HS & Col.	Leader Skills	Hi-Tech Equipment	Civilian Career	Self Confidence	Develop. Potential	Mental Challenge	Mature & Responsible	Skill Training	Hi-Trained Co-Workers	Money for Ed.	Serve Country	Exciting Weekends	Part-Time Work	Live in Hometown
RECRUITING MARKET:																			
MALES (PMAS + SMS)	1,987	88.3 (1.0)	77.9 (1.1)	91.8 (0.8)	53.0 (1.3)	78.6 (1.2)	65.9 (1.4)	90.8 (0.8)	88.7 (0.8)	91.4 (0.8)	79.9 (1.3)	90.1 (0.9)	85.1 (0.9)	88.8 (1.1)	65.6 (1.3)	61.7 (1.3)	78.0 (0.9)	35.5 (1.2)	53.7 (1.8)
FEMALES (PFAS + SFS)	385	94.8 (1.0)	71.9 (3.3)	94.1 (1.4)	64.1 (2.9)	72.3 (2.8)	58.1 (3.2)	90.8 (1.8)	93.7 (1.4)	94.1 (1.4)	83.4 (2.2)	92.8 (1.6)	87.9 (2.0)	84.2 (2.8)	71.1 (3.1)	52.1 (2.8)	67.3 (3.3)	48.4 (3.0)	51.8 (3.4)
TOTAL RECRUITING MARKET	2,372	91.3 (0.7)	76.8 (1.0)	93.0 (0.8)	56.7 (1.6)	75.3 (1.6)	61.9 (1.7)	90.4 (1.0)	91.2 (0.6)	92.8 (0.8)	81.7 (1.3)	91.0 (1.0)	85.1 (1.1)	87.4 (1.4)	68.4 (1.8)	56.8 (1.5)	76.5 (1.0)	42.1 (1.6)	52.9 (1.9)
PMAS:																			
College Freshmen and Sophomores	390	94.9 (1.1)	80.4 (2.3)	92.6 (1.5)	53.2 (3.0)	82.8 (2.1)	65.8 (2.5)	92.3 (1.3)	87.6 (1.9)	92.9 (1.3)	89.3 (2.0)	88.8 (2.0)	84.6 (2.1)	83.4 (2.2)	77.4 (2.7)	58.1 (2.8)	76.6 (2.7)	41.7 (3.1)	41.8 (2.9)
N.S. Students (College-Oriented)	578	92.8 (1.2)	79.2 (2.4)	94.5 (1.0)	70.9 (2.0)	82.9 (2.1)	69.2 (2.3)	92.5 (1.3)	88.2 (1.3)	91.1 (1.3)	79.1 (2.2)	91.9 (1.3)	86.2 (1.7)	85.1 (1.8)	84.4 (1.9)	69.3 (2.4)	77.2 (2.0)	53.3 (2.4)	46.7 (2.6)
N.S. Students (Work-Oriented)	168	87.2 (3.9)	78.8 (3.7)	90.3 (3.1)	57.9 (5.0)	71.7 (4.6)	48.2 (4.6)	84.5 (3.6)	85.9 (2.9)	88.8 (3.1)	72.5 (4.2)	90.8 (3.0)	84.8 (3.1)	78.2 (4.4)	58.4 (4.7)	71.5 (4.6)	77.3 (3.4)	42.8 (4.9)	51.9 (4.5)
N.S. Graduates Not Currently Enrolled	586	84.3 (1.9)	75.8 (2.8)	90.8 (1.4)	46.1 (2.4)	78.2 (2.1)	63.9 (2.7)	91.8 (1.3)	90.5 (1.6)	93.5 (1.4)	80.7 (1.8)	89.3 (1.5)	87.5 (1.7)	78.6 (2.8)	53.8 (2.8)	56.4 (2.6)	79.3 (1.7)	23.1 (1.9)	59.2 (3.0)
1st Rctg Bde	442	88.7 (1.5)	81.9 (2.2)	90.2 (1.8)	55.6 (2.7)	76.3 (2.3)	59.5 (3.2)	91.3 (1.6)	88.2 (1.6)	91.9 (1.6)	79.5 (2.5)	89.4 (1.7)	86.6 (1.4)	79.4 (1.8)	68.2 (3.2)	57.1 (2.8)	79.1 (2.4)	41.6 (3.3)	51.8 (3.5)
2nd Rctg Bde	308	90.9 (1.9)	76.3 (3.2)	93.6 (1.6)	61.4 (3.8)	80.6 (3.7)	68.6 (3.0)	92.7 (1.7)	90.5 (2.0)	91.3 (1.8)	78.3 (2.9)	90.6 (2.2)	85.7 (2.7)	85.1 (2.9)	69.8 (3.0)	67.8 (2.8)	79.7 (2.2)	39.9 (4.3)	58.7 (4.5)
4th Rctg Bde	392	88.1 (2.2)	78.1 (2.1)	92.8 (1.4)	58.4 (2.7)	79.2 (2.2)	67.9 (2.8)	90.5 (1.4)	88.2 (2.0)	93.2 (1.2)	85.2 (2.4)	87.9 (1.9)	84.2 (2.3)	82.4 (2.2)	67.5 (3.1)	56.4 (3.0)	78.2 (2.6)	48.1 (3.4)	47.4 (3.1)
5th Rctg Bde	340	92.5 (1.7)	77.9 (2.9)	93.4 (1.7)	54.7 (3.1)	85.1 (2.8)	65.8 (3.1)	90.8 (2.1)	92.6 (1.6)	93.4 (1.8)	83.3 (1.9)	93.8 (1.6)	87.6 (2.5)	88.4 (3.1)	68.3 (3.3)	64.4 (3.5)	76.9 (3.3)	33.1 (3.3)	52.5 (3.7)
6th Rctg Bde	240	86.9 (3.4)	77.4 (4.1)	91.4 (2.3)	57.7 (4.3)	80.3 (2.9)	72.9 (2.7)	91.2 (2.3)	85.4 (2.7)	91.1 (2.3)	81.9 (3.0)	89.3 (2.0)	87.6 (2.9)	88.4 (3.1)	68.1 (3.5)	65.3 (4.1)	76.1 (2.9)	31.7 (3.4)	52.8 (4.4)
16-17 Years Old	718	92.6 (1.2)	79.2 (1.9)	94.2 (1.0)	67.6 (1.9)	81.5 (1.6)	68.0 (1.9)	91.5 (1.2)	88.8 (1.2)	91.8 (1.2)	78.3 (2.0)	92.8 (1.1)	87.1 (1.4)	84.2 (1.6)	78.7 (1.8)	69.8 (1.9)	78.4 (1.6)	52.3 (2.3)	46.5 (2.4)
18-19 Years Old	459	91.4 (1.6)	78.5 (2.2)	91.7 (1.5)	56.5 (2.6)	79.3 (2.5)	68.1 (2.5)	91.3 (1.6)	86.8 (1.9)	91.5 (1.7)	82.7 (2.2)	88.8 (1.8)	85.8 (1.8)	79.4 (1.9)	72.9 (2.6)	62.8 (2.7)	75.8 (2.4)	43.8 (2.8)	48.8 (3.0)
20-21 Years Old	222	90.3 (2.1)	79.6 (3.4)	89.6 (2.3)	50.8 (3.5)	82.6 (3.0)	66.6 (3.9)	91.4 (2.1)	91.3 (2.1)	94.5 (1.5)	85.8 (2.6)	92.3 (1.7)	90.6 (1.9)	86.8 (2.3)	67.3 (4.3)	59.2 (3.8)	77.8 (3.6)	24.8 (3.5)	51.1 (4.8)
22-24 Years Old	323	81.6 (2.7)	74.6 (3.8)	91.7 (1.9)	41.8 (3.6)	77.8 (2.7)	61.1 (3.2)	90.3 (1.9)	89.3 (2.4)	93.2 (1.7)	82.4 (2.8)	86.4 (2.2)	83.2 (2.5)	76.2 (2.9)	48.8 (3.8)	50.4 (3.2)	80.1 (2.6)	18.5 (2.7)	60.4 (3.4)
TOTAL PMAS	1,722	89.6 (1.8)	78.8 (1.3)	92.2 (0.8)	55.9 (1.3)	80.1 (1.4)	66.3 (1.5)	91.2 (0.8)	88.8 (0.8)	92.2 (0.7)	81.5 (1.2)	90.8 (0.8)	86.2 (0.8)	81.5 (1.1)	68.4 (1.4)	61.8 (1.3)	77.9 (1.0)	37.7 (1.4)	50.8 (1.9)

TABLE SU-2 IMPORTANCE OF ATTRIBUTES

Similar to Last Quarter

- Again this quarter, a majority of youth (80%-95%) in all sample groups consider career and self-development opportunities important. The attributes most likely to be valued are having experiences to be proud of, having opportunities for developing potential, maturity, self-confidence, and having opportunities for job variety and career development.
  - Those opportunities least likely to be considered important (20%-65%) are living in one's own hometown, having a stepping-stone between high school and college, and working part-time.
- Differences among educational groups for two college-related opportunities, earning money for education and having a stepping-stone between high school and college, remain stable.
  - College-oriented high school students are most likely to value the opportunity to earn money for education. They are significantly more likely to value this opportunity than college freshmen and sophomores (84.4% vs. 77.4%)(Z=2.12, p<.05), work-oriented high school students (84.4% vs. 58.4%) (Z=5.13, p<.01), and high school graduates who are not currently enrolled in school (84.4% vs. 53.8%) (Z=9.04, p<.01).
  - College freshmen and sophomores are also significantly more likely than work-oriented high school students (77.4% vs. 58.4%) (Z=3.51, p<.01) and high school graduates not currently enrolled (77.4% vs. 53.8%) (Z=6.07, p<.01) to value earning money for education.
    - College-oriented high school students are again more likely than those who are work-oriented to value having a stepping-stone between high school and college (70.9% vs. 57.9%) (Z=2.41, p<.05). They are also significantly more likely to value it than college freshmen and sophomores (70.9% vs. 53.2%) (Z=4.91, p<.01) and high school graduates not enrolled in school (70.9% vs. 46.1%) (Z=7.94, p<.01).
- The percentage of PMAS youth who value the opportunity to serve American while living in their own hometowns (50.8%) is similar to last quarter (47.8%). Educational and age differences in the likelihood of valuing this opportunity are also similar to those reported last quarter.
- The likelihood of valuing some opportunities varies by sex of respondents.
  - Females are more likely than males to value job variety (94.0% vs. 88.3%) (Z=4.03, p<.01), a stepping-stone between high school and college (64.1% vs. 53.0%) (Z=3.49, p<.01), gaining self-confidence (93.7% vs. 88.7%) (Z=3.10, p<.01), and part-time work (48.4% vs. 35.5%) (Z=3.99, p<.01).

- Males are more likely than females to value developing leadership skills (78.6% vs. 72.3%) (Z=2.07, p<.05), using high-tech equipment (65.9% vs. 58.1%) (Z=2.23, p<.05), serving the country (61.7% vs. 52.1%) (Z=3.11, p<.01), and having exciting weekends (78.0% vs. 67.3%) (Z=3.13, p<.01).

Different from Last Quarter

- Table C-2 (Summer-Spring changes) contains an overall pattern of increases in importance items from last quarter. 86% of all changes shown in the table are positive and 32 of the 36 significant changes (not including Total rows) are positive. This contrasts with the Winter-Spring comparisons when approximately 80% of the changes were negative.

  - The greatest numbers of significant increases occurred for opportunities for career development (p<.05 for 8 of the 17 comparisons in the column) and having an experience to be proud of (p<.05 for 7 of the 17 comparisons). Last quarter, it was these two opportunities that showed the greatest numbers of significant decreases.

  - Last quarter, work-oriented high school students decreased in likelihood of valuing 8 of the 18 opportunities. This quarter, there are no significant changes for this group.

  - Last quarter, 18- to 19-year olds showed significant decreases in likelihood of valuing 3 of the 18 opportunities. This quarter, significant increases are shown for 3 opportunities though only one, having an experience to be proud of, was among those that decreased last quarter.

  - The likelihood of valuing job variety, having an experience to be proud of, and working with high-tech equipment increased significantly among college freshmen and sophomores this quarter (p<.05 for all three comparisons). However, it should be noted that this group now includes recent high school graduates who plan to attend college in the Fall, youth who last quarter were classified as college-oriented high school students. Since high school students are typically more likely to value these opportunities than college students, the increases are likely the result of adding the new cohort to the college freshmen and sophomores group.

- College-oriented high school students are more likely than those who are work oriented to value civilian career development (92.5% vs. 84.5%) (Z=2.09, p<.05), earning money for education (84.4% vs. 58.4%) (Z=9.04, p<.01), a stepping-stone between high school and college (70.9% vs. 57.9%) (Z=2.41, p<.05), and developing leadership skills (82.9% vs. 71.7%) (Z=2.21, p<.05). This quarter, the two high school student groups do not differ significantly on four opportunities that were significantly different last quarter: job variety, physical challenge, proud experience, and mental challenge.

SUMMER - SPRING DIFFERENCES IN
PERCENTAGE RATING OPPORTUNITIES "IMPORTANT" OR "VERY IMPORTANT" TO PLANS FOR THE NEXT YEAR

SAMPLE GROUPS	D	Job Variety	Physical Challenge	Proud Experience	Step Stun HS & Col.	Leader Skills	Hi-Tech Equipment	Civilian Career	Self Confidence	Develop Potential	Mental Challenge	Mature & Responsible	Skill Training	Hi-Trained Co-Workers	Money for Ed.	Serve Country	Exciting Weekends	Part-Time Work	Live in Hometown
RECRUITING MARKET:																			
MALES (PMAS + SMS)		+	+	+2.34	+	+	+2.69	+3.64	+2.57	+	+	+2.96	+	+	+	+2.55	+2.41	-2.56	+
FEMALES (PFAS + SFS)		+	+	+	+	+	+	+	+	+	-	+	+	+	+	+	+	+	+
TOTAL RECRUITING MARKET		+	+	+2.32	+	+	+	+2.98	+2.16	+	-	+	+	+	+	+	+	-	+
PMAS:																			
College Freshman and Sophomores		+2.73	+	+3.11	+	+	+2.36	+	+	+	+	+	+	+	+	+	+	-2.21	+
H.S. Students (College-Oriented)		-	-	+	+2.84	+	+	+2.28	+	+	-	+	+	+	+	+	+	-	+
H.S. Students (Work-Oriented)		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	-	-
H.S. Graduates Not Currently Enrolled		+	+	+	+	+	+	+2.58	+	+	-	+	+	+	+	+	+	+	+
1st Rctg Bde		+	+2.72	+	+	-	+	+	+	+	+2.43	+	+	+2.36	+	+	+	-	+
2nd Rctg Bde		+	-	+2.18	+2.26	+	+	+2.31	+	+	-	+	+	+	+	+	+	+	-
4th Rctg Bde		+	+	+	+	+	+2.60	+2.73	+	+	+	+	+	+	+	+	+	-	+
5th Rctg Bde		-	-	+	-	+2.11	-	-	+	+	+	+	+	+	-	+	+	-2.96	+
6th Rctg Bde		+	+	+	+	+	+2.87	+	-	-	-	+	+	+	+	+	+	-	+
16-17 Years Old		+	+	+2.15	+2.75	+	+	+2.25	+	+	+	+2.86	+	+	+	+	+	-	+
18-19 Years Old		+	+	+2.10	-	+	+2.65	+	+	+	+	+	+	+	+	+2.21	+	-	+
20-21 Years Old		+	+	-	+	+	+	+	+	+	+	+	+	+2.05	+	+	-	-2.53	-
22-24 Years Old		+	+	+	+	+	+	+	+	+	+	+	-	+	+	-	+3.01	-	+
TOTAL PMAS		+	+	+2.61	+	+2.15	+2.12	+3.24	+2.32	+2.08	+	+3.13	+	+2.12	+	+2.32	+2.67	-2.16	+

Note: Numbers are Z-scores for significant quarter-to-quarter differences (i.e., $p < 0.05$; $\pm$ 2 s.e.)
Signs indicate the direction of changes that are not statistically significant.

PERCENTAGE "AGREE" OR "STRONGLY AGREE" WITH ACTIVE ARMY ATTRIBUTE STATEMENTS
(Standard Error)

SAMPLE GROUPS	n	Job Variety	Physical Challenge	Proud Experience	Step Stun HS & Col.	Leader Skills	Hi-Tech Equipment	Civilian Career	Self Confidence	Develop Potential	Mental Challenge	Mature & Responsible	Skill Training	Hi-Trained Co-Workers	Money for Ed.
RECRUITING MARKET:															
MALES (PMAS + SMS)	1,861	59.6 (1.3)	79.9 (1.1)	70.6 (1.4)	52.3 (1.5)	73.1 (1.4)	79.6 (1.0)	56.1 (1.2)	74.8 (1.3)	70.9 (1.1)	66.8 (1.2)	77.4 (1.2)	74.4 (1.2)	75.5 (1.5)	74.2 (1.3)
FEMALES (PFAS + SFS)	351	60.9 (3.5)	77.4 (2.9)	70.3 (3.1)	53.8 (3.7)	72.8 (3.3)	77.6 (2.9)	56.4 (3.7)	70.3 (3.3)	72.4 (3.2)	69.1 (2.7)	76.2 (2.8)	77.6 (2.5)	74.6 (2.8)	73.8 (3.1)
TOTAL RECRUITING MARKET	2,212	59.8 (1.9)	78.8 (1.7)	70.4 (1.6)	53.1 (1.9)	73.0 (1.8)	78.6 (1.5)	56.3 (2.0)	72.9 (1.8)	71.6 (1.7)	67.9 (1.5)	76.8 (1.6)	76.0 (1.4)	75.1 (1.5)	74.0 (1.7)
PMAS:															
College Freshmen and Sophomores	264	44.5 (3.8)	84.8 (2.5)	67.1 (3.7)	37.5 (3.3)	72.2 (4.0)	77.0 (3.7)	46.0 (3.1)	73.2 (3.7)	64.8 (3.3)	55.6 (3.1)	72.8 (3.8)	67.3 (3.5)	67.3 (4.0)	67.4 (3.6)
H.S. Students (College-Oriented)	578	68.4 (2.2)	81.9 (1.9)	76.3 (2.2)	56.4 (2.6)	75.6 (2.2)	81.7 (2.0)	60.7 (2.6)	78.0 (1.8)	76.9 (1.9)	65.8 (2.5)	81.0 (1.9)	79.4 (2.1)	81.0 (1.9)	78.9 (2.0)
H.S. Students (Work-Oriented)	168	69.5 (3.9)	72.4 (4.5)	73.0 (3.2)	65.2 (4.5)	72.3 (4.4)	73.5 (4.3)	63.8 (4.5)	78.0 (4.5)	72.8 (4.3)	74.7 (4.1)	81.5 (3.6)	77.4 (3.8)	78.6 (4.1)	75.6 (3.8)
H.S. Graduates Not Currently Enrolled	586	57.4 (2.6)	78.1 (2.4)	64.6 (2.4)	53.3 (2.4)	72.3 (2.2)	81.3 (1.8)	55.6 (2.5)	72.6 (2.4)	68.5 (2.0)	69.3 (2.5)	74.9 (1.9)	76.1 (2.1)	76.5 (2.0)	73.6 (2.3)
1st Rctg Bde	403	55.9 (3.0)	80.2 (2.0)	64.0 (1.8)	48.4 (2.5)	71.6 (2.6)	75.3 (2.5)	47.8 (2.6)	70.1 (3.0)	66.0 (3.0)	58.2 (3.1)	74.7 (2.3)	70.1 (2.3)	72.0 (3.1)	66.8 (3.1)
2nd Rctg Bde	290	65.3 (3.0)	81.9 (3.7)	79.3 (3.2)	57.1 (3.7)	80.2 (2.8)	87.8 (1.9)	67.6 (4.3)	75.5 (3.5)	74.8 (3.5)	74.1 (3.3)	78.9 (3.3)	78.1 (3.4)	82.4 (3.1)	78.8 (2.3)
4th Rctg Bde	365	56.4 (3.3)	80.1 (2.3)	67.3 (3.5)	49.6 (3.0)	71.2 (2.9)	77.0 (3.1)	51.5 (3.3)	73.7 (3.9)	67.8 (2.7)	64.5 (3.4)	72.5 (3.0)	70.8 (2.8)	69.5 (3.8)	75.5 (3.1)
5th Rctg Bde	318	63.5 (3.4)	79.0 (2.2)	70.4 (2.9)	55.0 (3.9)	75.1 (3.1)	82.0 (2.6)	59.2 (2.9)	75.1 (2.7)	71.4 (2.9)	72.4 (2.8)	78.9 (2.6)	80.2 (2.4)	78.9 (3.2)	76.2 (2.9)
6th Rctg Bde	220	48.3 (5.1)	80.9 (3.5)	65.3 (4.5)	44.8 (3.9)	67.4 (5.0)	76.4 (3.6)	51.0 (4.0)	77.1 (3.9)	72.5 (3.8)	57.6 (4.2)	79.0 (3.2)	76.6 (3.2)	76.0 (3.2)	71.8 (4.5)
16-17 Years Old	701	68.8 (1.8)	80.8 (1.8)	74.0 (2.2)	56.7 (2.1)	74.2 (1.9)	80.0 (2.0)	60.1 (2.3)	75.3 (1.7)	76.2 (2.0)	66.9 (2.5)	80.3 (1.9)	78.7 (1.7)	79.3 (1.9)	78.4 (1.8)
18-19 Years Old	389	54.8 (3.1)	85.1 (2.2)	69.7 (2.8)	43.8 (3.1)	74.4 (2.6)	81.0 (2.4)	55.2 (3.0)	76.0 (2.8)	69.2 (3.0)	65.4 (2.7)	77.8 (2.5)	73.0 (2.6)	74.5 (2.8)	72.8 (2.7)
20-21 Years Old	203	56.5 (4.4)	76.8 (3.8)	65.7 (3.2)	53.5 (3.9)	71.8 (3.3)	81.9 (2.9)	49.5 (4.0)	71.4 (3.3)	69.4 (3.6)	62.9 (4.3)	73.1 (3.8)	70.5 (3.6)	75.5 (3.7)	72.8 (4.0)
22-24 Years Old	303	47.4 (3.8)	79.3 (2.9)	64.0 (3.6)	50.2 (3.7)	71.2 (4.0)	75.6 (3.3)	52.0 (3.4)	71.4 (3.6)	63.2 (3.5)	64.1 (3.5)	71.9 (3.3)	74.3 (3.1)	71.1 (3.9)	68.0 (3.6)
TOTAL PMAS	1,596	58.8 (1.4)	80.4 (1.1)	69.2 (1.5)	51.0 (1.5)	73.2 (1.4)	79.6 (1.2)	55.2 (1.4)	74.0 (1.3)	70.2 (1.4)	68.8 (1.3)	76.5 (1.3)	76.8 (1.2)	75.5 (1.5)	73.6 (1.4)

TABLE SU-3 PERCEPTIONS - ACTIVE ARMY

Similar to Last Quarter

- PMAS youth are most likely to agree that the Army provides opportunities for physical challenge (80.4%), for working with high-tech equipment (79.6%), and for becoming more mature and responsible (76.5%).

- PMAS youth are least likely to agree that the Army offers an advantage over going right from high school to college (51.0%), value in civilian career development (55.2%), and a wide variety of opportunities to find an enjoyable job (58.0%).

- Youth in the 2nd Recruiting Brigade (Southeast) are more likely than youth in the 1st Recruiting Brigade (Northeast), 4th Recruiting Brigade (Midwest) and 6th Recruiting Brigade (West) to agree that the Army offers value in civilian career development, highly trained co-workers (comparison between 2nd Recruiting Brigade and 6th Recruiting Brigade is not statistically significant), opportunities for learning leadership skills, working with high-tech equipment and mental challenge ($p<.05$ for all comparisons except the one indicated).

- Decreases in likelihood of agreement occur with increasing age for statements that the Army offers job variety, an experience to be proud of, a value in civilian career development, money for education, and opportunities for becoming more mature and responsible and for developing one's potential ($p<.05$ for all comparisons of 16- to 17-year olds with 22- to 24-year olds).

TABLE SU-3 (continued) PERCEPTIONS - ACTIVE ARMY

Different from Last Quarter

- PMAS educational groups exhibit very few differences in perceptions of the Army this quarter.
  - There are no significant differences between college-oriented and work-oriented high school students' perceptions of the Army this quarter.
  - College freshmen and sophomores tend to be significantly less likely than high school students to agree that the Army offers job variety, an experience to be proud of (comparison of work-oriented high school students to college freshmen and sophomores is not statistically significant), a stepping-stone between high school and college, value in civilian career development, mental challenge, skills training, and highly trained co-workers ($p<.05$ on all comparisons except the one indicated).
  - High school students are also more likely than high school graduates who are not currently enrolled to agree that the Army offers job variety, a stepping-stone between high school and college (comparison between college-oriented high school students and non-enrolled high school graduates is not statistically significant), and an experience to be proud of ($p<.05$ on all comparisons except the one indicated).

Table C-3

SUMMER · SPRING DIFFERENCES IN
PERCENTAGE "AGREE" OR "STRONGLY AGREE" WITH ACTIVE ARMY ATTRIBUTE STATEMENTS

SAMPLE GROUPS	n	Job Variety	Physical Challenge	Proud Experience	Step Btwn HS & Col.	Leader Skills	Hi-Tech Equipment	Civilian Career	Self Confidence	Develop Potential	Mental Challenge	Mature & Responsible	Skill Training	Hi-Trained Co-Workers	Money for Ed.
RECRUITING MARKET:															
MALES (PMAS + SMS)		+	+	+2.83	+2.55	+	+	+2.03	+	+2.11	+	+2.29	+	+	+
FEMALES (PFAS + SFS)		-	-2.30	-	+	-	+	+	-	-	-	-	-	-	-
TOTAL RECRUITING MARKET		-	-	-	+	-	+	+	-	+	-	+	+	-	-
PMAS:															
College Freshmen and Sophomores		+	+	+	+	+	+	+	+	+	+	+	+	+	+
H.S. Students (College-Oriented)		+	+	+	+2.71	-	+	+	+	+2.06	-	+	+	+2.40	+
H.S. Students (Work-Oriented)		-	-	+	+	-	-	-	-	+	+	+	-	-	+
H.S. Graduates Not Currently Enrolled		+	-	+	+	+	+	+2.08	+	+	+	+	+	+	+
1st Rctg Bde		+	-	-	+2.31	+	-	+	-	+	-	+	-	+	-
2nd Rctg Bde		+	+	+	+	+	+2.40	+	+	+	+	+	+	+	+
4th Rctg Bde		+	+	+	+	-	+	+	+	+	-	+	-	+	+
5th Rctg Bde		+	-	-	+	-	+	+	-	-	+	-	+	+	+
6th Rctg Bde		-	+	+	-	-	+	-	+2.10	+	-	+	+2.19	+	+
16-17 Years Old		+	-	+	+2.80	-	+	+	-	+	-	+	+	+	+
18-19 Years Old		+	+2.10	+	+	+	+	+	+2.19	+	+	+	+	+	-
20-21 Years Old		+	-	+	+	+	+	+	-	+	-	+	+	+	+
22-24 Years Old		-	+	+	+	+	+	+	+	-	+	+	+	+	-
TOTAL PMAS		+	+	+	+2.61	+	+1.99	+	+	+	-	+	+	+	+

Note: Numbers are Z-scores for significant quarter-to-quarter differences (i.e., $p < 0.05$; $\pm$ 2 s.e.)
Signs indicate the direction of changes that are not statistically significant.

PERCENTAGE "AGREE" OR "STRONGLY AGREE" WITH ARMY RESERVE ATTRIBUTE STATEMENTS
(Standard Error)

SAMPLE GROUPS	n	Job Variety	Proud Experience	Leader Skills	Civilian Career	Self Confidence	Develop Potential	Mental Challenge	Mature & Responsible	Skill Training	Hi-Trained Co-Workers	Money for Ed.	Exciting Weekends	Part-Time Work	Live in Hometown
MALES (PMAS + SMS)	293	52.9 (4.7)	63.5 (4.9)	67.8 (4.3)	55.8 (3.9)	70.4 (3.1)	68.8 (3.6)	60.4 (4.1)	70.2 (4.1)	64.5 (3.9)	71.4 (4.2)	59.6 (4.7)	39.3 (4.2)	57.5 (4.4)	62.6 (4.8)
FEMALES (PFAS + SFS)	53	58.3 (10.9)	47.2 (13.2)	63.9 (11.2)	60.7 (10.7)	63.3 (10.5)	64.2 (10.8)	47.4 (11.6)	57.8 (11.5)	63.3 (11.0)	69.7 (11.0)	67.8 (11.5)	34.6 (12.0)	54.8 (11.5)	58.9 (11.4)
TOTAL RECRUITING MARKET	346	55.5 (5.6)	59.8 (6.8)	65.5 (5.9)	57.7 (5.3)	67.8 (5.1)	66.2 (5.6)	54.2 (6.3)	63.9 (6.1)	64.8 (5.4)	70.6 (5.7)	63.1 (5.5)	37.1 (6.1)	55.9 (5.6)	60.8 (5.7)
TOTAL PMAS	263	51.9 (5.8)	62.3 (5.1)	64.6 (4.6)	53.3 (4.6)	70.4 (3.8)	66.6 (4.8)	56.5 (4.5)	66.5 (4.9)	65.2 (4.2)	70.8 (4.7)	58.8 (5.1)	39.4 (4.3)	57.1 (4.3)	64.9 (4.8)

Similar to Last Quarter

- The strength of the Army Reserve brand image continues to be moderate. Agreement with statements about the Army Reserve by PMAS youth ranges from approximately 40% to 70%.
- PMAS youth are most likely to agree that the Army Reserve offers the opportunity to gain self-confidence (70.4%) and to work with highly-trained co-workers (70.0%) and least likely to agree that it provides interesting and exciting weekends (39.4%).
- Again this quarter, there is no clear pattern of increases or decreases in perceptions over last quarter. About half of the quarter-to-quarter changes are positive and half are negative.

Different from Last Quarter

- Significant increases occurred this quarter in perceptions that the Army Reserve offers the opportunity to gain self-confidence by Recruiting Market Males (70.4% vs. 55.8%) (Z=2.54, p<.05) and PMAS youth (70.4% vs. 54.2%) (Z=2.61, p<.01).

- Nonsignificant decreases in agreement with all but three of the Army Reserve attribute statements appeared this quarter among Recruiting Market Females.

School Year 87/88 - Spring, Summer — Table C-4 — Perceptions - Army Reserve

SUMMER - SPRING DIFFERENCES IN
PERCENTAGE "AGREE" OR "STRONGLY AGREE" WITH ARMY RESERVE ATTRIBUTE STATEMENTS

SAMPLE GROUPS	n	Job Variety	Proud Experience	Leader Skills	Civilian Career	Self Confidence	Develop Potential	Mental Challenge	Mature & Responsible	Skill Training	Bi-Trained Co-Workers	Money for Ed.	Exciting Weekends	Part-Time Work	Live in Hometown
MALES (PMAS + SMS)		+	+	+	+	+2.54	+	+	+	+	+	-	+	-	-
FEMALES (PFAS + SFS)		+	-	-	+	-	-	-	-	-	-	-	-	+	+
TOTAL RECRUITING MARKET		+	-	+	+	+	+	-	-	-	+	-	-	-	+
TOTAL PMAS		+	+	+	-	+2.61	+	+	+	+	+	-	+	-	-

Note: Numbers are Z-scores for significant quarter-to-quarter differences (i.e., $p < 0.05$; $\pm$ 2 s.e.)
Signs indicate the direction of changes that are not statistically significant.

TABLE SU-5

PERCENTAGE "AGREE" OR "STRONGLY AGREE" WITH ARMY NATIONAL GUARD ATTRIBUTE STATEMENTS
(Standard Error)

SAMPLE GROUPS	n	Job Variety	Proud Experience	Leader Skills	Civilian Career	Self Confidence	Develop Potential	Mental Challenge	Mature & Responsible	Skill Training	Hi-Trained Co-Workers	Money for Ed.	Exciting Weekends	Part-Time Work	Live in Hometown
MALES (PMAS + SMS)	297	56.7 (3.6)	62.1 (4.8)	66.5 (3.2)	48.7 (4.1)	72.9 (3.2)	69.8 (3.2)	55.8 (4.0)	73.9 (3.9)	64.6 (3.7)	63.6 (3.9)	63.7 (3.9)	51.0 (3.9)	64.9 (4.1)	77.0 (3.7)
FEMALES (PFAS + SFS)	54	62.2 (9.7)	63.1 (10.0)	57.7 (11.2)	62.7 (10.4)	63.2 (10.8)	61.1 (10.9)	67.4 (9.5)	73.9 (9.8)	68.4 (10.1)	70.2 (10.2)	63.8 (11.1)	45.9 (11.1)	65.9 (10.2)	68.5 (10.5)
TOTAL RECRUITING MARKET	351	59.7 (5.5)	62.7 (5.9)	61.7 (6.4)	56.3 (6.1)	67.6 (6.2)	64.7 (6.2)	62.1 (5.6)	73.9 (5.8)	66.7 (5.7)	67.2 (5.9)	63.8 (6.2)	48.2 (6.4)	65.5 (6.4)	72.3 (6.2)
TOTAL PMAS	277	56.3 (3.9)	63.4 (4.9)	64.1 (3.5)	47.9 (4.3)	72.2 (3.4)	67.6 (3.6)	59.8 (3.8)	73.5 (4.0)	63.1 (4.3)	64.2 (4.5)	63.1 (4.2)	50.9 (4.3)	65.2 (4.0)	77.0 (3.8)

Similar to Last Quarter

- The strength of the Army National Guard brand image continues to be moderate. Agreement with statements about the ARNG by PMAS youth ranges from approximately 45% to 75%, a somewhat broader range than that reported last quarter (50% to 70%).
  - For PMAS youth the predominant perceptions are that the ARNG provides opportunities for becoming more mature and responsible (73.5%), for gaining self-confidence (72.2%), and for serving America while living in one's own hometown (77.0%).
  - PMAS youth are least likely to agree that the ARNG provides interesting and exciting weekends (50.9%) and value in civilian career development (47.9%).
- Like last quarter, there is no clear pattern of changes in likelihood of agreement with statements about the ARNG. Approximately half of the quarter-to-quarter changes are positive and half are negative.

Different from Last Quarter

- Males in the Recruiting Market are significantly more likely to agree this quarter than last that the Army National Guard offers the opportunity to serve America while living in one's own hometown (77.0% vs. 67.2%) (Z=2.54, p<.05).

School Year 87/88 - Spring, Summer — Table C-5 — Perceptions - Army National Guard

SUMMER - SPRING DIFFERENCES IN
PERCENTAGE "AGREE" OR "STRONGLY AGREE" WITH ARMY NATIONAL GUARD ATTRIBUTE STATEMENTS

SAMPLE GROUPS	n	Job Variety	Proud Experience	Leader Skills	Civilian Career	Self Confidence	Develop Potential	Mental Challenge	Mature & Responsible	Skill Training	Hi-Trained Co-Workers	Money for Ed.	Exciting Weekends	Part-Time Work	Live in Hometown
MALES (PMAS + SMS)		+	-	+	-	+	+	-	+	+	-	-	+	+	+2.54
FEMALES (PFAS + SFS)		+	-	-	+	-	-	+	-	-	-	-	+	+	+
TOTAL RECRUITING MARKET		+	-	-	+	-	+	+	+	-	-	-	+	+	+
TOTAL PMAS		-	+	-	-	+	+	+	-	+	+	+	+	-	+

Note: Numbers are Z-scores for significant quarter-to-quarter differences (i.e., $p < 0.05$; $\pm$ 2 s.e.)
Signs indicate the direction of changes that are not statistically significant.

TABLE SU-6

PERCENTAGE "AGREE" OR "STRONGLY AGREE" WITH ARMY ROTC ATTRIBUTE STATEMENTS
PERCENTAGE RATING ROTC OPPORTUNITIES "IMPORTANT" OR "VERY IMP ORTANT" TO PLANS FOR THE NEXT YEAR
(Standard Error)

SAMPLE GROUPS	n1	ROTC PERCEPTIONS: ROTC Offers: Leader/Mgmt Training	Self Confidence	College Elective	Officer's Commission	ROTC PERCEPTIONS: Officer Benefits: Job Variety	Proud Experience	Use College Skills	Use Own Judgment	n2	ROTC IMPORTANCE: Leader Skills	Self Confidence	Job Variety	Proud Experience	Use Own Judgment
ROTC MALE SAMPLE:															
College Juniors and Seniors	180	57.9 (4.2)	65.1 (3.8)	68.6 (5.3)	68.8 (4.1)	49.6 (4.5)	74.8 (4.3)	56.5 (3.9)	50.7 (4.4)	213	76.9 (3.8)	85.3 (2.8)	87.5 (2.6)	89.2 (2.8)	95.2 (1.5)
College Freshmen and Sophomores	184	62.8 (4.9)	74.4 (3.9)	67.5 (4.6)	67.2 (3.9)	57.9 (3.9)	77.4 (3.6)	58.8 (5.1)	63.1 (4.5)	390	82.8 (2.1)	87.6 (1.9)	94.9 (1.1)	92.6 (1.5)	92.7 (1.4)
N.S. Students [College-Oriented]	292	69.7 (2.9)	75.9 (2.5)	70.4 (3.5)	69.7 (3.6)	75.3 (2.8)	84.7 (2.6)	73.6 (2.7)	77.9 (2.7)	578	82.9 (2.1)	88.2 (1.3)	92.8 (1.2)	94.5 (1.0)	91.7 (1.5)
1st ROTC Region	197	62.7 (4.2)	73.6 (3.3)	71.0 (4.6)	69.4 (5.0)	62.4 (4.1)	77.3 (2.9)	61.7 (3.1)	64.6 (4.0)	376	81.2 (2.1)	88.5 (1.6)	90.9 (2.0)	91.2 (1.5)	90.9 (1.7)
2nd ROTC Region	161	64.1 (4.3)	75.9 (3.8)	64.7 (5.7)	66.6 (5.0)	59.8 (4.2)	79.9 (4.3)	67.4 (5.2)	71.3 (3.6)	279	82.2 (3.2)	85.4 (2.7)	92.5 (1.5)	94.3 (1.5)	92.9 (2.0)
3rd ROTC Region	164	63.4 (6.1)	71.3 (5.3)	69.5 (4.5)	68.1 (4.1)	66.1 (4.1)	81.7 (3.4)	63.9 (4.7)	64.1 (5.0)	286	82.8 (3.3)	89.7 (2.1)	95.8 (1.4)	93.2 (1.9)	94.3 (1.3)
4th ROTC Region	134	64.1 (4.0)	66.1 (4.4)	69.6 (6.1)	69.9 (4.8)	55.4 (5.9)	77.5 (4.7)	59.6 (4.9)	56.1 (4.9)	240	80.5 (2.7)	85.0 (2.9)	90.3 (2.1)	92.2 (2.3)	94.1 (1.9)
16-17 Years Old	289	70.8 (2.7)	75.9 (2.5)	71.7 (3.3)	71.6 (3.2)	73.2 (2.7)	83.4 (2.7)	71.8 (2.8)	76.7 (2.9)	565	83.6 (2.0)	89.7 (1.4)	93.4 (1.3)	94.9 (1.0)	92.2 (1.4)
18-19 Years Old	150	57.9 (4.3)	69.6 (4.8)	66.2 (4.2)	63.5 (4.8)	57.3 (4.6)	75.6 (4.0)	57.1 (4.3)	62.1 (4.2)	298	80.9 (2.6)	83.6 (2.5)	92.8 (1.8)	93.7 (1.5)	92.1 (1.6)
20-21 Years Old	131	62.2 (4.8)	71.6 (4.2)	67.7 (5.8)	67.9 (5.5)	57.2 (5.5)	77.0 (4.7)	60.6 (5.0)	59.2 (5.0)	188	81.5 (3.5)	89.7 (2.4)	89.8 (2.7)	91.4 (2.6)	94.3 (1.7)
22-24 Years Old	86	59.8 (6.4)	67.6 (5.1)	69.2 (6.3)	71.3 (5.2)	48.9 (5.5)	78.6 (4.6)	58.8 (7.1)	49.8 (5.3)	130	76.5 (4.3)	83.9 (4.3)	91.9 (2.9)	86.1 (3.3)	94.2 (2.4)
TOTAL ROTC MALE SAMPLE	856	63.5 (2.3)	71.8 (2.2)	68.9 (2.6)	68.6 (2.4)	61.1 (2.2)	79.8 (2.0)	63.1 (2.4)	64.1 (2.3)	1,101	81.4 (1.4)	87.3 (1.0)	92.3 (0.8)	92.6 (0.9)	92.9 (0.9)
TOTAL ROTC FEMALE SAMPLE	119	68.5 (5.1)	78.9 (4.8)	71.2 (5.5)	76.0 (5.2)	72.3 (5.3)	76.7 (4.6)	76.7 (5.4)	72.2 (4.8)	231	77.8 (3.7)	96.7 (1.4)	96.5 (1.3)	96.1 (1.2)	95.8 (1.7)
TOTAL ROTC SAMPLE (MALE + FEMALE)	775	66.1 (3.0)	75.5 (2.7)	70.1 (2.9)	71.4 (3.0)	66.9 (3.2)	77.8 (2.5)	69.1 (2.9)	68.2 (2.7)	1,412	79.6 (1.9)	92.2 (1.0)	94.5 (0.7)	94.4 (0.7)	94.8 (0.9)
TOTAL PNMS	917	63.3 (5.2)	73.8 (4.1)	68.9 (4.5)	66.8 (4.8)	65.0 (5.1)	79.0 (4.3)	72.8 (4.3)	69.8 (4.7)	1,722	80.1 (1.4)	88.8 (0.8)	89.4 (1.0)	92.2 (0.8)	91.6 (0.8)

Note: n1 provides case bases for all ROTC Perceptions Measures.
n2 provides case bases for all ROTC Importance Measures.

TABLE SU-6 PERCEPTIONS AND IMPORTANCE - ARMY ROTC

Similar to Last Quarter

Perceptions

- Brand image of the Army ROTC continues to be moderately strong. Agreement with statements about attributes of the Army ROTC for males in the ROTC Sample ranges from approximately 60% to 80%.

  - Among males in the officer market, there is highest agreement with the statement that the ROTC offers an experience to be proud of (79.0%). There is least agreement with statements that the Army ROTC offers job variety (61.1%), opportunities to use college-acquired skills (63.1%), and leadership and management training (63.5%).

- College-oriented high school students and 16- to 17-year olds are more likely than better educated and older youth to agree that the Army ROTC offers a wide variety of job opportunities, opportunities to use college-acquired skills (comparisons between 16- to 17-year olds and 20- to 21-year olds and between 16- to 17-year olds and 22- to 24-year olds are not statistically significant), and to use one's own judgment ($p<.05$ on all comparisons except those indicated).

Importance

- All the opportunities relevant to the ROTC are likely to be considered important.

  - Opportunities for using one's own judgment (92.9%), an experience to be proud of (92.6%), job variety (92.3%) and gaining self-confidence (87.3%) are highly likely to be valued by ROTC youth.

  - The leadership and management training opportunity, while still likely to be valued, is least likely to be considered important by males in the ROTC Sample (81.4%).

TABLE SU-6 (continued) PERCEPTIONS AND IMPORTANCE - ARMY ROTC

Comparison of Perceptions and Importance Items

- Youth are more likely to value the opportunities than to perceive them as available in the ROTC.
  - Gaps between perceptions and importance are especially large for job variety (92.3% vs. 61.1%), using one's own judgment (92.9% vs. 64.1%), and leadership and management training (81.4% vs. 63.5%).

Different from Last Quarter

Perceptions

- Unlike last quarter, youth in the 3rd ROTC Region are not significantly more likely to agree with any of the ROTC Perceptions statements than youth in other regions of the country.
- Females are more likely than males to agree that the Army ROTC offers the opportunity for using college-acquired skills (74.7% vs. 63.1%) (Z=1.96, p<.05).

Importance

- Having an experience to be proud of is more likely to be considered important this quarter than last by college freshmen and sophomores (92.6% vs. 83.3%) (Z=3.11, p<.01), youth in the 2nd ROTC Region (94.3% vs. 89.1%) (Z=2.07, p<.05), and 18- to 19-year olds (93.7% vs. 87.4%) (Z=2.44, p<.05). The totals for ROTC Males (92.6% vs. 88.7%) (Z=1.96, p<.05), the ROTC Sample (94.4 vs. 88.5%) (Z=2.77, p<.01) and the PMAS (92.2% vs. 89.3%) (Z=2.61, p<.01) are also significantly higher. These findings contrast with the decreases in value of having an experience to be proud of found between Winter and Spring quarters.
- This quarter, college freshmen and sophomores are more likely than college juniors and seniors to consider job variety important (94.9% vs. 87.5%) (Z=2.62, p<.01). No other significant differences are found among educational groups this quarter in ROTC-relevant values.
- This quarter's increases among college freshmen and sophomores in likelihood of valuing job variety, an experience to be proud of and use of their own judgment are likely the result of classifying recent high school graduates who are planning to attend college this Fall as college freshmen .

SUMMER - SPRING DIFFERENCES IN
PERCENTAGE "AGREE" OR "STRONGLY AGREE" WITH ARMY ROTC ATTRIBUTE STATEMENTS
PERCENTAGE RATING ROTC OPPORTUNITIES "IMPORTANT" OR "VERY IMPORTANT" TO PLANS FOR THE NEXT YEAR

SAMPLE GROUPS	n1	ROTC PERCEPTIONS: ROTC Offers: Leader/Mgmt Training	ROTC Offers: Self Confidence	ROTC Offers: College Elective	ROTC Offers: Officer's Commission	Officer Benefits: Job Variety	Officer Benefits: Proud Experience	Officer Benefits: Use College Skills	Officer Benefits: Use Own Judgment	n2	ROTC IMPORTANCE: Leader Skills	Self Confidence	Job Variety	Proud Experience	Use Own Judgment
ROTC MALE SAMPLE: College Juniors and Seniors		-	+	+	-	-	+	+	-2.13		+	-	+	+	+
College Freshmen and Sophomores		+	+	+	+	-	+	-	+		+	+	+2.73	+3.11	+2.03
N.S. Students (College-Oriented)		+	+	+	+	+2.48	+	+	+2.25		+	+	-	+	+
1st ROTC Region		+	+2.09	+	-	+	+	+	+		+	+	-	+	-
2nd ROTC Region		-	+	-	+	+	+	+	+		+	+	+	+2.07	+
3rd ROTC Region		-	+	+	-	-	+	-	-		+	+	+	+	+
4th ROTC Region		+	-	+	+	+	+	+	-		+	-	+	+	+
16-17 Years Old		+	+	+	+	+	+	+	+		+	+	-	+	+
18-19 Years Old		-	-	-	-	-	+	-	-		+	+	+	+2.44	+
20-21 Years Old		-	+	+	-	-	+	-	-		+	+	+	+	+
22-24 Years Old		+	+	+	+	+	+	+	-		+	+	+	-	+
TOTAL ROTC MALE SAMPLE		+	+1.99	+	+	+	+	+	-		+	+	+	+2.97	+1.96
TOTAL ROTC FEMALE SAMPLE		+	+	+	+	+	+	+	+		-	+	+	+	+
TOTAL ROTC SAMPLE (MALES + FEMALES)		+	+	+	+	+	+	+	+		+	+	+	+2.77	+
TOTAL PNAS		+	+	+	-	+	+	+	+		+2.15	+2.32	+	+2.61	+

Note: Numbers are Z-scores for significant quarter-to-quarter differences (i.e., $p < 0.05$; $\pm$ 2 s.e.)
Signs indicate the direction of changes that are not statistically significant.

PERCENTAGE TAKING ACTIONS RELATING TO ENLISTMENT DURING THE PAST SIX MONTHS
(Standard Error)

SAMPLE GROUPS	n	Talked to Anyone of Joining Army	Talked to an Army Recruiter	Taken ASVAB	Visited Army Recruiting Station	Toll-Free Call Sent for Gift
RECRUITING MARKET:						
MALES [PMAS + SMS]	1,987	22.1 (1.0)	11.2 (0.7)	5.5 (0.6)	5.6 (0.6)	3.5 (0.5)
FEMALES [PFAS + SFS]	385	10.1 (2.5)	6.4 (2.1)	2.4 (0.6)	2.4 (1.3)	1.8 (0.8)
TOTAL RECRUITING MARKET	2,372	19.9 (1.4)	10.7 (1.1)	5.0 (0.4)	5.0 (0.8)	3.4 (0.5)
PMAS:						
College Freshmen and Sophomores	390	20.0 (2.1)	15.5 (2.0)	6.0 (1.6)	6.6 (1.6)	1.5 (0.6)
H.S. Students [College-Oriented]	578	30.0 (2.3)	12.3 (1.7)	8.5 (1.5)	5.5 (1.3)	4.4 (0.9)
H.S. Students [Work-Oriented]	168	28.3 (5.0)	13.9 (3.7)	8.0 (2.4)	2.9 (1.4)	5.8 (2.1)
H.S. Graduates Not Currently Enrolled	586	17.5 (2.1)	10.7 (1.5)	4.4 (1.0)	5.9 (1.2)	2.6 (0.7)
1st Rctg Bde	442	18.8 (1.5)	10.2 (1.6)	4.2 (1.1)	4.3 (1.2)	2.1 (0.8)
2nd Rctg Bde	308	26.7 (3.8)	15.9 (2.5)	9.8 (2.1)	7.6 (2.1)	2.4 (1.2)
4th Rctg Bde	392	19.7 (1.8)	11.7 (1.5)	5.8 (1.2)	5.1 (1.2)	2.1 (0.7)
5th Rctg Bde	340	24.5 (2.8)	12.9 (1.9)	8.0 (1.7)	6.4 (1.8)	6.7 (1.5)
6th Rctg Bde	240	24.6 (3.8)	12.6 (2.6)	3.3 (1.0)	5.1 (1.6)	2.9 (1.4)
16-17 Years Old	718	29.9 (2.2)	11.9 (1.6)	8.5 (1.2)	4.6 (1.0)	3.8 (0.7)
18-19 Years Old	459	30.6 (2.0)	24.2 (1.9)	9.1 (2.0)	10.1 (1.7)	5.4 (1.3)
20-21 Years Old	222	11.7 (2.9)	6.7 (1.6)	2.4 (1.2)	4.4 (1.1)	0.4 (0.3)
22-24 Years Old	323	9.7 (2.2)	3.9 (1.2)	2.2 (0.9)	2.9 (1.1)	1.5 (0.7)
TOTAL PMAS	1,722	22.6 (1.1)	12.6 (0.8)	6.3 (0.7)	5.7 (0.6)	3.1 (0.5)

Similar to Last Quarter

- The most common enlistment-related action by PMAS youth is talking to someone about joining the Army (22.6%). Talking to a recruiter is about half as likely (12.6%). These proportions are almost identical to those reported last quarter.

- All of the enlistment-related activities (except sending for a gift) are again more likely to be reported by males than females ($p<.05$ for all 4 relevant comparisons) and by younger than older PMAS youth ($p<.05$ for all comparisons of 16- to 17-year olds and 18- to 19-year olds with 20- to 21- and 22- to 24-year olds).

- Again this quarter, high school students tend to be more likely than youth in the other educational groups to talk to someone about enlisting in the Army ($p<.05$ for all 3 comparisons). High school students also tend to be more likely than college freshmen and sophomores to call or send for a gift (4.4% vs. 1.5%) ($Z=2.68$, $p<.05$); (5.8% vs. 1.5%) ($Z=1.97$, $p<.05$).

Different from last Quarter

- PMAS youth in the 5th Recruiting Brigade (Southwest) are more likely than those in the other recruiting brigades (except for the 6th Recruiting Brigade) to make a toll-free call or send for a gift ($p<.05$ for comparisons of the 5th Recruiting Brigade with the 1st, 2nd, and 4th Recruiting Brigades).

- The percentage of high school students not currently enrolled who reported talking to an Army recruiter increased significantly this quarter (10.7% vs. 6.3%) ($Z=2.27$, $p<.05$).

- PMAS youth in the 6th Recruiting Brigade (West) were significantly less likely this quarter than last to report having taken the ASVAB (7.0% vs. 3.3%) ($Z=2.05$, $p<.05$).

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SUMMER · SPRING DIFFERENCES IN
PERCENTAGE TAKING ACTIONS RELATING TO ENLISTMENT DURING THE PAST SIX MONTHS

SAMPLE GROUPS	n	Talked to Anyone of Joining Army	Talked to an Army Recruiter	Taken ASVAB	Visited Army Recruiting Station	Toll-Free Call Sent for Gift
RECRUITING MARKET:						
MALES (PMAS + SMS)		-	-	-	+	-
FEMALES (PFAS + SFS)		-	+	-	-	-
TOTAL RECRUITING MARKET		-	+	-	+	-
PMAS:						
College Freshmen and Sophomores		-	-	+	+	-
N.S. Students (College-Oriented)		-	-	-	-	-
N.S. Students (Work-Oriented)		-	+	+	-	-
N.S. Graduates Not Currently Enrolled		+	+2.27	+	+	-
1st Rctg Bde		-	-	-	+	-
2nd Rctg Bde		+	+	+	-	-
4th Rctg Bde		+	+	+	+	-
5th Rctg Bde		-	-	-	-	+
6th Rctg Bde		-	+	-2.05	-	+
16-17 Years Old		-	-	-	-	-
18-19 Years Old		-	+	+	+	+
20-21 Years Old		-	-	-	+	-
22-24 Years Old		+	+	+	+	-
TOTAL PMAS		-	+	-	+	-

Note: Numbers are Z-scores for significant quarter-to-quarter differences (i.e., $p < 0.05$; $\pm$ 2 s.e.)
Signs indicate the direction of changes that are not statistically significant.

PERCENTAGE SEEING/HEARING MILITARY ADVERTISING
(Standard Error)

SAMPLE GROUPS	n	Army Components				Other Military Branches				JRAP	NONE
		ACTIVE	ROTC	ARNG	USAR	USAF	NAVY	USMC	USCG		
RECRUITING MARKET:											
MALES [PMAS + SMS]	1,987	81.4 (1.1)	1.4 (0.3)	12.1 (1.0)	9.1 (0.8)	64.0 (1.5)	58.1 (1.4)	64.2 (1.4)	10.0 (0.8)	5.1 (0.6)	4.7 (0.7)
FEMALES [PFAS + SFS]	385	81.2 (2.5)	2.3 (0.8)	7.5 (1.9)	5.9 (1.4)	53.6 (2.9)	41.8 (2.9)	54.5 (2.8)	4.6 (1.0)	3.7 (1.1)	6.4 (1.4)
TOTAL RECRUITING MARKET	2,372	81.3 (1.4)	1.9 (0.4)	9.7 (1.1)	7.5 (0.8)	58.6 (1.6)	49.7 (1.6)	59.2 (1.7)	7.2 (0.7)	4.4 (0.7)	5.5 (0.9)
PMAS:											
College Freshmen and Sophomores	390	86.6 (2.2)	2.0 (0.7)	12.8 (1.8)	10.6 (1.5)	74.7 (2.6)	63.4 (2.8)	66.1 (2.9)	12.7 (2.1)	7.5 (1.5)	2.2 (0.9)
H.S. Students [College-Oriented]	578	82.9 (2.1)	2.1 (0.6)	11.0 (1.5)	7.4 (1.2)	65.4 (1.9)	57.3 (2.5)	66.2 (2.2)	10.5 (1.6)	4.8 (0.9)	4.4 (1.1)
H.S. Students [Work-Oriented]	168	80.9 (2.9)	0.9 (1.0)	9.3 (2.5)	4.1 (1.9)	66.1 (3.6)	55.7 (4.4)	70.7 (4.0)	6.9 (2.6)	3.3 (1.8)	6.2 (2.2)
H.S. Graduates Not Currently Enrolled	586	80.2 (2.0)	1.3 (0.6)	13.1 (1.8)	9.8 (1.4)	62.4 (2.5)	58.6 (2.1)	66.5 (2.6)	10.5 (1.3)	4.9 (1.1)	2.5 (0.8)
1st Rctg Bde	442	82.6 (2.5)	1.1 (0.5)	11.5 (1.4)	9.4 (1.3)	62.0 (2.8)	61.5 (3.3)	65.7 (2.4)	15.0 (1.7)	5.2 (0.9)	3.1 (0.9)
2nd Rctg Bde	308	82.4 (2.8)	0.8 (0.5)	10.1 (1.8)	8.5 (1.8)	60.8 (3.2)	58.4 (3.3)	66.5 (3.7)	9.7 (1.7)	4.1 (1.2)	3.0 (1.3)
4th Rctg Bde	392	85.3 (1.8)	4.1 (1.2)	14.3 (2.5)	10.7 (1.6)	69.1 (2.7)	60.4 (2.5)	68.5 (2.7)	7.4 (1.2)	6.1 (1.3)	2.7 (1.1)
5th Rctg Bde	340	83.6 (2.5)	1.2 (0.7)	15.9 (3.2)	7.2 (1.8)	71.1 (3.0)	54.9 (3.4)	66.6 (4.1)	7.8 (1.6)	5.2 (1.6)	2.8 (1.0)
6th Rctg Bde	240	77.8 (3.0)	0.6 (0.5)	8.0 (2.1)	7.8 (2.1)	71.8 (3.0)	59.5 (3.4)	66.2 (3.7)	13.2 (2.7)	6.3 (1.9)	5.5 (1.9)
16-17 Years Old	718	83.5 (1.7)	1.9 (0.5)	10.9 (1.5)	6.8 (1.1)	65.9 (1.8)	58.0 (2.1)	65.4 (2.1)	9.7 (1.3)	5.0 (0.9)	4.1 (0.9)
18-19 Years Old	459	87.0 (2.1)	2.0 (0.7)	12.6 (1.6)	10.8 (1.4)	70.2 (2.1)	60.2 (2.8)	70.5 (2.4)	13.5 (1.9)	4.8 (1.1)	2.3 (0.7)
20-21 Years Old	222	83.8 (3.2)	1.5 (1.0)	10.6 (3.3)	8.9 (2.2)	63.0 (4.4)	61.2 (3.8)	66.8 (3.7)	7.6 (1.9)	4.4 (1.4)	2.7 (1.3)
22-24 Years Old	323	74.8 (2.6)	0.7 (0.5)	14.2 (2.1)	9.4 (1.8)	65.3 (2.7)	57.9 (2.7)	64.0 (3.4)	11.1 (1.8)	7.2 (1.9)	3.6 (1.4)
TOTAL PMAS	1,722	82.5 (1.1)	1.6 (0.3)	12.1 (1.1)	8.8 (0.7)	66.4 (1.3)	59.1 (1.3)	66.7 (1.6)	10.7 (0.8)	5.3 (0.5)	3.3 (0.5)

TABLE SU-8 KNOWLEDGE/RECALL - UNAIDED

Similar to Last Quarter

- Unaided recall of Army advertising remains the highest of all services for all sample groups.
  - Among the PMAS, for example, 82.5% recall seeing or hearing Army ads compared with 66.4% for the Air Force, 66.7% for the Marine Corps, and 59.1% for the Navy.
  - Very few youth (5.3%) recall joint recruiting advertising without aid.
  - Unaided recall of advertising continues to be lower for females than males for all military branches except the Army ($p<.05$ for all 4 comparisons) and for the ARNG (12.1% vs. 7.5%) ($Z=2.14$, $p<.05$) and the USAR (9.1% vs. 5.9%, $Z=1.98$, $p<.05$).
- Unaided recall is lower for Army component advertising than for the active Army ads.
  - Of PMAS youth, 12.1% recall Army National Guard advertising without aid, compared with 8.8% for the Army Reserve ads, and only 1.6% for Army ROTC.
- Levels of unaided recall of active Army advertising and advertising by all three Army components were stable across quarters.
- Again this quarter, there are very few differences among educational, age, or regional groups in unaided recall.

TABLE SU-8 (continued) KNOWLEDGE/RECALL - UNAIDED

Different from last Quarter

- Youth in the 4th Recruiting Brigade (Midwest) were significantly more likely than youth in any of the other recruiting brigades to recall unaided ROTC advertising ($p<.05$ for all 4 comparisons).

- Females are less likely this quarter to show unaided recall of Navy advertising (54.7% vs. 41.8%) ($Z=3.10$, $p<.05$).

- Compared to last quarter, there were significant decreases in unaided recall of USCG advertising for recruiting market males, college-oriented high school students, the 1st and 2nd Recruiting Brigades (Northeast and Southeast, respectively), and 16- to 17-and 20- to 21-year olds ($p<.05$ for all 6 comparisons).

SUMMER - SPRING DIFFERENCES IN
PERCENTAGE SEEING/HEARING MILITARY ADVERTISING

SAMPLE GROUPS	n	Army Components: ACTIVE	ROTC	ARNG	USAR	Other Military Branches: USAF	NAVY	USMC	USCG	JRAP	NONE
RECRUITING MARKET: MALES [PMAS + SMS]		-	-	+	+	-	-	-	-2.57	-	+2.09
FEMALES [PFAS + SFS]		+	+	+	-	-	-3.10	+	+	+	+
TOTAL RECRUITING MARKET		+	+	+	-	-	-3.09	+	-	+	+
PMAS: College Freshmen and Sophomores		+	+	+	-	+	-	-	-	-	+
H.S. Students [College-Oriented]		-	-	-	-	-	-	+	-2.86	-	+
H.S. Students [Work-Oriented]		+	-	+	-	+	-	+2.47	-	-	-
H.S. Graduates Not Currently Enrolled		-	-	+	+	-	-	+	-	-	+
1st Rctg Bde		-	-	+	+	-	-	-	-2.26	-	+
2nd Rctg Bde		-	-	-	-	-	-	+	-2.27	-	+
4th Rctg Bde		-	+	+	+	-	+	+	-	+	-
5th Rctg Bde		+	+	+	-	+	-	+	-	+	-
6th Rctg Bde		-	-	-	-	+2.34	-	+	+	-	+
16-17 Years Old		-	-	-	-	-	-	+	-3.28	-	+
18-19 Years Old		+	+	+	+	-	-	+	+	-	+
20-21 Years Old		-	+	-	+	-	-	-2.04	-1.98	-	+
22-24 Years Old		-	-	+	+	+	+	+	-	+	+
TOTAL PMAS		-	-	+	-	+	-	+	-2.72	-	+

Note: Numbers are Z-scores for significant quarter-to-quarter differences (i.e., $p < 0.05$; $\pm$ 2 s.e.)
Signs indicate the direction of changes that are not statistically significant.

PERCENTAGE SEEING/HEARING MILITARY ADVERTISING
(Standard Error)

SAMPLE GROUPS	n	Army Components				Other Military Branches				JRAP
		ACTIVE	ROTC	ARNG	USAR	USAF	NAVY	USMC	USCG	
RECRUITING MARKET:										
MALES [PMAS + SMS]	1,987	93.7 (0.6)	45.9 (1.5)	65.4 (1.4)	72.0 (1.3)	86.4 (1.0)	80.1 (1.2)	84.5 (1.0)	52.0 (1.5)	55.9 (1.5)
FEMALES [PFAS + SFS]	385	91.1 (1.6)	44.8 (2.6)	58.9 (3.2)	65.8 (3.0)	83.2 (2.2)	69.9 (3.3)	79.0 (2.5)	38.6 (3.1)	43.7 (3.4)
TOTAL RECRUITING MARKET	2,372	92.3 (0.8)	45.3 (1.5)	62.0 (1.7)	68.8 (1.6)	84.8 (1.2)	74.8 (1.9)	81.7 (1.9)	45.1 (1.8)	49.6 (1.9)
PMAS:										
College Freshmen and Sophomores	390	97.5 (0.8)	48.9 (3.2)	60.9 (3.6)	70.7 (3.0)	89.0 (2.0)	79.7 (2.8)	85.0 (2.2)	52.3 (3.2)	62.7 (3.0)
N.S. Students [College-Oriented]	578	95.9 (1.0)	44.7 (2.4)	67.8 (2.4)	71.2 (2.0)	86.5 (1.8)	80.7 (2.1)	84.1 (1.9)	47.5 (2.6)	57.1 (2.5)
N.S. Students [Work-Oriented]	168	92.5 (2.2)	46.8 (4.5)	62.3 (4.5)	67.8 (4.6)	90.5 (2.5)	77.7 (3.6)	82.9 (3.0)	47.4 (4.9)	50.1 (4.2)
N.S. Graduates Not Currently Enrolled	586	93.7 (1.1)	44.7 (2.6)	66.2 (2.1)	72.6 (2.3)	86.4 (1.8)	81.4 (1.9)	85.6 (1.6)	50.6 (2.8)	57.7 (2.4)
1st Rctg Bde	442	95.2 (1.1)	46.3 (3.3)	62.1 (2.9)	68.8 (2.4)	84.6 (2.4)	80.5 (2.9)	85.0 (1.7)	53.5 (2.9)	58.0 (2.3)
2nd Rctg Bde	308	96.1 (1.1)	45.3 (2.9)	66.4 (3.1)	73.6 (2.5)	88.8 (2.0)	81.2 (2.3)	85.2 (2.5)	53.3 (3.1)	60.7 (3.2)
4th Rctg Bde	392	94.3 (1.4)	47.6 (3.2)	65.6 (2.6)	74.6 (2.6)	88.2 (1.8)	81.4 (2.1)	85.7 (2.3)	44.4 (3.1)	59.0 (3.0)
5th Rctg Bde	340	95.3 (1.2)	43.3 (2.7)	69.8 (2.8)	70.3 (2.3)	87.3 (2.1)	80.0 (2.4)	83.6 (2.7)	44.9 (3.5)	55.5 (2.5)
6th Rctg Bde	240	94.2 (1.7)	46.9 (3.8)	61.7 (3.9)	69.2 (4.0)	88.9 (2.4)	78.8 (3.3)	84.2 (2.5)	52.5 (3.2)	55.9 (3.6)
16-17 Years Old	718	95.0 (0.9)	42.9 (2.2)	67.1 (2.1)	70.0 (2.0)	87.6 (1.4)	79.7 (1.8)	82.2 (1.8)	46.8 (2.5)	55.4 (2.2)
18-19 Years Old	459	97.2 (0.9)	49.6 (3.3)	63.9 (2.6)	71.8 (2.4)	88.5 (1.7)	79.8 (2.4)	89.1 (1.8)	53.5 (3.0)	59.6 (3.0)
20-21 Years Old	222	94.7 (1.9)	46.8 (3.9)	61.3 (3.4)	71.4 (4.0)	86.3 (2.8)	80.8 (2.8)	86.1 (2.4)	47.6 (3.9)	63.0 (4.3)
22-24 Years Old	323	93.0 (1.5)	45.2 (3.5)	66.1 (3.0)	72.7 (3.4)	86.6 (2.3)	82.3 (2.4)	82.7 (2.7)	51.6 (3.3)	56.4 (3.3)
TOTAL PMAS	1,722	95.1 (0.6)	45.9 (1.5)	65.1 (1.2)	71.3 (1.3)	87.4 (0.9)	80.9 (1.3)	84.8 (1.0)	49.8 (1.5)	58.0 (1.5)

TABLE SU-9 KNOWLEDGE/RECALL - UNAIDED PLUS AIDED

Similar to Last Quarter

- Combined unaided and aided recall of active Army advertising is again the highest of all services.
  - Among PMAS youth, combined recall for Army advertising is 95.1% compared with 87.4% for the Air Force, 84.8% for the Marine Corps, and 80.5% for the Navy.
- Large increases are again observed in all categories when responses to aided recall questions are added to unaided recall (Table SU-8). The largest increases are observed in those categories with the lowest levels of unaided recall such as the Army ROTC and the smallest increases are in categories with the highest unaided recall levels such as the active Army.

Different from Last Quarter

- Males are significantly more likely than females to have combined recall of Navy, Marine Corps, Coast Guard, and joint advertising ($p<.05$ for all 4 comparisons).
- College freshmen and sophomores are significantly more likely than work-oriented high school students and high school students not currently enrolled to have combined recall of active Army advertising (97.5% vs. 92.5%) ($Z=2.14$, $p<.05$); (97.5% vs. 93.7%) ($Z=2.79$, $p<.05$).
- Last quarter, college-oriented high school students had higher levels of combined recall for active Army, Army Reserve, and ROTC advertising than the work-oriented. This quarter, the levels of recall for these two high school groups are similar.
- The significant increase among college freshmen and sophomores in combined recall of active Army advertising is likely the result of classifying as college freshmen recent high school graduates who are planning to attend college in the Fall. As high school students typically have somewhat higher levels of combined recall of these ads than college students, the increase for college freshmen and sophomores this quarter probably results from adding the new cohort to this educational group.

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SUMMER - SPRING DIFFERENCES IN
PERCENTAGE SEEING/HEARING MILITARY ADVERTISING

SAMPLE GROUPS	n	Army Components				Other Military Branches				JRAP
		ACTIVE	ROTC	ARNG	USAR	USAF	NAVY	USMC	USCG	
RECRUITING MARKET: MALES [PNAS + SNS]		+	+	+	+	-	-	-	+	-
FEMALES [PFAS + SFS]		-	-	-	-	-	-	+	-	-
TOTAL RECRUITING MARKET		+	-	-	-	-	-	+	-	-
PNAS: College Freshmen and Sophomores		+2.63	-	+	-	+	-	-	+	+
N.S. Students [College-Oriented]		+	+	+	-	-	-	+	-	-
N.S. Students [Work-Oriented]		+	+	+	+	+	-	+	-	+
N.S. Graduates Not Currently Enrolled		-	+	-	+	-	-	-	+	+
1st Rctg Bde		+	-	-	-	-	-	-	-	+
2nd Rctg Bde		+	+	-	+	+	-	+	-	+
4th Rctg Bde		+	-	+	+	-	+	+	-	-
5th Rctg Bde		+	+	+	-	-	-	-	-	+
6th Rctg Bde		+	+	-	-	+	-	+	+	-
16-17 Years Old		+	-	+	-	+	-	+	-	-
18-19 Years Old		+	+	+	-	-	-	+	+	+
20-21 Years Old		+	+	-	-	-	-	-	-	+
22-24 Years Old		+	-	+	+	-	-	-	+	+
TOTAL PNAS		+	+	+	-	-	-	-	-	+

Note: Numbers are Z-scores for significant quarter-to-quarter differences (i.e., $p < 0.05$; ± 2 s.e.)
Signs indicate the direction of changes that are not statistically significant.

PERCENTAGE ANSWERING KNOWLEDGE OF ARMY OFFERS AND BENEFITS QUESTIONS CORRECTLY
(Standard Error)

SAMPLE GROUPS	n	Active Army Knowledge: If Enlist Eligible for College $	Total Education Benefits	Army Benefits Better?	Offer GI Bill: ARMY	USAF	NAVY	USMC	Minimum Duty Tour	Delayed Entry Allowed	Army Reserve and Army National Guard Knowledge: 17 Year Old Eligible to Join	H.S. Graduation Required	Scholar Athlete Sponsor	If Enlist Eligible for College $	Maximum GI Bill College $
RECRUITING MARKET:															
MALES (PMAS + SMS)	1,025	94.8 (0.8)	27.2 (1.7)	11.1 (1.0)	82.5 (1.4)	46.5 (2.0)	43.3 (2.1)	51.1 (2.0)	35.9 (1.9)	81.5 (1.5)	64.5 (1.9)	76.4 (2.0)	34.8 (2.0)	84.3 (1.5)	7.8 (1.0)
FEMALES (PFAS + SFS)	190	88.4 (2.4)	7.9 (2.2)	11.7 (3.4)	63.7 (4.7)	42.6 (3.9)	38.9 (4.6)	46.7 (4.5)	26.1 (3.3)	73.0 (4.4)	71.7 (3.5)	84.3 (2.9)	24.8 (3.6)	80.9 (4.0)	5.1 (1.3)
TOTAL RECRUITING MARKET	1,215	91.8 (1.3)	17.9 (1.6)	11.4 (1.0)	75.4 (2.5)	44.8 (2.0)	41.2 (2.6)	49.8 (2.3)	31.2 (2.0)	77.4 (2.3)	68.8 (1.9)	78.2 (1.8)	30.8 (2.1)	82.4 (2.2)	6.6 (0.9)
PMAS:															
College Freshmen and Sophomores	203	95.9 (1.7)	38.3 (4.1)	10.4 (2.5)	83.5 (2.8)	35.2 (3.8)	43.0 (4.5)	51.6 (3.6)	43.7 (4.3)	82.8 (3.6)	58.9 (3.8)	76.0 (3.8)	39.1 (3.5)	88.8 (2.3)	3.9 (1.4)
H.S. Students (College-Oriented)	301	95.1 (1.6)	28.4 (3.8)	13.9 (2.0)	84.8 (2.2)	48.4 (3.4)	44.2 (3.7)	46.5 (3.2)	35.7 (3.1)	81.1 (2.8)	55.4 (2.9)	71.8 (3.1)	31.4 (3.0)	87.8 (2.2)	7.6 (1.9)
H.S. Students (Work-Oriented)	75	94.8 (3.5)	15.1 (4.7)	12.5 (4.3)	75.9 (6.6)	46.2 (7.3)	30.0 (6.5)	48.3 (7.9)	27.3 (6.4)	78.5 (4.9)	63.9 (6.3)	79.2 (5.6)	32.4 (6.7)	78.2 (6.0)	9.0 (4.1)
H.S. Graduates Not Currently Enrolled	306	95.2 (1.2)	23.7 (3.1)	9.8 (1.8)	84.8 (2.2)	48.2 (3.5)	42.4 (3.4)	53.4 (3.6)	36.9 (4.1)	86.4 (2.5)	71.8 (3.1)	79.7 (3.0)	33.2 (3.8)	82.4 (2.9)	7.2 (1.7)
1st Rctg Bde	241	95.6 (1.4)	28.4 (3.4)	13.0 (2.7)	83.6 (2.6)	51.3 (3.7)	49.4 (4.1)	58.5 (3.6)	34.2 (4.3)	78.7 (2.8)	64.3 (3.9)	78.9 (3.5)	35.3 (4.0)	81.6 (3.2)	7.7 (2.1)
2nd Rctg Bde	157	97.8 (1.4)	28.9 (4.7)	12.2 (2.7)	87.9 (3.2)	46.7 (3.9)	38.8 (4.8)	49.5 (3.8)	35.3 (4.6)	86.2 (3.0)	65.2 (4.2)	75.5 (4.4)	38.2 (5.5)	88.7 (3.1)	3.8 (1.5)
4th Rctg Bde	192	96.0 (1.9)	30.4 (3.9)	12.9 (2.9)	79.9 (3.1)	45.7 (3.5)	42.5 (3.9)	51.8 (5.4)	36.6 (3.6)	87.2 (3.5)	67.7 (3.8)	79.2 (2.6)	31.4 (4.6)	86.5 (3.2)	5.7 (1.8)
5th Rctg Bde	163	94.4 (2.0)	25.6 (5.1)	10.9 (2.7)	83.4 (3.9)	37.9 (4.4)	40.4 (5.2)	48.3 (4.6)	38.1 (5.7)	85.1 (3.0)	67.0 (4.3)	77.1 (3.7)	32.8 (4.4)	83.4 (5.0)	8.8 (2.6)
6th Rctg Bde	132	91.8 (3.0)	25.0 (4.5)	6.6 (2.3)	82.2 (3.9)	40.6 (5.3)	36.9 (5.6)	42.0 (4.7)	44.8 (5.9)	81.4 (4.9)	52.6 (4.8)	71.2 (4.9)	31.7 (4.6)	86.2 (3.7)	7.3 (2.4)
16-17 Years Old	354	94.4 (1.8)	25.4 (3.2)	15.5 (2.0)	83.2 (2.3)	46.8 (2.8)	39.2 (2.9)	49.2 (3.0)	38.3 (2.7)	82.2 (2.1)	56.8 (3.0)	72.8 (2.9)	33.6 (3.2)	85.6 (2.4)	7.3 (1.5)
18-19 Years Old	246	94.7 (1.8)	35.2 (3.3)	12.0 (2.7)	84.3 (2.8)	42.1 (3.7)	40.1 (4.3)	51.0 (3.7)	35.2 (3.4)	85.2 (3.2)	64.0 (2.7)	80.8 (2.5)	36.2 (3.3)	88.5 (2.7)	7.1 (1.6)
20-21 Years Old	108	96.7 (1.9)	20.4 (4.4)	12.7 (2.7)	88.8 (3.0)	40.5 (5.9)	43.6 (5.9)	47.1 (5.8)	37.1 (6.0)	81.8 (4.2)	66.4 (5.9)	72.8 (5.5)	38.1 (5.2)	83.2 (5.4)	4.8 (1.9)
22-24 Years Old	177	96.1 (1.4)	26.5 (4.7)	4.1 (1.3)	79.6 (3.8)	48.8 (5.2)	47.3 (4.7)	54.3 (4.4)	39.3 (4.7)	84.0 (3.4)	70.1 (3.7)	78.9 (3.6)	29.5 (4.2)	81.6 (3.6)	6.6 (2.2)
TOTAL PMAS	885	95.2 (0.8)	27.8 (2.0)	11.3 (1.1)	83.5 (1.3)	45.0 (1.9)	42.1 (2.2)	50.6 (2.1)	37.4 (2.1)	83.5 (1.5)	63.5 (1.8)	76.6 (1.9)	34.0 (2.1)	85.1 (1.7)	6.7 (0.9)

TABLE SU-10 KNOWLEDGE

Similar to Last Quarter

- Percentages of PMAS indicating knowledge of the Army's offers and benefits remain stable across quarters.

- General knowledge of Army offers remains widespread while specific information continues to be less well known.

  - Of PMAS youth, 95.2% know that the Army offers educational benefits for enlistment and 83.5% know of the delayed entry program. However, only 27.8% correctly specify the maximum amount of educational benefits available, only 11.3% know that the educational benefits available through Army enlistment are better than those offered by other services, and 37.4% are aware that the minimum tour of duty in the Army is two years.

  - College freshmen and sophomores are more likely to know the amount of money that can be earned for education by enlisting than work-oriented high school students (38.3% vs. 15.1%) (Z=3.72, p<.01) and high school graduates who are not currently enrolled in school (38.3% vs. 23.7%) (Z=2.84, p<.01). College-oriented high school students are more likely than those who are work oriented to have this information (28.4% vs. 15.1%) (Z=2.20, p<.05). These findings suggest that youth in a position to take advantage of the educational benefits are most likely to know about them.

  - Youth in all sample groups are again more likely to associate the GI Bill with the Army than with other services (p<.05 for all relevant comparisons). For example, 83.5% of the PMAS correctly answered that the Army offers the GI Bill while only 45.0% were correct when asked about the Air Force, 42.1% about the Navy, and 50.6% about the Marine Corps.

- Knowledge of the eligibility requirements and educational benefits offered by the Army Reserve and Army National Guard are also relatively high in all sample groups and quite stable across quarters.

  - Of PMAS youth, for example, 76.6% are aware that high school graduation is not required before enlisting, and 63.5% know that 17-year-olds may enlist.

  - Of PMAS youth, 85.1% know that the Army Reserve and National Guard offer educational benefits, but only 6.7% can specify the correct maximum amount of benefits available.

- Decreases noted over the last two quarters in identification of the Marine Corps with the GI Bill were not found this quarter. No significant differences were found between quarters in identification of the Marine Corps or Air Force with the GI Bill.

Different from Last Quarter

- Significant decreases are observed this quarter over last in knowledge that the Army offers more in educational benefits than the other services for high school graduates who are not currently enrolled in school (9.8% vs. 15.7%) (Z=-2.07, p<.05), youth in the 6th Recruiting Brigade (6.6% vs. 19.3%) (Z=-3.11, p<.01) and 22- to 24-year olds (4.1% vs. 16.7%) (Z=-3.14, p<.01).

- Very few age differences in knowledge are apparent this quarter.

  - 22- to 24-year olds are less likely than youth in the other age groups to know the Army offers more in educational benefits than the other services (p<.05 on all three relevant comparisons).

  - 18- to 19-year olds are more likely than 16- to 17-year olds to know the maximum amount of Army educational benefits and to know that high school graduation is not required before enlisting in the Army Reserve and Army National Guard (35.2% vs. 25.4%) (Z=2.13, p<.05) (80.8% vs. 72.8%) (Z=2.09, p<.05).

- Males are more likely than females to answer questions about active Army benefits and offers correctly (p<.05 for 5 of the 6 relevant comparisons).

- Knowledge of USAR and ARNG eligibility requirements increased significantly for females in the recruiting market this quarter (17-year olds eligible: 71.7% vs. 56.5%, Z=2.83, p<.01; high school graduation not required: 84.3% vs. 73.1%, Z=2.31, p<.05).

- The decrease among college freshmen and sophomores this quarter in knowledge of the maximum in educational benefits available through the USAR and ARNG is likely the result of classifying recent high school graduates who are planning to attend college this Fall as college freshmen . Since high school students are typically less likely to have this information, it seems likely that the decrease among college students results from adding the new cohort.

SUMMER - SPRING DIFFERENCES IN
PERCENTAGE ANSWERING KNOWLEDGE OF ARMY OFFERS AND BENEFITS QUESTIONS CORRECTLY

SAMPLE GROUPS	D	Active Army Knowledge: If Enlist Eligible for College $	Total Education Benefits	Army Benefits Better?	Offer GI Bill: ARMY	USAF	NAVY	USMC	Minimum Duty Tour	Delayed Entry Allowed	Army Reserve and Army National Guard Knowledge: 17 Year Old Eligible to Join	H.S. Graduation Required	Scholar Athlete Sponsor	If Enlist Eligible for College $	Maximum GI Bill College $
RECRUITING MARKET: MALES (PHAS + SHS)		+	+	-2.83	-	+	-	-	-	+	-	-	+	+	-
FEMALES (PFAS + SFS)		-	-	+	-	-	-	-	-	-	+2.83	+2.31	-	-	-
TOTAL RECRUITING MARKET		+	-	-	-	-	-	-	-	-	+2.36	+	-	-	-
PHAS: College Freshman and Sophomores		+	+	-	-	-	+	+	-	+	-	-	-	+	-2.33
H.S. Students (College-Oriented)		-	+	-	-	+	-	-	-	+	-2.03	-	-	-	+
H.S. Students (Work-Oriented)		+	-	-	-1.97	+	-2.00	-	+	+	+	+	+	-	+
H.S. Graduates Not Currently Enrolled		+	+	-2.07	+2.34	+	+	+	-	-	+	+	+	+	-
1st Rctg Bde		+	-	-	+	+	+	+	-	-	+	+	+	-	-
2nd Rctg Bde		+	+	-	+	+	-	-	-	+	-	-	+	+2.07	-
4th Rctg Bde		-	+	-	-	+	+	+	-	+	-	-	+	-	-2.22
5th Rctg Bde		+	+	-	-	-	-	+	+	+	+	+	+	-	+
6th Rctg Bde		-	-	-3.11	-	-	-	-	-	-	-	-	+	+	+
16-17 Years Old		-	-	-	-	+	-	-	+	+	-	-	-	-	-
18-19 Years Old		-	+	-	-	+	-	-	-	-	-	-	+	+	-
20-21 Years Old		+	-	-	+	-	+	-	-	+	+	-	+	+	-
22-24 Years Old		+1.98	+	-3.14	+	+	+	+	-	-	+	+	+	+	-
TOTAL PHAS		+	+	-2.93	-	+	-	-	-	+	-	-	+	+	-

Note: Numbers are Z-scores for significant quarter-to-quarter differences (i.e., $p < 0.05$; $\pm$ 2 s.e.)
Signs indicate the direction of changes that are not statistically significant.

PERCENTAGE REGULARLY VIEWING OR LISTENING TO VARIOUS TYPES OF PROGRAMMING Δ
(Standard Error)

SAMPLE GROUPS	n1	Types of TV Shows: Sports	Mystery	Drama	Music	Comedy	Movie	Talk	n2	Types of Radio Programs: News	Classical	Pop	Country	Sports	Talk	Rock	Easy
RECRUITING MARKET:																	
MALES [PMAS + SMS]	967	74.0 (1.8)	53.4 (1.9)	38.1 (2.1)	58.6 (2.1)	80.7 (1.5)	77.9 (1.7)	41.1 (2.0)	976	52.4 (1.7)	13.4 (1.2)	51.8 (2.3)	32.3 (1.7)	43.3 (2.0)	17.4 (1.6)	80.2 (1.9)	41.7 (2.1)
FEMALES [PFAS + SFS]	181	48.0 (5.4)	56.7 (4.8)	63.2 (4.7)	60.9 (4.0)	87.0 (2.5)	85.2 (2.8)	56.5 (4.3)	188	46.0 (5.2)	11.7 (2.7)	60.4 (4.2)	39.5 (4.7)	12.4 (3.7)	27.3 (4.4)	75.0 (4.4)	58.7 (4.2)
TOTAL RECRUITING MARKET	1,148	69.2 (3.0)	55.2 (2.6)	41.4 (2.7)	59.8 (2.4)	84.0 (1.5)	81.7 (1.6)	49.2 (2.5)	1,164	49.8 (2.8)	12.4 (1.6)	56.6 (2.6)	36.2 (2.8)	36.7 (2.0)	22.7 (2.3)	77.4 (2.5)	50.8 (2.5)
PMAS:																	
College Freshmen and Sophomores	177	77.2 (3.6)	48.7 (4.0)	36.6 (3.8)	50.7 (4.3)	80.5 (3.4)	70.9 (4.0)	47.1 (4.3)	181	49.1 (4.2)	16.0 (3.2)	55.3 (3.9)	21.2 (2.5)	43.7 (3.8)	22.9 (4.3)	86.2 (3.3)	38.7 (4.5)
N.S. Students [College-Oriented]	294	78.8 (3.3)	53.0 (3.8)	38.2 (3.1)	66.5 (3.3)	89.2 (1.8)	79.6 (2.9)	40.0 (3.2)	291	42.2 (3.9)	9.5 (2.1)	57.3 (3.3)	21.1 (2.8)	49.7 (3.4)	16.4 (2.8)	81.3 (2.4)	42.5 (3.2)
N.S. Students [Work-Oriented]	94	72.0 (5.2)	56.2 (4.5)	32.3 (5.0)	70.8 (4.8)	80.1 (5.0)	85.3 (3.6)	41.5 (7.1)	94	44.5 (5.8)	17.0 (4.8)	48.6 (6.1)	36.9 (7.3)	39.2 (5.6)	18.9 (5.2)	85.6 (4.5)	32.1 (5.2)
N.S. Graduates Not Currently Enrolled	269	74.8 (3.0)	54.5 (4.0)	38.8 (4.0)	50.6 (3.7)	79.8 (2.4)	77.3 (3.1)	37.0 (3.9)	273	58.3 (3.5)	14.1 (2.3)	49.3 (3.9)	43.8 (3.9)	47.4 (4.0)	14.6 (2.3)	80.6 (3.0)	43.9 (3.6)
1st Rctg Bde	231	74.7 (3.4)	61.6 (4.6)	37.1 (3.6)	56.1 (4.9)	85.0 (2.8)	74.2 (3.7)	26.7 (3.7)	231	42.6 (4.2)	13.7 (2.6)	46.2 (4.3)	21.9 (3.4)	46.6 (2.6)	15.1 (3.0)	86.2 (3.2)	42.8 (4.3)
2nd Rctg Bde	141	79.4 (5.1)	54.6 (6.6)	44.1 (5.2)	69.0 (5.7)	82.1 (3.9)	85.0 (2.9)	50.9 (4.0)	141	61.2 (4.2)	15.2 (4.0)	64.4 (4.4)	41.4 (6.4)	51.8 (7.0)	25.7 (4.0)	77.8 (4.5)	49.5 (4.7)
4th Rctg Bde	184	77.8 (3.5)	49.8 (4.1)	31.3 (3.5)	57.6 (4.9)	80.1 (3.7)	75.8 (4.1)	45.0 (3.9)	188	44.9 (4.6)	13.4 (3.1)	54.3 (5.2)	25.1 (4.1)	47.6 (4.0)	15.3 (2.7)	84.9 (3.1)	38.9 (3.7)
5th Rctg Bde	170	70.7 (4.3)	46.9 (4.2)	36.8 (4.6)	55.9 (5.0)	87.8 (3.4)	75.8 (5.1)	45.8 (6.3)	169	56.7 (4.5)	12.7 (3.2)	48.8 (5.2)	44.1 (4.8)	41.7 (3.3)	16.6 (3.3)	80.2 (4.0)	35.1 (4.4)
6th Rctg Bde	108	79.8 (4.8)	47.2 (5.4)	38.6 (5.4)	46.2 (5.3)	77.0 (4.2)	78.0 (4.4)	39.3 (5.3)	110	47.6 (5.6)	11.6 (4.0)	53.0 (5.0)	27.8 (5.5)	43.3 (5.3)	14.5 (3.2)	82.1 (5.0)	37.7 (5.6)
16-17 Years Old	373	75.0 (3.0)	52.6 (2.9)	38.5 (2.9)	66.0 (3.1)	87.9 (1.5)	80.7 (2.4)	38.8 (2.9)	369	41.2 (2.8)	12.2 (2.3)	55.5 (3.1)	24.8 (2.8)	44.7 (3.2)	15.1 (2.5)	82.3 (2.4)	39.9 (2.8)
18-19 Years Old	207	78.4 (3.2)	54.6 (4.4)	35.9 (3.6)	58.5 (4.1)	79.8 (3.2)	74.4 (3.8)	45.2 (4.3)	211	47.0 (3.5)	14.6 (2.7)	52.6 (4.1)	29.9 (3.2)	43.5 (3.3)	20.0 (3.4)	84.9 (2.9)	36.1 (4.4)
20-21 Years Old	113	81.6 (4.2)	47.6 (5.6)	32.3 (5.4)	51.0 (6.2)	82.1 (4.5)	84.6 (5.4)	43.9 (5.7)	115	53.7 (6.3)	12.6 (3.7)	49.3 (5.6)	39.7 (5.8)	63.2 (5.3)	15.1 (3.7)	83.7 (3.7)	43.7 (5.4)
22-24 Years Old	141	71.6 (4.7)	55.9 (4.8)	41.3 (5.3)	46.3 (4.7)	77.7 (3.9)	69.7 (4.1)	35.6 (4.5)	144	66.7 (4.1)	14.8 (3.1)	51.5 (5.5)	38.5 (5.0)	39.7 (6.1)	20.1 (4.0)	79.4 (4.8)	47.2 (4.4)
TOTAL PMAS	834	76.2 (1.9)	52.9 (2.1)	37.6 (2.2)	57.6 (2.4)	82.8 (1.4)	77.5 (1.6)	40.5 (2.0)	839	50.1 (1.9)	13.4 (1.3)	52.9 (2.2)	31.3 (2.0)	46.4 (1.9)	17.4 (1.6)	82.6 (1.7)	41.1 (2.1)

Note: n1 provides case bases for Types of TV Shows regularly watched by youth selected for Media Habits questions who watch TV more than zero hours each week.
n2 provides case bases for Types of Radio Programs regularly listened to by youth selected for Media Habits questions who listen to the radio more than zero hours each week.
Δ indicates significant change in administration of questions. See Appendix F.

TABLE SU-11 MEDIA HABITS

Television

- This quarter youth selected to receive media habits questions were asked about their television programming preferences unless they indicated they watch zero hours of TV each week. Previously, youth who claimed not to be regular television viewers were also excluded. This change resulted in an increase in the percentage of youth answering television preference questions.

  - Of PMAS youth, 94.5% reported watching more than zero hours of TV a week and thus were asked the television preference questions. Only 61.2% claim to be regular television viewers. Thus, 33.3% of PMAS youth who would have been excluded under the old criteria are included now.

Similar to Last Quarter: Television

- PMAS youth continue to have the highest preferences for comedy (82.8%), movies (77.5%), and sports (76.2%) programs. They are least likely to regularly watch dramatic (37.4%) and talk (40.5%) shows.

- Males are more likely than females to watch sports programs on TV (74.0% vs. 48.0%) (Z=4.57, p<.01) while females are more likely than males to prefer drama (63.2% vs. 38.1%) (Z=4.88, p<.01), movies (85.2% vs. 77.9%) (Z=2.23, p<.05), comedy (87.0% vs. 80.0%) (Z=2.16, p<.05), and talk shows (56.5% vs. 41.1%) (Z=3.25, p<.01).

- There is no clear pattern of differences among groups in television programming preferences. A few of the group differences observed last quarter, however, were again found this quarter.

  - Music programs and music videos are most popular with high school students (p<.01 for all 4 relevant comparisons). The popularity of music programs appears to decrease with age. Both 16- to 17-year olds and 18- to 19-year olds are significantly more likely than 22- to 24-year olds to prefer this type of programming (16-to 17-year olds vs. 22- to 24-year olds: 66.0% vs. 46.3%, Z=3.50, p<.01; 18- to 19-year olds vs. 22- to 24-year olds: 58.5% vs. 46.3%, Z=1.96, p<.05).

Different from Last Quarter: Television

- The many significant decreases shown in Table C-11 probably result from the change in sample composition that occurred with inclusion of non-regular television viewers.

Radio

- This quarter youth selected to receive media habits questions were asked about their radio programming preferences unless they indicated they listen to zero hours of radio each week. Previously, youth who claimed not to be regular radio listeners were also excluded. This change resulted in an increase in the percentage of youth answering radio programming preference questions.

  - 95.8% of PMAS youth reported listening to more than zero hours of radio a week and thus were asked the radio preference questions. This compares with 82.8% who say they are regular radio listeners. Thus, 13.0% of PMAS youth would have been excluded under the old criteria but are included now.

Similar to Last Quarter: Radio

- Among PMAS youth, radio rock programs are the most popular (82.6%) with pop programming (52.9%) a distant second. Classical music (13.4%) and talk shows (17.4%) are least preferred.

- The popularity of country music programs varies both regionally and by level of education. Youth in the 2nd Recruiting Brigade (Southeast), 5th Recruiting Brigade (Southwest), work-oriented high school students, and high school graduates who are not currently enrolled in school are more likely than youth in other regional and educational groups to report regularly listening to country music ($p<.05$ for all relevant comparisons except that the difference between 2nd and 6th Recruiting Brigades is not statistically significant).

- Males are more likely than females to listen to sports shows on the radio (43.4% vs. 12.4%) ($Z=7.35$, $p<.01$) while females are more likely than males to listen to radio talk shows (27.3% vs. 17.4%) ($Z=2.11$, $p<.05$) and easy listening programs (58.7% vs. 41.7%) ($Z=3.62$, $p<.01$).

Different from Last Quarter: Radio

- The significant decreases in radio programming preferences from last quarter are most likely the result of including non-regular radio listeners rather than changes in viewer preferences.

SUMMER - SPRING DIFFERENCES IN
PERCENTAGE REGULARLY VIEWING OR LISTENING TO PROGRAMS WITH ARMY ADVERTISING Δ

SAMPLE GROUPS	p1	Types of TV Shows: Sports	Mystery	Drama	Music	Comedy	Movie	Talk	p2	Types of Radio Programs: News	Classical	Pop	Country	Sports	Talk	Rock	Easy
RECRUITING MARKET: MALES (PMAS + SMS)		-2.40	-2.49	-3.03	-3.00	-2.84	-2.89	-		-	-2.21	-	+	-2.73	-	-	-
FEMALES (PFAS + SFS)		+	-	-2.82	-	-	-2.26	-		-2.25	-	-	+	-	+	-	+
TOTAL RECRUITING MARKET		-	-	-3.76	-	-	-3.53	-		-2.85	-	-	+	-	-	-	+
PMAS:																	
College Freshmen and Sophomores		-2.03	-	-2.11	-	-	-	+		-	-	-	-	-2.81	+	+	-
H.S. Students (College-Oriented)		-	-	+	-2.54	-	-	+		-	-	-	+	-	+	-	+
H.S. Students (Work-Oriented)		-2.01	-	-	-	-	-	+		-	-	+	-	-	-	+	-
H.S. Graduates Not Currently Enrolled		-	-	-2.26	-	-	-2.56	-		-	+	-2.19	+	-	-	-	-
1st Rctg Bde		-	+	-	-	-	-	-		-2.34	-	-2.24	+	-2.56	-	-	-
2nd Rctg Bde		-	-	-	-	-	+	+		-	-	+	+	+	+	-	+
4th Rctg Bde		-	-	-3.92	-	-	-2.26	+		-	+	-	+	-	-	-	-
5th Rctg Bde		-1.96	-	+	-	+	-	-		+	-	-	-	-	-	+	-
6th Rctg Bde		-	-2.93	-	-2.20	-4.40	-	-		-	-	-	+	-2.42	+	+	-2.36
16-17 Years Old		-	-2.03	-	-2.42	-	-	+		-	+	+	+	-	+	-	+
18-19 Years Old		-	-	-2.50	-	-3.73	-2.22	+		-	-	-	+	-2.02	+	+	-
20-21 Years Old		+	-	-2.52	-	-	+	-		-	-	-	+	+	-	+	-
22-24 Years Old		-	-	-	-	+	-3.39	-		-	-	-	+	-	-	+	-
TOTAL PMAS		-	-2.35	-2.88	-3.16	-	-2.80	-		-	-	-	+	-2.47	-	-	-

Note: Numbers are Z-scores for significant quarter-to-quarter differences (i.e., $p > 0.05$; $\pm$ 2 s.e.)
Signs indicate the direction of changes that are not statistically significant.
Δ indicates significant changes in administration of Media Habits questions. See Appendix E.

TABLE SU-12
PERCENTAGE WITH INTENTION TO ENLIST IN ARMY COMPONENTS
(PMAS MONTHLY TOTALS)
(Standard Error)

MONTHS	n1	Unaided Intention: General Intention	Unaided Intention: Active Army	Unaided Intention: USAR	Unaided Intention: ARNG	Aided Intention: General Intention	Aided Intention: Active Army	Aided Intention: USAR	Aided Intention: ARNG	n2	Army ROTC
July	502	1.5 (0.6)	1.0 (0.4)	0.2 (0.2)	0.0 n.e.	27.0 (2.2)	15.8 (2.4)	18.1 (1.9)	14.2 (2.0)	351	13.9 (3.2)
August	715	2.6 (0.8)	2.3 (0.7)	0.1 (0.1)	0.3 (0.3)	24.7 (2.3)	15.0 (1.7)	12.3 (1.7)	11.5 (1.3)	522	16.8 (2.5)
September	505	2.4 (0.8)	0.9 (0.4)	1.0 (0.4)	0.4 (0.3)	24.4 (2.1)	15.0 (2.0)	12.1 (1.6)	8.6 (1.6)	365	14.1 (1.8)
TOTAL	1,722	2.3 (0.4)	1.3 (0.3)	0.5 (0.2)	0.3 (0.2)	25.2 (1.2)	15.2 (1.1)	13.8 (0.9)	11.2 (0.9)	1,258	15.1 (1.5)

Note: n.e. indicates standard error is not estimable.
n1 provides case bases for all Unaided Intention Measures and for all Aided Intention Measures except Army ROTC.
n2 provides case bases for Aided Intention - Army ROTC.

TABLE SU-13
PERCENTAGE "AGREE" OR "STRONGLY AGREE" WITH ACTIVE ARMY ATTRIBUTE STATEMENTS
(PMAS MONTHLY TOTALS)
(Standard Error)

MONTHS	n	Job Variety	Physical Challenge	Proud Experience	Step Btwn HS & Col.	Leader Skills	Hi-Tech Equipment	Civilian Career	Self Confidence	Develop Potential	Mental Challenge	Nature & Responsible	Skill Training	Hi-Trained Co-Workers	Money for Ed.
July	461	57.1 (2.6)	77.9 (2.9)	69.1 (2.7)	53.0 (3.1)	74.0 (2.7)	79.2 (2.7)	55.9 (2.6)	73.6 (2.7)	69.0 (2.9)	61.3 (2.6)	75.4 (2.9)	75.9 (2.8)	75.2 (3.0)	72.7 (2.3)
August	668	59.1 (2.1)	81.9 (2.0)	70.3 (2.4)	52.2 (2.7)	76.9 (1.9)	79.8 (1.5)	55.9 (2.2)	75.6 (2.4)	72.0 (2.1)	70.2 (2.0)	79.3 (1.9)	74.8 (2.0)	76.2 (2.4)	75.6 (2.1)
September	467	57.6 (2.9)	80.7 (2.2)	68.0 (2.7)	48.1 (2.2)	68.4 (2.8)	79.7 (2.3)	53.7 (2.5)	72.6 (2.7)	69.1 (2.2)	62.6 (2.8)	74.3 (2.6)	73.8 (2.3)	74.9 (2.4)	72.0 (2.9)
TOTAL	1,596	58.0 (1.4)	80.4 (1.1)	69.2 (1.5)	51.0 (1.5)	73.2 (1.4)	79.6 (1.2)	55.2 (1.4)	74.0 (1.5)	70.2 (1.4)	65.2 (1.3)	76.9 (1.3)	74.6 (1.2)	75.5 (1.5)	73.6 (1.4)

TABLE SU-14
PERCENTAGE SEEING/HEARING MILITARY ADVERTISING
[PMAS MONTHLY TOTALS]
(Standard Error)

MONTHS	n	Army Components				Other Military Branches				JRAP	NONE
		ACTIVE	ROTC	ARNG	USAR	USAF	NAVY	USMC	USCG		
July	502	82.4 (2.5)	1.8 (0.5)	9.8 (1.9)	8.4 (1.6)	69.4 (2.5)	59.0 (2.7)	65.7 (3.0)	11.4 (1.5)	5.3 (1.3)	2.9 (0.9)
August	715	81.5 (1.8)	0.9 (0.3)	13.9 (1.9)	10.6 (1.2)	66.8 (2.0)	58.9 (2.1)	67.5 (2.3)	12.0 (1.4)	5.5 (0.9)	3.7 (0.8)
September	505	83.8 (1.9)	2.3 (0.8)	11.7 (1.5)	7.2 (1.0)	63.8 (2.4)	59.3 (2.1)	66.5 (2.2)	8.7 (1.2)	5.1 (0.9)	3.1 (1.0)
TOTAL	1,722	82.9 (1.1)	1.6 (0.3)	12.1 (1.1)	8.8 (0.7)	66.4 (1.3)	59.1 (1.3)	66.7 (1.4)	10.7 (0.8)	5.3 (0.5)	3.3 (0.5)

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Westat, Inc.

ARMY COMMUNICATIONS OBJECTIVES MEASUREMENT SYSTEM (ACOMS): QUARTERLY REPORT, FALL 1987

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February 1988

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ARMY COMMUNICATIONS OBJECTIVES MEASUREMENT SYSTEM (ACOMS): QUARTERLY REPORT, FALL 1987

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ARMY COMMUNICATIONS OBJECTIVES MEASUREMENT SYSTEM (ACOMS): QUARTERLY REPORT, FALL 1987

OVERVIEW OF FINDINGS

Purpose

To provide timely information to Army policymakers and advertising planners regarding key market responses that are expected to be sensitive to changes in the Army's advertising plans.

Methodology

During Fall Quarter 1987 (1 October through 31 December), computer-assisted 30-minute telephone interviews were conducted with 3,258 youth between the ages of 16 and 24. Youth were asked about their education and employment history, career plans, intentions to enlist in the Army, enlistment-related activities undertaken during the prior six months, and what opportunities they regard as important to their future plans. They were also asked about their media habits, recall of military advertising, knowledge and perceptions of the Army and its components, and their attitudes toward Army advertisements. Demographic information was collected and, for selected youth, parental location information was requested for use in parental interviewing.

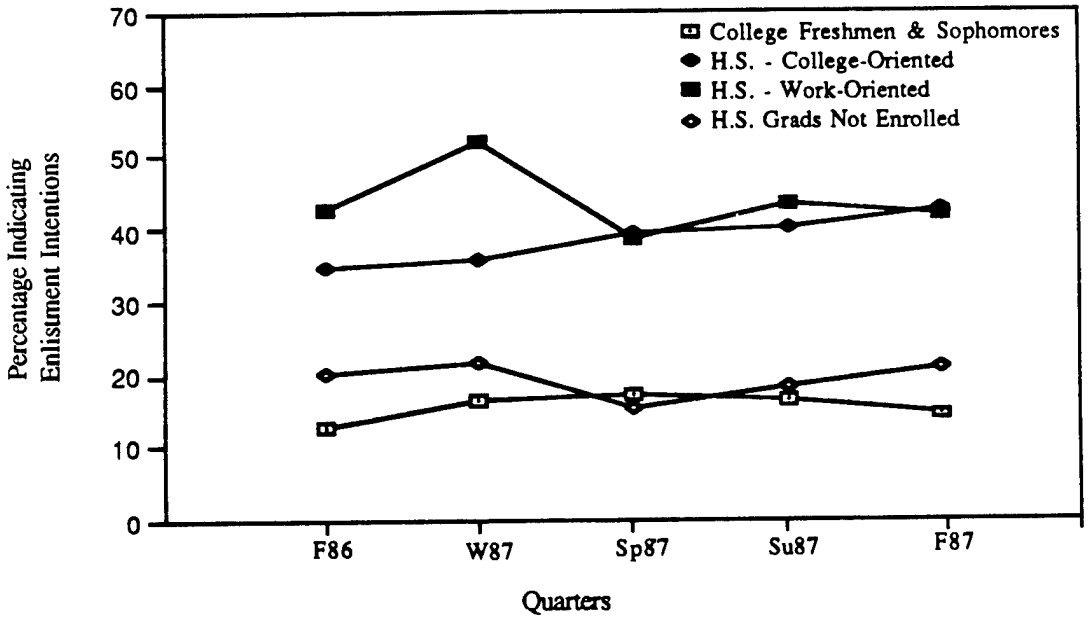
The quarterly report focuses mainly on males in the Primary Male Analytic Sample (PMAS). The PMAS corresponds to the primary enlisted market and includes youth who have neither served nor been accepted for service in the military; who are either in high school or have a regular high school diploma; who have never taken a college ROTC course; and, who have not yet completed their sophomore year in college. This quarter 2,087 PMAS youth were interviewed. Data are reported by PMAS educational, regional, and age groups. Findings are reported by sex for the Recruiting Market as a whole, including both the primary and secondary enlisted markets. The secondary enlisted market includes high school non-completers and youth with a high school certificate other than a diploma (e.g., GED) who have not yet completed one year of college. Finally, data for youth in the officer market are reported for ROTC perceptions and ROTC-relevant importance items by education, region, age, and sex.

Findings

The overall pattern of results has been very stable between Summer and Fall quarters.

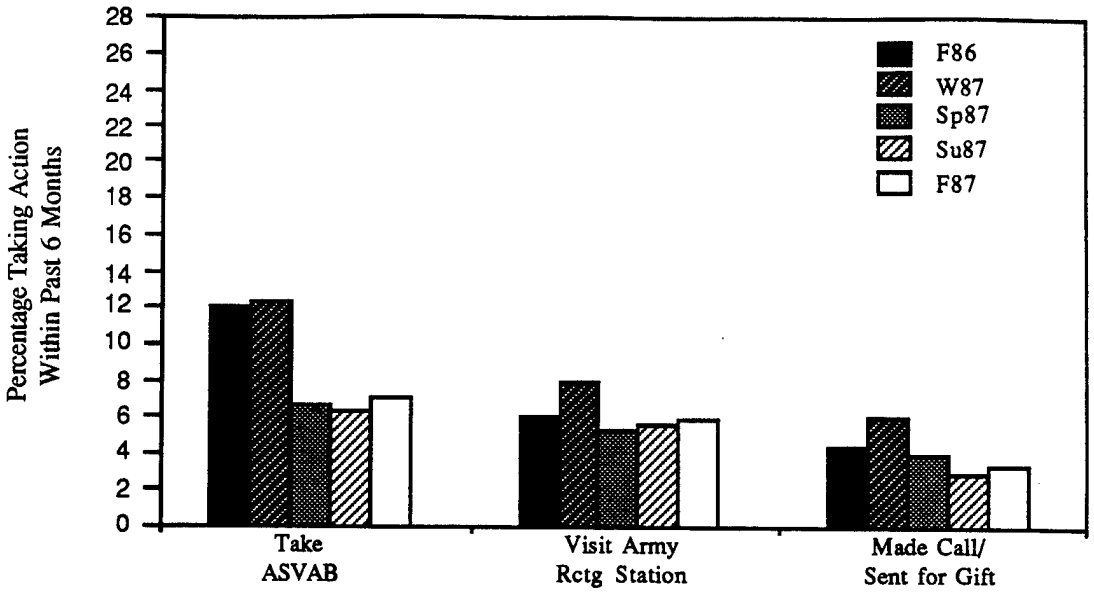
General Army Findings (All Components)

Enlistment intentions and behaviors. High school students continue to have highest general aided intentions to enlist in the Army. Youth in the 2nd and 5th Recruiting Brigades have higher general aided intentions to enlist than those in other areas of the country. No significant changes from last quarter are observed this quarter in general intentions to enlist (see Figure 1). Enlistment-related actions by youth in the primary male enlisted market are also similar to last quarter (see Figure 2). Talking to someone about joining the Army is about twice as likely as talking to an Army recruiter (25.6% and 13.0%, respectively). Smaller percentages of youth have taken an Army aptitude test (7.1%), visited an Army recruiting station (5.9%), and made a toll-free call or sent for a free gift (3.5%).



Note. Respondents answering DEFINITELY or PROBABLY to one or more of four questions about their intentions to enlist in the active Army, USAR, ARNG, and ROTC are included in percentage for general aided intention.

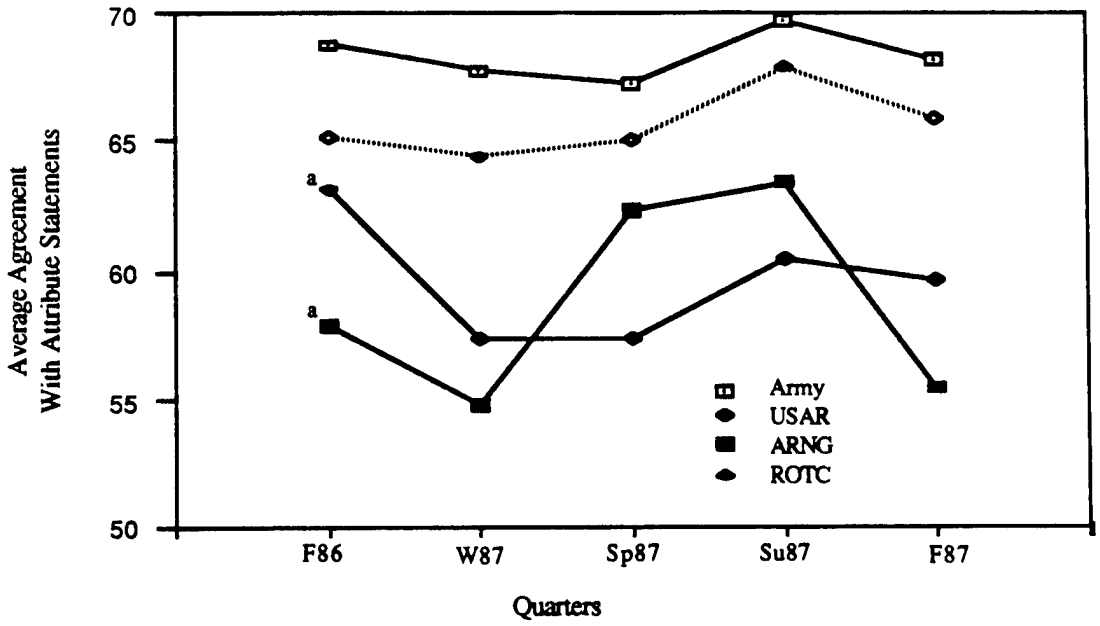
Figure 1. General aided intentions to enlist in the Army by educational groups in the Primary Male Enlisted Market (F86, W87, Sp87, Su87, F87).



Note: Beginning in Spring 1987, youth were first asked if they had ever taken a military aptitude test. Those answering yes were then asked if they had taken such a test in the past six months. Prior to Spring 1987, all youth were asked about test taking within the past six months. This change in question administration may account for the apparent decline in this behavior beginning in Spring 1987.

Figure 2. Actions relating to Army enlistment by youth in the Primary Male Enlisted Market (F86, W87, Sp87, Su87, F87)

The Army image. The Army image is defined in terms of agreement with statements that the Army, the Army Reserve (USAR), the Army National Guard (ARNG), and the Army Reserve Officers' Training Corps (ROTC) offer attributes emphasized in Army advertising. Among youth in the primary male enlisted market, the average percentage of youth agreeing with statements about Army attributes is 68.2% this quarter (see Figure 3). Average percentages agreeing with statements about USAR and ARNG attributes are 59.6% and 55.4%, respectively. Among youth in the officer market, an average percentage of 65.9% agree with statements about the ROTC. None of this quarter's Army image percentages are significantly different from those reported last quarter.



Note. ROTC line is dotted because percentages are for the ROTC Male Sample (Officer Market), not the Primary Male Enlisted Market, and are based on fewer and different attributes than the other components.

[a]Part-time work was not asked this quarter, thus average is computed with 13 rather than 14 attributes.

Figure 3. Army component images among youth in the Primary Male Enlisted Market (F86, W87, Sp87, Su87, F87).

Recall of Army advertising. Again this quarter, a large majority of youth in the primary male enlisted market recall active Army advertising without aid (84.7%)(see Figure 4). Recall of other services' advertising is considerably lower: USMC=66.5%, USAF=65.4%, Navy=59.1%, and JRAP=6.0%. The active Army advertising recall level is also higher than those of the other Army components: ARNG=12.0%, USAR=8.9%, and ROTC=1.6%.

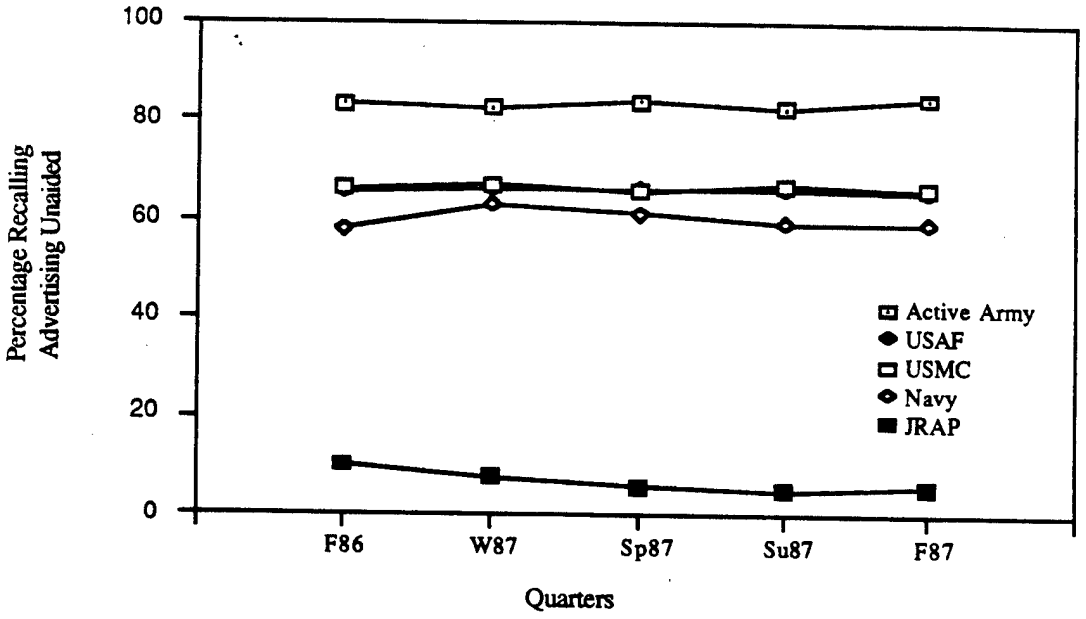


Figure 4. Unaided recall of advertising by youth in the Primary Male Enlistment Market (F86, W87, Sp87, Su87, F87).

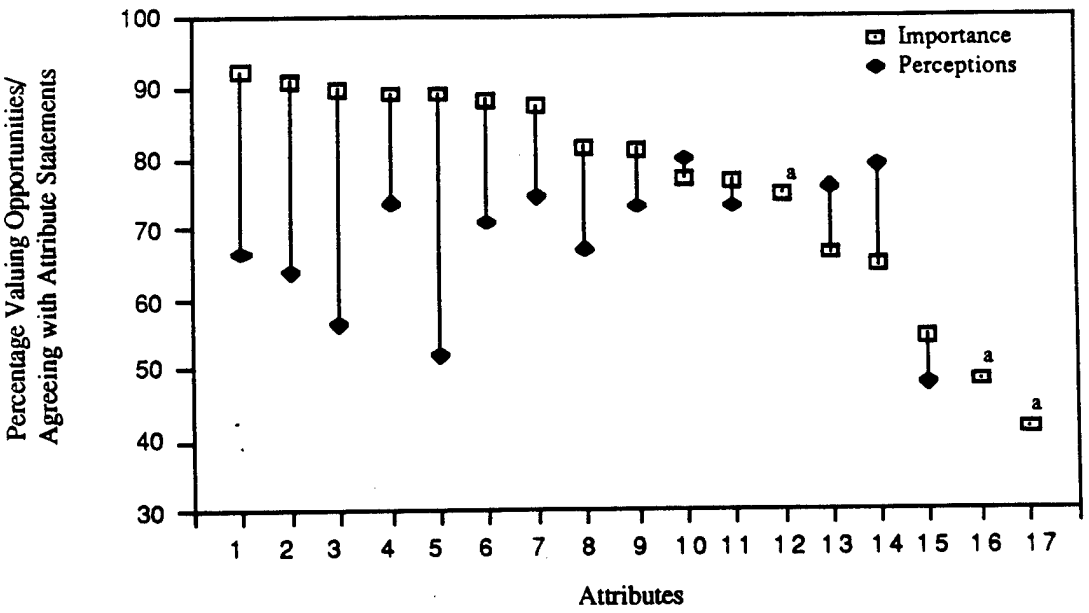
Active Army (Enlisted)

General. The overall pattern of results for the active Army is relatively stable. A significant decline this quarter among PMAS youth in agreement that the Army provides an experience to be proud of appears due to decreases among college freshmen and sophomores and 20- to 21-year olds.

Enlistment intentions. College freshmen and sophomores are less likely this quarter than last to have aided intentions to enlist in the active Army. However, no other significant changes occurred in aided or unaided enlistment intentions. The overall percentage of youth in the primary male enlisted market who have aided intentions to enlist in the active Army is very similar to last quarter (15.2%).

Perceptions of opportunities compared to importance of opportunities. As shown in Figure 5, for youth in the primary male enlisted market, the largest gaps between importance of opportunities and perception of them as available in the Army are for developing civilian career and potential, having job variety, and an experience to be proud of. Youth in the primary male enlisted market are more likely to perceive that the Army offers opportunities to work with high-tech equipment, money for education, and a physical challenge than to value these opportunities. In general, the pattern of differences between perceptions and importance of attributes is very similar to that found last quarter.

Recall and knowledge. Recall of active Army advertising remains very high. Unaided recall of Army advertising dropped this quarter for work-oriented high school students whose recall level is the lowest of the four educational groups. General knowledge of Army offers and benefits also remains high but more specific knowledge (e.g., the total amount of educational benefits) remains considerably lower. For some subgroups, increases over last quarter are found for knowledge that the Army offers more in educational benefits than other services (i.e., males, 6th Recruiting Brigade, 22- to 24-year olds) and for knowledge of the delayed entry program (DEP) (i.e., college freshmen and sophomores, 1st Recruiting Brigade).



Key:

1. Develop Potential
2. Proud Experience
3. Job Variety
4. Mature & Responsible
5. Civilian Career
6. Self-Confidence
7. Skill Training
8. Mental Challenge
9. Hi-Trained Co-Workers
10. Physical Challenge
11. Leader Skills
12. Exciting Weekends
13. Money for Ed.
14. Hi-Tech Equipment
15. Step Betwn HS & Col.
16. Live in Hometown
17. Part-time Work

Note. Attributes are presented in descending order of importance to aid interpretation.

[a]This attribute is not asked in the Army perceptions module.

Figure 5. Primary Male Enlisted Market importance-perception gaps for Army attributes (F87).

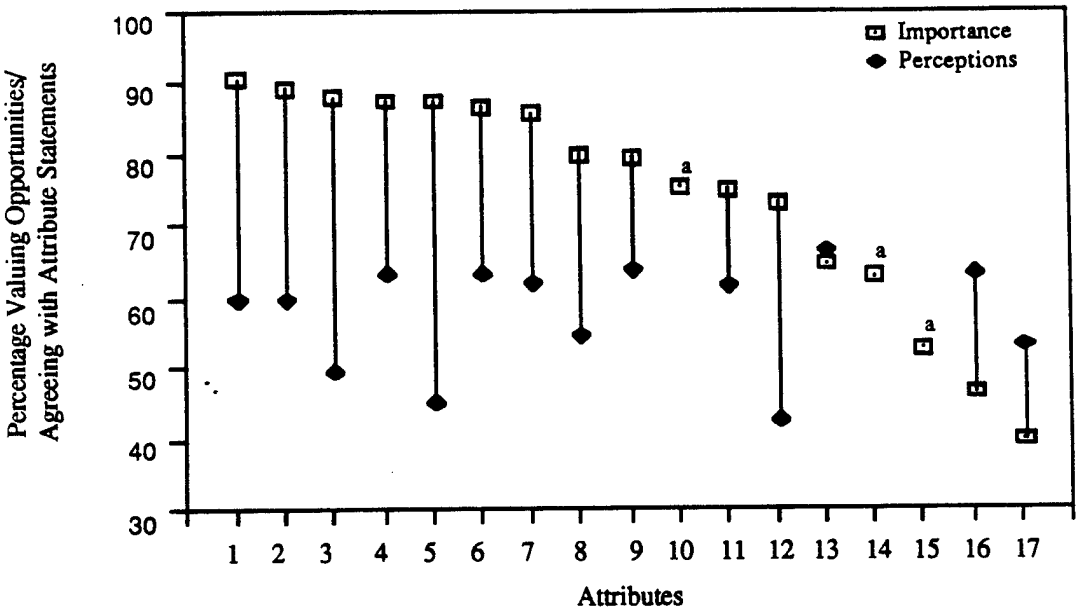
Army Reserve (USAR)

General. In general, the findings pertaining to the USAR are also stable this quarter. A significant decrease over last quarter was observed in perceptions by Recruiting Market Males that the USAR offers opportunities for gaining self-confidence. This finding contrasts with the increase reported for this perception last quarter. Recruiting Market Females increased this quarter in perception of the USAR as offering opportunities for mental challenge and for becoming more mature and responsible.

Enlistment intentions. No significant changes were observed this quarter in the percentage of youth in the primary enlisted market who said they would probably or definitely enlist in the USAR (14.7%). However, work-oriented high school students are less likely this quarter than last to mention USAR enlistment intentions unaided.

Perceptions of opportunities compared to importance of opportunities. As shown in Figure 6, the largest gaps between importance of opportunities and perceptions of their availability in the USAR are for having interesting and exciting weekends, developing one's civilian career and having a wide variety of opportunities to find an enjoyable job. The smallest gap is for the opportunity to earn money for education. Opportunities for part-time work and for serving America while living in one's own hometown are perceived as available in the USAR by larger percentages of youth than the percentages who value these opportunities.

Recall and knowledge. Unaided recall of USAR advertising continues to be low (8.9%) but increases markedly when recall is aided (72.8%). Recall of USAR ads is lower among work-oriented high school students than among those who are college-oriented. General knowledge that educational money can be earned by enlisting in the USAR and ARNG remains high (89.2%) while specific knowledge of the maximum amount that can be earned continues to be low (9.5%). However, knowledge of the latter increased this quarter for some subgroups (i.e., college freshmen and sophomores, 2nd Recruiting Brigade, and 18- to 19-year olds). In contrast to last quarter's increases, Recruiting Market Females decreased this quarter in knowledge of USAR/ARNG eligibility requirements.



Key:

1. Develop Potential
2. Proud Experience
3. Job Variety
4. Mature & Responsible
5. Civilian Career
6. Self-Confidence
7. Skill Training
8. Mental Challenge
9. Hi-Trained Co-Workers
10. Physical Challenge
11. Leader Skills
12. Exciting Weekends
13. Money for Ed.
14. Hi-Tech Equipment
15. Step Betwn HS & Col.
16. Live in Hometown
17. Part-time Work

Note. Attributes are presented in descending order of importance to aid interpretation.

[a]This attribute is not asked in the Army Reserve perceptions module.

Figure 6. Primary Male Enlisted Market importance-perception gaps for Army Reserve attributes (F87).

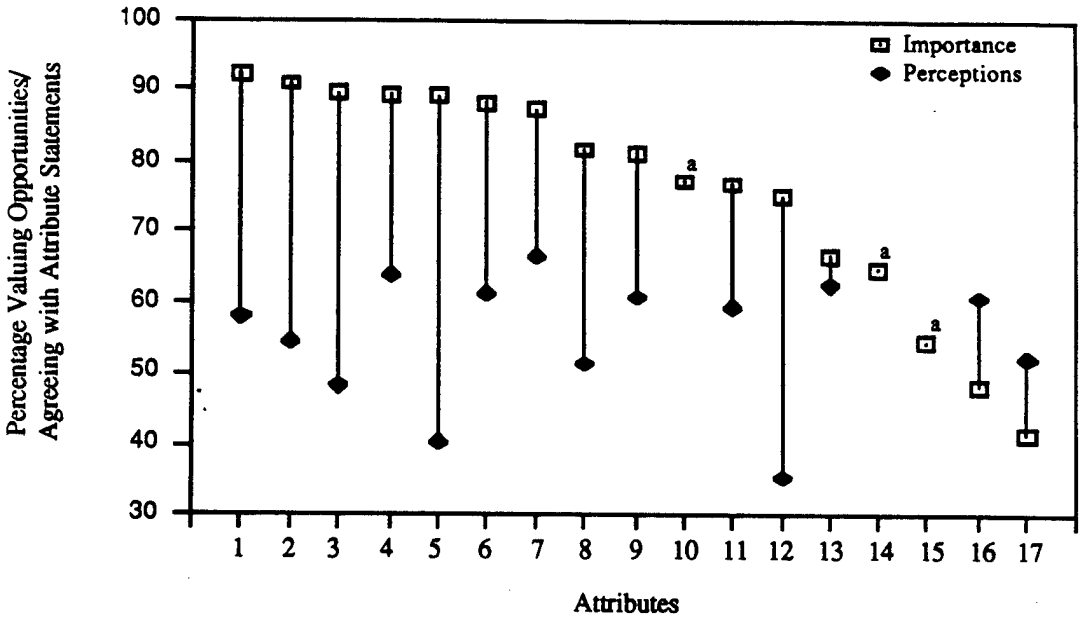
Army National Guard (ARNG)

General. In general, the findings pertaining to the ARNG are also stable this quarter. Decreases in agreement that the ARNG provides opportunities for gaining self-confidence and for serving America while living in one's own hometown, two of last quarter's predominant perceptions, resulted in shifts in the predominant perceptions of the ARNG by PMAS youth this quarter. This quarter PMAS youth are most likely to agree that the ARNG offers opportunities for becoming more mature and responsible (also predominant last quarter), for training in useful skill areas, and for earning money for education.

Enlistment intentions. There were no significant changes this quarter in the percentage of youth in the primary enlisted market who said they would probably or definitely enlist in the ARNG (12.1%). No significant changes from last quarter were observed in unaided ARNG enlistment intentions.

Perceptions of opportunities compared to importance of opportunities. As shown in Figure 7, the largest gaps between importance of opportunities and perceptions that they are available in the ARNG are found for developing one's civilian career and having job variety. Opportunities for part-time work, serving America while living in one's own hometown, and earning money for education are perceived as available in the ARNG by larger percentages of youth than the percentages considering them important.

Recall and knowledge. Unaided recall of ARNG advertising remains low (12.0%) but increases substantially when recall is aided (67.7%). A significant decrease over last quarter in recall of ARNG ads by youth in the 1st Recruiting Brigade occurred. This decline resulted in 1st Recruiting Brigade youth being least likely of all regional groups to recall ARNG advertising. Combined aided and unaided recall of ARNG advertising increased this quarter among college freshmen and sophomores. General knowledge that educational money can be earned by enlisting in the USAR and ARNG remains high (89.2%) while specific knowledge of the maximum amount that can be earned continues to be low (9.5%). However, knowledge of the latter increased this quarter for some subgroups (i.e., college freshmen and sophomores, 2nd Recruiting Brigade, and 18- to 19-year olds). In contrast to last quarter's increases, Recruiting Market Females decreased this quarter in knowledge of USAR/ARNG eligibility requirements.



Key:

1. Develop Potential
2. Proud Experience
3. Job Variety
4. Mature & Responsible
5. Civilian Career
6. Self-Confidence
7. Skill Training
8. Mental Challenge
9. Hi-Trained Co-Workers
10. Physical Challenge
11. Leader Skills
12. Exciting Weekends
13. Money for Ed.
14. Hi-Tech Equipment
15. Step Betwn HS & Col.
16. Live in Hometown
17. Part-time Work

Note. Attributes are presented in descending order of importance to aid interpretation.

[a]This attribute is not asked in the Army National Guard perceptions module.

Figure 7. Primary Male Enlisted Market importance-perception gaps for Army National Guard attributes (F87).

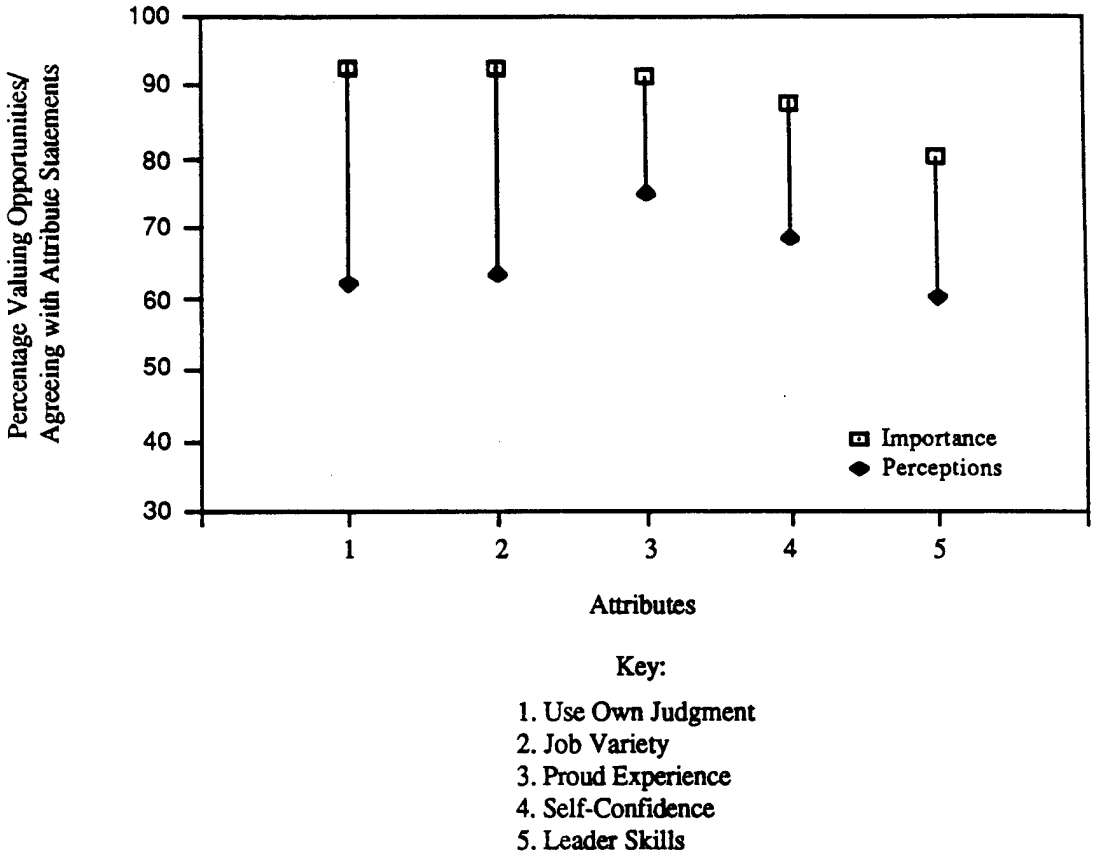
Army Reserve Officers' Training Corps (ROTC)

General. Stable findings also characterize the overall pattern of results for the ROTC this quarter. However, decreases were observed for college freshmen and sophomores in agreement that the Army ROTC offers opportunities for gaining self-confidence, having an experience to be proud of, and using one's own judgment. College freshmen and sophomores are also less likely to value opportunities for having an experience to be proud of and finding an enjoyable job. These changes may be the result of assimilation of new college students into the college culture.

Intention to join the ROTC. No significant changes were observed this quarter in the overall percentage of youth in the officer market who said they would probably or definitely receive an officer's commission through participation in the Army ROTC (17.3%). However, youth in the 5th Recruiting Brigade were more likely this quarter than last to have aided ROTC enlistment intentions.

Perceptions of opportunities compared to importance of opportunities. As shown in Figure 8, there are importance-perceptions gaps for all of the ROTC-relevant opportunities again this quarter. Largest gaps are observed for opportunities for job variety and using one's own judgment. The smallest gaps appear for agreement that the ROTC offers opportunities for having an experience to be proud of and for gaining self-confidence.

Recall and knowledge. Unaided recall of ROTC advertising continues to be very low (1.6%) but is substantially increased when recall is aided (42.0%). Approximately 70% of male youth in the officer market know that ROTC courses can be taken as college electives and that an officer's commission can be earned through participation in the ROTC.



Note. Attributes are presented in descending order of importance to aid interpretation.

Figure 8. ROTC Male Sample (Officer Market) importance-perception gaps for ROTC attributes (F87).

Season-to-Season Comparisons

Fall 1987 represents the fifth and final quarter of ACOMS data collection. There are few significant changes from Summer quarter in most of the variables tracked in the quarterly reports. Interpretation of these Summer to Fall differences are, however, complicated by the confounding of potential seasonal effects and longer term trends. Analyses to separate these two aspects of change which were planned for this quarterly report could not be conducted owing to funding limitations and the closing of the project. Comparisons between Fall 1987 and Fall 1988 to detect seasonality effects are not incorporated into the body of this quarterly report. However, we can make note of two significant changes from Fall 1987 to Fall 1988 that illustrate the complexity of interpreting season-to-season changes.

First, there are significant increases from last Fall to this Fall in general aided intentions to enlist in the Army by youth in the primary male enlisted market (27.3 vs. 23.4)(Z=2.07, p<.05) and, more specifically, by college-oriented high school students within this market (41.6% vs. 33.6%)(Z=2.34,p<.05). By looking at the pattern of changes in this variable across the five quarters of ACOMS data collection for these two subgroups, we can see that the significant increase from Fall 1987 to Fall 1988 reflects consistent, gradual increases in intentions to enlist from quarter-to-quarter throughout the year. While none of the previous quarter-to-quarter comparisons produced a significant change, nonsignificant positive increases across quarters have accumulated steadily and culminated in a significant difference between this Fall and last Fall. While this may be a trend rather than a seasonal pattern of change, additional data and more analysis would be needed to make this determination statistically.

Second, among youth in the primary male enlisted market, there is a significant decrease in agreement that the Army offers an experience to be proud of in Fall 1988 compared to Fall 1987 (64.0% vs. 70.3%)(Z=-2.55,p<.05). However, the drop in agreement with this attribute statement occurred between Summer 1988 and Fall 1988 while no previous significant changes from quarter-to-quarter were found. In fact, while a nonsignificant decline occurred last Winter over Fall quarter, both Spring and Summer quarters showed nonsignificant rises in agreement that the Army offers an experience to be proud of. In this case, additional data would be crucial to interpreting the trend. While the change does not appear to be a seasonal effect, the downturn could signal the start of a longer term downtrend in agreement with this attribute statement. One possible explanation for such a shift might be a change in the advertising content or a decrease in the quantity of ads carrying this message.

In sum, then, significant differences found comparing results from the same season in two years may reflect: (1) significant changes localized in one or two quarters or (2) the cumulative effects of gradual non-significant quarterly changes. Because we have only five quarters of data, we have no current example of a third possible cause of season-to-season changes: (3) significant changes in a durable seasonal pattern. Additional analysis must be conducted to distinguish among these interpretations.

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INTRODUCTION

This report presents data collected from youth respondents in the main interview conducted for ACOMS between 1 October and 31 December 1987. This report is intended only to convey topline results of important information that has been tracked on a routine basis. Analyses of relationships found among the measures and their meaning for improving Army advertising are reported elsewhere (e.g., Nieva, Gaertner, Elig, & Benedict, 1988).

METHODOLOGY

Respondents

During this quarter of data collection, a total of 3,258 youth interviews were completed. All of the tables in the quarterly report except Table F-6, Perceptions - Army ROTC, focus on the Army Enlisted Recruiting Market, a subset of 2,988 of the total youth interviews. Subgroups reported within the Army Recruiting Market and the Primary Male Analytic Sample (PMAS) are listed in Table 1. The composition of the subgroups is shown by number of respondents and the weighted percentage of respondents in each subgroup. Respondents have been weighted to represent the population eligible to be surveyed. (See Mohadjer & Waksberg (in preparation) for procedures and Keil, Gaertner, Nieva & Gay (1987) for sample definitions). Weighted percentages in Table 1 reflect the (estimated) composition of the population of eligibles.

The number of interviews and the weighted percentages in Table 1 are provided as a general guide to sample sizes. It should be noted, however, that the number of interviews and weighted percentages are different for each of the tables containing data from rotating modules (Tables F-3, F-4, F-5, F-10, and F-11, for Perceptions of the Army, USAR, and ARNG, Knowledge, and Media Habits, respectively).

The sample for Table F-6, Perceptions - Army ROTC, is quite different because it reflects the Officer Market rather than the Recruiting Market.

Questionnaire

In general, the version of the questionnaire that a respondent receives is determined by the date an interview is conducted. Respondents interviewed on September 30th received the Summer version while those interviewed on October 1st

Table 1

Fall 1987 Respondents by Market and Market Subgroup Percentages

Sample	Respondents	Weighted Percentage
RECRUITING MARKET (2,988 Respondents)		
Males [PMAS + SMS]	2,459	48.5
Females [PFAS + SFS]	529	51.5
TOTAL PMAS (2,087 Respondents)		
College Freshman and Sophomores	377	19.4
H.S. Students [College-Oriented]	834	32.1
H.S. Students [Work-Oriented]	188	8.0
H.S. Graduates Not Currently Enrolled	688	40.4
1st Rctg Bde	575	23.3
2nd Rctg Bde	334	17.6
4th Rctg Bde	528	21.8
5th Rctg Bde	366	18.8
6th Rctg Bde	284	18.6
16-17 Years Old	899	33.8
18-19 Years Old	575	26.8
20-21 Years Old	287	17.3
22-24 Years Old	326	22.2
OFFICER MARKET : TOTAL ROTC SAMPLE (1,772 Respondents)		
Total ROTC Male Sample	1,459	49.1
Total ROTC Female Sample	313	50.9
OFFICER MARKET: ROTC MALE SAMPLE (1,459 Respondents)		
College Juniors and Seniors	248	22.3
College Freshman and Sophomores	377	29.3
H.S. Students [College-Oriented]	834	48.4
1st ROTC Region	415	23.9
2nd ROTC Region	400	25.0
3rd ROTC Region	323	24.5
4th ROTC Region	321	26.7
16-17 Years Old	730	40.8
18-19 Years Old	357	24.1
20-21 Years Old	207	18.2
22-24 Years Old	165	17.0

received the Fall version. The only exceptions occurred when, for any reason, a September interview could not be completed during one telephone call, and the youth was not available to complete the interview until October. Interviews with these youth were completed using the Summer version of the questionnaire rather than the Fall version of the instrument. A total of 15 respondents in the Recruiting Market completed their interviews during Fall quarter using the Summer version of the questionnaire. Their responses are included in the Fall quarter data.

Sample Data

Table 2 shows response rates for household screeners, youth interviews, and a combined rate for samples initiated on 1 October, 1 November, and 1 December. The response rate for household screeners is the percentage of total identified households for which the screening instrument was completed to identify youths eligible for interviewing. The youth response rate is the percentage of youths for whom interviews were completed of those who were eligible for interviewing. The combined rate is the product of the household- and youth-interview rates.

Table 2

Response Rates for Samples Drawn October, November, and December 1987

	October	November	December
Household Screener	84.8	85.7	81.9*
Youth Interview	75.3	77.2	71.7*
Combined	63.9	66.2	58.7*

*Note that the normal close-out time of 8 weeks was truncated for the month of December to approximately 5 weeks because of budget cuts. This resulted in lower response rates than would have been obtained if the normal close-out timeframe had been available.

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RESULTS AND DISCUSSION

PERCENTAGE WITH INTENTION TO ENLIST IN ARMY COMPONENTS
(Standard Error)

SAMPLE GROUPS	n1	Unaided Intention: General Intention	Unaided Intention: Active Army	Unaided Intention: USAR	Unaided Intention: ARNG	Aided Intention: General Intention	Aided Intention: Active Army	Aided Intention: USAR	Aided Intention: ARNG	n2	Army ROTC
RECRUITING MARKET:											
MALES [PMAS + SMS]	2,459	2.7	2.1	0.2	0.3	29.3	17.1	15.8	14.3	1,683	18.9
		(0.4)	(0.3)	(0.1)	(0.1)	(1.1)	(0.9)	(1.0)	(0.9)		(1.0)
FEMALES [PFAS + SFS]	529	0.7	0.0	0.7	0.0	7.8	4.1	4.4	3.2	420	6.8
		(0.5)	n.e.	(0.5)	n.e.	(1.6)	(1.0)	(1.3)	(0.9)		(2.0)
TOTAL RECRUITING MARKET	2,988	1.7	1.0	0.5	0.2	18.2	10.4	9.9	8.6	2,103	12.1
		(0.3)	(0.2)	(0.3)	(0.1)	(1.0)	(0.6)	(0.9)	(0.6)		(1.2)
PMAS:											
College Freshmen and Sophomores	377	0.9	0.9	0.0	0.0	13.5	3.7	6.1	3.6	372	7.3
		(0.6)	(0.6)	n.e.	n.e.	(2.3)	(1.2)	(1.4)	(1.3)		(1.8)
H.S. Students [College-Oriented]	834	3.2	1.6	0.8	0.7	41.6	24.2	23.6	18.2	834	26.0
		(0.7)	(0.5)	(0.4)	(0.4)	(1.8)	(1.8)	(1.9)	(1.7)		(1.6)
H.S. Students [Work-Oriented]	188	7.9	5.5	0.6	1.8	40.8	26.7	23.8	21.5	0	N/A
		(3.2)	(3.0)	(0.6)	(1.0)	(3.5)	(3.2)	(3.5)	(3.3)		N/A
H.S. Graduates Not Currently Enrolled	688	1.1	1.1	0.0	0.0	19.9	11.3	9.9	9.5	336	13.1
		(0.5)	(0.5)	n.e.	n.e.	(2.0)	(1.7)	(1.3)	(1.4)		(2.0)
1st Rctg Bde	575	2.5	2.0	0.2	0.3	22.5	11.3	13.3	9.6	399	12.5
		(1.0)	(1.0)	(0.2)	(0.2)	(1.5)	(1.3)	(1.5)	(1.1)		(1.9)
2nd Rctg Bde	334	2.6	2.4	0.0	0.3	33.7	20.5	18.3	19.1	234	22.4
		(0.9)	(0.9)	n.e.	(0.3)	(2.5)	(2.4)	(2.6)	(2.4)		(2.4)
4th Rctg Bde	528	3.2	1.4	0.9	0.9	26.2	15.9	11.6	10.4	384	16.0
		(0.9)	(0.5)	(0.5)	(0.5)	(2.1)	(1.9)	(1.6)	(1.8)		(3.1)
5th Rctg Bde	366	1.4	1.0	0.4	0.0	35.0	16.1	20.1	15.4	292	26.0
		(0.5)	(0.5)	(0.3)	n.e.	(2.7)	(2.5)	(2.6)	(1.9)		(2.7)
6th Rctg Bde	284	1.4	1.2	0.0	0.3	20.8	13.2	11.3	7.6	233	10.8
		(0.8)	(0.8)	n.e.	(0.3)	(2.8)	(1.9)	(2.2)	(1.6)		(1.8)
16-17 Years Old	899	4.4	2.4	0.9	1.1	40.7	24.6	23.5	18.7	729	25.4
		(1.0)	(0.8)	(0.4)	(0.4)	(1.6)	(1.7)	(1.7)	(1.6)		(1.7)
18-19 Years Old	575	1.3	1.2	0.1	0.0	25.2	11.7	12.0	8.6	475	12.7
		(0.5)	(0.5)	(0.1)	n.e.	(1.9)	(1.4)	(1.5)	(1.3)		(1.9)
20-21 Years Old	287	0.2	0.2	0.0	0.0	17.1	7.1	9.7	7.7	180	9.4
		(0.2)	(0.2)	n.e.	n.e.	(2.6)	(1.9)	(2.2)	(1.9)		(2.5)
22-24 Years Old	326	1.9	1.9	0.0	0.0	17.4	11.2	8.4	9.8	158	14.7
		(0.9)	(0.9)	n.e.	n.e.	(2.7)	(2.2)	(1.9)	(2.0)		(3.8)
TOTAL PMAS	2,087	2.3	1.6	0.3	0.4	27.3	15.2	14.7	12.1	1,542	17.3
		(0.4)	(0.4)	(0.1)	(0.1)	(1.0)	(0.8)	(0.9)	(0.7)		(1.0)

Note: n.e. indicates standard error is not estimable.
n1 provides case bases for all Unaided Intention Measures and for all Aided Intention Measures except Army ROTC.
n2 provides case bases for all Aided Intention - Army ROTC.

Similar to Last Quarter

- High school students continue to have the highest aided general intentions to enlist in the Army among PMAS youth ($p<.05$ for all 4 relevant comparisons).
  - Aided intentions to enlist in all Army components are again higher for high school students than for college freshmen and sophomores or high school graduates not currently enrolled in school ($p<.01$ for all 13 relevant comparisons).
  - Similarly, 16- to 17-year olds are significantly more likely than youth in the other three age groups to have aided intentions to enlist generally and in all Army components ($p<.05$ for all 15 relevant comparisons).
- Youth in the 2nd Recruiting Brigade (Southeast) and the 5th Recruiting Brigade (Southwest) have higher general aided intentions to enlist in the Army than youth in the other three regions ($p<.05$ for all 6 relevant comparisons).
  - The regional differences are most apparent in aided intentions to enlist in the USAR, ARNG, and ROTC. For all three of these Army components, youth in the 2nd and 5th Recruiting Brigades appear more likely than those in the 1st, 4th, and 6th Recruiting Brigades to intend to enlist ($p<.05$ for 15 of the 18 relevant comparisons).
  - Although youth in the 2nd Recruiting Brigade are significantly more likely than youth in the 1st Recruiting Brigade (20.5% vs. 11.3%, $Z=3.37$, $p<.01$) and 6th Recruiting Brigade (20.5% vs. 13.2%, $Z=2.38$, $p<.05$) to have active Army enlistment intentions, there is no significant difference between 2nd and 4th Recruiting Brigade youth in active Army intentions. Youth in the 5th Recruiting Brigade are no more likely than those in the other areas of the country to have active Army enlistment intentions.
- Men continue to be significantly more likely than women to express aided intentions to enlist generally (29.3% vs. 7.8%) ($Z=11.07$, $p<.01$) and in all Army components (Active Army: 17.1% vs. 4.1%, $Z=9.66$, $p<.01$; USAR: 15.8% vs. 4.4%, $Z=6.95$, $p<.01$; ARNG: 14.3% vs. 3.2%, $Z=8.72$, $p<.01$; ROTC: 18.9% vs. 6.8%, $Z=5.41$, $p<.01$). Men are also more likely than women to volunteer that they intend to enlist in the Army (general unaided intention) (2.7% vs. 0.7%) ($Z=3.12$, $p<.01$).

Different from Last Quarter

- No clear patterns of changes in enlistment intentions are found when comparing this quarter to last quarter. Rather there were a few changes in the enlistment intention of particular subgroups with respect to some Army components.

  - College freshmen and sophomores are significantly less likely to have aided intentions to enlist in the active Army this quarter than last quarter (3.7% vs. 9.2%) (Z=-2.36, p<.05).

  - Work-oriented high school students show a decrease in unaided intentions to enlist in the USAR (0.6% vs. 2.4%) (Z=-1.96, p<.05).

  - Significant increases occurred this quarter for general aided intentions to enlist in the Army among youth in the 4th Recruiting Brigade (26.2% vs. 19.4%) (Z=2.35, p<.05) and for Army ROTC enlistment intentions among youth in the 5th Recruiting Brigade (26.0% vs. 18.1%) (Z=2.0, p<.05).

FALL - SUMMER DIFFERENCES IN
PERCENTAGE WITH INTENTION TO ENLIST IN ARMY COMPONENTS

SAMPLE GROUPS	n1	Unaided Intention: General Intention	Unaided Intention: Active Army	Unaided Intention: USAR	Unaided Intention: ARNG	Aided Intention: General Intention	Aided Intention: Active Army	Aided Intention: USAR	Aided Intention: ARNG	n2	Army ROTC
RECRUITING MARKET:											
MALES (PMAS + SMS)		+	+	-	+	+	-	+	+		+
FEMALES (PFAS + SFS)		-	-	+	-	-	+	-	-		-
TOTAL RECRUITING MARKET		-	-	+	-	+	+	-	-		+
PMAS:											
College Freshmen and Sophomores		+	+	-	-	-	-2.36	-	-		-
H.S. Students (College-Oriented)		+	-	+	+	+	-	+	+		+
H.S. Students (Work-Oriented)		+	+	-1.96	+	-	-	+	+		0
H.S. Graduates Not Currently Enrolled		-	-	0	-	+	+	+	+		+
1st Rctg Bde		+	+	-	+	+	+	+	+		+
2nd Rctg Bde		-	-	-	+	-	-	-	+		+
4th Rctg Bde		+	+	+	+	+2.35	+	+	+		+
5th Rctg Bde		-	-	-	-	+	+	+	+		+2.00
6th Rctg Bde		+	+	0	-	-	-	-	-		-
16-17 Years Old		+	+	-	+	+	+	+	+		+
18-19 Years Old		-	-	-	0	+	-	-	-		+
20-21 Years Old		-	+	0	-	-	-	-	+		-
22-24 Years Old		+	+	0	0	+	+	+	+		+
TOTAL PMAS		+	+	-	+	+	-	+	+		+

Note: Numbers are Z-scores for significant quarter-to-quarter differences (i.e., $p < 0.05$; ± 2 s.e.)
Signs indicate the direction of changes that are not statistically significant.

PERCENTAGE RATING OPPORTUNITIES "IMPORTANT" OR "VERY IMPORTANT" TO PLANS FOR THE NEXT YEAR
(Standard Error)

SAMPLE GROUPS	n	Job Variety	Physical Challenge	Proud Experience	Step Btwn HS & Col.	Leader Skills	Hi-Tech Equipment	Civilian Career	Self Confidence	Develop Potential	Mental Challenge	Mature & Responsible	Skill Training	Hi-Trained Co-Workers	Money for Ed.	Serve Country	Exciting Weekends	Part-Time Work	Live in Hometown
RECRUITING MARKET:																			
MALES [PMAS + SMS]	2,459	89.2	77.5	91.3	54.2	76.1	64.1	88.6	88.3	91.4	80.2	89.2	85.0	79.9	64.3	59.8	76.2	38.6	51.0
		(0.8)	(0.9)	(0.6)	(1.1)	(1.0)	(1.1)	(0.8)	(0.8)	(0.6)	(0.9)	(0.7)	(0.8)	(0.9)	(1.2)	(1.3)	(1.0)	(1.2)	(1.3)
FEMALES [PFAS + SFS]	529	91.3	66.9	94.6	65.8	75.1	55.6	90.4	91.2	92.8	82.6	90.9	86.1	82.0	71.7	52.2	72.0	49.6	57.1
		(1.6)	(3.0)	(0.9)	(2.5)	(2.1)	(2.4)	(1.2)	(1.2)	(1.3)	(1.9)	(1.3)	(1.9)	(1.9)	(2.6)	(2.5)	(2.4)	(2.3)	(2.7)
TOTAL RECRUITING MARKET	2,988	90.3	72.0	93.0	60.2	75.6	59.7	89.5	89.8	92.1	81.5	90.1	85.5	81.0	68.1	55.9	74.0	44.3	54.1
		(0.9)	(1.5)	(0.6)	(1.5)	(1.2)	(1.4)	(0.8)	(0.7)	(0.7)	(1.0)	(0.8)	(1.0)	(1.1)	(1.5)	(1.5)	(1.2)	(1.2)	(1.5)
PMAS:																			
College Freshmen and Sophomores	377	89.7	73.7	87.9	46.8	77.6	57.9	90.9	87.2	94.9	88.4	87.3	84.9	78.4	71.2	53.0	69.9	44.5	37.1
		(2.0)	(2.9)	(1.9)	(3.5)	(3.1)	(3.4)	(1.7)	(2.2)	(1.2)	(1.9)	(1.7)	(2.0)	(2.6)	(3.4)	(3.4)	(3.3)	(3.9)	(3.2)
H.S. Students [College-Oriented]	834	94.2	82.0	93.6	69.8	79.8	67.5	91.7	89.0	92.8	81.6	91.4	87.9	83.3	85.0	64.4	73.9	61.5	43.7
		(0.8)	(1.6)	(1.0)	(1.8)	(1.8)	(2.0)	(0.9)	(1.3)	(0.9)	(1.4)	(1.0)	(1.4)	(1.2)	(1.3)	(2.1)	(1.6)	(2.2)	(1.8)
H.S. Students [Work-Oriented]	188	89.6	75.9	93.1	44.4	77.0	74.3	84.9	88.6	85.8	74.8	92.8	87.1	82.1	61.5	72.9	79.0	53.9	59.5
		(2.2)	(3.0)	(1.8)	(4.2)	(3.0)	(3.1)	(2.9)	(1.8)	(2.5)	(3.9)	(2.3)	(2.4)	(3.0)	(3.4)	(3.6)	(3.2)	(4.1)	(3.8)
H.S. Graduates Not Currently Enrolled	688	86.6	75.2	90.7	47.9	74.3	64.3	87.4	88.8	92.1	80.4	88.2	88.1	80.4	50.5	53.6	77.7	22.0	55.2
		(1.8)	(2.0)	(1.4)	(2.4)	(1.5)	(2.1)	(1.3)	(1.4)	(1.0)	(1.8)	(1.4)	(1.3)	(1.5)	(2.1)	(2.2)	(1.6)	(2.1)	(2.2)
1st Rctg Bde	575	90.0	73.7	89.3	48.0	70.2	59.6	85.4	86.7	92.2	79.4	87.6	82.9	77.1	61.1	53.4	72.5	40.0	46.4
		(1.4)	(2.4)	(1.3)	(2.2)	(2.5)	(2.4)	(2.0)	(1.6)	(1.2)	(1.9)	(1.6)	(1.6)	(1.8)	(3.0)	(2.5)	(2.1)	(2.8)	(2.9)
2nd Rctg Bde	334	91.7	77.0	90.3	56.8	81.7	74.3	88.8	91.4	93.1	82.8	89.5	88.0	87.5	65.9	63.4	75.7	41.5	51.6
		(1.4)	(2.5)	(1.8)	(3.6)	(2.3)	(2.8)	(1.7)	(1.7)	(1.5)	(2.2)	(2.3)	(2.4)	(2.0)	(3.1)	(3.2)	(2.6)	(2.4)	(3.5)
4th Rctg Bde	528	86.8	76.9	90.6	52.1	75.3	61.1	89.5	87.0	90.1	77.0	88.3	86.9	79.6	68.1	55.4	76.4	45.7	49.8
		(2.3)	(1.9)	(1.2)	(3.1)	(1.9)	(2.6)	(1.5)	(1.7)	(1.5)	(2.4)	(1.3)	(1.6)	(1.9)	(2.4)	(2.6)	(2.4)	(2.8)	(2.7)
5th Rctg Bde	366	92.8	80.0	93.7	61.2	85.0	70.4	92.2	88.9	93.5	84.9	90.5	90.7	81.5	73.8	61.9	77.7	42.8	49.4
		(1.4)	(2.5)	(1.4)	(2.6)	(1.9)	(2.5)	(1.5)	(2.1)	(1.2)	(2.3)	(1.6)	(1.6)	(2.4)	(2.4)	(3.0)	(2.6)	(3.2)	(2.8)
6th Rctg Bde	284	88.5	79.0	93.1	56.1	74.6	61.6	91.1	89.6	93.5	87.0	91.7	89.3	81.4	64.5	60.5	73.5	37.6	45.0
		(3.2)	(3.3)	(2.0)	(3.1)	(2.3)	(2.7)	(1.3)	(2.2)	(1.8)	(2.2)	(1.7)	(1.7)	(2.5)	(2.8)	(3.8)	(3.1)	(3.0)	(3.4)
16-17 Years Old	899	92.8	81.5	93.5	63.1	79.0	68.8	90.2	88.6	91.8	80.6	91.1	87.0	82.5	80.2	66.6	76.1	59.4	45.6
		(0.7)	(1.3)	(0.8)	(1.8)	(1.4)	(1.5)	(0.9)	(1.1)	(1.0)	(1.3)	(1.0)	(1.2)	(1.4)	(1.2)	(1.9)	(1.5)	(2.0)	(1.9)
18-19 Years Old	575	92.5	77.3	91.9	53.0	76.2	62.9	89.3	88.9	92.3	83.4	90.4	87.8	81.7	71.1	57.0	71.7	43.0	46.6
		(1.3)	(1.9)	(1.2)	(2.1)	(1.8)	(2.2)	(1.5)	(1.4)	(1.2)	(1.4)	(1.4)	(1.5)	(1.8)	(2.2)	(2.3)	(2.3)	(2.7)	(2.4)
20-21 Years Old	287	85.8	73.3	90.5	50.4	78.0	64.4	88.3	87.7	91.3	80.2	87.4	87.7	78.6	56.8	51.6	81.1	32.3	47.9
		(2.6)	(3.0)	(1.7)	(3.5)	(2.4)	(2.7)	(2.1)	(2.1)	(2.3)	(2.9)	(2.1)	(2.0)	(3.4)	(3.5)	(3.4)	(2.6)	(3.1)	(4.5)
22-24 Years Old	326	85.3	73.2	87.7	46.1	73.8	61.8	88.5	88.7	94.1	83.4	87.3	86.9	80.1	47.5	53.3	72.9	20.0	54.9
		(2.6)	(2.9)	(2.1)	(3.0)	(2.9)	(3.2)	(1.9)	(1.9)	(1.1)	(2.5)	(2.0)	(1.9)	(2.3)	(3.6)	(3.7)	(2.8)	(2.7)	(4.0)
TOTAL PMAS	2,087	89.9	77.1	91.3	54.4	76.9	64.9	89.2	88.6	92.4	81.9	89.4	87.3	81.1	66.5	58.5	75.1	41.6	48.3
		(1.0)	(1.1)	(0.7)	(1.1)	(1.0)	(1.1)	(0.7)	(0.8)	(0.6)	(1.0)	(0.8)	(0.7)	(0.9)	(1.3)	(1.3)	(1.2)	(1.4)	(1.3)

TABLE F-2 IMPORTANCE OF ATTRIBUTES

Similar to Last Quarter

- Again this quarter, a majority of youth (85%-95%) in all sample groups consider career and self-development opportunities important. The attributes most likely to be valued are having experiences to be proud of, having opportunities for developing potential, maturity, self-confidence, and having opportunities for job variety and career development.

  - Those opportunities least likely to be considered important (20% - 60%) are living in one's own hometown, working part-time, and having a stepping-stone between high school and college.

- Differences among educational groups for two college-related opportunities, earning money for education and having a stepping-stone between high school and college, remain stable.

  - College-oriented high school students are most likely to value the opportunity to earn money for education. They are significantly more likely to value this opportunity than college freshmen and sophomores (85.0% vs. 71.2%) (Z=3.79, p<.01), work-oriented high school students (85.0% vs. 61.5%) (Z=6.46, p<.01), and high school graduates who are not currently enrolled in school (85.0% vs. 50.5%) (Z=13.97, p<.01).

  - College freshmen and sophomores are also significantly more likely than work-oriented high school students (71.2% vs. 61.5%) (Z=2.02, p<.05) and high school graduates not currently enrolled (71.2% vs. 50.5%) (Z=5.18, p<.01) to value earning money for education.

  - College-oriented high school students are again more likely than those who are work-oriented to value having a stepping stone between high school and college (69.8% vs.44.4%) (Z=5.56, p<.01). They are also significantly more likely to value it than college freshmen and sophomores (69.8% vs. 46.8%) (Z=5.84, p<.01) and high school graduates not enrolled in school (69.8% vs. 47.9%) (Z=7.30, p<.01).

- The likelihood of valuing opportunities for service to country and living in one's own hometown also vary across educational groups.

  - Work-oriented high school students are more likely to value the opportunity to serve the country than any of the other educational groups (p<.05 for all 3 comparisons). However, college-oriented high school students are also more likely to value this opportunity than college freshmen and sophomores (64.4% vs. 53.0%) (Z=2.85, p<.01) or high school graduates who are not currently enrolled (64.4% vs. 53.6%) (Z=3.55, p<.01).

- Work-oriented high school students and high school graduates who are not currently enrolled in school are more likely than college-oriented youth to consider it important to live in their own hometowns ($p<.05$ on all 4 comparisons).

- The likelihood of valuing some opportunities varies by sex of respondents.

  - Females are more likely than males to value having an experience to be proud of (94.6% vs. 91.3%) ($Z=3.05$, $p<.01$), a stepping-stone between high school and college (65.8% vs. 54.2%) ($Z=4.25$, $p<.01$), gaining self-confidence (91.2% vs. 88.3%) ($Z=2.01$, $p<.01$), earning money for education (71.7% vs. 64.3%) ($Z=2.58$, $p<.01$), part-time work (49.6% vs. 38.6%) ($Z=4.24$, $p<.01$), and living in their own hometowns (57.1% vs. 51.0%) ($Z=2.04$, $p<.05$).

  - Males are more likely than females to value having a physical challenge (77.5% vs. 66.9%) ($Z=3.38$, $p<.01$), using high-tech equipment (64.1% vs. 55.6%) ($Z=3.22$, $p<.01$), and serving the country (59.8% vs. 52.2%) ($Z=2.70$, $p<.01$).

Different from Last Quarter

- In contrast to last quarter's clear pattern of increases in importance items, there are fewer significant changes this quarter (15 significant changes this quarter compared to 36 last quarter). Additionally, 59% of all changes are negative and 41% are positive as compared with 14% negative and 86% positive reported last quarter.

  - None of the opportunities shows a strong pattern of value shifts this quarter.

  - Similarly, none of the groups shown in Table C-2 exhibits a clear pattern of change over last quarter.

- Significant differences between college-oriented and work-oriented high school students appear again this quarter. In addition to the stable differences between the two groups on college-related opportunities discussed previously, college-oriented high school students are more likely than those who are work-oriented to value opportunities for job variety (94.2% vs. 89.6%) ($Z=1.97$, $p<.05$) and for developing career (91.7% vs. 84.9%) ($Z=2.24$, $p<.05$) and potential (92.8% vs. 85.8%) ($Z=2.63$, $p<.01$).

- High school students, both college- and work-oriented, are more likely than college freshmen and sophomores to value having an experience to be proud of (college-oriented: 93.6% vs. 87.9%, $Z=2.65$, $p<.01$; work-oriented: 93.1% vs. 87.9%, $Z=1.99$, $p<.05$) and having the opportunity to work with high-tech equipment (college-oriented: 67.5% vs. 57.9%, $Z=2.43$, $p<.05$; work-oriented: 74.3% vs. 57.9%, $Z=3.56$, $p<.01$).

FALL - SUMMER DIFFERENCES IN
PERCENTAGE RATING OPPORTUNITIES "IMPORTANT" OR "VERY IMPORTANT" TO PLANS FOR THE NEXT YEAR

SAMPLE GROUPS	n	Job Variety	Physical Challenge	Proud Experience	Step Stnn HS & Col.	Leader Skills	Hi-Tech Equipment	Civilian Career	Self Confidence	Develop Potential	Mental Challenge	Mature & Responsible	Skill Training	Hi-Trained Co-Workers	Money for Ed.	Serve Country	Exciting Weekends	Part-Time Work	Live in Hometown
RECRUITING MARKET:																			
MALES (FMAS + SMS)		+	-	-	+	-	-	-2.12	-	-	+	-	-	-	-	-	-	+	-
FEMALES (FFAS + SFS)		-	-	+	+	+	-	+	-	-	-	-	-	-	+	+	+	+	+
TOTAL RECRUITING MARKET		-	-	+	+	+	-	-	-	-	-	-	-	-	-	-	+	+	+
FMAS:																			
College Freshmen and Sophomores		-2.28	-	-1.97	-	-	-	-	-	+	-	-	+	-	-	-	-	+	-
H.S. Students (College-Oriented)		+	+	-	-	-	-	-	+	+	+	-	+	-	+	-	-	+2.52	-
H.S. Students (Work-Oriented)		+	-	+	-2.06	+	+	+	+	-	+	+	+	+	+	+	+	+	+
H.S. Graduates Not Currently Enrolled		+	-	-	+	-	+	-	-	-	-	-	+	+	-	-	-	-	-
1st Rctg Bde		+	-2.53	-	-2.20	-	+	-2.33	-	+	-	-	-	-	-	-	-2.05	-	-
2nd Rctg Bde		+	+	-	-	+	+	-	+	+	+	-	+	+	-	-	-	+	+
4th Rctg Bde		-	-	-	+	-	-	-	-	-	-2.40	+	+	-	+	-	-	+	+
5th Rctg Bde		+	+	+	+	-	+	+	-	+	+	-	+	+	+	-	+	+2.12	-
6th Rctg Bde		+	+	+	-	-	-2.99	-	+	+	+	+	+	+	-	-	-	+	-
16-17 Years Old		+	+	-	-	-	+	-	-	+	+	-	-	-	+	-	-	+2.33	-
18-19 Years Old		+	-	+	-	-	-	-	+	+	+	+	+	+	-	-	-	+	-
20-21 Years Old		-	-	+	-	-	-	-	-	-	-	-	-	-1.98	-	-	+	+	-
22-24 Years Old		+	-	-	+	-	+	-	-	+	+	+	+	+	-	+	-	+	-
TOTAL FMAS		+	-	-	-	-	-	-	-	+	+	-	+	-	-	-	-	+1.98	-

Note: Numbers are Z-scores for significant quarter-to-quarter differences (i.e., $p < 0.05$; $\pm$ 2 s.e.)
Signs indicate the direction of changes that are not statistically significant.

PERCENTAGE "AGREE" OR "STRONGLY AGREE" WITH ACTIVE ARMY ATTRIBUTE STATEMENTS
(Standard Error)

SAMPLE GROUPS	n	Job Variety	Physical Challenge	Proud Experience	Step Btwn HS & Col.	Leader Skills	Hi-Tech Equipment	Civilian Career	Self Confidence	Develop Potential	Mental Challenge	Mature & Responsible	Skill Training	Hi-Trained Co-Workers	Money for Ed.
RECRUITING MARKET:															
MALES [PMAS + SMS]	2,322	58.9	79.8	65.7	50.2	73.7	78.9	54.0	71.6	68.7	68.0	74.7	75.0	74.6	75.9
		(1.3)	(1.1)	(1.2)	(1.4)	(1.0)	(1.2)	(1.3)	(1.2)	(1.1)	(1.2)	(1.2)	(1.2)	(1.1)	(1.0)
FEMALES [PFAS + SFS]	495	62.5	81.1	70.3	52.7	73.0	78.0	57.7	72.7	70.8	69.9	77.1	78.3	78.6	74.0
		(2.4)	(2.4)	(2.6)	(2.5)	(2.6)	(2.5)	(2.7)	(2.4)	(2.2)	(2.6)	(2.3)	(2.4)	(2.2)	(2.1)
TOTAL RECRUITING MARKET	2,817	60.8	80.5	68.1	51.5	73.3	78.5	55.9	72.2	69.8	69.0	76.0	76.7	76.7	74.9
		(1.5)	(1.4)	(1.4)	(1.5)	(1.5)	(1.4)	(1.6)	(1.3)	(1.2)	(1.5)	(1.2)	(1.4)	(1.3)	(1.2)
PMAS:															
College Freshmen and Sophomores	240	45.0	80.8	48.2	28.0	64.3	68.4	36.6	65.3	57.5	57.2	61.6	61.5	62.1	70.6
		(4.3)	(3.2)	(3.9)	(3.5)	(3.6)	(3.9)	(3.6)	(4.2)	(4.0)	(3.7)	(3.9)	(3.6)	(3.4)	(3.3)
H.S. Students [College-Oriented]	834	60.6	83.3	72.2	54.7	77.9	82.3	59.9	75.6	72.5	68.5	80.2	77.6	78.6	79.9
		(2.2)	(1.8)	(2.1)	(1.9)	(1.9)	(1.6)	(1.9)	(1.6)	(1.8)	(1.9)	(1.5)	(1.7)	(1.7)	(1.6)
H.S. Students [Work-Oriented]	188	74.1	77.4	73.6	56.3	75.9	79.8	67.3	76.5	71.6	74.1	78.9	82.6	76.7	75.3
		(3.5)	(3.6)	(3.6)	(4.7)	(3.9)	(3.5)	(4.1)	(3.2)	(3.3)	(3.3)	(3.4)	(3.1)	(3.5)	(3.2)
H.S. Graduates Not Currently Enrolled	688	55.1	77.7	63.0	50.3	73.6	80.9	49.7	68.8	65.5	69.3	73.0	76.9	73.5	75.5
		(2.0)	(1.8)	(2.2)	(2.3)	(1.6)	(2.1)	(2.2)	(2.2)	(2.1)	(1.9)	(2.2)	(1.8)	(2.1)	(1.5)
1st Rctg Bde	541	50.2	78.6	61.8	44.7	72.3	77.3	48.4	70.5	64.8	66.0	72.0	71.4	70.3	71.7
		(2.7)	(2.3)	(2.4)	(2.4)	(2.4)	(2.0)	(2.9)	(2.1)	(3.0)	(2.4)	(2.4)	(2.0)	(2.6)	(2.2)
2nd Rctg Bde	307	67.8	84.8	75.3	54.5	84.2	85.5	62.3	81.4	75.5	73.1	84.2	83.0	82.6	80.9
		(2.9)	(1.6)	(2.4)	(3.3)	(2.1)	(2.8)	(2.7)	(2.3)	(2.4)	(3.3)	(1.9)	(2.2)	(2.2)	(2.4)
4th Rctg Bde	490	56.0	76.1	59.1	46.0	69.3	73.3	50.9	66.9	60.7	63.1	69.4	74.3	68.9	74.2
		(3.1)	(2.9)	(3.5)	(2.8)	(2.5)	(3.2)	(2.7)	(2.6)	(2.9)	(2.6)	(2.7)	(2.5)	(2.7)	(2.2)
5th Rctg Bde	349	59.5	81.0	66.3	54.5	73.2	76.9	58.1	72.8	70.2	68.3	78.1	75.0	75.0	83.8
		(3.4)	(2.3)	(3.2)	(3.2)	(3.2)	(3.2)	(3.4)	(3.0)	(2.7)	(3.4)	(2.9)	(2.7)	(3.0)	(1.8)
6th Rctg Bde	263	51.4	81.4	59.7	41.3	69.8	83.3	41.2	64.4	64.4	66.6	66.1	71.0	71.6	71.0
		(3.0)	(2.7)	(3.5)	(4.0)	(3.1)	(3.3)	(2.8)	(3.1)	(3.9)	(2.9)	(3.8)	(3.8)	(3.4)	(3.5)
16-17 Years Old	895	62.8	82.9	71.2	54.1	77.1	81.4	60.6	75.0	72.3	69.7	81.0	77.3	77.9	77.5
		(2.1)	(1.7)	(2.0)	(2.2)	(1.9)	(1.7)	(2.0)	(1.5)	(1.7)	(2.0)	(1.4)	(1.6)	(1.7)	(1.5)
18-19 Years Old	480	59.0	80.8	63.4	43.0	73.0	76.1	50.4	70.4	66.0	66.6	73.0	72.1	69.8	77.8
		(2.9)	(1.9)	(2.6)	(2.4)	(2.7)	(2.1)	(2.2)	(2.5)	(2.4)	(2.6)	(2.2)	(2.2)	(2.4)	(2.1)
20-21 Years Old	265	51.2	75.4	55.1	43.0	65.5	75.8	42.9	65.3	61.7	61.5	62.5	71.4	68.1	75.8
		(3.6)	(2.8)	(3.1)	(3.8)	(3.4)	(3.2)	(3.8)	(3.6)	(3.6)	(3.6)	(4.2)	(2.9)	(3.2)	(2.8)
22-24 Years Old	310	47.8	78.6	60.8	48.2	74.6	80.6	47.5	69.9	63.0	68.4	71.9	76.1	74.4	71.6
		(3.5)	(2.5)	(3.6)	(3.1)	(3.0)	(3.0)	(4.2)	(2.8)	(2.8)	(3.0)	(3.4)	(2.8)	(3.0)	(3.0)
TOTAL PMAS	1,950	56.5	80.1	64.0	47.9	73.4	78.9	51.9	70.9	66.7	67.1	73.6	74.6	73.2	76.0
		(1.4)	(1.2)	(1.3)	(1.5)	(1.1)	(1.2)	(1.3)	(1.2)	(1.2)	(1.2)	(1.3)	(1.2)	(1.3)	(1.1)

TABLE F-3

PERCEPTIONS - ACTIVE ARMY

Similar to Last Quarter

- PMAS youth are most likely to agree that the Army provides opportunities for physical challenge (80.1%), for working with high-tech equipment (78.9%), and money for education (76.0%).

- PMAS youth are least likely to agree that the Army offers an advantage over going right from high school to college (47.9%), value in civilian career development (51.9%), and a wide variety of opportunities to find an enjoyable job (56.5%).

- Youth in the 2nd Recruiting Brigade (Southeast) are more likely than youth in the other recruiting brigades to agree that the Army offers highly trained co-workers, opportunities for learning leadership skills, gaining self-confidence, skills training, and having an experience to be proud of ($p<.05$ for all 20 comparisons). Additionally, youth in the 2nd Recruiting Brigade are more likely than those in the 1st, 4th, and 6th Recruiting Brigades to agree that the Army offers job variety, money for education, a stepping-stone between high school and college, and opportunities for developing one's potential, maturity, and career ($p<.05$ for all 18 comparisons).

- Decreases in likelihood of agreement occur with increasing age for statements that the Army offers an experience to be proud of, a value in civilian career development, and opportunities for becoming more mature and responsible and for developing one's potential ($p<.05$ for all 12 comparisons of 16- to 17-year olds with youth in the other 3 age groups).

- PMAS educational groups exhibit few differences in perceptions of the Army this quarter.

  - College-oriented and work-oriented high school students' perceptions of the Army continue to be very similar. Only one significant difference between the two groups is found: work-oriented high school students are significantly more likely than those who are college-oriented to agree that the Army offers a wide variety of job opportunities (74.1% vs. 60.6%)($Z=3.27$, $p<.01$).

  - College freshmen and sophomores are less likely than youth in the other educational groups to agree with Army attribute statements. They are significantly less likely than high school students to agree with all statements except those pertaining to physical challenge and money for education ($p<.05$ for 25 of 28 comparisons).

Different from Last Quarter

- No strong patterns of change in agreement with the Army attribute statements are found in comparing this quarter with last.
  - The significant decrease among PMAS youth in agreement that the Army offers an experience to be proud of appears to be mainly due to a decline in agreement with this statement among college freshmen and sophomores (48.2% vs. 67.1%) (Z=-3.51, p<.01) and 20- to 21-year olds (55.1% vs. 65.7%) (Z=-2.39, p<.05).

FALL - SUMMER DIFFERENCES IN
PERCENTAGE "AGREE" OR "STRONGLY AGREE" WITH ACTIVE ARMY ATTRIBUTE STATEMENTS

SAMPLE GROUPS	n	Job Variety	Physical Challenge	Proud Experience	Step Btwn HS & Col.	Leader Skills	Hi-Tech Equipment	Civilian Career	Self Confidence	Develop Potential	Mental Challenge	Mature & Responsible	Skill Training	Hi-Trained Co-Workers	Money for Ed.
RECRUITING MARKET:															
MALES [PMAS + SMS]		-	-	-2.62	-	+	-	-	-	-	+	-	+	-	+
FEMALES [PFAS + SFS]		+	+	+	-	+	+	+	+	-	+	+	+	+	+
TOTAL RECRUITING MARKET		+	+	-	-	+	-	-	-	-	+	-	+	+	+
PMAS:															
College Freshman and Sophomores		+	-	-3.51	-1.97	-	-	-1.96	-	-	+	-2.03	-	-	+
H.S. Students [College-Oriented]		-2.55	+	-	-	+	+	-	-	-	+	-	-	-	+
H.S. Students [Work-Oriented]		+	+	+	-	+	+	+	+	-	-	-	+	-	-
H.S. Graduates Not Currently Enrolled		-	-	-	-	+	-	-	-	-	-	-	+	-	+
1st Rctg Bde		-	-	-	-	+	+	+	+	-	+1.98	-	+	-	+
2nd Rctg Bde		+	+	-	-	+	-	-	+	+	-	+	+	+	+
4th Rctg Bde		-	-	-	-	-	-	-	-	-	-	-	+	-	-
5th Rctg Bde		-	+	-	-	-	-	-	-	-	-	-	-	-	+2.21
6th Rctg Bde		+	+	-	-	+	+	-1.99	-2.52	-	+	-2.57	-	-	-
16-17 Years Old		-2.15	+	-	-	+	+	+	-	-	+	+	-	-	-
18-19 Years Old		+	-	-	-	-	-	-	-	-	+	-	-	-	+
20-21 Years Old		-	+	-2.39	-	-	-	-	-	-	-	-2.03	+	-	+
22-24 Years Old		+	-	-	-	+	+	-	-	-	+	+	+	+	+
TOTAL PMAS		-	-	-2.64	-	+	-	-	-	-	+	-	-	-	+

Note: Numbers are Z-scores for significant quarter-to-quarter differences (i.e., $p < 0.05$; ± 2 s.e.)
Signs indicate the direction of changes that are not statistically significant.

PERCENTAGE "AGREE" OR "STRONGLY AGREE" WITH ARMY RESERVE ATTRIBUTE STATEMENTS
(Standard Error)

SAMPLE GROUPS	n	Job Variety	Proud Experience	Leader Skills	Civilian Career	Self Confidence	Develop Potential	Mental Challenge	Mature & Responsible	Skill Training	Hi-Trained Co-Workers	Money for Ed.	Exciting Weekends	Part-Time Work	Live in Hometown
MALES [PMAS + SMS]	381	52.2 (3.6)	62.1 (3.5)	62.4 (3.4)	45.9 (3.5)	60.7 (3.7)	63.0 (3.6)	57.0 (3.5)	67.1 (3.3)	64.6 (3.6)	67.7 (3.4)	65.8 (3.8)	43.4 (3.7)	58.6 (3.6)	61.7 (3.3)
FEMALES [PFAS + SFS]	70	46.7 (7.4)	73.2 (9.8)	76.1 (6.7)	57.0 (7.9)	80.8 (8.9)	74.8 (9.1)	74.6 (6.9)	82.7 (5.5)	70.3 (9.6)	74.0 (8.8)	53.5 (6.9)	32.3 (6.8)	60.1 (9.8)	55.5 (7.8)
TOTAL RECRUITING MARKET	451	49.6 (3.3)	67.3 (5.2)	68.8 (3.4)	51.1 (4.4)	70.1 (4.6)	68.5 (4.8)	65.3 (3.9)	74.4 (3.3)	67.3 (4.9)	70.7 (4.5)	60.0 (4.0)	38.2 (3.4)	59.3 (5.0)	58.8 (4.2)
TOTAL PMAS	336	51.4 (4.3)	61.6 (3.6)	63.6 (3.4)	47.0 (4.0)	65.2 (3.7)	61.6 (3.8)	56.5 (3.6)	65.1 (3.5)	63.9 (4.8)	65.6 (4.2)	68.3 (3.8)	44.4 (4.0)	54.8 (3.6)	65.2 (2.9)

Similar to Last Quarter

- The strength of the USAR brand image continues to be moderate. Agreement with statements about the USAR by PMAS youth ranges from approximately 45% to 70%.
- PMAS youth are most likely to agree that the USAR offers the opportunity to obtain money for education (68.3%), to work with highly-trained co-workers (65.6%), and to gain self-confidence (65.2%). They are least likely to agree that it provides interesting and exciting weekends (44.4%).
- Again this quarter, there is no clear pattern of increases or decreases in perceptions over last quarter. About half of the quarter-to-quarter changes are positive and half are negative.

Different from Last Quarter

- Significant increases in agreement by women with two USAR attribute statements and a decrease among men in agreement with one statement resulted in sex differences in USAR perceptions.
  - A significant decrease occurred for Recruiting Market Males in the perception that the USAR offers the opportunity to gain self-confidence (60.7% vs. 70.4%) (Z=-1.97, p<.05).
  - Recruiting Market Females showed significant increases in their perceptions that the USAR offers opportunities for a mentally challenging experience (74.6% vs. 47.4%) (Z=2.02, p<.05), and for becoming more mature and responsible (82.7% vs. 57.0%) (Z=2.01, p<.05).
  - Last quarter there were no significant sex differences, but this quarter Recruiting Market Females are significantly more likely than Recruiting Market Males to perceive the USAR as offering opportunities for becoming more mature and responsible (82.7% vs. 67.1%) (Z=2.43, p<.05) and for a mentally challenging experience (74.6% vs. 57.0%) (Z=2.27, p<.05). Women are also more likely than men to agree that the USAR provides opportunities for developing self-confidence (80.8% vs. 60.7%) (Z=2.09, p<.05).

School Year 87/88 - Summer, Fall

TABLE C-4

Perceptions - Army Reserve

FALL - SUMMER DIFFERENCES IN
PERCENTAGE "AGREE" OR "STRONGLY AGREE" WITH ARMY RESERVE ATTRIBUTE STATEMENTS

SAMPLE GROUPS	n	Job Variety	Proud Experience	Leader Skills	Civilian Career	Self Confidence	Develop Potential	Mental Challenge	Mature & Responsible	Skill Training	Hi-Trained Co-Workers	Money for Ed.	Exciting Weekends	Part-Time Work	Live in Hometown
MALES (PMAS + SMS)		-	-	-	-	-1.97	-	-	-	+	-	+	+	+	-
FEMALES (PFAS + SFS)		-	+	+	-	+	+	+2.02	+2.01	+	+	-	-	+	-
TOTAL RECRUITING MARKET		-	+	+	-	+	+	+	+	+	+	-	+	+	-
TOTAL PMAS		-	-	-	-	-	-	-	-	-	-	+	+	-	+

Note: Numbers are Z-scores for significant quarter-to-quarter differences (i.e., $p < 0.05$; $\pm$ 2 s.e.)
Signs indicate the direction of changes that are not statistically significant.

PERCENTAGE "AGREE" OR "STRONGLY AGREE" WITH ARMY NATIONAL GUARD ATTRIBUTE STATEMENTS
(Standard Error)

SAMPLE GROUPS	n	Job Variety	Proud Experience	Leader Skills	Civilian Career	Self Confidence	Develop Potential	Mental Challenge	Mature & Responsible	Skill Training	Hi-Trained Co-Workers	Money for Ed.	Exciting Weekends	Part-Time Work	Live in Hometown
MALES [PMAS + SMS]	360	53.8 (3.1)	56.4 (3.1)	61.1 (3.6)	44.7 (3.4)	62.6 (2.8)	61.1 (3.4)	53.8 (4.1)	66.0 (3.0)	67.5 (3.3)	64.0 (3.3)	65.7 (3.1)	40.0 (3.3)	57.0 (2.6)	64.5 (3.3)
FEMALES [PFAS + SFS]	76	54.0 (7.9)	68.0 (7.5)	67.2 (7.3)	42.8 (9.5)	67.4 (7.5)	63.1 (7.7)	64.4 (8.5)	77.3 (5.9)	74.0 (7.6)	78.6 (6.3)	68.3 (8.2)	31.0 (7.2)	58.6 (7.2)	52.6 (6.8)
TOTAL RECRUITING MARKET	444	53.8 (4.0)	62.1 (4.2)	64.1 (3.9)	43.8 (5.0)	65.0 (3.6)	62.0 (4.3)	59.0 (4.5)	71.6 (3.1)	70.7 (3.6)	71.2 (3.4)	67.0 (3.9)	35.6 (3.8)	57.8 (3.5)	58.6 (3.6)
TOTAL PMAS	336	48.1 (3.6)	54.4 (3.6)	59.4 (4.1)	40.2 (3.3)	61.0 (3.5)	58.1 (3.5)	51.6 (4.2)	63.8 (3.3)	66.7 (3.8)	60.9 (3.8)	62.6 (3.4)	35.2 (3.7)	52.5 (3.5)	60.9 (3.7)

Similar to Last Quarter

- The strength of the Army National Guard brand image continues to be moderate. Agreement with statements about the ARNG by PMAS youth ranges from approximately 35% to 70%.
  - PMAS youth are least likely to agree that the ARNG provides interesting and exciting weekends (35.2%) and value in civilian career development (40.2%).

Different from Last Quarter

- Changes occurred this quarter in the predominant perceptions of the ARNG by PMAS youth.
  - Last quarter, the predominant perceptions were that the ARNG provides opportunities for becoming more mature and responsible, for gaining self-confidence and for serving America while living in one's own hometown.

- Significant decreases occurred this quarter in the PMAS perceptions that the ARNG offers opportunities for gaining self-confidence (61.0% vs. 72.2%) (Z=-2.28 p<.05), and for serving American while living in one's own hometown (60.9% vs. 77.0%) Z=-3.04, p<.01).

- Thus, statements most likely to elicit agreement from PMAS youth this quarter are that the ARNG offers opportunities for training in useful skill areas (66.7%), for becoming more mature and responsible (63.8%), and for earning money for education (62.6%). The levels of agreement with all three statements are very similar to those found last quarter but they have become predominant because of the decreases discussed above. . .

- Last quarter there were no significant sex differences in ARNG perceptions, but this quarter Recruiting Market Females are significantly more likely than Recruiting Market Males to perceive the ARNG as offering the opportunity to work with highly trained co-workers (78.6% vs. 64.0%) (Z=2.05, p<.05).

TABLE C-5

FALL - SUMMER DIFFERENCES IN
PERCENTAGE "AGREE" OR "STRONGLY AGREE" WITH ARMY NATIONAL GUARD ATTRIBUTE STATEMENTS

SAMPLE GROUPS	n	Job Variety	Proud Experience	Leader Skills	Civilian Career	Self Confidence	Develop Potential	Mental Challenge	Mature & Responsible	Skill Training	Hi-Trained Co-Workers	Money for Ed.	Exciting Weekends	Part-Time Work	Live in Hometown
MALES (PMAS + SMS)		-	-	-	-	-2.45	-	-	-	+	+	+	-2.15	-	-2.51
FEMALES (PFAS + SFS)		-	+	+	-	+	+	-	+	+	+	+	-	-	-
TOTAL RECRUITING MARKET		-	-	+	-	-	-	-	-	+	+	+	-	-	-
TOTAL PMAS		-	-	-	-	-2.28	-	-	-	+	-	-	-2.76	-2.36	-3.04

Note: Numbers are Z-scores for significant quarter-to-quarter differences (i.e., $p < 0.05$; $\pm$ 2 s.e.)
Signs indicate the direction of changes that are not statistically significant.

PERCENTAGE "AGREE" OR "STRONGLY AGREE" WITH ARMY ROTC ATTRIBUTE STATEMENTS
PERCENTAGE RATING ROTC OPPORTUNITIES "IMPORTANT" OR "VERY IMPORTANT" TO PLANS FOR THE NEXT YEAR
(Standard Error)

SAMPLE GROUPS	n1	ROTC PERCEPTIONS: ROTC Offers: Leader/Mgmt Training	Self Confidence	College Elective	Officer's Commission	Officer Benefits: Job Variety	Proud Experience	Use College Skills	Use Own Judgment	n2	ROTC IMPORTANCE: Leader Skills	Self Confidence	Job Variety	Proud Experience	Use Own Judgment
ROTC MALE SAMPLE:															
College Juniors and Seniors	209	59.9 (3.3)	63.7 (3.8)	69.7 (4.0)	74.2 (3.7)	57.6 (3.9)	75.7 (3.7)	58.2 (4.3)	56.0 (4.0)	248	84.4 (2.6)	85.8 (2.9)	93.3 (1.4)	92.0 (1.9)	91.9 (2.9)
College Freshmen and Sophomores	197	50.4 (5.7)	61.3 (4.5)	64.6 (4.8)	64.9 (4.4)	60.4 (4.1)	64.2 (4.2)	53.1 (4.4)	49.6 (4.5)	377	77.6 (3.1)	87.2 (2.2)	89.7 (2.0)	87.9 (1.9)	92.3 (1.4)
H.S. Students [College-Oriented]	383	69.6 (2.9)	79.8 (2.2)	74.8 (2.4)	71.4 (2.8)	71.2 (2.6)	85.3 (2.1)	75.1 (2.7)	79.0 (2.1)	834	79.8 (1.8)	89.0 (1.3)	94.2 (0.8)	93.6 (1.0)	93.5 (1.1)
1st ROTC Region	226	63.6 (4.4)	70.7 (3.5)	66.2 (3.7)	66.7 (3.5)	57.1 (4.2)	71.1 (3.8)	64.8 (4.4)	59.8 (4.3)	415	75.9 (2.7)	84.8 (2.1)	90.9 (1.2)	89.7 (1.5)	92.1 (1.4)
2nd ROTC Region	234	65.5 (4.7)	71.1 (3.2)	74.0 (3.3)	67.3 (3.7)	64.6 (4.7)	78.0 (3.3)	61.7 (5.0)	62.1 (3.4)	400	79.7 (1.9)	88.1 (1.9)	91.0 (2.2)	90.4 (1.3)	93.2 (1.7)
3rd ROTC Region	175	58.8 (3.7)	70.8 (3.9)	73.7 (4.2)	80.8 (3.6)	69.1 (4.3)	75.7 (4.2)	65.4 (4.9)	68.2 (4.6)	323	83.8 (2.5)	90.1 (1.5)	94.2 (1.3)	91.2 (1.8)	93.4 (1.1)
4th ROTC Region	154	52.2 (5.5)	61.9 (4.6)	64.9 (5.0)	65.7 (5.0)	62.8 (6.2)	75.7 (4.2)	58.2 (5.9)	58.1 (4.6)	321	81.2 (3.0)	87.9 (2.8)	94.4 (1.3)	94.7 (1.5)	92.6 (2.0)
16-17 Years Old	329	68.6 (3.1)	79.0 (2.4)	73.6 (2.3)	71.2 (2.9)	70.3 (2.6)	84.7 (2.4)	76.4 (2.8)	77.8 (2.4)	730	79.5 (1.9)	88.8 (1.3)	94.2 (0.8)	93.9 (0.9)	93.9 (1.1)
18-19 Years Old	195	55.2 (5.4)	62.5 (4.8)	70.5 (4.0)	69.1 (3.6)	67.8 (4.1)	67.6 (4.1)	59.0 (4.6)	61.5 (2.9)	357	76.0 (2.6)	87.7 (2.0)	93.1 (1.4)	89.4 (1.7)	93.3 (1.6)
20-21 Years Old	141	60.6 (5.1)	65.3 (4.1)	67.9 (5.1)	68.0 (4.7)	55.6 (5.2)	73.6 (5.2)	53.5 (5.1)	52.2 (4.7)	207	82.0 (3.4)	85.1 (3.3)	90.0 (1.9)	88.0 (2.4)	88.1 (2.7)
22-24 Years Old	124	53.5 (4.8)	65.5 (5.2)	65.3 (4.9)	72.0 (5.5)	56.6 (7.0)	73.5 (4.8)	57.3 (5.4)	51.2 (6.1)	165	85.9 (3.6)	88.2 (3.5)	91.2 (2.3)	93.0 (2.2)	94.7 (2.7)
TOTAL ROTC MALE SAMPLE	789	60.1 (2.5)	68.6 (1.8)	69.8 (2.0)	70.0 (2.1)	63.4 (2.3)	75.2 (2.1)	62.5 (2.4)	62.0 (2.1)	1,459	80.2 (1.4)	87.8 (1.1)	92.7 (0.7)	91.6 (0.8)	92.8 (0.8)
TOTAL ROTC FEMALE SAMPLE	157	60.1 (5.2)	75.9 (4.5)	71.5 (4.1)	55.0 (5.2)	71.5 (4.5)	77.1 (4.9)	73.3 (4.0)	72.0 (4.4)	313	78.1 (3.0)	91.4 (2.2)	94.2 (1.8)	95.7 (1.1)	94.4 (1.8)
TOTAL ROTC SAMPLE [MALES + FEMALES]	946	60.1 (2.7)	72.2 (2.2)	70.6 (2.3)	62.8 (2.7)	67.3 (2.3)	76.1 (2.1)	67.7 (2.2)	66.8 (2.3)	1,772	79.1 (1.6)	89.6 (1.3)	93.4 (1.0)	93.7 (0.7)	93.6 (1.0)
TOTAL PMAS	633	59.3 (5.1)	68.8 (4.5)	66.3 (4.5)	65.1 (4.2)	62.8 (3.9)	76.8 (3.0)	63.7 (3.6)	68.6 (3.4)	2,087	76.9 (1.0)	88.6 (0.8)	89.9 (1.0)	91.3 (0.7)	92.2 (0.6)

Note: n1 provides case bases for all ROTC Perceptions Measures.
n2 provides case bases for all ROTC Importance Measures.

TABLE F-6 PERCEPTIONS AND IMPORTANCE - ARMY ROTC

Similar to Last Quarter

Perceptions

- Brand image of the Army ROTC continues to be moderately strong. Agreement with statements about attributes of the Army ROTC for males in the ROTC Sample ranges from approximately 50% to 80%.
  - Among males in the officer market, there is highest agreement with the statement that the ROTC offers an experience to be proud of (75.2%). There is least agreement with statements that the Army ROTC offers opportunities for leadership and management training (60.1%), use of one's own judgment (62.0%), and use of college-acquired skills (62.5%).
- Perceptions of the Army ROTC are related to age and educational level.
  - College-oriented high school students are significantly more likely than better educated youth to agree that the Army ROTC offers opportunities for gaining self-confidence, job variety, an experience to be proud of, leadership and management training, and using one's college-acquired skills and one's own judgment ($p<.05$ for all 12 comparisons).
  - Similarly, 16- to 17-year olds are more likely than older youths to agree that the ROTC offers opportunities for gaining self-confidence, using college-acquired skills and using one's own judgment ($p<.05$ for all 9 comparisons). 16- to 17-year olds are also more likely than 18- to 19-year olds, and 22- to 24-year olds ($p<.05$ for all 4 comparisons) to perceive the ROTC as offering opportunities for an experience to be proud of and leadership and management training. There are no significant differences between 16- to 17-year olds and 20- to 21-year olds in agreement with these latter two attribute statements.

Importance

- All opportunities relevant to the ROTC are likely to be considered important.
  - Opportunities for using one's own judgment (92.8%), job variety (92.7%), an experience to be proud of (91.6%), and gaining self-confidence (87.8%) are highly likely to be valued by males in the officer market.
  - The leadership training opportunity, while still likely to be valued, is least likely to be considered important by males in the ROTC sample (80.2%).

Comparison of Perceptions and Importance Items

- Youth are more likely to value the opportunities than to perceive them as available in the ROTC.
  - Among males in the ROTC Sample, for example, gaps between importance and perceptions are especially large for job variety (92.7% vs. 63.4%), using one's own judgment (92.8% vs. 62.0%), and leadership and management training (80.2% vs. 60.1%).

Different from Last Quarter

Perceptions

- Females are more likely than males to agree that the Army ROTC offers the opportunity for using college-acquired skills (73.3% vs. 62.5%)(Z=2.32, p<.05), and using one's own judgment (72.0% vs. 62.0%)(Z=2.05, p<.05). Males are more likely than females to agree that the ROTC offers an officer's commission (70.0% vs. 55.0%)(Z=2.67, p<.01).

- College freshmen and sophomores are less likely this quarter than last to agree that the Army ROTC offers opportunities for having an experience to be proud of (64.2% vs. 77.4%)(Z=-2.38, p<.05), for gaining self-confidence (61.3% vs. 74.4%)(Z=-2.19,p<.05), and for using one's own judgment (49.6% vs. 63.1%)(Z=-2.12, p<.05).

Importance

- College freshmen and sophomores are less likely this quarter than last to value opportunities for job variety (89.7% vs. 94.9%) (Z=-2.28, p<.05), and having an experience to be proud of (87.9% vs. 92.6%, Z=-1.97, p<.05).

- As discussed above, a number of decreases are noted this quarter in the perceptions and importance of ROTC opportunities by college freshmen and sophomores. These declines contrast with last quarter's significant increases for this group. We speculated last quarter that the increases might be the result of newly graduated high school student's reclassification into the college freshman category. Similarly, this quarter's decreases may be the result of assimilation of these new college students into the college culture.

FALL - SUMMER DIFFERENCES IN
PERCENTAGE "AGREE" OR "STRONGLY AGREE" WITH ARMY ROTC ATTRIBUTE STATEMENTS
PERCENTAGE RATING ROTC OPPORTUNITIES "IMPORTANT" OR "VERY IMPORTANT" TO PLANS FOR THE NEXT YEAR

SAMPLE GROUPS	n1	ROTC PERCEPTIONS: ROTC Offers: Leader/Mgmt Training	ROTC Offers: Self Confidence	ROTC Offers: College Elective	ROTC Offers: Officer's Commission	Officer Benefits: Job Variety	Officer Benefits: Proud Experience	Officer Benefits: Use College Skills	Officer Benefits: Use Own Judgment	n2	ROTC IMPORTANCE: Leader Skills	Self Confidence	Job Variety	Proud Experience	Use Own Judgment
ROTC MALE SAMPLE:															
College Juniors and Seniors		+	-	+	+	+	+	+	+		+	+	+1.99	+	-
College Freshman and Sophomores		-	-2.19	-	-	+	-2.38	-	-2.12		-	-	-2.28	-1.97	-
H.S. Students [College-Oriented]		-	+	+	+	-	+	+	+		-	+	+	-	+
1st ROTC Region		+	-	-	-	-	-	+	-		-	-	-	-	+
2nd ROTC Region		+	-	+	+	+	-	-	-		-	+	-	-	+
3rd ROTC Region		-	-	+	+2.33	+	-	+	+		+	+	-	-	-
4th ROTC Region		-	-	-	-	+	-	-	+		+	+	+	+	-
16-17 Years Old		-	+	+	-	-	+	+	+		-	-	+	-	+
18-19 Years Old		-	-	+	+	+	-	+	-		-	+	+	-	+
20-21 Years Old		-	-	+	+	-	-	-	-		+	-	+	-	-
22-24 Years Old		-	-	-	+	+	-	-	+		+	+	-	+	+
TOTAL ROTC MALE SAMPLE		-	-	+	+	+	-	-	-		-	+	+	-	-
TOTAL ROTC FEMALE SAMPLE		-	-	+	-2.58	-	+	-	-		+	-2.05	-	-	-
TOTAL ROTC SAMPLE [MALES + FEMALES]		-	-	+	-2.14	+	-	-	-		-	-	-	-	-
TOTAL PMAS		-	-	-	+	-	-	-	-		-	-	+	-	+

Note: Numbers are Z-scores for significant quarter-to-quarter differences (i.e., $p < 0.05$; $\pm$ 2 s.e.)
Signs indicate the direction of changes that are not statistically significant.

PERCENTAGE TAKING ACTIONS RELATING TO ENLISTMENT DURING THE PAST SIX MONTHS
(Standard Error)

SAMPLE GROUPS	n	Talked to Anyone of Joining Army	Talked to an Army Recruiter	Taken ASVAB	Visited Army Recruiting Station	Toll-Free Call Sent for Gift
RECRUITING MARKET:						
MALES [PMAS + SMS]	2,459	24.5 (1.1)	12.3 (0.7)	6.8 (0.6)	6.1 (0.6)	3.2 (0.4)
FEMALES [PFAS + SFS]	529	9.4 (1.5)	4.1 (0.9)	3.7 (0.9)	2.6 (1.1)	1.0 (0.3)
TOTAL RECRUITING MARKET	2,988	16.8 (0.9)	8.1 (0.6)	5.2 (0.5)	4.3 (0.7)	2.1 (0.3)
PMAS:						
College Freshmen and Sophomores	377	19.7 (2.5)	13.5 (2.0)	1.5 (0.6)	4.0 (1.0)	1.9 (1.0)
H.S. Students [College-Oriented]	834	36.2 (2.4)	16.2 (1.8)	11.3 (1.4)	8.9 (1.4)	5.7 (0.9)
H.S. Students [Work-Oriented]	188	26.7 (3.6)	11.5 (3.4)	14.1 (4.3)	2.6 (1.4)	10.1 (3.5)
H.S. Graduates Not Currently Enrolled	688	19.7 (2.0)	10.5 (1.5)	5.2 (1.0)	5.1 (0.9)	1.2 (0.4)
1st Rctg Bde	575	24.9 (2.4)	13.8 (1.8)	8.4 (1.6)	5.2 (1.2)	3.4 (1.1)
2nd Rctg Bde	334	25.0 (2.6)	11.2 (1.9)	7.4 (1.6)	3.5 (0.9)	5.7 (1.7)
4th Rctg Bde	528	25.8 (2.5)	14.2 (1.9)	8.1 (1.8)	7.9 (1.9)	3.3 (0.8)
5th Rctg Bde	366	29.0 (3.7)	13.9 (2.5)	7.6 (1.4)	7.3 (1.4)	3.8 (1.0)
6th Rctg Bde	284	23.1 (3.1)	11.5 (1.7)	3.7 (0.9)	5.3 (1.1)	1.7 (0.9)
16-17 Years Old	899	34.2 (2.2)	14.4 (1.7)	11.3 (1.6)	7.3 (1.3)	6.0 (1.0)
18-19 Years Old	575	32.6 (2.3)	21.8 (2.1)	8.0 (1.3)	7.9 (1.3)	2.7 (0.8)
20-21 Years Old	287	15.1 (3.0)	5.3 (1.4)	2.3 (1.0)	2.5 (1.0)	2.8 (1.1)
22-24 Years Old	326	12.2 (2.6)	6.3 (2.1)	3.6 (1.4)	3.9 (1.4)	1.3 (0.8)
TOTAL PMAS	2,087	25.6 (1.3)	13.0 (0.9)	7.1 (0.7)	5.9 (0.7)	3.5 (0.5)

Similar to Last Quarter

- The most common enlistment-related action by PMAS youth is talking to someone about joining the Army (25.6%). Talking to a recruiter is about half as likely (13.0%).

- All of the enlistment-related activities are again more likely to be reported by males than females ($p<.01$ for all 5 comparisons) and by younger than older PMAS youth ($p<.05$ for all comparisons of 16- to 17-year olds and 18- to 19-year olds with 20- to 21- and 22- to 24-year olds).

- High school students tend to be more likely than youth in the remaining educational groups to take action relevant to enlistment.

  - College-oriented high school students are more likely than college freshmen and sophomores and high school graduates not currently enrolled to have taken all five enlistment-related actions ($p<.01$ for 9 of the 10 relevant comparisons; talked to a recruiter is not a statistically significant difference).

  - Work-oriented high school students are more likely than freshmen and sophomores and high school graduates not currently enrolled to have taken an Army aptitude test and made a call or sent for a gift within the past six months ($p<.05$ for all 4 comparisons).

Different from Last Quarter

- College-oriented high school students are more likely than those who are work-oriented to talk to someone about joining the Army (36.2% vs. 26.7%) ($Z=2.20$, $p<.05$) and to visit a recruiting station (8.9% vs. 2.6%) ($Z=3.18$, $p<.01$).

- A few regional shifts in behaviors are noted.

  - PMAS youth in the 6th Recruiting Brigade (West) are less likely than those in the other recruiting brigades to have taken an Army aptitude test within the past 6 months ($p<.05$ for all 4 comparisons).

  - PMAS youth in the 1st and 4th Recruiting Brigades (Northeast and Midwest, respectively) are more likely this quarter than last to report talking to someone about joining the Army (1st Recruiting Brigade: 24.9% vs. 18.8%, $Z=2.17$, $p<.05$; 4th Recruiting Brigade: 25.8% vs. 19.7%, $Z=1.97$, $p<.05$).

- College freshmen and sophomores are less likely this quarter than last to report having taken an Army aptitude test within the past 6 months (1.5% vs. 6.0%) ($Z=2.53$, $p<.05$).

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FALL - SUMMER DIFFERENCES IN
PERCENTAGE TAKING ACTIONS RELATING TO ENLISTMENT DURING THE PAST SIX MONTHS

SAMPLE GROUPS	n	Talked to Anyone of Joining Army	Talked to an Army Recruiter	Taken ASVAB	Visited Army Recruiting Station	Toll-Free Call Sent for Gift
RECRUITING MARKET:						
MALES [PMAS + SMS]		+	+	+	+	-
FEMALES [PFAS + SFS]		-	-	+	+	-
TOTAL RECRUITING MARKET		+	-	+	+	-
PMAS:						
College Freshmen and Sophomores		-	-	-2.53	-	+
H.S. Students [College-Oriented]		+	+	+	+	+
H.S. Students [Work-Oriented]		-	-	+	-	+
H.S. Graduates Not Currently Enrolled		+	-	+	-	-
1st Rctg Bde		+2.17	+	+2.13	+	+
2nd Rctg Bde		-	-	-	-	+
4th Rctg Bde		+1.97	+	+	+	+
5th Rctg Bde		+	+	-	+	-
6th Rctg Bde		-	-	+	+	-
16-17 Years Old		+	+	+	+	+
18-19 Years Old		+	-	-	-	-
20-21 Years Old		+	-	-	-	+2.10
22-24 Years Old		+	+	+	+	-
TOTAL PMAS		+	+	+	+	+

Note: Numbers are Z-scores for significant quarter-to quarter differences (i.e., $p < 0.05$; $\pm$ 2 s.e.)
Signs indicate the direction of changes that are not statistically significant.

PERCENTAGE SEEING/HEARING MILITARY ADVERTISING
(Standard Error)

SAMPLE GROUPS	n	Army Components				Other Military Branches				JRAP	NONE
		ACTIVE	ROTC	ARNG	USAR	USAF	NAVY	USMC	USCG		
RECRUITING MARKET:											
MALES [PMAS + SMS]	2,459	82.0 (0.9)	1.5 (0.3)	11.7 (0.7)	8.9 (0.7)	62.5 (1.2)	56.7 (1.3)	64.1 (1.3)	9.5 (0.7)	5.8 (0.7)	5.1 (0.7)
FEMALES [PFAS + SFS]	529	79.5 (2.3)	0.9 (0.4)	5.4 (1.2)	6.6 (1.3)	59.0 (2.9)	45.2 (2.7)	53.0 (2.5)	6.5 (1.4)	4.9 (1.1)	7.0 (1.3)
TOTAL RECRUITING MARKET	2,988	80.7 (1.3)	1.2 (0.2)	8.4 (0.7)	7.7 (0.8)	60.7 (1.6)	50.8 (1.6)	58.4 (1.3)	8.0 (0.8)	5.3 (0.6)	6.1 (0.8)
PMAS:											
College Freshmen and Sophomores	377	88.0 (2.1)	2.3 (0.9)	14.4 (2.6)	10.6 (2.2)	69.3 (2.7)	59.6 (3.2)	70.3 (3.1)	13.0 (2.3)	6.7 (1.5)	1.3 (0.6)
H.S. Students [College-Oriented]	834	87.4 (1.3)	2.1 (0.6)	11.9 (1.2)	9.4 (1.0)	69.8 (2.0)	64.4 (2.1)	70.7 (2.0)	11.2 (1.2)	5.4 (1.0)	2.4 (0.6)
H.S. Students [Work-Oriented]	188	65.3 (4.9)	1.0 (0.8)	9.7 (2.0)	5.1 (1.9)	55.5 (4.2)	48.1 (4.9)	51.4 (4.4)	5.2 (1.6)	5.0 (1.8)	10.6 (2.8)
H.S. Graduates Not Currently Enrolled	688	84.9 (1.7)	1.0 (0.4)	11.3 (1.6)	8.3 (1.2)	62.1 (2.1)	56.8 (2.4)	64.5 (2.3)	8.2 (1.2)	6.2 (1.2)	3.8 (0.9)
1st Rctg Bde	575	85.6 (1.7)	1.8 (0.6)	6.4 (1.1)	9.3 (1.4)	63.5 (2.9)	61.2 (2.6)	66.3 (2.5)	11.8 (1.5)	6.3 (1.1)	3.9 (1.0)
2nd Rctg Bde	334	83.4 (2.4)	0.5 (0.4)	13.3 (2.0)	7.9 (1.5)	67.3 (2.9)	59.6 (3.2)	64.7 (3.3)	11.2 (2.5)	4.6 (1.4)	2.8 (0.9)
4th Rctg Bde	528	84.8 (2.1)	2.8 (0.9)	15.6 (1.9)	11.6 (1.7)	62.6 (2.5)	56.9 (2.3)	65.8 (2.6)	7.1 (1.0)	6.6 (1.1)	3.1 (0.9)
5th Rctg Bde	366	84.0 (2.3)	0.4 (0.3)	11.8 (1.4)	8.5 (1.4)	71.6 (2.6)	62.9 (3.4)	71.7 (3.1)	8.4 (1.7)	6.7 (2.2)	3.3 (1.2)
6th Rctg Bde	284	85.7 (2.6)	2.3 (0.7)	13.5 (2.5)	6.5 (2.0)	63.1 (4.5)	54.6 (3.6)	64.0 (3.9)	10.9 (2.4)	5.3 (1.3)	3.8 (1.6)
16-17 Years Old	899	84.8 (1.5)	2.2 (0.7)	12.0 (1.2)	8.6 (1.0)	68.4 (2.0)	62.6 (1.8)	68.0 (2.1)	10.3 (1.0)	5.1 (0.9)	3.3 (0.8)
18-19 Years Old	575	83.9 (2.0)	1.5 (0.5)	11.3 (1.5)	9.6 (1.3)	64.0 (2.3)	58.0 (2.5)	67.9 (2.5)	10.0 (1.3)	6.6 (1.1)	3.6 (0.9)
20-21 Years Old	287	86.1 (2.3)	1.2 (0.5)	13.6 (2.9)	10.0 (2.1)	65.5 (3.1)	61.4 (3.6)	66.1 (3.1)	7.5 (1.6)	7.1 (2.2)	3.6 (1.4)
22-24 Years Old	326	84.5 (2.4)	1.0 (0.7)	11.4 (2.1)	7.6 (1.6)	62.5 (2.8)	53.1 (3.4)	62.9 (3.1)	11.0 (2.2)	5.6 (1.3)	3.3 (0.9)
TOTAL PMAS	2,087	84.7 (1.0)	1.6 (0.3)	12.0 (0.7)	8.9 (0.8)	65.4 (1.4)	59.1 (1.5)	66.5 (1.5)	9.9 (0.8)	6.0 (0.6)	3.4 (0.5)

TABLE F-8 KNOWLEDGE-RECALL - UNAIDED

Similar to Last Quarter

- Unaided recall of Army advertising remains the highest of all services for all sample groups.
  - Among the PMAS, for example, 84.7% recall seeing or hearing Army ads compared with 65.4% for the USAF, 59.1% for the USMC, and 66.5% for the Navy.
  - Very few youth (6.0%) recall joint recruiting advertising without aid.
  - Unaided recall of advertising continues to be lower for females than males for Navy (56.7% vs. 45.2%) (Z=3.84, p<.01) and for USMC (64.1% vs. 53.0%) (Z=3.94, p<.01) advertising.
- Unaided recall is lower for Army component advertising than for the active Army ads.
  - Of PMAS youth, 12.0% recall ARNG advertising without aid, compared with 8.9% for the USAR ads, and only 1.6% for Army ROTC ads.
  - Unaided recall of ARNG advertising is lower for females than males (11.7% vs. 5.4%) (Z=4.53, p<.01).
- Levels of unaided recall of active Army advertising and advertising by all three Army components were stable across quarters.

Different from Last Quarter

- Last quarter there were very few differences among educational, age, or regional groups in unaided recall. This quarter more differences appear.
  - Work-oriented high school students are less likely than all the other educational groups to have unaided recall of active Army ads (p<.05 for all 3 comparisons). They are also less likely than college-oriented high school students to have unaided recall of USAR advertising (5.1% vs. 9.4%) (Z=-2.00, p<.05).
  - Work-oriented high school students are less likely than college freshmen and sophomores and college-oriented high school students to recall without aid advertising by the USAF, USMC, and Navy (p<.05 for all 6 comparisons).
  - Youth in the 1st Recruiting Brigade (Northeast) are less likely than youth in any of the other recruiting brigades to have unaided recall of ARNG advertising (p<.05 for all 4 comparisons).

TABLE F-8 (continued)

KNOWLEDGE-RECALL - UNAIDED

- There are a number of significant differences between this quarter and last quarter in unaided recall of Army component advertising.
  - Work-oriented high school students are less likely this quarter to recall without aid advertising for the active Army (65.3% vs. 80.9%) (Z=-2.74, p<.05).
  - Unaided recall of ARNG advertising decreased this quarter for the 1st Recruiting Brigade (Northeast) (6.4% vs. 11.5%) (Z=-2.80, p<.05). Unaided recall by youth in the 6th Recruiting Brigade (West) increased for both the active Army (85.7% vs. 77.8%) (Z=2.00, p<.05) and for the Army ROTC (2.3% vs. 0.6%) (Z=2.00, p<.05).
  - Older youth, 22- to 24-years of age, are more likely this quarter than last to have unaided recall of active Army advertising (84.5% vs. 74.8%) (Z=2.76, p<.05).
- Some shifts also occurred in unaided recall of advertising by other branches of the military.
  - Among the other military branches, college-oriented high school students are more likely this quarter than last to recall without aid advertising for the Navy (64.4% vs. 57.3%) (Z=2.16, p<.05), while work-oriented high school students are less likely to have unaided recall of USMC advertising (51.4% vs. 70.7%) (Z=-3.24,p<.05).
  - Advertising for the Air Force is less likely to be recalled without aid this quarter than last by 18- to 19-year old youth (64.0% vs. 70.2%) (Z=-1.99, p<.05).

FALL - SUMMER DIFFERENCES IN
PERCENTAGE SEEING/HEARING MILITARY ADVERTISING

SAMPLE GROUPS	n	Army Components				Other Military Branches				JRAP	NONE
		ACTIVE	ROTC	ARNG	USAR	USAF	NAVY	USMC	USCG		
RECRUITING MARKET:											
MALES [PMAS + SMS]		+	+	-	-	-	-	-	-	+	+
FEMALES [PFAS + SFS]		-	-	-	+	+	+	-	+	+	+
TOTAL RECRUITING MARKET		-	-	-	+	+	+	-	+	+	+
PMAS:											
College Freshmen and Sophomores		+	+	+	+	-	-	+	+	-	-
H.S. Students [College-Oriented]		+	+	+	+	+	+2.16	+	+	+	-
H.S. Students [Work-Oriented]		-2.74	+	+	+	-	-	-3.24	-	+	+
H.S. Graduates Not Currently Enrolled		+	-	-	-	-	-	-	-	+	+
1st Rctg Bde		+	+	-2.80	-	+	-	+	-	+	+
2nd Rctg Bde		+	-	+	-	+	+	-	+	+	-
4th Rctg Bde		-	-	+	+	-	-	-	-	+	+
5th Rctg Bde		+	-	-	+	+	+	+	+	+	+
6th Rctg Bde		+2.00	+2.00	+	-	-	-	-	-	-	-
16-17 Years Old		+	+	+	+	+	+	+	+	+	-
18-19 Years Old		-	-	-	-	-1.99	-	-	-	+	+
20-21 Years Old		+	-	+	+	+	+	-	-	+	+
22-24 Years Old		+2.76	+	-	-	-	-	-	-	-	-
TOTAL PMAS		+	-	-	+	-	-	-	-	+	+

Note: Numbers are z-scores for significant quarter-to-quarter differences (i.e., $p < 0.05$; ± 2 s.e.)
Signs indicate the direction of changes that are not statistically significant.

PERCENTAGE SEEING/HEARING MILITARY ADVERTISING
(Standard Error)

SAMPLE GROUPS	n	Army Components				Other Military Branches				JRAP
		ACTIVE	ROTC	ARNG	USAR	USAF	NAVY	USMC	USCG	
RECRUITING MARKET:										
MALES [PMAS + SMS]	2,459	94.9 (0.5)	41.7 (1.4)	68.1 (1.1)	72.5 (1.2)	85.8 (1.0)	77.9 (1.0)	84.6 (1.0)	47.5 (1.2)	57.9 (1.2)
FEMALES [PFAS + SFS]	529	93.8 (1.0)	48.1 (2.7)	58.0 (2.8)	75.2 (1.9)	85.9 (1.7)	72.5 (2.8)	77.5 (2.3)	40.9 (2.8)	46.2 (2.4)
TOTAL RECRUITING MARKET	2,988	94.3 (0.6)	45.0 (1.7)	62.9 (1.6)	73.9 (1.2)	85.8 (1.1)	75.1 (1.6)	80.9 (1.3)	44.1 (1.7)	51.9 (1.3)
PMAS:										
College Freshman and Sophomores	377	96.2 (1.1)	47.0 (3.6)	71.0 (2.6)	72.6 (2.7)	85.6 (2.5)	80.6 (2.4)	89.3 (2.2)	49.6 (3.5)	66.8 (2.9)
H.S. Students [College-Oriented]	834	96.4 (0.7)	40.4 (1.7)	68.6 (2.0)	73.4 (1.8)	87.0 (1.4)	82.8 (1.4)	84.8 (1.9)	47.4 (2.3)	57.4 (2.3)
H.S. Students [Work-Oriented]	188	92.0 (1.9)	33.1 (4.0)	63.2 (4.5)	59.1 (4.6)	82.7 (3.0)	68.6 (4.3)	75.1 (3.5)	44.4 (4.2)	43.1 (4.5)
H.S. Graduates Not Currently Enrolled	688	94.7 (1.0)	42.6 (2.2)	66.4 (1.9)	75.1 (2.1)	87.7 (1.6)	77.6 (1.8)	85.1 (1.5)	45.6 (2.1)	60.4 (2.0)
1st Rctg Bde	575	96.3 (0.7)	42.7 (2.1)	63.9 (2.0)	74.0 (1.9)	85.9 (2.0)	81.7 (2.0)	84.9 (1.7)	49.6 (2.8)	58.2 (2.3)
2nd Rctg Bde	334	94.8 (1.5)	40.6 (4.1)	71.1 (2.8)	69.9 (3.3)	89.0 (1.9)	82.6 (2.6)	84.4 (2.0)	50.7 (3.4)	53.9 (3.4)
4th Rctg Bde	528	96.3 (0.8)	49.5 (2.5)	69.9 (3.3)	73.5 (2.8)	85.5 (2.0)	78.2 (1.6)	83.1 (2.5)	40.1 (2.4)	59.3 (2.5)
5th Rctg Bde	366	94.4 (1.2)	37.0 (3.5)	67.1 (3.7)	70.3 (3.6)	88.9 (1.7)	77.8 (2.6)	89.3 (2.0)	43.8 (3.3)	58.4 (2.7)
6th Rctg Bde	284	94.2 (1.7)	38.6 (4.2)	67.3 (3.5)	75.8 (2.9)	84.4 (3.2)	75.0 (2.6)	83.7 (2.6)	50.7 (3.9)	66.9 (4.2)
16-17 Years Old	899	96.3 (0.6)	38.4 (1.9)	68.6 (2.0)	69.4 (1.7)	86.5 (1.4)	80.3 (1.4)	83.7 (1.7)	47.6 (2.0)	56.1 (2.1)
18-19 Years Old	575	95.8 (1.0)	44.4 (2.6)	67.4 (2.5)	72.1 (2.3)	86.0 (1.6)	81.5 (2.2)	86.7 (1.6)	44.5 (2.5)	60.3 (2.2)
20-21 Years Old	287	94.8 (1.4)	46.8 (3.3)	68.4 (3.2)	76.7 (3.0)	87.0 (2.6)	80.0 (2.5)	87.3 (2.2)	44.3 (2.9)	65.2 (3.4)
22-24 Years Old	326	93.6 (1.7)	40.8 (3.2)	66.3 (2.9)	75.8 (2.4)	87.4 (2.2)	73.6 (3.2)	83.4 (2.4)	50.4 (3.1)	58.6 (3.6)
TOTAL PMAS	2,087	95.3 (0.5)	42.0 (1.5)	67.7 (1.3)	72.8 (1.2)	86.7 (1.1)	79.1 (1.1)	85.0 (1.0)	46.9 (1.4)	59.3 (1.2)

TABLE F-9 KNOWLEDGE/RECALL - UNAIDED PLUS AIDED

Similar to Last Quarter

- Combined unaided and aided recall of active Army advertising is again the highest of all services.
  - Among PMAS youth, combined recall for Army advertising is 95.3% compared with 86.7% for the USAF, 85.0% for the USMC, and 79.1% for the Navy.
- Males are more likely than females to have combined recall of USMC, USCG, and joint advertising ($p<.05$ for all 3 comparisons).
- Large increases are again observed in all categories when responses to aided recall questions are added to unaided recall (Table F-8). The largest increases are observed in those categories with the lowest levels of unaided recall such as the Army ROTC and the smallest increases are in categories with the highest unaided recall levels such as the active Army.

Different from Last Quarter

- Combined recall of ARNG advertising increased significantly this quarter from last for college freshmen and sophomores (71.0% vs. 60.9%) ($Z=2.28$, $p<.05$).
- Work-oriented high school students appear less likely to recall military advertising than youth in other educational groups.
  - Last quarter, the two high school groups had similar levels of combined recall for all Army components' advertising. This quarter, work-oriented high school students are less likely than those who are college-oriented to recall ads by the active Army (92.0% vs. 96.4%) ($Z=-2.17$, $p<.05$), and the USAR (59.1% vs. 73.4%) ($Z=-2.89$, $p<.01$). The work-oriented are also less likely than the college-oriented to recall USMC (75.1% vs. 84.8%) ($Z=-2.44$, $p<.05$), Navy (68.6% vs. 82.8%) ($Z=-3.14$, $p<.01$), and joint advertising (43.1% vs. 57.4%) ($Z=-2.83$, $p<.01$).
  - Work-oriented high school students are also less likely than college freshmen and sophomores or high school graduates who are not currently enrolled in school to recall advertising by the Army ROTC, USAR, USMC and joint services ($p<.05$ for all 8 comparisons). They are also less likely than college freshmen and sophomores to recall Navy ads (68.6% vs. 80.6%) ($Z=-2.44$, $p<.05$).
  - Combined recall levels for work-oriented high school students decreased significantly this quarter from last for ROTC (33.1% vs. 46.8%) ($Z=-2.29$, $p<.05$) and USAF advertising (82.7% vs. 90.5%) ($Z=-2.01$, $p<.05$).

TABLE F-9 (continued) KNOWLEDGE/RECALL - UNAIDED PLUS AIDED

- This quarter, Recruiting Market Males are less likely than they were last quarter to recall ROTC ads (41.7% vs. 45.9%) (Z=-2.02, p<.05). Recruiting Market Females, on the other hand, are more likely this quarter than last to recall advertising by the USAR (75.2% vs. 65.8%) (Z=2.66, p<.05).

- Males are more likely than females to recall ARNG advertising (68.1% vs. 58.0%) (Z=3.36, p<.01). Females are more likely than males to recall ROTC ads (48.1% vs. 41.7%) (Z=2.10, p<.05).

FALL - SUMMER DIFFERENCES IN
PERCENTAGE SEEING/HEARING MILITARY ADVERTISING

SAMPLE GROUPS	n	Army Components				Other Military Branches				JRAP
		ACTIVE	ROTC	ARNG	USAR	USAF	NAVY	USMC	USCG	
RECRUITING MARKET:										
MALES [FMAS + SMS]		+	-2.02	+	+	-	-	+	-2.39	+
FEMALES [FFAS + SFS]		+	+	-	+2.66	+	+	-	+	+
TOTAL RECRUITING MARKET		+1.99	-	+	+2.58	+	+	-	-	+
FMAS:										
College Freshmen and Sophomores		-	-	+2.28	+	-	+	+	-	+
H.S. Students [College-Oriented]		+	-	+	+	+	+	+	-	+
H.S. Students [Work-Oriented]		-	-2.29	+	-	-2.01	-	-	-	-
H.S. Graduates Not Currently Enrolled		+	-	+	+	+	-	-	-	+
1st Rctg Bde		+	-	+	+	+	+	-	-	+
2nd Rctg Bde		-	-	+	-	+	+	-	-	-
4th Rctg Bde		+	+	+	-	-	-	-	-	+
5th Rctg Bde		-	-	-	-	+	-	+	-	+
6th Rctg Bde		-	-	+	+	-	-	-	-	+1.99
16-17 Years Old		+	-	+	-	-	+	+	+	+
18-19 Years Old		-	-	+	+	-	+	-	-2.31	+
20-21 Years Old		+	-	+	+	+	-	+	-	+
22-24 Years Old		+	-	+	+	+	-2.17	+	-	+
TOTAL FMAS		+	-	+	+	-	-	+	-	+

Note: Numbers are $\underset{\sim}{z}$-scores for significant quarter-to-quarter differences (i.e., $p < 0.05$; $\pm$ 2 s.e.)
Signs indicate the direction of changes that are not statistically significant.

PERCENTAGE ANSWERING KNOWLEDGE OF ARMY OFFERS AND BENEFITS QUESTIONS CORRECTLY
(Standard Error)

SAMPLE GROUPS	n	Active Army Knowledge: If Enlist Eligible for College $	Total Education Benefits	Army Benefits Better?	Offer GI Bill: ARMY	USAF	NAVY	USMC	Minimum Duty Tour	Delayed Entry Allowed	Army Reserve and Army National Guard Knowledge: 17 Year Old Eligible to Join	H.S. Graduation Required	Scholar Athlete Sponsor	If Enlist Eligible for College $	Maximum GI Bill College $
RECRUITING MARKET:															
MALES [PMAS + SMS]	1,231	93.8 (0.8)	26.7 (1.4)	15.2 (1.3)	82.2 (1.2)	45.8 (1.6)	43.5 (1.7)	49.4 (1.5)	37.9 (1.8)	80.6 (1.3)	62.7 (1.6)	76.2 (1.4)	30.2 (1.4)	88.4 (1.1)	8.9 (0.8)
FEMALES [PFAS + SFS]	269	93.7 (1.8)	14.2 (2.1)	13.4 (2.1)	69.1 (3.9)	42.0 (3.4)	45.2 (4.1)	42.1 (3.6)	24.5 (2.8)	78.3 (3.0)	60.7 (3.5)	72.9 (3.4)	28.3 (3.7)	87.2 (2.4)	8.9 (1.9)
TOTAL RECRUITING MARKET	1,500	93.8 (1.0)	20.4 (1.3)	14.3 (1.1)	75.5 (2.0)	43.9 (1.8)	44.4 (2.2)	45.7 (1.9)	31.1 (1.7)	79.4 (1.8)	61.7 (2.0)	74.5 (2.0)	29.2 (2.0)	87.8 (1.4)	8.9 (0.9)
PMAS:															
College Freshmen and Sophomores	183	95.5 (1.8)	46.9 (5.3)	14.9 (2.9)	90.0 (2.7)	48.9 (4.7)	53.9 (4.8)	53.1 (4.7)	51.4 (4.7)	92.2 (2.7)	65.2 (4.6)	80.5 (4.5)	36.9 (4.3)	90.4 (2.9)	11.3 (2.8)
H.S. Students [College-Oriented]	411	93.4 (2.3)	32.2 (2.4)	19.1 (2.1)	87.6 (1.9)	46.1 (3.0)	46.4 (3.0)	48.8 (3.0)	37.4 (3.1)	81.1 (2.3)	57.9 (2.6)	75.6 (2.6)	37.7 (3.1)	92.5 (1.4)	10.4 (1.8)
H.S. Students [Work-Oriented]	98	96.5 (1.6)	15.6 (4.1)	18.0 (5.0)	78.8 (4.2)	34.8 (5.5)	32.6 (6.3)	47.5 (6.6)	25.4 (5.0)	77.3 (4.6)	61.7 (5.4)	70.1 (5.2)	20.9 (4.7)	82.7 (4.4)	8.4 (2.9)
H.S. Graduates Not Currently Enrolled	357	92.3 (1.5)	20.5 (2.3)	15.5 (2.7)	80.9 (2.7)	43.2 (3.1)	39.0 (3.0)	45.3 (2.6)	39.3 (2.8)	82.3 (2.5)	64.4 (2.8)	74.4 (2.5)	25.8 (2.3)	87.5 (2.1)	8.3 (1.5)
1st Rctg Bde	283	92.8 (1.8)	24.7 (3.1)	16.3 (3.6)	80.8 (3.4)	46.1 (3.7)	42.0 (3.4)	49.1 (3.5)	35.5 (3.2)	86.1 (2.5)	65.9 (3.5)	76.9 (2.9)	27.8 (3.2)	83.7 (3.0)	8.9 (1.7)
2nd Rctg Bde	173	94.2 (1.7)	28.2 (3.8)	16.7 (3.0)	89.0 (3.0)	41.5 (4.1)	46.9 (3.9)	50.2 (4.1)	35.0 (3.4)	81.8 (3.2)	67.5 (3.2)	79.5 (3.3)	27.2 (3.9)	92.1 (2.0)	11.5 (2.7)
4th Rctg Bde	266	95.5 (1.4)	30.6 (3.3)	19.8 (3.0)	85.9 (2.5)	43.4 (3.5)	42.5 (3.6)	46.7 (3.8)	42.7 (3.9)	85.1 (3.1)	58.9 (3.7)	75.9 (2.8)	32.7 (3.1)	92.6 (1.7)	8.7 (1.7)
5th Rctg Bde	179	89.5 (3.9)	34.7 (4.1)	15.1 (2.2)	87.3 (2.9)	42.4 (3.8)	40.8 (4.3)	47.3 (3.9)	38.0 (3.8)	83.1 (2.9)	58.9 (4.2)	71.4 (4.5)	37.9 (5.5)	90.5 (2.2)	10.1 (2.1)
6th Rctg Bde	148	95.6 (1.9)	26.3 (4.8)	15.1 (3.0)	80.6 (3.9)	48.3 (5.6)	46.0 (5.8)	47.3 (4.6)	48.0 (5.2)	80.2 (3.7)	60.7 (3.9)	74.1 (3.8)	30.7 (3.9)	87.8 (3.1)	9.0 (2.2)
16-17 Years Old	445	93.7 (2.1)	27.4 (2.3)	20.0 (2.3)	86.0 (1.9)	44.5 (2.6)	43.0 (2.6)	49.1 (2.9)	35.8 (2.8)	80.6 (2.1)	57.7 (2.5)	74.2 (2.4)	34.5 (2.9)	90.0 (1.4)	9.0 (1.6)
18-19 Years Old	280	93.1 (1.9)	36.8 (3.3)	15.9 (2.3)	89.4 (2.0)	42.7 (3.1)	42.3 (3.3)	47.4 (3.2)	38.0 (2.7)	86.4 (2.3)	65.3 (3.1)	79.8 (2.9)	32.5 (3.3)	90.4 (1.7)	12.2 (1.9)
20-21 Years Old	150	95.3 (1.5)	28.1 (5.1)	16.8 (2.8)	85.9 (3.6)	43.8 (4.8)	41.2 (5.4)	46.6 (4.3)	41.6 (4.9)	79.5 (4.5)	61.4 (5.4)	71.1 (4.7)	26.6 (4.1)	87.4 (3.0)	8.5 (2.8)
22-24 Years Old	174	92.7 (2.1)	22.3 (4.1)	12.9 (3.7)	76.1 (3.6)	46.9 (4.6)	47.4 (4.9)	48.4 (4.1)	46.1 (3.7)	86.9 (2.5)	66.2 (4.1)	76.2 (4.0)	28.7 (3.9)	88.2 (3.2)	8.2 (2.5)
TOTAL PMAS	1,049	93.6 (1.0)	28.7 (1.7)	16.7 (1.6)	84.5 (1.4)	44.5 (1.9)	43.6 (1.8)	48.1 (1.6)	39.9 (1.7)	83.4 (1.4)	62.4 (1.7)	75.6 (1.4)	31.1 (1.7)	89.2 (1.2)	9.5 (0.9)

Similar to Last Quarter

- General knowledge of Army offers remains widespread while specific information continues to be less well known.
  - Of PMAS youth, 93.6% know that the Army offers educational benefits for enlistment and 83.4% know of the delayed entry program. However, only 28.7% correctly specify the maximum amount of educational benefits available, only 16.7% know that the educational benefits available through Army enlistment are better than those offered by other services, and 39.9% are aware that the minimum duty tour in the Army is two years.
  - College freshmen and sophomores are more likely than youth in the other educational groups to know the amount of money that can be earned for education by enlisting and college-oriented high school students are more likely than work-oriented high school students and high school graduates not currently enrolled to know this information ($p<.05$ for all 5 comparisons). These results suggest that youth in a position to take advantage of the educational benefits are most likely to know about them.
  - Youth in all sample groups are again more likely to associate the GI Bill with the Army than with other services ($p<.05$ for all relevant comparisons). For example, 84.5% of the PMAS correctly answered that the Army offers the GI Bill while only 44.5% were correct when asked about the Air Force, 43.6% about the Navy, and 48.1% about the Marine Corps.
- Knowledge of the eligibility requirements and educational benefits offered by the Army Reserve and Army National Guard are also relatively high in all sample groups.
  - Of PMAS youth, for example, 75.6% are aware that high school graduation is not required before enlisting, and 62.4% know that 17-year-olds may enlist.
  - Of PMAS youth, 89.2% know that the Army Reserve and National Guard offer educational benefits, but only 9.5% can specify the correct maximum amount of benefits available.

Different from Last Quarter

- Noteworthy changes from last quarter in knowledge of Army benefits and offers include:
  - Significant increases are observed this quarter in knowledge that the Army offers more in educational benefits than the other services by Recruiting Market Males (15.2% vs. 11.1%) ($Z=2.45$, $p<.05$), by youth in the 6th Recruiting Brigade (15.1% vs. 6.6%) ($Z=2.28$, $p<.05$), and by 22- to 24-year-olds (12.9% vs. 4.1%) ($Z=2.23$, $p<.05$).

- Knowledge of the delayed entry program increased this quarter from last quarter for college freshmen and sophomores (92.2% vs. 82.8%) (Z=2.09, p<.05) and youth in the 1st Recruiting Brigade (86.1% vs. 78.7%) (Z=1.98, p<.05).

- Noteworthy changes from last quarter in knowledge of USAR and ARNG benefits and offers are:

  - In contrast to last quarter's increases, knowledge of Army Reserve and Army National Guard eligibility requirements decreased this quarter for females (17-year-olds eligible: 60.7% vs. 71.7%, Z=-2.23, p<.05; high school graduation not required: 72.9% vs. 84.3%, Z=-2.55, p<.05).

  - Knowledge of the maximum amount of college money available through the Army Reserve or Army National Guard GI Bill increased this quarter from last for college freshmen and sophomores (11.3% vs. 3.9%) (Z=2.38, p<.05), the 2nd Recruiting Brigade (11.5% vs. 3.8%) (Z=2.48, p<.05), and 18- to 19-year-olds (12.2% vs. 7.1%) (Z=2.05, p<.05).

- A number of knowledge differences among educational groups emerged this quarter.

  - College freshmen and sophomores are more likely than work-oriented high school students and high school graduates not currently enrolled to know that the GI Bill is offered by both the Army and the Navy (p<.05 for all 4 comparisons). College-oriented high school students are more likely than high school graduates not currently enrolled to know of the Army GI Bill (87.6% vs. 80.9%) (Z=2.03, p<.05) and more likely than work-oriented high school students to know of the Navy GI Bill (46.4% vs. 32.6%) (Z=1.98, p<.05).

  - College freshmen and sophomores are more likely than youth in the other educational groups to know the minimum number of years of service required and to know of the delayed entry program (p<.05 for all 3 comparisons).

  - Work-oriented high school students are less likely than those youth in other educational groups to know the minimum number of years of service required (p<.05 for all 3 comparisons).

  - College-oriented high school students are more likely than those who are work-oriented and high school graduates not currently enrolled to know who sponsors the Scholar-Athlete Award Program and to know that joining the Army Reserve or Army National Guard qualifies people to receive money for college (p<.05 for all 4 comparisons).

TABLE C-10

FALL - SUMMER DIFFERENCES IN
PERCENTAGE ANSWERING KNOWLEDGE OF ARMY OFFERS AND BENEFITS QUESTIONS CORRECTLY

SAMPLE GROUPS	n	Active Army Knowledge: If Enlist Eligible for College $	Total Education Benefits	Army Benefits Better?	Offer GI Bill: ARMY	USAF	NAVY	USMC	Minimum Duty Tour	Delayed Entry Allowed	Army Reserve and Army National Guard Knowledge: 17 Year Old Eligible to Join	H.S. Graduation Required	Scholar Athlete Sponsor	If Enlist Eligible for College $	Maximum GI Bill College $
RECRUITING MARKET:															
MALES [PMAS + SMS]		-	-	+2.45	-	-	+	-	+	-	-	-	-	+2.19	+
FEMALES [PFAS + SFS]		+	+2.10	+	+	-	+	-	-	+	-2.23	-2.55	+	+	+
TOTAL RECRUITING MARKET		+	+	+	+	-	+	-	-	+	-2.30	-2.16	-	+2.01	+
PMAS:															
College Freshman and Sophomores		-	+	+	+	+2.28	+	+	+	+2.09	+	+	-	+	+2.38
H.S. Students [College-Oriented]		-	+	+	+	-	+	+	+	-	+	+	+	+	+
H.S. Students [Work-Oriented]		+	+	+	+	-	+	-	-	-	-	-	-	+	-
H.S. Graduates Not Currently Enrolled		-	-	+	-	-	-	-	+	-	-	-	-	+	+
1st Rctg Bde		-	-	+	-	-	-	-	+	+1.98	+	-	-	+	+
2nd Rctg Bde		-	-	+	+	-	+	+	-	-	+	+	-	+	+2.48
4th Rctg Bde		-	+	+	+	-	+	-	+	-	-	-	+	+	+
5th Rctg Bde		-	+	+	+	+	+	-	-	-	-	-	+	+	+
6th Rctg Bde		+	+	+2.28	-	+	+	+	+	-	+	+	-	+	+
16-17 Years Old		-	+	+	+	-	+	-	-	-	+	+	+	+	+
18-19 Years Old		-	+	+	+	+	+	-	+	+	+	-	-	+	+2.05
20-21 Years Old		-	+	+	-	+	-	-	+	-	-	-	-	+	+
22-24 Years Old		-	-	+2.23	-	-	+	-	+	+	-	-	-	+	+
TOTAL PMAS		-	+	+2.82	+	-	+	-	+	-	-	-	-	+2.01	+2.21

Note: Numbers are Z-scores for significant quarter-to-quarter differences (i.e., $p < 0.05$; ± 2 s.e.)
Signs indicate the direction of changes that are not statistically significant.

PERCENTAGE REGULARLY VIEWING OR LISTENING TO VARIOUS TYPES OF PROGRAMMING
(Standard Error)

SAMPLE GROUPS	n1	Types of TV Shows: Sports	Mystery	Drama	Music	Comedy	Movie	Talk	n2	Types of Radio Programs: News	Classical	Pop	Country	Sports	Talk	Rock	Easy
RECRUITING MARKET:																	
MALES [PMAS + SMS]	1,238	78.4	51.8	39.5	61.6	83.5	77.5	42.8	1,231	50.5	15.8	51.3	35.1	44.1	16.1	80.8	40.8
		(1.5)	(1.8)	(1.5)	(1.7)	(1.6)	(1.5)	(1.5)		(1.5)	(1.5)	(2.0)	(1.8)	(1.7)	(1.2)	(2.1)	(1.4)
FEMALES [PFAS + SFS]	280	41.6	61.4	72.8	60.4	83.2	85.8	60.4	278	55.6	14.9	69.8	34.2	12.4	18.0	70.7	61.9
		(3.5)	(4.2)	(3.3)	(3.9)	(2.7)	(2.0)	(3.0)		(3.7)	(2.0)	(3.7)	(3.5)	(2.3)	(2.5)	(3.9)	(3.1)
TOTAL RECRUITING MARKET	1,518	58.8	56.9	57.2	61.0	83.3	81.9	52.1	1,509	53.2	15.3	61.2	34.6	27.3	17.1	75.4	52.1
		(1.9)	(2.5)	(1.8)	(2.0)	(1.6)	(1.4)	(1.7)		(2.0)	(1.3)	(2.1)	(2.1)	(1.7)	(1.4)	(2.3)	(1.8)
PMAS:																	
College Freshmen and Sophomores	198	79.1	47.6	39.3	54.1	82.7	64.2	45.7	197	46.2	14.9	63.3	26.5	41.7	11.8	83.4	32.3
		(3.5)	(4.0)	(3.9)	(4.2)	(3.8)	(4.1)	(4.1)		(4.6)	(3.1)	(4.6)	(3.9)	(4.1)	(2.8)	(3.6)	(4.2)
H.S. Students [College-Oriented]	424	81.7	54.9	37.4	66.6	85.9	82.4	37.1	419	44.4	13.8	50.9	21.8	44.7	16.9	82.6	33.7
		(2.4)	(3.0)	(2.5)	(2.7)	(1.7)	(2.1)	(2.4)		(2.8)	(1.8)	(2.7)	(2.9)	(3.2)	(2.1)	(2.2)	(2.3)
H.S. Students [Work-Oriented]	92	70.7	54.5	27.4	71.6	85.1	82.1	41.7	91	34.7	11.7	35.1	40.6	41.3	14.7	83.4	32.7
		(5.4)	(5.6)	(5.6)	(6.0)	(4.4)	(5.2)	(5.3)		(5.4)	(3.5)	(6.1)	(6.6)	(6.1)	(3.9)	(4.8)	(5.1)
H.S. Graduates Not Currently Enrolled	334	77.6	48.8	42.4	57.5	81.4	75.4	40.8	334	58.8	17.7	52.0	45.0	45.5	17.9	80.5	46.6
		(2.8)	(3.4)	(3.5)	(3.4)	(3.0)	(3.2)	(3.0)		(2.7)	(2.6)	(3.8)	(3.4)	(3.5)	(2.3)	(3.3)	(3.3)
1st Rctg Bde	282	77.2	56.4	40.2	63.4	81.3	75.5	45.6	282	50.1	14.5	48.0	20.6	41.4	19.3	84.7	34.4
		(3.3)	(2.9)	(2.6)	(3.7)	(3.2)	(2.8)	(3.2)		(3.0)	(3.2)	(4.3)	(3.0)	(3.5)	(3.6)	(2.4)	(3.9)
2nd Rctg Bde	157	81.7	51.3	33.8	62.0	85.7	76.3	42.8	157	46.8	15.6	63.1	37.7	44.3	15.5	76.9	47.3
		(3.6)	(4.3)	(4.9)	(3.5)	(3.2)	(3.8)	(4.9)		(5.3)	(3.5)	(5.0)	(3.4)	(4.7)	(3.5)	(4.8)	(4.3)
4th Rctg Bde	271	77.8	53.3	36.7	60.2	83.7	78.9	39.4	267	54.4	12.6	46.8	34.4	48.9	17.7	81.4	37.9
		(3.4)	(3.5)	(4.2)	(3.8)	(2.4)	(3.5)	(3.3)		(4.9)	(2.6)	(3.2)	(4.0)	(4.1)	(2.8)	(3.3)	(3.9)
5th Rctg Bde	193	81.6	48.2	41.0	62.5	83.9	76.6	41.0	193	47.1	17.0	60.0	44.1	44.5	14.8	81.2	37.1
		(3.8)	(4.4)	(3.6)	(4.6)	(3.3)	(3.2)	(3.1)		(5.1)	(3.3)	(3.8)	(4.6)	(3.8)	(3.5)	(4.6)	(4.3)
6th Rctg Bde	145	76.1	44.0	43.0	55.5	83.1	71.5	34.1	142	49.2	18.3	48.8	33.5	41.2	11.9	84.9	38.2
		(3.8)	(4.5)	(4.5)	(3.8)	(4.8)	(4.9)	(5.2)		(3.9)	(3.5)	(4.9)	(5.2)	(4.4)	(2.9)	(2.6)	(4.9)
16-17 Years Old	441	80.3	55.7	35.8	67.1	88.8	83.4	37.1	439	40.9	12.8	47.3	24.7	44.3	17.1	84.0	30.9
		(2.2)	(3.0)	(2.2)	(2.5)	(1.8)	(2.1)	(2.5)		(2.7)	(1.8)	(2.9)	(2.8)	(3.1)	(2.0)	(2.1)	(2.4)
18-19 Years Old	316	77.8	51.2	37.4	61.6	83.0	72.7	44.6	313	48.1	15.5	57.7	29.5	43.3	11.0	83.4	37.6
		(3.7)	(3.0)	(3.2)	(3.4)	(2.8)	(2.8)	(2.9)		(3.5)	(2.4)	(3.5)	(3.0)	(3.2)	(2.3)	(2.5)	(3.1)
20-21 Years Old	133	72.1	50.1	44.4	59.0	84.6	67.9	42.9	133	51.6	16.4	57.4	40.5	36.3	17.2	80.6	40.8
		(4.8)	(4.8)	(5.5)	(5.5)	(3.8)	(5.7)	(4.5)		(5.1)	(3.6)	(4.8)	(6.3)	(4.7)	(3.1)	(5.3)	(4.6)
22-24 Years Old	158	82.5	44.0	42.2	51.5	74.9	74.8	38.9	156	64.4	18.6	50.2	47.2	51.1	20.8	78.1	49.9
		(3.2)	(4.9)	(4.2)	(4.7)	(4.6)	(4.3)	(4.5)		(3.9)	(3.9)	(5.4)	(4.7)	(5.4)	(3.5)	(4.4)	(4.5)
TOTAL PMAS	1,048	78.7	51.0	39.0	60.8	83.4	75.9	40.7	1,041	49.8	15.4	52.7	33.5	44.2	16.1	82.0	38.5
		(1.7)	(1.8)	(1.6)	(1.8)	(1.7)	(1.8)	(1.7)		(1.8)	(1.5)	(2.0)	(2.0)	(1.8)	(1.4)	(2.0)	(1.7)

Note: n1 provides case bases for Types of TV Shows regularly watched by youth selected for Media Habits questions who watch TV more than zero hours each week.
n2 provides case bases for Types of Radio Programs regularly listened to by youth selected for Media Habits questions who listen to the radio more than zero hours each week.

Similar to Last Quarter

Television

- PMAS youth continue to have highest preferences for comedy (83.4%), sports, (78.7%), and movies (75.9%). They are least likely to regularly watch dramatic (39.0%) and talk (40.7%) shows.

- Males are more likely than females to watch TV sports shows (78.4% vs. 41.6%) (Z=9.66, p<.01), while females are more likely than males to prefer drama (72.8% vs. 39.5%) (Z=9.19, p<.01), movies (85.8% vs. 77.5%) (Z=3.32, p<.01), mystery (61.4% vs. 51.8%) (Z=2.10, p<.05), and talk shows (60.4% vs. 42.8%) (Z=5.25, p<.01).

- Music programs and music videos are most popular with high school students (p<.05 for all 4 relevant comparisons).

Radio

- Among PMAS youth, radio rock programs are the most popular (82.0%) with pop programming (52.7%) a distant second. Classical music (15.4%) and talk programs (16.1%) are least preferred.

- The popularity of country music radio programs varies by level of education, region, and age.

  - High school graduates not currently enrolled are more likely than college freshmen and sophomores (45.0% vs. 26.5%) (Z=3.58, p<.01) and college-oriented high school students (45.0% vs. 21.8%) (Z=5.19, p<.01) to report listening to country music. Work-oriented high school students are also more likely than college-oriented high school students to listen to country music on a regular basis (40.6% vs. 21.8%) (Z= 2.61, p<.01).

  - Youth in the 1st Recruiting Brigade (Northeast) are less likely than youth in the other recruiting brigades to listen to radio country music (p<.05 for all 4 comparisons).

  - Older respondents are more likely than younger respondents to report that they regularly listen to country music on the radio (p<.05 for 3 of the 5 relevant comparisons, the differences between 20- to 21-year-olds and 18- to 19-year-olds and between 18- to 19-year olds and 16- to 17-year olds are not statistically significant).

- Males are more likely than females to listen to sports (44.1% vs. 12.4%) (Z=11.08, p<.01) and rock programs (80.8% vs. 70.7%) (Z=2.28, p<.05) on the radio, while females are more likely than males to listen to pop (69.8% vs. 51.3%) (Z=4.40, p<.01) and easy listening programs (61.9% vs. 40.8%) (Z=6.20, p<.01).

Different from Last Quarter

- No strong shifts in television viewing and radio listening were observed this quarter. A few subgroup differences and quarter-to-quarter changes are statistically significant and may be meaningful in the context of the Army's advertising program.

  Television

  - College freshmen and sophomores are less likely than youth in the other educational groups to watch TV movies ($p<.05$ for all 3 comparisons).

  - 16- to 17-year-olds are more likely than 22- to 24-year-olds to watch mystery, music, and comedy programs ($p<.05$ for all 3 comparisons) and are more likely than 18- to 19-year-olds (83.4% vs. 72.7%) ($Z=3.06$) and 20- to 21-year-olds (83.4% vs. 67.9%) ($Z=2.55$, $p<.05$) to watch TV movies.

  - 20- to 21-year-olds are less likely this quarter than last to report watching TV movies (67.9% vs. 84.6%) ($Z=-2.12$, $p<.05$).

  Radio

  - High school graduates not currently enrolled are more likely than youth in the other educational groups to report listening to news and easy listening radio programs ($p<.05$ for all 6 comparisons).

  - Similarly, 22- to 24-year-olds are more likely than youth in other age groups to listen to news and easy listening programs on the radio ($p<.05$ for 5 of the 6 relevant comparisons, the difference between 22- to 24-year olds and 20- to 21-year-olds is not statistically significant).

  - College freshmen and sophomores, 18- to 19-year-olds, and youth in the Total Recruiting Market are less likely this quarter than last quarter to report listening to talk programs on the radio ($p<.05$ for all 3 comparisons), while easy listening programs are less popular among college-oriented high school students (33.7% vs. 42.5%) ($Z=-2.22$, $p<.05$)) and 16- to 17-year-olds (30.9% vs. 39.9%) (($Z=-2.49$, $p<.05$).

FALL - SUMMER DIFFERENCES IN
PERCENTAGE REGULARLY VIEWING OR LISTENING TO PROGRAMS WITH ARMY ADVERTISING

SAMPLE GROUPS	n1	Types of TV Shows: Sports	Mystery	Drama	Music	Comedy	Movie	Talk	n2	Types of Radio Programs: News	Classical	Pop	Country	Sports	Talk	Rock	Easy
RECRUITING MARKET:																	
MALES [PMAS + SMS]		+	-	+	+	+	-	+		-	+	-	+	+	-	+	-
FEMALES [PFAS + SFS]		-	+	+	-	-	+	+		+	+	+	-	+	-	-	+
TOTAL RECRUITING MARKET		-	+	+	+	-	+	+		+	+	+	-	+	-2.07	-	+
PMAS:																	
College Freshman and Sophomores		+	-	+	+	+	-	-		-	-	+	+	-	-2.17	-	-
H.S. Students [College-Oriented]		+	+	-	+	-	+	-		+	+	-	+	-	+	+	-2.22
H.S. Students [Work-Oriented]		-	-	-	+	+	-	+		-	-	-	+	+	-	-	+
H.S. Graduates Not Currently Enrolled		+	-	+	+	+	-	+		+	+	+	+	-	+	-	+
1st Rctg Bde		+	-	+	+	-	+	+3.89		+	+	+	-	-	+	-	-
2nd Rctg Bde		+	-	-	-	+	-	-		-2.13	+	-	-	-	-	-	-
4th Rctg Bde		-	+	+	+	+	+	-		+	-	-	+	+	+	-	-
5th Rctg Bde		+	+	+	+	-	+	-		-	+	+	-	+	-	+	+
6th Rctg Bde		-	-	+	+	+	-	-		+	+	-	+	-	-	+	+
16-17 Years Old		+	+	-	+	+	+	-		-	+	-	-	-	+	+	-2.49
18-19 Years Old		-	-	+	+	+	-	-		+	+	+	-	-	-2.19	-	+
20-21 Years Old		-	+	+	+	+	-2.12	-		-	+	+	+	-3.80	+	-	-
22-24 Years Old		+	-	+	+	-	+	+		-	+	-	+	+	+	-	+
TOTAL PMAS		+	-	+	+	+	-	+		-	+	-	+	-	-	-	-

Note: Numbers are Z-scores for significant quarter-to-quarter differences (i.e., $p < 0.05$; $\pm$ 2 s.e.)
Signs indicate the direction of changes that are not statistically significant.

PERCENTAGE WITH INTENTION TO ENLIST IN ARMY COMPONENTS
[PMAS MONTHLY TOTALS]
(Standard Error)

MONTHS	n1	Unaided Intention: General Intention	Unaided Intention: Active Army	Unaided Intention: USAR	Unaided Intention: ARNG	Aided Intention: General Intention	Aided Intention: Active Army	Aided Intention: USAR	Aided Intention: ARNG	n2	Army ROTC
October	626	2.0 (0.5)	1.0 (0.4)	0.7 (0.4)	0.2 (0.2)	26.5 (2.2)	14.9 (1.6)	14.4 (1.6)	12.3 (1.4)	470	16.5 (2.1)
November	781	3.7 (0.9)	3.0 (0.8)	0.1 (0.1)	0.6 (0.3)	29.8 (1.8)	16.6 (1.2)	16.4 (1.7)	12.0 (1.4)	546	18.4 (1.5)
December	680	0.9 (0.3)	0.5 (0.2)	0.2 (0.2)	0.2 (0.1)	25.1 (1.8)	13.9 (1.6)	13.0 (1.4)	12.1 (1.3)	526	16.9 (1.6)
TOTAL	2,087	2.3 (0.4)	1.6 (0.4)	0.3 (0.1)	0.4 (0.1)	27.3 (1.0)	15.2 (0.8)	14.7 (0.9)	12.1 (0.7)	1,542	17.3 (1.0)

Note: n1 provides case bases for all Unaided Intention Measures and for all Aided Intention Measures except Army ROTC.
n2 provides case bases for all Aided Intention - Army ROTC.

PERCENTAGE "AGREE" OR "STRONGLY AGREE" WITH ACTIVE ARMY ATTRIBUTE STATEMENTS
[PMAS MONTHLY TOTALS]
(Standard Error)

MONTHS	n	Job Variety	Physical Challenge	Proud Experience	Step Btwn HS & Col.	Leader Skills	Hi-Tech Equipment	Civilian Career	Self Confidence	Develop Potential	Mental Challenge	Mature Responsible	Skill Training	Hi-Trained Co-Workers	Money for Ed.
October	595	55.7 (2.1)	82.2 (1.6)	69.0 (2.0)	52.4 (2.1)	75.6 (1.7)	80.6 (1.8)	56.3 (2.6)	73.9 (2.1)	72.6 (2.0)	70.9 (2.4)	75.4 (2.3)	75.9 (2.2)	74.1 (2.1)	77.1 (2.1)
November	728	59.8 (2.2)	80.1 (2.4)	65.7 (2.2)	49.9 (2.4)	73.6 (2.1)	79.0 (2.3)	54.3 (2.4)	71.4 (2.4)	66.6 (2.1)	65.7 (1.9)	74.5 (2.1)	75.7 (2.2)	73.0 (2.1)	75.7 (1.7)
December	627	53.3 (2.5)	78.1 (1.8)	57.6 (2.4)	41.6 (2.4)	71.2 (2.1)	77.1 (1.9)	45.1 (2.3)	67.8 (2.1)	61.5 (2.5)	65.4 (2.1)	71.1 (2.0)	72.3 (2.2)	72.8 (2.1)	75.3 (2.3)
TOTAL	1,950	56.5 (1.4)	80.1 (1.2)	64.0 (1.3)	47.9 (1.5)	73.4 (1.1)	78.9 (1.2)	51.9 (1.3)	70.9 (1.2)	66.7 (1.2)	67.1 (1.2)	73.6 (1.3)	74.6 (1.2)	73.2 (1.3)	76.0 (1.1)

PERCENTAGE SEEING/HEARING MILITARY ADVERTISING
[PMAS MONTHLY TOTALS]
(Standard Error)

MONTHS	n	.....Army Components..... ACTIVE	ROTC	ARNG	USAR	.....Other Military Branches..... USAF	NAVY	USMC	USCG	JRAP	NONE
October	626	83.1 (1.9)	2.4 (0.6)	12.8 (1.2)	10.4 (1.3)	63.4 (2.0)	58.2 (2.5)	65.6 (2.5)	12.4 (1.5)	7.6 (1.3)	4.1 (1.1)
November	781	84.8 (1.4)	1.7 (0.5)	11.1 (1.2)	8.0 (1.1)	67.2 (2.3)	57.3 (2.3)	66.1 (2.4)	9.4 (1.3)	5.5 (1.1)	3.8 (0.8)
December	680	86.1 (1.6)	0.9 (0.3)	12.2 (1.3)	8.5 (1.5)	65.1 (2.4)	61.9 (2.3)	67.8 (1.9)	8.3 (0.8)	5.0 (1.1)	2.4 (0.8)
TOTAL	2,087	84.7 (1.0)	1.6 (0.3)	12.0 (0.7)	8.9 (0.8)	65.4 (1.4)	59.1 (1.5)	66.5 (1.5)	9.9 (0.8)	6.0 (0.6)	3.4 (0.5)

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ACOMS QUARTERLY REPORT FOR SCHOOL YEAR 86/87: SPRING QUARTER

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August 1987

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ACOMS QUARTERLY REPORT
FOR SCHOOL YEAR 86/87: SPRING QUARTER

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ACOMS QUARTERLY REPORT: SPRING 1987

EXECUTIVE SUMMARY

Requirement:

To provide timely information to Army policymakers and advertising planners regarding key market responses that are expected to be sensitive to changes in the Army's advertising plans.

Procedure:

Computer-assisted 30-minute telephone interviews were conducted with 2,824 youth between the ages of 16 and 24 during the quarter. Youth were asked about their education and employment history, career plans, intentions to enlist in the Army, enlistment-related activities undertaken during the prior six months, and what opportunities they regard as important to their future plans. They were also asked about their media monitoring habits, recall of military advertising, knowledge and perceptions of the Army and its components, and their attitudes toward Army advertisements. Demographic information was collected and, for selected youth, parental location and tracking information was requested for use in parental and longitudinal interviewing.

Results:

The quarterly report focuses mainly on males in the Primary Male Analytic Sample (PMAS). The PMAS corresponds to the primary male enlisted market and includes youth who have neither served nor been accepted for service in the military, who are either in high school or have a regular high school diploma, who have never taken a college ROTC course, and who have not yet completed their sophomore year in college. Data are reported by PMAS educational, regional, and age groups. Findings are reported by sex for the Recruiting Market as a whole, including both the primary and secondary enlisted markets. Finally, data for youth in the officer market are reported for ROTC perceptions and ROTC-relevant importance items by education, region, age, and sex.

Utilization:

These findings are intended for use by Army policymakers and advertising planners who need information about the perceptions,

intentions and enlistment-related behaviors of youth in the Army's recruiting market. Subsequent data collection and analytic reporting should facilitate identification of stable results and trends.

INTRODUCTION TO SPRING 1987 QUARTERLY REPORT

This report presents data collected between April 1 and June 30, 1987.

Sample Groups in the Quarterly Report

During the Spring quarter, a total of 2,824 youth interviews were completed. All of the tables in the quarterly report except Table SP-6 [Perceptions - Army ROTC] focus on the main Army Recruiting Market, a subset of 2,267 of the total youth interviews. Table SP-6 includes data on the perceptions of the ROTC Sample, a subset of 755 of the total youth interviews. The following chart lists the subgroups within the Recruiting Market. It shows the total number of interviews conducted among youth in each of the subgroups during the Spring quarter, and the weighted percentages of respondents within each grouping category (e.g., education, region, age, etc.).

Sample Groups	N	Weighted Percentage
RECRUITING MARKET:		
MALES [PMAS + SMS]	1,858	46.9
FEMALES [PFAS + SFS]	409	53.1
TOTAL RECRUITING MARKET	2,267	
PMAS:		
College Freshmen and Sophomores	296	21.3
H.S. Students [College-Oriented]	642	31.9
H.S. Students [Work-Oriented]	184	9.5
H.S. Graduates Not Currently Enrolled	492	37.3
1ST Rctg Bde	374	24.6
2ND Rctg Bde	271	17.5
4TH Rctg Bde	469	24.2
5TH Rctg Bde	260	16.2
6TH Rctg Bde	240	17.4
16-17 Years Old	715	33.6
18-19 Years Old	413	26.3
20-21 Years Old	234	18.4
22-24 Years Old	252	21.7
TOTAL PMAS	1,614	

The interview totals and weighted percentages in the chart above are provided as a general guide to sample sizes. It should be noted, however, that the numbers of interviews and weighted percentages are different for each of the tables containing data from rotating modules (i.e., Table SP-10 (Knowledge) and Table SP-11 (Media Habits)) and Perceptions modules (e.g., Table SP-3 (Perceptions - Active Army), Table SP-4 (Perceptions - Army Reserve), and Table SP-5 (Perceptions - Army National Guard)). Additionally, of course, the sample sizes and weighted percentages for Table SP-6 (Perceptions - Army ROTC) are quite different since they include different subpopulations.

It should also be noted that some respondents who were part of the sample drawn in March were actually interviewed during the month of April. These respondents received the Q87-2 questionnaire rather than the Q87-3 instrument administered to the youth in the Spring quarter sample draw. A total of 74 respondents in the Recruiting Market, 41 of whom are in the PMAS, were interviewed during Spring quarter using the Winter version of the questionnaire. Their responses are included in the Spring quarter percentages shown in the quarterly tables.

Sample Performance

The chart below shows response rates for household screeners and youth interviews for the third quarter of ACOMS data collection. The monthly response rate for household screeners is the percentage of total identified households for which the screening instrument was successfully completed. The monthly response rate for youth interviews is the percentage of completed youth interviews out of the total eligible youth in the month's sample[1].

---

[1]Interviewers have a total of eight weeks to close out each monthly sample of telephone numbers. This process includes identifying all non-working and non-residential numbers in addition to completing household screeners on all identified households and completing interviews with all eligible respondents. Therefore, the respondents included in the response rate calculations are somewhat different than those included in the quarterly report itself. In particular, since the June monthly sample was not closed out until late in July, interviewing continued for this sample past the June 30 cutoff date used for reporting purposes. Interviews in this category will be included in the next quarterly report though they are included in the response rates reported here.

Response Rates for ACOMS - Spring 1987
Percentage Completed

	April	May	June
Household Screener	84.5	84.6	83.4
Youth Interviews	81.9	75.7	77.3

Change Tables

Again this quarter, a set of data tables (Table C-1 through Table C-11) is included in the quarterly report showing changes from the previous to the current quarter. The row labels and column headings of the change tables are identical to the corresponding quarterly tables. The numbers shown in these tables are z Scores and appear only if comparisons between Winter and Spring percentages show significant change ($p \leq 0.05$; $\pm$ 2 standard errors). Signs (+ and -) show the direction of changes that are not statistically significant. The direction of change is determined by subtracting Winter percentages from Spring percentages. Thus, a positive change indicates an increase for Spring quarter and a negative change means the Spring percentage is lower than the Winter percentage in that cell. When the percentage has not changed, a 0 appears in the cell.

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OVERVIEW OF FINDINGS

Purpose.

To provide timely information to Army policymakers and advertising planners regarding key market responses that are expected to be sensitive to changes in the Army's advertising plans.

Methodology.

Computer-assisted 30-minute telephone interviews were conducted with 2,824 youth between the ages of 16 and 24 during the quarter. Youth were asked about their education and employment history, career plans, intentions to enlist in the Army, enlistment-related activities undertaken during the prior six months, and what opportunities they regard as important to their future plans. They were also asked about their media monitoring habits, recall of military advertising, knowledge and perceptions of the Army and its components, and their attitudes toward Army advertisements. Demographic information was collected and, for selected youth, parental location and tracking information was requested for use in parental and longitudinal interviewing.

The quarterly report focuses mainly on males in the Primary Male Analytic Sample (PMAS). The PMAS corresponds to the primary male enlisted market and includes youth who have neither served nor been accepted for service in the military, who are either in high school or have a regular high school diploma, who have never taken a college ROTC course, and who have not yet completed their sophomore year in college. Data are reported by PMAS educational, regional, and age groups. Findings are reported by sex for the Recruiting Market as a whole, including both the primary and secondary enlisted markets. The secondary enlisted market includes high school non-completers and youth with a high school certificate other than a diploma (e.g., GED) who have not yet completed one year of college. Finally, data for youth in the officer market are reported for ROTC perceptions and ROTC-relevant importance items by education, region, age, and sex.

Caution. Since this is the first year of data collection under ACOMS, it is not possible to judge whether changes during the first three quarters reflect true trends or seasonal changes.

Findings:

A. General Army Findings (All Components)

1. Enlistment Intentions and Behaviors. Intentions to enlist in the Army in general remain strongest in the high school student market. Significant decreases in intention to enlist occurred this quarter among the work-oriented high school students and among high school graduates who are not currently enrolled (See Figure 1). There were also decreases in actions directly related to Army enlistment (for example, taking the ASVAB, visiting a recruiting station, or sending away for a gift in response to an Army announcement) (See Figure 2). The largest declines in these behaviors occurred among 18- to 19-year olds and youth in the 4th Recruiting Brigade (Midwest).

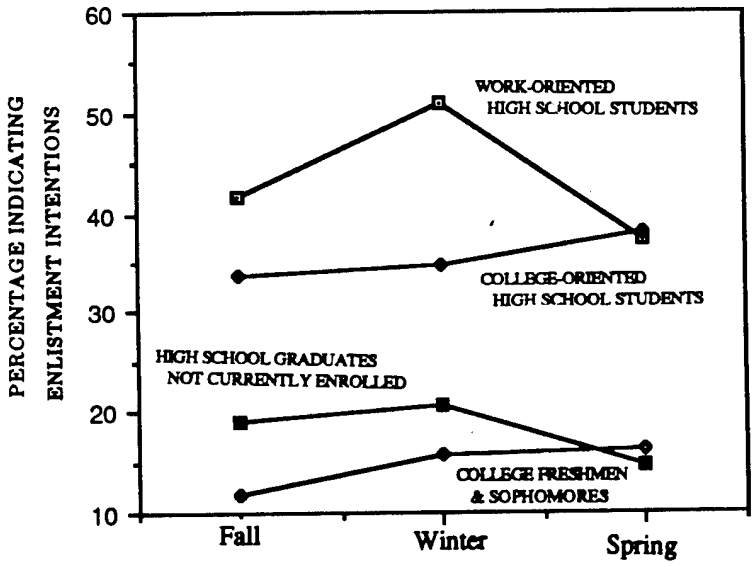

Figure 1. Aided Intentions to Enlist in the Army in General by Educational Groups (Fall, Winter, Spring)

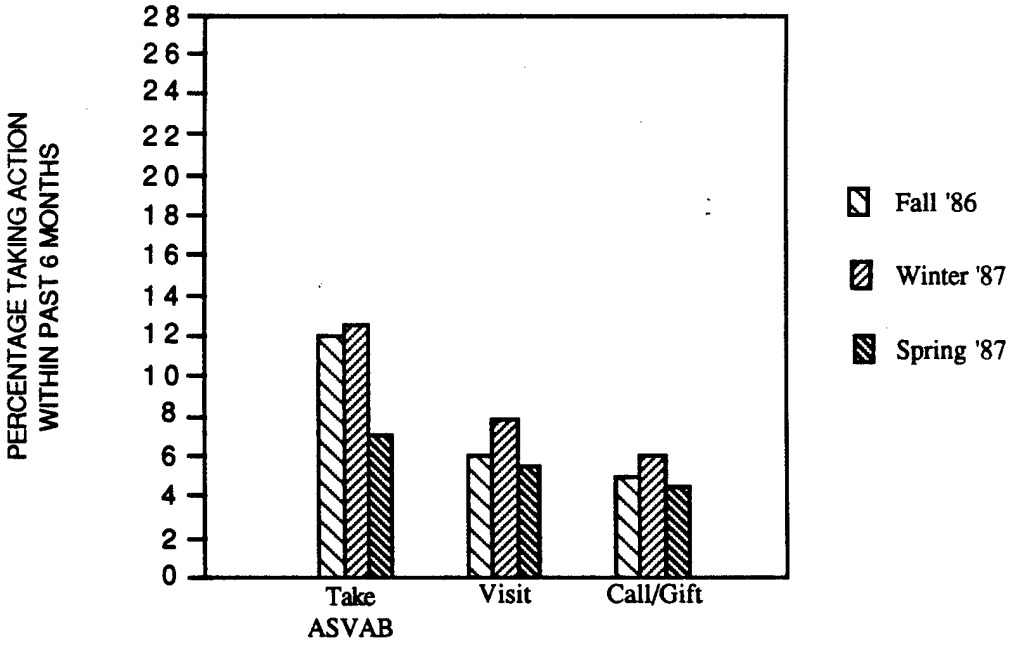

Figure 2. Actions Relating to Army Enlistment by Youth in the Primary Enlisted Market (Fall, Winter, Spring)

2. The Army Image. The Army Image is defined in terms of agreement with statements that the Army, the Reserve, the National Guard and the ROTC offer a set of attributes emphasized in Army advertising. Average agreement with statements that the Army offers these attributes is about 67 percent across three quarters (See Figure 3). Average agreement with statements about the USAR and ARNG has been less stable, fluctuating between 55% and 65%. Average agreement among youth in the officer market that the ROTC provides opportunities emphasized in ROTC advertising ranges between 60 and 65 percent (Note: ROTC attributes and samples differ from those of other components).

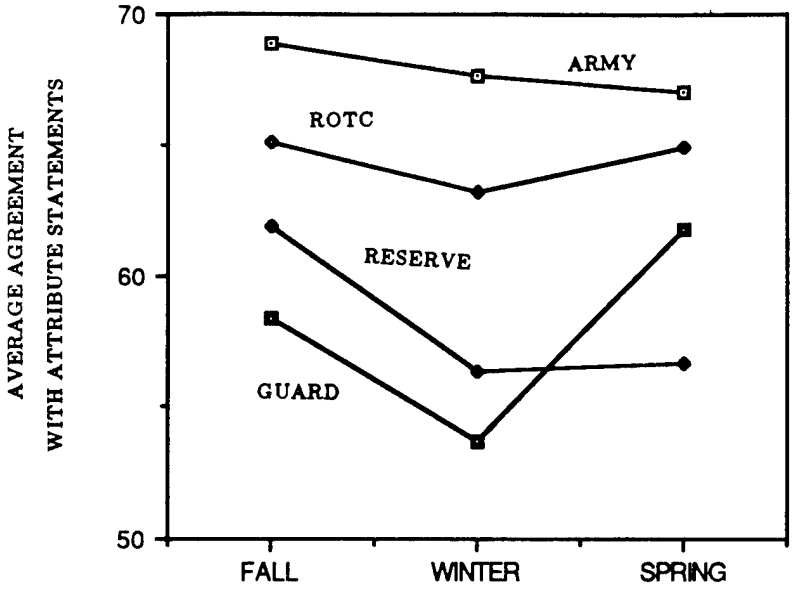

Figure 3. Army Component Images among Youth in the Primary Enlisted Market (Fall, Winter, Spring)

3. Importance of Army Offers and Their Links to the Army Image. The opportunities most often valued by the primary male enlisted market remain focused on self and career development. The opportunities least valued are part-time work, living in one's own hometown, and having a stepping stone between high school and college.

There are notable gaps between the opportunities highly valued by youth in the enlisted market and their perceptions that the Army offers them these opportunities. "Value-Image" gaps occur when there is a difference between how youth value an attribute and how likely they are to see it as present in the Army or its components. (See figures in sections following for graphs showing these discrepancies for each of the Army's components.) Of particular interest are Value-Image gaps in the following attributes: Civilian career development, wide variety of opportunities to find an enjoyable job, and leadership development. There is little Value-Image gap for the following attributes: A stepping stone between high school and college, working with high-tech equipment, physical challenge, and money for education.

These findings on Value-Image gaps provide useful information to the Army's advertising program regarding attributes on which specific emphasis may be needed and those which may currently be relatively "oversold".

4. Recall of Army Advertising. A large and stable majority of youth (84.3% in Spring Quarter) were able to recall active Army advertising unaided (See Figure 4). Recall of active Army advertising is substantially higher than recall of other services' advertising (USAF = 66.2%, Navy = 61.2%, USMC = 65.4%, JRAP = 5.8% all in Spring Quarter). Unaided recall levels of Army ROTC, ARNG and USAR advertising are substantially lower than that of active Army advertising.

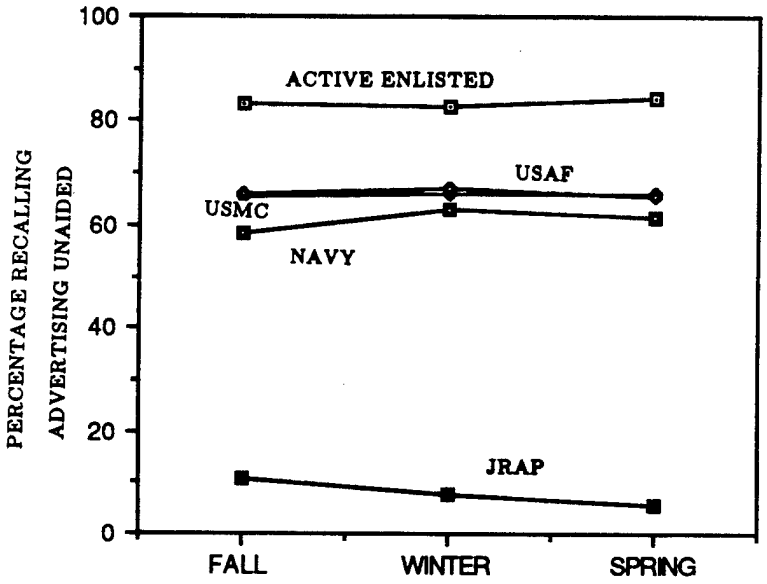

Figure 4. Unaided Recall of Advertising by Youth in the Primary Enlisted Market (Fall, Winter, Spring)

B. Active Army (Enlisted)

1. Enlistment Intentions. The proportion of the primary male enlisted market responding that they would definitely or probably be serving on active duty in the Army in the next few years dropped significantly this quarter in one market group -- the high school graduates not currently enrolled.

2. Values and the Army Image. Questions on perceptions did not specifically mention the active Army. We assume respondents were referring to the active Army in agreeing to statements that "The Army offers..." various opportunities. The Value-Image gap for the active Army is greatest for the following attributes: The development of potential, civilian career development, job variety, and having an experience that one can be proud of. (See Figure 5).

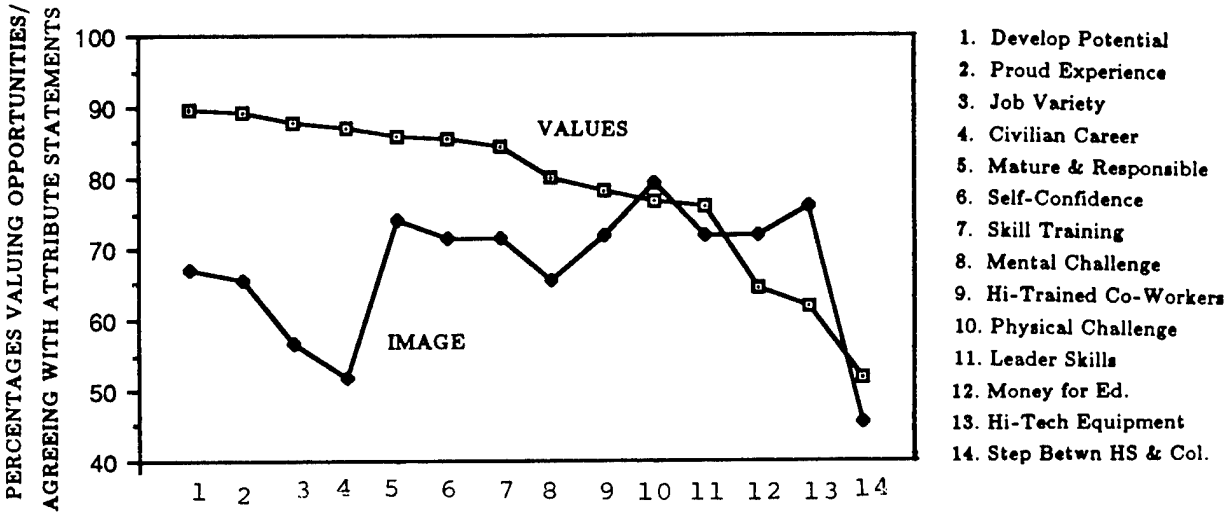

Figure 5. Value-Image Gaps for the Army (Spring Quarter)

3. Recall and Knowledge. As previously discussed, recall of active Army advertising remains very high. Further, general knowledge of Army offers and benefits remains high. Knowledge about specific information (e.g., the total amount of educational benefits) remains considerably lower.

C. Army Reserve (USAR).

1. Enlistment Intentions. When asked directly, 13.7% of youth in the primary male enlisted market say they will definitely or probably enlist in the Army Reserve. Similar to the active Army, a decline in Army Reserve enlistment intentions was found among the high school graduates not currently enrolled. Concurrently, there was a decrease in recall of Army Reserve advertising for the same group.

2. Values and the Army Reserve Image. The Army Reserve brand image remains somewhat lower than those of the other Army components. The Value-Image gap for the Army Reserve are similar to those found for the active Army, with the notable exceptions of attributes that are particularly characteristic of the Reserve (i.e., part-time work opportunities, and serving America in one's hometown) (See Figure 6). These attributes are well established in the Reserve image -- probably too much so, given the generally low level of importance of these attributes in the youth market.

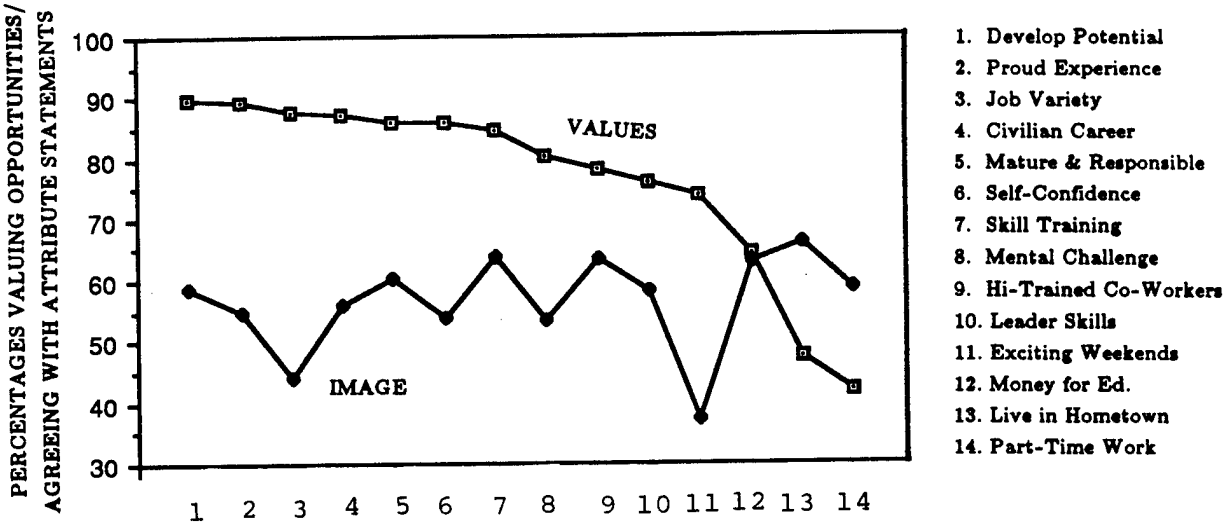

Figure 6. Value-Image Gaps for the USAR (Spring Quarter)

3. Recall and Knowledge. Unaided recall of Army Reserve advertising remains low (9.0%), although aided recall is substantially higher (71.7%). Although general knowledge of Reserve (and Guard) offers remains high, knowledge about specific offers is relatively low. For example, 84% of the primary male enlisted market is aware that money for education may be obtained from the Reserve or Guard, but only 9% can correctly identify the amount.

D. Army National Guard (ARNG).

1. Enlistment Intentions. Intentions to enlist in the Army National Guard remained stable this quarter for youth in the enlisted market. When asked directly, 12.3% of youth in the primary male enlisted market say they will probably or definitely enlist in the ARNG.

2. Values and the Army National Guard Image. The Army National Guard brand image remains weaker than that of the active Army. For most attributes, large discrepancies remain between youth values and perceptions of the Guard (See Figure 7). The notable exceptions are opportunities to live in one's own hometown and opportunities for part-time work.

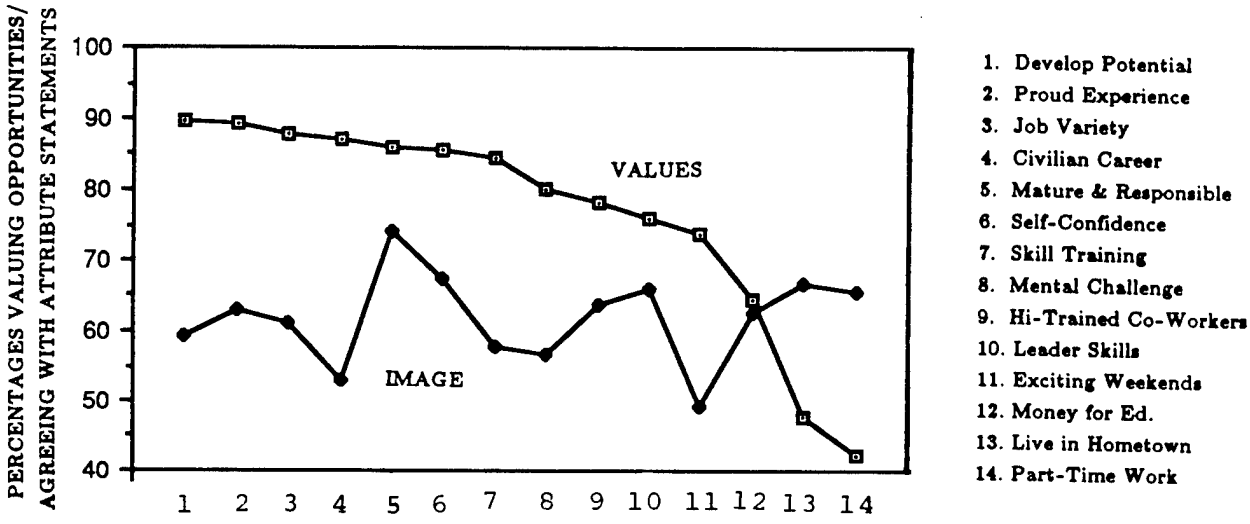

Figure 7. Value-Image Gaps for the ARNG (Spring Quarter)

3. Recall and Knowledge. Unaided recall of Army National Guard advertising remains low (11.6%), although aided recall is much higher (64.3%). The same questions assess knowledge of Guard and Reserve offers. On knowledge of offers, see the discussion above for the Reserve.

E. Army Reserve Officer's Training Corps (ROTC).

1. Intentions to Join the ROTC. These intentions remain relatively stable across quarters. 16.6% of youth in the primary male enlisted market report that they will probably or definitely receive an officer's commission through participation in the Army Reserve Officer's Training Corps.

2. Values and the ROTC Image. All five attributes emphasized by the ROTC are highly valued by the majority of the youth in the officer market (See Figure 8). The attribute valued by the greatest proportion (over 90%) of the officer market is job variety, while the one valued by the smallest proportion (slightly over 80%) is acquiring leadership skills. The largest Value-Image gaps are found for job variety and the opportunity to use one's own judgment. There is a relatively small gap found between the value placed on having opportunities to be proud of and the perception that this attribute is offered by the ROTC.

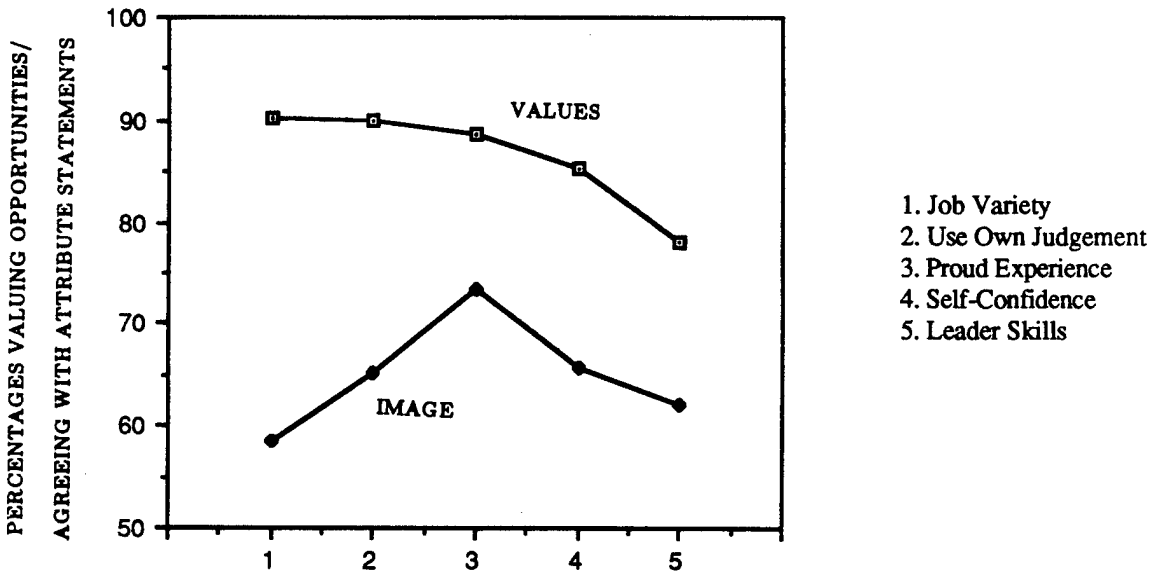

Figure 8. Value-Image Gaps for the Army ROTC (Spring Quarter)

3. Recall and Knowledge. Unaided recall of ROTC advertising is reported by less than 2% of youth in the officer market while close to 50% recall it when prompted. These levels are similar to those reported for Winter quarter, though both Spring and Winter unaided recall levels are lower than in Fall quarter when most ROTC advertising occurs. Similarly, knowledge of ROTC offers remains at about the same level as last quarter (60%-70%) and down somewhat from Fall quarter.

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QUARTERLY TABLES
SPRING 1987

PERCENTAGE WITH INTENTION TO ENLIST IN ARMY COMPONENTS
(Standard Error)

SAMPLE GROUPS	N1	Unaided Intention: General Intention	Unaided Intention: Active Army	Unaided Intention: USAR	Unaided Intention: ARNG	Aided Intention: General Intention	Aided Intention: Active Army	Aided Intention: USAR	Aided Intention: ARNG	N2	Army ROTC
RECRUITING MARKET:											
MALES [PMAS + SMS]	1,858	2.3 (0.4)	1.5 (0.3)	0.3 (0.2)	0.5 (0.2)	25.7 (1.2)	14.5 (1.1)	14.2 (0.9)	12.9 (1.0)	1,256	17.7 (1.5)
FEMALES [PFAS + SFS]	409	2.6 (1.8)	2.6 (1.8)	0.0 n.e.	0.0 n.e.	14.2 (2.8)	6.6 (1.9)	6.5 (1.6)	8.5 (2.7)	316	7.3 (2.8)
TOTAL RECRUITING MARKET	**2,267**	**2.4 (1.0)**	**2.1 (1.0)**	**0.2 (0.1)**	**0.2 (0.1)**	**19.6 (1.7)**	**10.3 (1.2)**	**10.1 (1.0)**	**10.6 (1.6)**	**1,572**	**11.9 (1.8)**
PMAS:											
College Freshmen and Sophomores	296	1.4 (0.9)	1.4 (0.9)	0.0 n.e.	0.0 n.e.	16.2 (2.4)	8.0 (1.7)	10.5 (2.1)	7.7 (1.6)	289	10.2 (2.0)
H.S. Students [College-Oriented]	642	2.9 (0.7)	1.3 (0.4)	0.8 (0.5)	0.8 (0.3)	38.2 (2.3)	22.8 (2.5)	20.8 (1.8)	18.1 (1.9)	642	23.2 (1.9)
H.S. Students [Work-Oriented]	184	6.3 (2.0)	5.2 (1.9)	1.1 (0.9)	0.0 n.e.	37.4 (4.6)	25.4 (3.5)	23.1 (3.4)	20.0 (3.6)	0	N/A N/A
H.S. Graduates Not Currently Enrolled	492	0.8 (0.4)	0.5 (0.3)	0.0 n.e.	0.3 (0.4)	14.6 (1.8)	6.2 (1.3)	7.2 (1.4)	7.9 (1.2)	227	12.1 (3.1)
1st Rctg Bde	374	0.6 (0.4)	0.5 (0.4)	0.1 (0.1)	0.0 n.e.	20.6 (1.9)	11.2 (1.7)	11.7 (1.6)	8.3 (1.6)	247	17.4 (2.6)
2nd Rctg Bde	271	3.8 (1.5)	2.4 (0.9)	0.4 (0.5)	1.0 (0.8)	35.5 (4.1)	24.5 (4.1)	18.8 (2.0)	19.2 (3.4)	197	24.8 (3.8)
4th Rctg Bde	469	0.9 (0.4)	0.8 (0.4)	0.1 (0.1)	0.0 n.e.	19.5 (2.2)	8.0 (1.5)	9.9 (1.3)	8.9 (1.3)	319	10.8 (2.4)
5th Rctg Bde	260	4.2 (1.5)	3.1 (1.5)	0.3 (0.3)	0.8 (0.1)	26.4 (4.1)	15.9 (3.6)	14.9 (2.8)	17.0 (3.6)	197	14.3 (3.4)
6th Rctg Bde	240	2.3 (1.2)	0.8 (0.5)	1.1 (0.9)	0.5 (0.5)	25.1 (4.0)	12.3 (2.0)	15.7 (3.7)	11.0 (2.3)	198	16.9 (3.0)
16-17 Years Old	715	3.5 (0.8)	2.2 (0.6)	1.1 (0.6)	0.3 (0.2)	38.4 (1.9)	24.4 (1.9)	20.8 (1.5)	17.2 (1.6)	575	22.3 (1.9)
18-19 Years Old	413	1.9 (0.7)	1.4 (0.6)	0.0 n.e.	0.6 (0.4)	22.0 (2.4)	10.8 (2.2)	13.0 (2.0)	11.2 (1.9)	324	12.7 (2.5)
20-21 Years Old	234	2.3 (1.2)	1.6 (1.0)	0.0 n.e.	0.7 (0.7)	15.9 (2.8)	9.2 (2.0)	10.8 (2.4)	10.7 (2.6)	141	13.1 (3.0)
22-24 Years Old	252	0.0 n.e.	0.0 n.e.	0.0 n.e.	0.0 n.e.	14.0 (2.6)	4.4 (1.5)	6.3 (1.7)	7.2 (1.9)	118	13.3 (4.2)
TOTAL PMAS	1,614	2.1 (0.4)	1.4 (0.3)	0.4 (0.2)	0.4 (0.2)	24.7 (1.3)	13.7 (1.2)	13.7 (1.0)	12.3 (1.0)	1,158	16.6 (1.2)

Note: n.e. indicates standard error is not estimable.

TABLE SP-1 INTENTIONS TO ENLIST

Similar to Last Quarter

- High school students continue to have the highest aided and unaided general intentions to enlist in the Army among PMAS youth ($p < .05$ for 7 of the 8 relevant comparisons).
  - Aided intentions to enlist in all Army components are again higher for high school students than for college freshmen and sophomores or high school graduates not currently enrolled in school ($p < .05$ for all 18 relevant comparisons).
  - Unaided intentions to enlist in the active Army are higher for work-oriented high school students than for college-oriented high school students (5.2% vs. 1.3%) ($z = +2.00$, $p < .05$) and high school graduates (5.2% vs. 0.5%) ($z = +2.44$, $p < .02$), and tend to be higher than for college freshmen and sophomores (5.2% vs. 1.4%) ($z = +1.80$, $p < .08$). There are no differences among educational groups in unaided intentions to enlist in the Army Reserve or Army National Guard.
- Youth in the Southeast (2nd Recruiting Brigade) tend to have higher aided intentions to enlist in all Army components than youth in other regions of the country ($p < .10$ for 10 of the 16 relevant comparisons, of these $p < .05$ for 11 comparisons). The aided intentions of Southeasterners are especially high in comparison with Midwesterners (4nd Recruiting Brigade) and Northeasterners (1st Recruiting Brigade) ($p < .10$ for all 10 comparisons; $p < .05$ for 9 comparisons).
- Men continue to be significantly more likely than women to express aided intentions to enlist generally and in all Army components except the National Guard ($p \leq .05$ for all 4 relevant comparisons).

Different from Last Quarter

- Patterns of decline in intentions to enlist are noted for several groups this quarter.
  - Aided intentions generally and for active Army and Army Reserve dropped significantly among high school graduates not currently enrolled ($p < .05$ for all 3 relevant comparisons). All but one of the remaining changes for this group are negative but not significant.

- A pattern of decrease in aided intentions is found for 22- to 24-year olds ($p < .20$ for 3 of the 5 relevant comparisons; of these $p < .05$ for 1 comparison) while youth in the Northeast (1st Recruiting Brigade) and Midwest (4th Recruiting Brigade) show patterns of declining unaided intentions. ($p < .05$ for 2 of 3 relevant comparisons for youth in the Northeast; $p < .10$ for 2 of the 3 relevant comparisons for youth in the Midwest; of these, $p < .05$ for 1 comparison; quarter-to-quarter comparisons cannot be made for ARNG.)

- This quarter, aided intentions of work-oriented high school students were significantly lower for general (37.4% vs. 51.0%) ($z = -2.09$, $p < .04$), for active Army (25.4% vs. 29.5%) ($z = -1.96$, $p < .05$), and for Army Reserve (23.1% vs. 27.7%) ($z = -2.91$, $p < .01$). There are no significant differences this quarter between work-oriented and college-oriented high school students in aided intentions to enlist.

- Regional patterns of enlistment intentions show some shifts this quarter in addition to the declines noted above.

  - Southeastern youth (2nd Recruiting Brigade) show a strong increase in aided intention to enlist in the active Army (24.5% vs. 14.5%) ($z = +2.13$, $p < .03$).

  - Youth in the Southwest (5th Recruiting Brigade), however, are no longer significantly higher in general aided intentions to enlist than those in other regions.

SPRING - WINTER DIFFERENCES IN
PERCENTAGE WITH INTENTION TO ENLIST IN ARMY COMPONENTS

SAMPLE GROUPS	N1	Unaided Intention: General Intention	Unaided Intention: Active Army	Unaided Intention: USAR	Unaided Intention: ARNG	Aided Intention: General Intention	Aided Intention: Active Army	Aided Intention: USAR	Aided Intention: ARNG	N2	Army ROTC
RECRUITING MARKET: MALES [PMAS + SMS]		-	+	-	-	-	-	-1.98	-		+
FEMALES [PFAS + SFS]		+	+	0	0	+	+	+	+		-
TOTAL RECRUITING MARKET		+	+	-	-	+	+	+	+		+
PMAS: College Freshmen and Sophomores		+	+	0	-	+	+	+	-		+
H.S. Students [College-Oriented]		-	-	-	+	+	+	+	+		+
H.S. Students [Work-Oriented]		-	+	-	-	-2.02	-	-	-		0
H.S. Graduates Not Currently Enrolled		-	-	-	+	-2.09	-1.96	-2.91	-		-
1st Rctg Bde		-2.74	-	-2.18	0	-	+	-	-		+
2nd Rctg Bde		+	+	-	+	+	+2.13	+	+		+
4th Rctg Bde		-2.00	-	-	-	-	-2.03	-	-		-
5th Rctg Bde		+	+	-	+	-	-	-	-		-
6th Rctg Bde		+	+	+	+	-	-	-	-		-
16-17 Years Old		-	+	-	-	+	+	+	+		+
18-19 Years Old		-	-	-	+	-	+	-	+		-
20-21 Years Old		+	+	-	+	-	-	-	-		-
22-24 Years Old		-	0	0	-	-	-	-2.71	-		-
TOTAL PMAS		-	+	-	+	-	+	-	-		+

Note: Numbers are z scores for significant quarter-to-quarter differences (i.e., $p < 0.05$; $\pm$ 2 s.e.)
Signs indicate the direction of changes that are not statistically significant.

PERCENTAGE RATING OPPORTUNITIES "IMPORTANT" OR "VERY IMPORTANT" TO PLANS FOR THE NEXT YEAR
(Standard Error)

SAMPLE GROUPS	N	Job Variety	Physical Challenge	Proud Experience	Step Btwn HS & Col.	Leader Skills	Hi-Tech Equipment	Civilian Career	Self Confidence	Develop Potential	Mental Challenge	Mature & Responsible	Skill Training	Hi-Trained Co-Workers	△ Money for Ed.	Serve Country	Exciting Weekends	Part-Time Work	Live in Hometown
RECRUITING MARKET:																			
MALES [PMAS + SMS]	1,858	87.4 (0.9)	75.6 (1.2)	89.3 (0.8)	51.3 (1.7)	75.0 (1.4)	60.9 (1.3)	86.3 (1.0)	85.3 (1.0)	89.3 (0.9)	78.7 (1.2)	86.1 (1.0)	84.0 (0.9)	77.8 (1.2)	62.8 (1.3)	57.1 (1.3)	74.4 (1.2)	40.0 (1.3)	50.2 (1.6)
FEMALES [PFAS + SFS]	409	89.7 (2.1)	65.6 (3.3)	88.4 (2.9)	60.2 (2.6)	71.9 (3.2)	54.6 (3.3)	85.2 (2.2)	91.1 (1.8)	91.9 (2.0)	84.6 (2.4)	91.8 (1.7)	83.1 (2.2)	79.2 (2.5)	68.2 (2.8)	50.1 (2.9)	65.8 (2.9)	47.3 (3.4)	51.7 (3.3)
TOTAL RECRUITING MARKET	**2,267**	**88.6 (1.3)**	**70.3 (1.9)**	**88.8 (1.6)**	**56.0 (1.7)**	**73.3 (1.9)**	**57.5 (1.9)**	**85.7 (1.2)**	**88.4 (1.0)**	**90.7 (1.1)**	**81.9 (1.3)**	**89.1 (1.0)**	**83.5 (1.3)**	**78.6 (1.4)**	**65.7 (1.6)**	**53.4 (1.7)**	**69.8 (1.7)**	**43.9 (1.8)**	**51.0 (1.9)**
PMAS:																			
College Freshmen and Sophomores	296	88.3 (2.2)	74.0 (2.6)	83.3 (2.6)	47.7 (3.1)	77.8 (3.0)	56.1 (3.2)	90.5 (1.8)	82.4 (2.7)	90.4 (2.2)	83.4 (2.6)	86.3 (2.3)	84.5 (2.0)	78.2 (2.9)	72.0 (3.0)	53.2 (3.5)	71.3 (3.0)	52.1 (3.6)	35.5 (3.3)
H.S. Students [College-Oriented]	642	93.9 (1.0)	80.4 (1.9)	93.4 (1.0)	62.5 (2.2)	80.5 (1.8)	67.8 (2.1)	88.6 (1.2)	87.3 (1.4)	90.4 (1.4)	81.2 (1.9)	88.2 (1.5)	84.3 (1.5)	79.8 (2.0)	81.1 (2.1)	64.8 (2.2)	73.0 (1.9)	56.7 (2.2)	43.8 (2.4)
H.S. Students [Work-Oriented]	184	84.3 (2.7)	70.1 (3.8)	85.0 (2.9)	49.6 (5.0)	65.4 (3.8)	64.7 (4.5)	82.0 (3.3)	84.3 (3.1)	84.1 (3.4)	62.9 (4.4)	81.0 (4.0)	80.9 (3.5)	74.7 (3.8)	53.6 (4.6)	64.5 (4.5)	78.8 (4.0)	48.9 (3.8)	52.2 (4.7)
H.S. Graduates Not Currently Enrolled	492	82.6 (1.8)	77.0 (1.9)	90.2 (1.1)	46.1 (2.8)	73.3 (2.4)	59.7 (2.5)	85.6 (1.6)	86.6 (1.6)	90.4 (1.3)	81.5 (2.0)	84.9 (1.8)	85.5 (1.5)	77.2 (2.0)	48.7 (2.4)	51.8 (2.3)	74.2 (2.2)	22.3 (2.6)	57.1 (2.5)
1st Rctg Bde	374	88.3 (1.8)	73.4 (2.2)	89.0 (1.8)	50.3 (2.9)	74.6 (2.5)	62.2 (2.8)	87.5 (1.8)	83.0 (2.2)	87.1 (2.0)	77.0 (2.5)	82.7 (2.2)	83.6 (2.1)	76.1 (2.6)	58.7 (2.5)	51.1 (3.1)	74.9 (2.2)	44.1 (3.1)	42.3 (3.4)
2nd Rctg Bde	271	87.6 (2.3)	78.2 (3.2)	88.5 (1.7)	50.0 (3.4)	78.7 (2.8)	66.5 (3.4)	86.4 (2.1)	86.7 (2.4)	87.8 (2.7)	79.9 (2.7)	87.7 (2.2)	85.1 (1.9)	81.3 (2.6)	61.6 (3.3)	63.3 (2.6)	75.9 (2.3)	38.2 (3.6)	53.7 (3.2)
4th Rctg Bde	469	83.9 (1.9)	75.8 (2.3)	88.9 (1.7)	50.3 (3.0)	75.6 (2.8)	58.2 (2.5)	84.0 (1.9)	85.1 (2.0)	90.5 (1.6)	82.1 (2.2)	85.3 (1.9)	83.3 (2.0)	77.3 (1.7)	65.9 (3.3)	56.2 (2.8)	72.2 (2.1)	43.4 (3.1)	43.7 (2.4)
5th Rctg Bde	260	95.0 (1.5)	81.7 (3.0)	91.6 (1.7)	55.3 (4.5)	75.1 (3.8)	65.2 (3.3)	90.7 (1.7)	89.8 (1.7)	92.7 (1.8)	79.5 (3.0)	88.7 (2.5)	86.5 (2.0)	79.9 (3.1)	70.6 (4.6)	63.3 (3.4)	75.2 (3.4)	47.6 (3.6)	51.3 (4.9)
6th Rctg Bde	240	84.6 (2.8)	76.8 (3.4)	88.6 (2.1)	55.7 (3.4)	75.5 (3.8)	59.6 (3.8)	89.1 (2.5)	85.6 (2.1)	92.0 (1.8)	82.2 (2.7)	86.8 (2.6)	84.6 (2.3)	76.6 (4.6)	67.8 (3.5)	56.9 (4.3)	70.3 (4.3)	36.6 (3.0)	51.9 (4.5)
16-17 Years Old	715	91.7 (1.3)	78.9 (1.8)	91.1 (1.1)	59.4 (2.3)	79.2 (1.7)	67.4 (2.1)	87.4 (1.3)	88.1 (1.5)	89.9 (1.4)	77.5 (1.6)	87.1 (1.7)	83.9 (1.3)	80.1 (1.9)	77.3 (2.0)	65.9 (1.9)	74.0 (1.7)	56.0 (1.9)	44.2 (2.2)
18-19 Years Old	413	88.9 (1.7)	75.3 (2.2)	86.8 (1.8)	57.3 (3.0)	73.5 (2.7)	59.0 (2.4)	87.0 (2.0)	82.6 (2.1)	87.4 (2.0)	80.4 (2.7)	85.2 (2.0)	83.1 (1.8)	76.2 (2.2)	66.9 (2.9)	53.7 (3.1)	73.2 (2.1)	44.8 (2.6)	42.2 (2.5)
20-21 Years Old	234	87.3 (2.2)	79.2 (2.8)	89.9 (2.1)	47.2 (3.7)	76.6 (2.9)	65.1 (4.1)	87.7 (2.2)	86.1 (2.3)	90.8 (2.0)	82.7 (2.4)	87.9 (2.4)	86.5 (2.2)	78.8 (3.1)	60.5 (3.6)	55.2 (3.3)	80.4 (3.2)	38.6 (4.1)	54.9 (3.7)
22-24 Years Old	252	79.8 (2.7)	73.2 (2.8)	88.9 (2.1)	38.4 (3.9)	72.7 (3.6)	54.7 (3.8)	86.8 (2.2)	85.5 (2.6)	91.6 (1.9)	81.4 (2.9)	83.2 (2.5)	85.1 (2.5)	76.1 (3.5)	44.9 (3.4)	50.9 (3.0)	68.0 (3.0)	20.5 (3.1)	53.9 (3.6)
TOTAL PMAS	**1,614**	**87.6 (0.9)**	**76.8 (1.2)**	**89.3 (0.8)**	**52.8 (1.7)**	**75.8 (1.4)**	**62.0 (1.4)**	**87.2 (0.9)**	**85.7 (1.0)**	**89.8 (0.9)**	**80.1 (1.2)**	**85.9 (1.0)**	**84.4 (0.9)**	**78.0 (1.3)**	**64.4 (1.5)**	**57.5 (1.3)**	**73.7 (1.2)**	**42.1 (1.5)**	**47.8 (1.6)**

△ indicates wording for question item(s) was changed significantly. See Appendix E.

TABLE SP-2 IMPORTANCE OF ATTRIBUTES

Similar to Last Quarter

- Again this quarter, a majority of youth (80-95%) in all sample groups consider career and self-development opportunities important. The attributes most likely to be valued are having experiences to be proud of, having opportunities for developing potential, maturity, self-confidence, and having opportunities for job variety and career development.

  - Those opportunities least likely to be considered important (20-63%) are living in one's own hometown, having a stepping-stone between high school and college, and working part-time.

- Differences among educational groups for two college-related opportunities, earning money for education and having a stepping-stone between high and college, remain stable.

  - College freshmen and sophomores are most likely to value the opportunity to earn money for education ($p < .05$ for all 3 relevant comparisons). College-oriented high school students are also more likely to value this opportunity than either work-oriented high school students (81.1% vs. 53.6%) ($z = +5.43$, $p < .001$) or high school graduates not currently enrolled (81.1% vs. 48.7%) ($z = +10.16$, $p < .001$).

  - The value of earning money for school decreases with age as it has for the past two quarters ($p < .05$ for 2 of the 3 relevant comparisons).

  - College-oriented high school students are again more likely than those who are work-oriented to value having a stepping-stone between high school and college (62.5% vs. 49.6%) ($z = +2.36$, $p < .04$).

- The proportion of PMAS youth in all sample categories who value living in their own hometowns this quarter (47.8%) is very similar to last quarter (48.8%). (This similarity suggests that the significant increases observed from Fall to Winter were attributable to wording changes in this question.)

  - Work-oriented high school students and graduates not currently enrolled are more likely than the other education groups to value this opportunity ($p < .11$ for all 4 relevant comparisons; of these, $p <= .05$ for 3 comparisons).

  - The importance of living in one's own hometown tends to increase with age (53.9% for 22- to 24-year olds vs. 44.2% for 16- to 17-year olds) ($z = +2.30$, $p < .02$).

Differences from Last Quarter

- The Winter-Spring Change table shows an overall pattern of decreases in importance items from last quarter. Approximately 80% of all changes shown in the table are negative and all of the significant changes are negative. This contrasts with the Fall-Winter comparisons where the majority of changes were positive. The reasons behind these decreases in importance are not clear.

  - Greatest drops occurred for opportunities for career development and having an experience to be proud of ($p < .20$ for 11 of the 17 comparisons for career development; of these, $p < .05$ for 5 comparisons) ($p < .20$ for 9 of the 17 comparisons for proud experience; of these, $p < .05$ for 5 comparisons).

  - The greatest number of significant decreases in valued attributes exist for work-oriented high school students ($p < .20$ for 12 of the 18 comparisons; of these, $p < .05$ for 8 comparisons).

  - A similar negative pattern is shown for 18- to 19-year olds ($p < .20$ for 10 of the 18 relevant comparisons; of these, $p < .05$ for 3 comparisons).

- The decreases in importance items for work-oriented high school students (noted above) have several implications for comparisons with college-oriented high school students.

  - In past quarters, the proportions of college- and work-oriented high school students valuing most of these opportunities were very similar. This quarter the work-oriented are less likely than the college-oriented to value the majority of opportunities ($p < .20$ for 13 of the 18 relevant comparisons; of these, $p < .05$ for 7 comparisons). For example, this quarter the work-oriented are significantly less likely than the college-oriented to value mental challenge (62.9% vs. 81.2%) ($z = -3.81$, $p < .001$) and having an experience to be proud of (85.0% vs. 93.4%) ($z = -2.74$, $p < .01$).

  - Last quarter, work-oriented high school students were more likely than college-oriented students to value service to country and exciting weekends. This quarter, the differences have disappeared because of decreases among the work-oriented.

SPRING - WINTER DIFFERENCES IN
PERCENTAGE RATING OPPORTUNITIES "IMPORTANT" OR "VERY IMPORTANT" TO PLANS FOR THE NEXT YEAR

SAMPLE GROUPS	N	Job Variety	Physical Challenge	Proud Experience	Step Btwn HS & Col.	Leader Skills	Hi-Tech Equipment	Civilian Career	Self Confidence	Develop Potential	Mental Challenge	Mature & Responsible	Skill Training	Hi-Trained Co-Workers	△ Money for Ed.	Serve Country	Exciting Weekends	Part-Time Work	Live in Hometown
RECRUITING MARKET:																			
MALES (PMAS + SMS)		-	-2.12	-	-	-	-2.14	-2.69	-	-	-2.08	-	-	-	-	+	-	-	-
FEMALES (PFAS + SFS)		+	-	-	-	-	-	-	+	-	-	+	-	-	-	+	-	-	+
TOTAL RECRUITING MARKET		+	-	-	-	-	-	-2.48	-	-1.99	-	-	-	-	-	+	-	-	+
PMAS:																			
College Freshmen and Sophomores		-	-	-2.74	+	+	-	-	-	-	-	+	+	-	-	+	-	+	-
H.S. Students (College-Oriented)		+	+	+	-	+	-	-	-	-	+	-	-	-	+	+	-	+	+
H.S. Students (Work-Oriented)		-2.30	-2.76	-2.07	-	-	-	-	-2.19	-	-2.74	-2.79	-1.98	-	-	-2.11	-	-	+
H.S. Graduates Not Currently Enrolled		-	-	-	-	-	-	-	-	-	-	-	+	-	-	+	-	-	-
1st Rctg Bde		+	-	-	-	+	+	-	-	-	-	-	+	-	-	+	-	+	-
2nd Rctg Bde		-	-	-2.27	-	-	-	-2.78	-	-2.26	-	-	-	-	-	+	-	-	-
4th Rctg Bde		-	-	-	-	+	-	-	-	-	+	-	-	+	-	+	-	+	+
5th Rctg Bde		+	+	-	-	-	-	-	+	-	-	-	+	-	-	-	-	-	-
6th Rctg Bde		-	-	-	+	+	-	+	-	+	-	-	-	-	+	+	-	-	+
16-17 Years Old		+	-	-	-	+	-	-	-	-	-	-	-	-	-	+	-	-	+
18-19 Years Old		-	-	-2.78	+	-	-	-2.14	-	-	-	-	-	-2.07	-	-	-	-	+
20-21 Years Old		-	+	-	-	+	+	-	+	-	-	-	+	-	-	-	+	+	+
22-24 Years Old		-	-	-	-	-	-	-	-	-	-	-	+	-	-	+	-	-	-
TOTAL PMAS		-	-	-2.15	-	-	-	-2.47	-	-	-	-	-	-	-	+	-	-	-

Note: Numbers are z scores for significant quarter-to-quarter differences (i.e., $p < 0.05$; $\pm$ 2 s.e.)
Signs indicate the direction of changes that are not statistically significant.
△ indicates wording for question item(s) was changed significantly. See Appendix E.

TABLE SP-3

PERCENTAGE "AGREE" OR "STRONGLY AGREE" WITH ACTIVE ARMY ATTRIBUTE STATEMENTS
(Standard Error)

SAMPLE GROUPS	N	Job Variety	Physical Challenge	Proud Experience	Step Btwn HS & Col.	Leader Skills	Hi-Tech Equipment	Civilian Career	Self Confidence	Develop Potential	Mental Challenge	Mature & Responsible	Skill Training	Hi-Trained Co-Workers	△ Money for Ed.
RECRUITING MARKET:															
MALES [PMAS + SMS]	1,770	57.4 (1.2)	78.7 (1.5)	65.0 (1.4)	47.3 (1.3)	71.3 (1.3)	76.4 (1.4)	52.3 (1.5)	71.9 (1.5)	67.0 (1.4)	66.7 (1.5)	73.6 (1.1)	71.7 (1.2)	71.8 (1.4)	72.9 (1.3)
FEMALES [PFAS + SFS]	391	63.0 (3.3)	85.3 (1.8)	75.7 (3.0)	51.3 (3.1)	75.4 (3.1)	74.9 (3.5)	55.2 (3.4)	74.0 (3.0)	73.4 (2.9)	72.4 (3.0)	78.7 (2.3)	79.1 (2.9)	79.0 (3.2)	75.0 (3.1)
TOTAL RECRUITING MARKET	2,161	58.4 (1.8)	82.3 (1.2)	70.7 (1.6)	49.4 (1.7)	73.5 (1.7)	75.6 (1.9)	53.8 (1.9)	73.0 (1.7)	70.5 (1.7)	69.8 (1.8)	76.4 (1.4)	75.7 (1.7)	75.6 (1.8)	76.0 (1.8)
PMAS:															
College Freshmen and Sophomores	208	40.8 (4.0)	75.9 (4.1)	61.1 (4.2)	30.1 (3.1)	65.8 (3.6)	68.3 (4.2)	42.0 (3.8)	67.6 (3.5)	61.7 (4.1)	55.0 (4.2)	70.3 (3.6)	59.3 (3.8)	62.9 (4.4)	63.6 (3.6)
H.S. Students [College-Oriented]	642	63.1 (2.2)	81.5 (1.6)	74.4 (2.2)	47.0 (2.3)	77.2 (1.8)	78.2 (2.1)	58.0 (2.3)	75.9 (2.1)	71.0 (2.1)	69.2 (2.4)	78.7 (1.7)	75.2 (1.9)	74.1 (2.2)	75.2 (2.0)
H.S. Students [Work-Oriented]	184	74.4 (3.3)	78.5 (3.5)	67.9 (3.8)	59.0 (4.4)	72.6 (4.0)	83.3 (2.9)	67.8 (4.3)	72.1 (4.0)	65.6 (4.3)	69.4 (4.0)	75.1 (4.1)	82.5 (2.9)	81.4 (2.6)	73.4 (3.7)
H.S. Graduates Not Currently Enrolled	492	54.6 (2.2)	79.0 (2.6)	60.2 (2.7)	49.5 (2.8)	70.0 (2.7)	75.8 (2.8)	47.8 (2.8)	69.7 (2.7)	66.8 (2.5)	67.3 (2.5)	72.2 (2.4)	72.3 (2.4)	71.7 (2.4)	73.4 (2.4)
1st Rctg Bde	352	54.4 (2.6)	83.2 (2.3)	64.4 (2.7)	39.5 (3.0)	68.0 (2.8)	76.0 (2.7)	46.3 (3.3)	73.1 (3.1)	62.6 (3.2)	62.3 (2.7)	72.2 (2.8)	70.2 (3.3)	70.8 (2.4)	68.8 (2.7)
2nd Rctg Bde	257	64.6 (3.1)	78.4 (3.3)	70.1 (3.4)	51.5 (3.2)	74.4 (3.3)	79.6 (2.9)	58.3 (4.2)	71.4 (3.9)	68.8 (3.9)	66.2 (3.5)	76.9 (3.6)	76.4 (3.2)	77.2 (2.9)	76.6 (2.5)
4th Rctg Bde	441	54.9 (2.9)	77.4 (2.6)	61.4 (3.3)	44.2 (2.5)	71.9 (2.4)	75.2 (2.5)	49.3 (3.0)	71.0 (3.0)	65.4 (2.8)	66.1 (2.6)	71.9 (2.4)	71.9 (2.5)	67.7 (2.5)	71.7 (2.7)
5th Rctg Bde	249	56.8 (3.9)	81.2 (3.4)	73.2 (3.4)	49.7 (3.5)	76.8 (3.0)	74.5 (3.2)	57.6 (3.7)	76.0 (3.0)	74.0 (3.7)	68.4 (3.8)	79.9 (2.9)	75.4 (3.1)	76.2 (3.2)	75.7 (3.1)
6th Rctg Bde	227	53.5 (3.2)	74.8 (5.6)	62.2 (3.0)	46.9 (3.4)	69.5 (3.7)	73.9 (4.0)	51.5 (3.8)	66.0 (3.5)	67.2 (3.3)	66.6 (4.1)	72.4 (3.9)	65.0 (4.3)	68.8 (4.1)	69.1 (4.0)
16-17 Years Old	713	65.2 (2.0)	81.0 (1.7)	72.4 (2.0)	48.9 (1.8)	76.7 (1.8)	79.9 (1.7)	58.1 (2.2)	77.1 (2.0)	71.3 (2.1)	69.7 (2.1)	76.8 (1.8)	75.3 (1.9)	74.8 (1.8)	74.4 (2.0)
18-19 Years Old	365	54.3 (2.7)	77.6 (2.8)	67.5 (2.5)	43.1 (2.8)	69.6 (2.7)	74.8 (2.2)	52.8 (3.2)	67.0 (3.0)	63.4 (2.8)	63.1 (2.9)	76.1 (2.6)	71.7 (2.8)	72.2 (2.4)	74.3 (2.6)
20-21 Years Old	209	51.1 (4.1)	80.4 (3.6)	65.0 (3.9)	43.5 (4.1)	68.4 (3.7)	71.5 (4.9)	45.1 (4.0)	72.1 (4.1)	67.8 (4.2)	66.7 (3.6)	71.9 (3.6)	68.7 (3.8)	70.1 (4.3)	65.8 (4.4)
22-24 Years Old	239	49.9 (3.3)	77.1 (3.6)	53.5 (4.2)	45.6 (3.9)	69.2 (3.6)	74.0 (3.4)	46.4 (3.9)	67.5 (3.7)	63.9 (3.9)	61.4 (4.3)	69.6 (3.9)	68.1 (3.8)	67.4 (3.7)	70.6 (3.3)
TOTAL PMAS	1,526	56.5 (1.4)	79.1 (1.7)	65.7 (1.6)	45.7 (1.4)	71.7 (1.5)	75.8 (1.5)	51.9 (1.6)	71.5 (1.7)	67.8 (1.6)	65.6 (1.5)	74.2 (1.3)	71.6 (1.4)	71.7 (1.5)	72.8 (1.3)

△ indicates wording for question item(s) was changed significantly. See Appendix E.

TABLE SP-3 PERCEPTIONS - ACTIVE ARMY

Similar to Last Quarter

- PMAS youth are most likely to agree that the Army provides opportunities for physical challenge (79.1%), for working with high-tech equipment (75.8%), and for becoming more mature and responsible (74.2%).

- PMAS youth are least likely to agree that the Army offers an advantage over going right from high school to college (45.7%), value in civilian career development (51.9%), or a wide variety of opportunities to find an enjoyable job (56.5%).

- Messages targeted to college-oriented high school students under the dual market theory (money for education and mental challenge) do not appear to have differential impact on the perceptions of the two high school groups. Both attributes are equally likely to be perceived by 70-75% of college- and work-oriented high school students. (See below for results supporting the dual market theory for the work-oriented.)

  - Across all three quarters, the work-oriented have been the most likely to perceive the Army as offering a stepping-stone between high school and college (for example, this quarter: work-oriented = 59.0% vs. college-oriented = 47.0%) ($z = +2.42$, $p < .02$).

Different from Last Quarter

- While the overall perceptions of the college- and work-oriented high school groups are still quite similar, the work-oriented are significantly more likely this quarter to perceive the Army as offering job variety (74.4% vs. 63.1%) ($z = +2.85$, $p < .01$), civilian career development (67.8% vs. 58.0%) ($z = +2.01$, $p < .05$), and skills training (82.5% vs. 75.2%) ($z = +2.10$, $p < .04$). These perceptions are in line with dual market theory predictions. (This quarter's differences between groups are similar to the findings for Fall quarter and different from Winter quarter's convergent trend.)

- Youth in the Recruiting Market this quarter are clearly less likely to perceive the Army as offering money for education than last. This negative pattern is not surprising because money for education was not one of this quarter's main advertising messages. (However, caution should be used in interpreting this change because of the wording change to the question this quarter. See Appendix E.)

  - This overall pattern is clearly shown in the significant decreases observed for Recruiting Market males (72.9% vs. 78.4%) ($z = -2.79$, $p < .01$), college freshmen and sophomores (63.6% - 80.7%) ($z = -3.43$, $p < .01$), and youth in the Southeast (2nd Recruiting Brigade) (76.6% vs. 86.7%) ($z = -2.63$, $p < .01$), and the Midwest (4th Recruiting Brigade) (71.7% vs. 81.0%) ($z = -2.78$, $p < .01$). PMAS totals also show significantly lower perceptions this quarter.

SPRING - WINTER DIFFERENCES IN
PERCENTAGE "AGREE" OR "STRONGLY AGREE" WITH ACTIVE ARMY ATTRIBUTE STATEMENTS

SAMPLE GROUPS	N	Job Variety	Physical Challenge	Proud Experience	Step Btwn HS & Col.	Leader Skills	Hi-Tech Equipment	Civilian Career	Self Confidence	Develop Potential	Mental Challenge	Mature & Responsible	Skill Training	Hi-Trained Co-Workers	△ Money for Ed.
RECRUITING MARKET: MALES (PMAS + SMS)		-	-	-	-	+	-	-	+	-	+	-	-	-	-2.79
FEMALES (PFAS + SFS)		+	+2.23	+	-	+	-2.07	-	+	+	+	-	-	+	-
TOTAL RECRUITING MARKET		+	+	+	-	+	-2.23	-	+	-	+	-	-	+	-2.36
PMAS: College Freshmen and Sophomores		-	-	+	-	-	-	+	+	+	-	+	-	-	-3.43
H.S. Students (College-Oriented)		-	-	+	-	+	-	-	+	-	+	-	-	+	-
H.S. Students (Work-Oriented)		+	+	-	-	+	+	+	-	-2.06	-	-	+	+	-
H.S. Graduates Not Currently Enrolled		+	+	-	+	+	-	-	+	+	+	-	-	-	-
1st Rctg Bde		+	+	+	-	-	+	-	+	-	+	-	-	-	-
2nd Rctg Bde		+	-	-	-	+	-	+	-	-	-	-	-	+	-2.63
4th Rctg Bde		-	-	-	+	+	+	+	+	+	+	-	+	+	-2.78
5th Rctg Bde		-2.03	-	+	-	-	-	-	+	-	-	+	-	-	-
6th Rctg Bde		+	+	+2.04	+	+	-	+	+	+	+2.29	+	-	+	+
16-17 Years Old		-	-	+	+	+	-	+	+	+	+	-	-	+	-
18-19 Years Old		-	-	-	-	-	-	+	-	-	-	-	-	-	-
20-21 Years Old		-	+	+	-	+	-	-	+	+	+2.12	+	+	+	-
22-24 Years Old		+	+	-	-	+	-	+	-	-	-	-	-	-	-
TOTAL PMAS		-	-	+	-	+	-	+	+	-	+	-	-	-	-3.12

Note: Numbers are z scores for significant quarter-to-quarter differences (i.e., $p < 0.05$; ± 2 s.e.)
Signs indicate the direction of changes that are not statistically significant.
△ indicates wording for question item(s) was changed significantly. See Appendix E.

PERCENTAGE "AGREE" OR "STRONGLY AGREE" WITH ARMY RESERVE ATTRIBUTE STATEMENTS
(Standard Error)

SAMPLE GROUPS	N	Job Variety	Proud Experience	Leader Skills	Civilian Career	Self Confidence	Develop Potential	Mental Challenge	Mature & Responsible	Skill Training	Hi-Trained Co-Workers	△ Money for Ed.	Exciting Weekends	Part-Time Work	Live in Hometown
MALES [PMAS + SMS]	271	43.8 (4.0)	56.2 (3.5)	58.8 (4.0)	54.9 (4.0)	55.8 (4.8)	58.6 (3.9)	54.2 (3.9)	61.6 (4.1)	63.6 (3.6)	65.2 (3.8)	64.6 (3.9)	38.0 (3.8)	59.7 (3.5)	67.2 (3.5)
FEMALES [PFAS + SFS]	50	56.9 (9.5)	64.6 (9.9)	69.1 (7.9)	57.4 (8.8)	72.4 (7.8)	64.5 (9.6)	71.4 (7.5)	79.8 (7.2)	73.9 (7.4)	69.8 (8.4)	73.4 (8.3)	39.1 (9.0)	51.8 (10.8)	51.8 (9.9)
TOTAL RECRUITING MARKET	321	49.9 (5.2)	60.1 (5.2)	63.6 (4.4)	56.1 (4.7)	63.6 (4.7)	61.4 (4.7)	62.3 (3.9)	70.1 (4.2)	68.4 (3.6)	67.3 (3.7)	68.7 (4.7)	38.5 (4.5)	56.0 (5.5)	60.0 (5.6)
TOTAL PMAS	246	44.1 (4.2)	54.8 (4.2)	58.2 (4.2)	56.0 (4.6)	54.2 (4.9)	58.9 (4.5)	53.5 (4.2)	60.5 (4.4)	63.9 (4.0)	63.6 (4.1)	62.9 (4.4)	37.1 (3.8)	58.8 (4.1)	66.0 (4.1)

△ indicates wording for question item(s) was changed significantly. See Appendix E.

Similar to Last Quarter

- The strength of the Army Reserve brand image continues to be moderate. Agreement with statements about the Army Reserve by PMAS youth ranges from approximately 35% to 65%.
- PMAS youth continue to agree least with the statements that the Army Reserve offers interesting and exciting weekends (37.1%) and job variety (44.1%).

Different from Last Quarter

- o In contrast to last quarter's pattern of decreases in agreement with Army Reserve attribute statements, no clear change pattern emerges this quarter.
  - Males in the Recruiting Market show significant increases in their perception of the Army Reserve's value in civilian career development (54.9% vs. 41.0%) ($z = +2.22$, $p < .03$). The same is true for PMAS (56.0% vs. 37.5%) ($z = +2.88$, $p < .01$). However, there are no other significant changes.
- o Shifts occurred this quarter in the predominant perceptions of the Army Reserve among PMAS youth.
  - PMAS youth are most likely to agree that the Army Reserve offers opportunities to serve America while living in one's own hometown (66.0%), to gain training in useful skill areas (63.9%), and to work with highly trained co-workers (63.6%).
  - Of last quarter's predominant perceptions, there is a tendency among the PMAS to be less likely to agree that the Reserve provides opportunities for becoming more mature and responsible (60.5% vs. 70.5%) ($z = -1.66$, $p < .12$).

School Year 86/87 - Winter, Spring

Table C-4

Perceptions - Army Reserve

SPRING - WINTER DIFFERENCES IN
PERCENTAGE "AGREE" OR "STRONGLY AGREE" WITH ARMY RESERVE ATTRIBUTE STATEMENTS

SAMPLE GROUPS	N	Job Variety	Proud Experience	Leader Skills	Civilian Career	Self Confidence	Develop Potential	Mental Challenge	Mature & Responsible	Skill Training	Hi-Trained Co-Workers	△ Money for Ed.	Exciting Weekends	Part-Time Work	Live in Hometown
MALES [PMAS + SMS]		-	-	-	+2.22	-	+	+	-	+	+	-	-	+	+
FEMALES [PFAS + SFS]		-	-	+	-	+	+	+	+	-	+	-	+	-	+
TOTAL RECRUITING MARKET		-	-	+	+	+	+	+	+	-	+	-	-	-	+
TOTAL PMAS		-	+	-	+2.88	-	+	+	-	+	+	-	-	+	+

Note: Numbers are z scores for significant quarter-to-quarter differences (i.e., $p < 0.05$; ± 2 s.e.)
Signs indicate the direction of changes that are not statistically significant.
△ indicates wording for question item(s) was changed significantly. See Appendix E.

PERCENTAGE "AGREE" OR "STRONGLY AGREE" WITH ARMY NATIONAL GUARD ATTRIBUTE STATEMENTS
(Standard Error)

SAMPLE GROUPS	N	Job Variety	Proud Experience	Leader Skills	Civilian Career	Self Confidence	Develop Potential	Mental Challenge	Mature & Responsible	Skill Training	Hi-Trained Co-Workers	△ Money for Ed.	Exciting Weekends	Part-Time Work	Live in Hometown
MALES [PMAS + SMS]	273	56.0 (4.2)	62.9 (4.7)	66.2 (4.5)	53.0 (4.2)	64.0 (4.5)	59.0 (4.9)	56.3 (5.3)	68.0 (3.9)	58.0 (4.7)	64.7 (4.2)	64.9 (4.7)	48.4 (5.4)	60.6 (4.5)	61.2 (5.0)
FEMALES [PFAS + SFS]	67	56.9 (8.5)	73.5 (7.8)	66.0 (8.1)	51.5 (8.9)	70.7 (7.2)	63.3 (9.5)	65.3 (8.3)	75.3 (8.3)	73.4 (7.7)	78.8 (7.5)	64.3 (8.4)	41.0 (10.2)	62.9 (7.9)	57.0 (8.7)
TOTAL RECRUITING MARKET	340	56.5 (4.9)	69.2 (5.0)	66.1 (4.8)	52.1 (5.2)	68.0 (4.7)	61.6 (5.5)	61.7 (5.2)	72.4 (5.4)	67.1 (4.7)	73.1 (4.8)	64.5 (5.0)	44.0 (6.6)	62.0 (4.5)	58.7 (5.4)
TOTAL PMAS	248	61.2 (4.3)	62.8 (4.3)	66.1 (4.6)	55.0 (3.9)	67.3 (4.8)	59.4 (4.5)	56.5 (5.2)	73.9 (3.7)	57.7 (5.0)	63.6 (4.2)	62.7 (4.5)	49.2 (5.7)	65.4 (4.4)	66.8 (4.2)

△ indicates wording for question item(s) was changed significantly. See Appendix E.

Similar to Last Quarter

- The strength of the Army National Guard brand image continues to be moderate. Agreement with statements about the Army National Guard by PMAS youth ranges from approximately 50% to 70%.
  - For PMAS youth, the predominant perceptions are that the National Guard provides opportunities for becoming more mature and responsible (73.9%), for gaining self-confidence (67.3%), and for serving America while living at home (66.8%).
  - PMAS youth are once again least likely to agree that the National Guard provides interesting and exciting weekends (49.2%). However, the percentage of PMAS youth agreeing with this statement has increased significantly from last quarter (49.2% vs. 33.2%) ($z = +2.05$, $p < .05$).

Different from Last Quarter

- The downward shift in males' perceptions of the Army National Guard reported last quarter did not continue this quarter. Rather, significant increases occur in perceptions by youth in the PMAS that the Guard provides job variety (61.2% vs. 38.7%) ($z = +3.68$, $p < .01$), value in civilian career development (55.0% vs. 38.6%) ($z = +2.32$, $p < .03$), and interesting and exciting weekends (49.2% vs. 33.2%) ($z = +2.05$, $p < .05$).

  - Among youth in the Recruiting Market, there are no longer any significant sex differences in National Guard perceptions.

School Year 86/87 · Winter, Spring — Table C-5 — Perceptions · Army National Guard

SPRING - WINTER DIFFERENCES IN
PERCENTAGE "AGREE" OR "STRONGLY AGREE" WITH ARMY NATIONAL GUARD ATTRIBUTE STATEMENTS

SAMPLE GROUPS	N	Job Variety	Proud Experience	Leader Skills	Civilian Career	Self Confidence	Develop Potential	Mental Challenge	Mature & Responsible	Skill Training	Hi-Trained Co-Workers	△ Money for Ed.	Exciting Weekends	Part-Time Work	Live in Hometown
MALES [PMAS + SMS]		+2.78	+	+	+2.02	+	+	+	-	-	+	+	+	+	-
FEMALES [PFAS + SFS]		+	+	-	-	-	-	+	-	-	-	+	+	-	-
TOTAL RECRUITING MARKET		+	+	-	-	+	-	+	-	-	+	+	+	+	-
TOTAL PMAS		+3.68	+	+	+2.32	+	+	+	+	-	+	+	+2.05	+	+

Note: Numbers are z scores for significant quarter-to-quarter differences (i.e., $p < 0.05$; ± 2 s.e.)
Signs indicate the direction of changes that are not statistically significant.
△ indicates wording for question item(s) was changed significantly. See Appendix E.

PERCENTAGE "AGREE" OR "STRONGLY AGREE" WITH ARMY ROTC ATTRIBUTE STATEMENTS
PERCENTAGE RATING ROTC OPPORTUNITIES "IMPORTANT" OR "VERY IMPORTANT" TO PLANS FOR THE NEXT YEAR
(Standard Error)

SAMPLE GROUPS	N1	ROTC PERCEPTIONS: ROTC Offers: Leader/Mgmt Training	ROTC Offers: Self Confidence	ROTC Offers: College Elective	ROTC Offers: Officer's Commission	Officer Benefits: Job Variety	Officer Benefits: Proud Experience	Officer Benefits: Use College Skills	Officer Benefits: Use Own Judgment	N2	ROTC IMPORTANCE: Leader Skills	Self Confidence	Job Variety	Proud Experience	Use Own Judgment
ROTC MALE SAMPLE: College Juniors and Seniors	171	65.0 (3.6)	57.7 (4.9)	66.2 (5.4)	75.8 (3.8)	50.4 (4.8)	71.0 (5.5)	54.0 (4.4)	63.8 (4.3)	219	74.6 (3.3)	85.4 (2.8)	86.9 (3.3)	87.0 (2.0)	90.2 (3.0)
College Freshmen and Sophomores	130	58.5 (6.0)	65.9 (5.0)	64.5 (4.9)	60.9 (6.0)	60.6 (5.6)	68.8 (4.4)	60.0 (5.5)	62.5 (5.3)	296	77.8 (3.0)	82.4 (2.7)	88.3 (2.2)	83.3 (2.6)	87.1 (2.4)
H.S. Students [College-Oriented]	327	63.0 (3.3)	74.4 (2.3)	69.7 (2.8)	64.5 (2.8)	65.4 (2.9)	81.0 (2.2)	69.9 (2.5)	69.6 (2.5)	642	80.5 (1.8)	87.3 (1.4)	93.9 (1.0)	93.4 (1.0)	91.6 (1.2)
△1st ROTC Region	185	58.5 (5.1)	61.9 (4.5)	68.2 (3.7)	69.9 (4.2)	54.7 (4.1)	69.7 (4.3)	59.1 (4.7)	58.7 (5.2)	327	78.1 (2.1)	85.0 (1.8)	92.0 (1.6)	88.1 (1.9)	91.5 (1.6)
2nd ROTC Region	177	65.8 (4.4)	69.7 (4.4)	68.5 (4.3)	66.1 (4.3)	58.8 (4.6)	73.7 (4.0)	58.7 (4.9)	63.8 (4.8)	318	80.5 (2.4)	85.1 (2.2)	90.7 (1.6)	89.1 (2.0)	89.8 (1.8)
△3rd ROTC Region	123	66.0 (5.7)	64.6 (6.1)	65.4 (5.5)	69.1 (6.6)	69.4 (6.2)	74.3 (5.3)	72.4 (5.9)	77.2 (5.4)	248	81.7 (3.4)	86.4 (2.3)	91.9 (2.4)	90.9 (1.6)	90.6 (2.4)
△4th ROTC Region	143	59.5 (5.3)	68.0 (4.4)	64.4 (6.2)	62.8 (5.0)	53.0 (5.5)	76.9 (4.0)	55.3 (5.6)	63.1 (4.9)	264	72.6 (4.4)	85.1 (3.1)	86.4 (3.7)	87.2 (2.7)	87.4 (3.4)
16-17 Years Old	277	63.8 (3.1)	72.4 (3.0)	70.1 (3.5)	65.8 (3.2)	66.6 (3.3)	79.1 (2.4)	69.9 (2.9)	69.8 (2.9)	569	80.2 (2.0)	88.2 (1.6)	93.4 (1.2)	92.2 (1.2)	91.3 (1.3)
18-19 Years Old	148	65.4 (4.4)	70.0 (4.8)	69.1 (4.1)	64.6 (4.7)	59.0 (3.9)	75.2 (4.6)	58.7 (4.0)	67.8 (4.2)	287	76.8 (2.7)	82.1 (2.4)	90.2 (2.0)	87.4 (2.1)	88.6 (2.4)
20-21 Years Old	120	62.5 (6.6)	61.3 (4.8)	62.9 (5.6)	70.4 (5.3)	58.5 (6.8)	65.7 (5.7)	61.4 (6.8)	59.9 (7.3)	171	79.8 (3.2)	85.8 (2.4)	89.5 (2.5)	86.2 (3.0)	91.6 (3.1)
22-24 Years Old	83	55.5 (5.7)	57.8 (5.5)	64.2 (7.1)	67.8 (7.3)	48.1 (6.1)	73.5 (5.2)	52.4 (6.5)	62.6 (7.0)	130	73.9 (4.9)	83.7 (3.5)	85.5 (4.7)	86.6 (3.4)	87.0 (4.2)
TOTAL ROTC MALE SAMPLE	628	62.2 (2.5)	65.8 (2.1)	66.7 (2.6)	67.1 (2.7)	58.6 (2.7)	73.4 (2.3)	61.1 (2.8)	65.2 (2.7)	1,157	78.1 (1.6)	85.4 (1.3)	90.3 (1.2)	88.7 (0.9)	89.9 (1.2)
TOTAL ROTC FEMALE SAMPLE	127	64.9 (6.0)	75.3 (4.5)	67.2 (4.6)	61.1 (4.9)	69.1 (4.8)	76.6 (4.4)	71.3 (4.9)	65.1 (4.2)	260	78.2 (4.0)	94.6 (1.7)	94.8 (1.7)	88.4 (3.8)	91.0 (3.7)
TOTAL ROTC SAMPLE (MALES + FEMALES)	755	63.5 (3.0)	70.4 (2.3)	67.0 (2.8)	64.2 (2.5)	63.7 (2.7)	74.9 (2.4)	66.1 (2.7)	65.1 (2.5)	1,417	78.2 (2.4)	90.2 (1.2)	92.6 (1.1)	88.5 (2.0)	90.5 (2.3)
TOTAL PNAS	487	56.3 (4.8)	66.7 (3.5)	66.6 (4.0)	65.5 (3.9)	59.6 (4.2)	72.9 (3.6)	66.5 (3.9)	65.2 (4.2)	1,614	75.8 (1.4)	85.7 (1.0)	87.6 (0.9)	89.3 (0.8)	89.3 (1.0)

△ Note: ROTC Regions have been redefined since Winter quarter. Calculations for this table are based on regions as currently defined. See Appendix B.

TABLE SP-6 PERCEPTIONS AND IMPORTANCE - ROTC

Similar to Last Quarter

Perceptions

- Brand image of the Army ROTC continues to be moderately strong. Agreement with statements about attributes of the Army ROTC for males in the ROTC Sample ranges from approximately 55% to 75%.
  - Among males in the officer market, there is highest agreement with the statement that the ROTC offers an experience to be proud of (73.4%). There is least agreement with statements that the Army ROTC offers job variety (58.6%), opportunities to use college-acquired skills (61.1%) and leadership and management training (62.2%).
- College-oriented high school students and 16- to 17-year olds are more likely than better educated and older youth to agree that the Army ROTC offers a wide variety of job opportunities, an experience to be proud of, and the opportunities to gain self-confidence and use college-acquired skills ($p < .20$ for 11 of the 23 relevant comparisons; of these, $p < .05$ for 8 comparisons). In other words, as age and education levels increase, agreement with these attributes statements decreases.
- The ROTC brand image is strongest for males in 3rd ROTC Region. Agreement with ROTC attribute statements is especially likely for job variety, use of college-acquired skills, and the opportunity to use one's own judgment ($p < .20$ for all relevant comparisons; of these, $p < .05$ for 4 comparisons).
- The ROTC Male Sample does not differ significantly from the PMAS in perceptions of the Army ROTC.
- Knowledge among youth in the ROTC Sample that Army ROTC courses can be taken as college electives and that the ROTC offers an officer's commission is similar to that reported last quarter. Since ROTC advertised only during the Fall quarter, it is not surprising that the Spring and Winter knowledge levels are low relative to those reported for Fall quarter.

Importance

- All the opportunities relevant to the ROTC are likely to be considered important by youth in the ROTC Male Sample.
  - Opportunities for using one's own judgment (89.9%), having a wide variety of job choices (90.3%), gaining self-confidence (85.4%), and having an experience to be proud of (88.7%) are highly valued.
  - The leadership and management training opportunity is least likely to be considered important by males in the ROTC Sample (78.1%).
  - A similar pattern is evident for all educational and age groups as well as for both sexes.
- Last quarter the likelihood of valuing opportunities to develop leadership skills and self-confidence decreased among most ROTC Sample groups. This quarter's percentages are similar to last.

Comparison of Perceptions and Importance Items

- In all cases, opportunities are more likely to be valued by youth than to be perceived as available in the ROTC.
  - In particular, there are large discrepancies between perceptions and importance for job variety, use of one's own judgment, and leadership and management training. The gap between the importance of developing leadership skills and the perception of the ROTC as offering leadership and management training, however, narrowed this quarter.

Different from Last Quarter

Importance

- Having an experience to be proud of is less likely to be considered important this quarter by college freshman and sophomores (83.3% vs 92.3%) ($z = -2.74$, $p < .01$), youth in the 3rd ROTC Region (90.9% vs 97.2%) ($z = -2.12$, $p < .05$), and 18- to 19-year olds (87.4% vs 93.5%) ($z = -2.38$, $p < .04$). The totals for both the ROTC Sample and PMAS are also significantly lower [Total ROTC Sample: 88.5% vs 93.2% ($z = -2.12$, $p < .05$); PMAS: 89.3% vs 91.7% ($z = -2.15$, $p < .05$)].
- This quarter, college-oriented high school students are more likely than college students to value job variety and having an experience to be proud of ($p < .05$ for all 4 relevant comparisons). They also tend to be more likely than college freshmen and sophomores to value the opportunities to use their own judgment and to develop self-confidence ($p < .10$ for both comparisons).

SPRING - WINTER DIFFERENCES IN
PERCENTAGE "AGREE" OR "STRONGLY AGREE" WITH ARMY ROTC ATTRIBUTE STATEMENTS
PERCENTAGE RATING ROTC OPPORTUNITIES "IMPORTANT" OR "VERY IMPORTANT" TO PLANS FOR THE NEXT YEAR

SAMPLE GROUPS	N1	ROTC PERCEPTIONS: ROTC Offers: Leader/Mgmt Training	Self Confidence	College Elective	Officer's Commission	Officer Benefits: Job Variety	Proud Experience	Use College Skills	Use Own Judgment	N2	ROTC IMPORTANCE: Leader Skills	Self Confidence	Job Variety	Proud Experience	Use Own Judgment
ROTC MALE SAMPLE:															
College Juniors and Seniors		+	-	-	+	+	+	+	+2.46		-	+	-1.96	+	-
College Freshmen and Sophomores		+	+	+	-	+	-	+	-		+	-	-	-2.74	-2.21
H.S. Students [College-Oriented]		-	-	-	-	-	-	-	-2.33		+	-	+	+	+
△1st ROTC Region		+	-	+	+	+	-	+	-		+	+	+	-	+
2nd ROTC Region		+	+	+	+	-	-	+	+		+	-	-	+	-
△3rd ROTC Region		+	-2.23	+	-	+	-	+	+		-	-	+	-2.12	-
△4th ROTC Region		+	-	-	-	-	+	-	-		-	+	-	-	-
16-17 Years Old		+	-	+	-	-	-	+	-1.98		+	-	+	+	-
18-19 Years Old		+	-	+	+	-	+	-	+		-	-	-	-2.38	-
20-21 Years Old		+	-	-	-	+	+	+	-		+	-	-	-	+
22-24 Years Old		+	-	+	+	+	-	-	+		-	+	-	-	-
TOTAL ROTC MALE SAMPLE		+	-	+	+	+	-	+	-		+	-	-	-	-
TOTAL ROTC FEMALE SAMPLE		+	-	-	-	+	-	-	+		-	+	+	-	-
TOTAL ROTC SAMPLE [MALES + FEMALES]		+	-	-	-	+	-	-	+		-	+	+	-2.12	-
TOTAL PMAS		+	+	+	+	-	+	-	-		-	-	-	-2.15	-2.24

Note: Numbers are z scores for significant quarter-to-quarter differences (i.e., $p < 0.05$; ± 2 s.e.)
Signs indicate the direction of changes that are not statistically significant.

△ ROTC Regions have been redefined since Winter quarter. Calculations of quarter-to-quarter changes are based on regions as currently defined. See Appendix B.

PERCENTAGE TAKING ACTIONS RELATING TO ENLISTMENT DURING THE PAST SIX MONTHS
(Standard Error)

SAMPLE GROUPS	N	Talked to Anyone of Joining Army	Talked to an Army Recruiter	△ Taken ASVAB	Visited Army Recruiting Station	Toll-Free Call Sent for Gift
RECRUITING MARKET:						
MALES [PMAS + SMS]	1,858	22.8 (1.0)	11.7 (0.8)	6.3 (0.6)	5.1 (0.5)	3.7 (0.4)
FEMALES [PFAS + SFS]	409	10.9 (2.0)	4.2 (1.3)	3.1 (1.0)	2.7 (0.9)	2.4 (1.0)
TOTAL RECRUITING MARKET	**2,267**	**16.5 (1.1)**	**7.7 (0.8)**	**4.6 (0.6)**	**3.8 (0.5)**	**3.0 (0.6)**
PMAS:						
College Freshmen and Sophomores	296	25.6 (2.7)	17.1 (2.6)	4.6 (1.5)	5.9 (1.6)	1.9 (0.7)
H.S. Students [College-Oriented]	642	32.5 (1.9)	16.6 (1.7)	11.3 (1.3)	6.4 (1.0)	6.3 (1.0)
H.S. Students [Work-Oriented]	184	31.8 (3.6)	12.2 (2.6)	5.8 (1.7)	4.9 (1.7)	6.8 (2.5)
H.S. Graduates Not Currently Enrolled	492	11.9 (2.0)	6.3 (1.2)	4.2 (1.0)	4.4 (1.0)	2.9 (0.8)
1st Rctg Bde	374	22.9 (2.2)	12.6 (2.2)	5.3 (1.2)	2.8 (0.8)	4.5 (1.3)
2nd Rctg Bde	271	25.7 (2.4)	13.4 (2.0)	6.3 (1.5)	8.2 (1.6)	4.6 (1.0)
4th Rctg Bde	469	19.2 (2.0)	10.7 (1.3)	5.3 (1.0)	4.8 (0.9)	3.1 (1.0)
5th Rctg Bde	260	25.3 (3.5)	14.5 (2.5)	11.0 (2.5)	7.0 (1.9)	6.3 (2.3)
6th Rctg Bde	240	25.0 (3.0)	11.8 (2.1)	7.0 (1.5)	5.7 (1.3)	2.6 (0.9)
16-17 Years Old	715	32.0 (1.8)	14.5 (1.4)	10.7 (1.2)	6.7 (0.9)	5.8 (1.0)
18-19 Years Old	413	32.3 (2.5)	20.1 (2.1)	8.4 (1.5)	8.2 (1.5)	5.0 (1.2)
20-21 Years Old	234	15.3 (2.6)	9.3 (2.1)	2.9 (1.3)	4.2 (1.6)	2.1 (0.9)
22-24 Years Old	252	5.6 (1.7)	2.6 (1.2)	1.8 (1.1)	1.0 (0.6)	2.2 (1.3)
TOTAL PMAS	**1,614**	**23.3 (1.1)**	**12.4 (0.9)**	**6.7 (0.6)**	**5.4 (0.6)**	**4.1 (0.5)**

△ indicates wording for question item(s) was changed significantly. See Appendix E.

Similar to Last Quarter

- The most common enlistment-related action by PMAS youth is talking to someone about joining the Army (23.3%). Talking to a recruiter is about half as likely (12.4%). These proportions are almost identical to those reported last quarter.

- All of the enlistment-related activities (except making a call or sending for a gift) are again more likely to be reported by males than females ($p < .05$ for all 4 relevant comparisons) and by younger PMAS youth ($p < .05$ for all comparisons of 16- to 17-year olds with 22- to 24-year olds).

- Again this quarter, high school students tend to be more likely than youth in the other educational groups to talk to someone about enlisting in the Army ($p < .20$ for all 4 comparisons; of these, $p < .05$ for 3 comparisons), to talk to an Army Recruiter ($p < .20$ for 3 of the 4 relevant comparisons; of these, $p < .05$ for 2 comparisons) and to call or send for a gift ($p < .20$ for all 4 comparisons; of these, $p < .05$ for 2 comparisons).

Different from Last Quarter

- Activity levels are down substantially this quarter in the PMAS for taking a written test (6.7% vs. 12.3%) ($z = -5.36$, $p < .01$), visiting a recruiting station (5.4% vs. 7.9%) ($z = -2.76$, $p < .02$), and sending for a gift or making a telephone call (4.1% vs. 6.0%) ($z = -2.15$, $p < .05$). This pattern reverses the upward trend reported last quarter.

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SPRING - WINTER DIFFERENCES IN
PERCENTAGE TAKING ACTIONS RELATING TO ENLISTMENT DURING THE PAST SIX MONTHS

SAMPLE GROUPS	N	Talked to Anyone of Joining Army	Talked to an Army Recruiter	△ Taken ASVAB	Visited Army Recruiting Station	Toll-Free Call Sent for Gift
RECRUITING MARKET: MALES [PMAS + SMS]		-	-	-5.18	-2.98	-2.28
FEMALES [PFAS + SFS]		+	+	-	-	+
TOTAL RECRUITING MARKET		-	-	-3.42	-2.17	-
PMAS: College Freshmen and Sophomores		+	+1.97	-	-	-2.42
H.S. Students [College-Oriented]		-	+	-3.44	-	-
H.S. Students [Work-Oriented]		-	-	-	-	-
H.S. Graduates Not Currently Enrolled		-	-	-2.43	-	+
1st Rctg Bde		+	+	-	-2.73	-
2nd Rctg Bde		+	+	-2.59	+	+
4th Rctg Bde		-	-	-3.38	-2.23	-
5th Rctg Bde		+	+	-	-	-
6th Rctg Bde		-	-	-2.21	-	-
16-17 Years Old		-	-	-	-	-
18-19 Years Old		+	+	-3.38	-	-2.00
20-21 Years Old		-	-	-3.36	-	-
22-24 Years Old		-1.97	-	-2.23	-	-
TOTAL PMAS		-	-	-5.36	-2.76	-2.15

Note: Numbers are z scores for significant quarter-to-quarter differences (i.e., $p < 0.05$; ± 2 s.e.)
Signs indicate the direction of changes that are not statistically significant.
△ indicates wording for question item(s) was changed significantly. See Appendix E.

PERCENTAGE SEEING/HEARING MILITARY ADVERTISING
(Standard Error)

SAMPLE GROUPS	N	Army Components				Other Military Branches				JRAP	NONE
		ACTIVE	ROTC	ARNG	USAR	USAF	NAVY	USMC	USCG		
RECRUITING MARKET:											
MALES [PMAS + SMS]	1,858	83.4 (1.1)	1.6 (0.3)	12.1 (0.9)	8.8 (0.7)	64.4 (1.3)	60.0 (1.4)	65.3 (1.2)	13.4 (1.0)	6.0 (0.7)	3.0 (0.5)
FEMALES [PFAS + SFS]	409	78.9 (2.8)	2.1 (0.7)	5.7 (1.2)	6.4 (1.7)	59.3 (3.1)	54.7 (3.0)	51.3 (3.2)	3.5 (1.3)	2.7 (0.9)	4.1 (0.9)
TOTAL RECRUITING MARKET	**2,267**	**81.0 (1.6)**	**1.9 (0.4)**	**8.7 (0.8)**	**7.5 (1.0)**	**61.7 (1.8)**	**57.2 (1.8)**	**57.8 (2.0)**	**8.1 (0.9)**	**4.3 (0.5)**	**3.6 (0.6)**
PMAS:											
College Freshmen and Sophomores	296	84.5 (2.3)	1.8 (0.8)	12.5 (2.4)	11.5 (2.1)	73.8 (2.8)	65.4 (3.2)	73.2 (3.1)	16.1 (2.8)	7.6 (1.7)	1.5 (1.0)
H.S. Students [College-Oriented]	642	85.7 (1.8)	2.4 (0.7)	11.8 (1.5)	8.9 (1.2)	66.8 (2.1)	61.8 (2.5)	63.5 (2.4)	17.4 (1.8)	5.4 (1.0)	3.2 (0.8)
H.S. Students [Work-Oriented]	184	79.4 (3.2)	1.4 (0.8)	7.4 (1.7)	6.8 (2.3)	61.4 (3.9)	57.9 (4.4)	57.6 (3.5)	12.4 (2.3)	4.5 (1.9)	6.6 (1.9)
H.S. Graduates Not Currently Enrolled	492	84.2 (2.1)	1.4 (0.6)	11.9 (1.7)	8.3 (1.5)	62.7 (2.4)	59.0 (2.5)	64.5 (2.2)	11.2 (1.7)	5.5 (1.2)	1.5 (0.5)
1st Rctg Bde	374	83.4 (2.3)	1.6 (0.6)	11.3 (1.9)	7.3 (1.7)	66.5 (2.6)	65.1 (2.5)	67.7 (2.9)	21.6 (2.4)	6.2 (1.3)	2.1 (0.9)
2nd Rctg Bde	271	86.1 (2.5)	2.0 (1.1)	13.2 (2.2)	10.0 (1.9)	63.5 (4.0)	60.0 (3.9)	61.8 (3.4)	16.6 (2.5)	4.9 (1.7)	1.6 (0.9)
4th Rctg Bde	469	85.7 (1.9)	2.6 (0.7)	9.4 (1.3)	10.2 (1.1)	70.4 (2.2)	60.3 (2.4)	64.6 (2.5)	10.5 (1.5)	5.8 (1.5)	2.7 (0.6)
5th Rctg Bde	260	80.5 (2.4)	0.7 (0.5)	12.3 (2.4)	9.3 (2.0)	67.8 (3.2)	57.4 (3.1)	66.4 (3.1)	9.7 (3.0)	4.4 (1.4)	4.0 (1.2)
6th Rctg Bde	240	85.2 (2.9)	1.7 (0.9)	12.8 (3.5)	8.5 (2.8)	61.4 (3.2)	61.6 (3.1)	65.8 (3.1)	11.6 (2.3)	7.4 (2.0)	2.2 (0.8)
16-17 Years Old	715	85.3 (1.5)	2.8 (0.7)	12.3 (1.3)	8.9 (1.3)	66.2 (1.8)	60.3 (2.2)	61.7 (2.2)	16.8 (1.7)	5.8 (1.0)	3.8 (0.6)
18-19 Years Old	413	86.3 (1.7)	1.3 (0.6)	9.6 (1.6)	9.9 (1.5)	70.5 (2.3)	64.9 (2.9)	67.4 (2.8)	13.0 (1.7)	5.1 (1.3)	1.9 (0.7)
20-21 Years Old	234	84.4 (3.4)	1.0 (0.6)	12.9 (2.8)	8.1 (2.9)	69.8 (3.7)	65.3 (3.9)	76.6 (3.1)	14.9 (3.2)	5.9 (1.6)	0.8 (0.5)
22-24 Years Old	252	80.2 (3.2)	1.5 (0.9)	11.8 (2.4)	8.9 (1.6)	58.2 (3.7)	54.4 (3.5)	59.0 (3.1)	11.8 (2.5)	6.6 (1.8)	2.7 (1.1)
TOTAL PMAS	**1,614**	**84.3 (1.0)**	**1.8 (0.3)**	**11.6 (0.9)**	**9.0 (0.8)**	**66.2 (1.2)**	**61.2 (1.3)**	**65.4 (1.2)**	**14.4 (1.1)**	**5.8 (0.7)**	**2.5 (0.4)**

TABLE SP-8 KNOWLEDGE/RECALL - UNAIDED

Similar to Last Quarter

- Unaided recall of Army advertising remains the highest of all services for all sample groups.
  - In the PMAS, for example, 84.3% recall seeing or hearing Army ads compared with 66.2% for the Air Force, 65.4% for the Marine Corps, and 61.2% for Navy.
  - Very few youth (5.8%) recall joint recruiting advertising without aid.
  - Unaided recall of advertising continues to be lower for females as opposed to males for the Marine Corps (51.3% vs. 65.3%) ($z = -4.10$, $p < .01$) and Coast Guard (3.5% vs. 13.4%) ($z = -6.04$, $p < .01$). Unaided recall of Army advertising is similar for both. (This quarter, nonsignificant increases in unaided recall among females eliminated the previously reported sex differences in recall of Air Force and Navy ads.)
- Unaided recall is lower for advertising by the Army's components than for the active Army ads.
  - Of PMAS youth, 11.6% recall Army National Guard advertising without aid, compared with 9.0% for the Army Reserve ads, and only 1.8% for Army ROTC.
- Levels of unaided recall of advertising for both the active Army and the Army ROTC were relatively stable across quarters.
- Again this quarter, there are very few differences among educational, age, or regional groups in unaided recall.

Different from Last Quarter

- Unaided recall of advertising for the Army Reserve and Army National Guard decreased this quarter among PMAS youth.
  - The drop in unaided recall of Army Reserve ads was mostly due to high school graduates who are not currently enrolled in school (8.3% vs. 14.1%) ($z = -2.51$, $p < .02$) and Northeasterners (1st Recruiting Brigade) (7.3% vs. 15.8%) ($z = -3.13$, $p < .01$).
  - The significant decline in recall of National Guard was mostly due to work-oriented high school students (7.4% vs. 17.2%) ($z = -2.27$, $p < .03$) and Midwesterners (4th Recruiting Brigade) (9.4% vs. 15.6%) $z = -2.40$, $p < .03$).

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SPRING - WINTER DIFFERENCES IN
PERCENTAGE SEEING/HEARING MILITARY ADVERTISING

SAMPLE GROUPS	N	Army Components				Other Military Branches				JRAP	NONE
		ACTIVE	ROTC	ARNG	USAR	USAF	NAVY	USMC	USCG		
RECRUITING MARKET: MALES [PMAS + SMS]		+	+	-	-2.62	+	-	-	+	-	+
FEMALES [PFAS + SFS]		-	+	-	-	+	+	-	-	-2.53	+
TOTAL RECRUITING MARKET		-	+	-	-	+	-	-	-	**-3.41**	+
PMAS: College Freshmen and Sophomores		+	+	+	-	+	-	+	-	+	-
H.S. Students [College-Oriented]		+	+	-	-	-	-2.15	-2.89	+	-	+
H.S. Students [Work-Oriented]		-	+	-2.27	-	-	-	-	+	+	+
H.S. Graduates Not Currently Enrolled		+	-	-	-2.51	+	+	+	-	-2.41	-
1st Rctg Bde		-	+	-	-3.13	-	-	-	+	+	-
2nd Rctg Bde		+	-	+	-	-	-	-	+	-	-
4th Rctg Bde		-	+2.15	-2.40	-	+	-	+	-	-	+
5th Rctg Bde		+	-	-	-	+	-	-	-	-	+
6th Rctg Bde		+	-	+	-	-	+	+	+	-	-
16-17 Years Old		+	+2.30	-	-	-	-2.68	-3.18	+	+	+
18-19 Years Old		+	+	-	-	+	-	-	-	-	-
20-21 Years Old		+	-	+	-	+	+	+2.75	+	-	-
22-24 Years Old		-	-	-	-	-	-	-	-	-	+
TOTAL PMAS		+	+	-2.10	-3.07	+	-	-	+	-	+

Note: Numbers are z scores for significant quarter-to-quarter differences (i.e., $p < 0.05$; ± 2 s.e.)
Signs indicate the direction of changes that are not statistically significant.

PERCENTAGE SEEING/HEARING MILITARY ADVERTISING
(Standard Error)

SAMPLE GROUPS	N	Army Components				Other Military Branches				
		ACTIVE	ROTC	ARNG	USAR	USAF	NAVY	USMC	USCG	JRAP
RECRUITING MARKET:										
MALES [PMAS + SMS]	1,858	93.5 (0.6)	44.7 (1.4)	65.2 (1.1)	71.8 (1.3)	86.9 (1.0)	82.4 (1.1)	85.3 (0.8)	51.8 (1.6)	56.7 (1.4)
FEMALES [PFAS + SFS]	409	91.3 (2.4)	51.0 (3.2)	60.0 (3.3)	69.1 (2.9)	86.1 (1.7)	76.7 (2.4)	77.2 (2.5)	43.3 (3.0)	46.0 (3.5)
TOTAL RECRUITING MARKET	**2,267**	**92.3 (1.3)**	**48.0 (1.8)**	**62.4 (1.9)**	**70.3 (1.7)**	**86.5 (1.0)**	**79.4 (1.4)**	**81.0 (1.4)**	**47.2 (1.8)**	**51.0 (2.1)**
PMAS:										
College Freshmen and Sophomores	296	92.3 (1.8)	56.3 (3.4)	60.7 (2.7)	74.9 (2.9)	88.2 (2.2)	85.4 (2.2)	90.5 (1.9)	51.6 (3.4)	62.1 (3.9)
H.S. Students [College-Oriented]	642	95.7 (0.8)	44.3 (2.1)	66.9 (2.1)	73.6 (1.9)	87.8 (1.5)	84.8 (1.4)	81.6 (1.7)	53.7 (2.4)	60.8 (2.2)
H.S. Students [Work-Oriented]	184	90.8 (2.0)	37.1 (3.7)	55.9 (5.3)	66.7 (5.2)	83.7 (2.8)	78.2 (3.2)	78.9 (3.0)	49.3 (4.8)	45.9 (4.3)
H.S. Graduates Not Currently Enrolled	492	94.1 (1.3)	43.1 (3.1)	66.2 (2.0)	69.6 (2.6)	88.5 (1.7)	82.5 (1.7)	87.5 (1.7)	50.0 (2.6)	56.0 (2.5)
1st Rctg Bde	374	94 4 (1.3)	47.7 (2.7)	63.1 (2.8)	73.8 (2.5)	88.5 (1.6)	86.8 (2.0)	86.3 (1.8)	54.0 (3.0)	57.9 (2.9)
2nd Rctg Bde	271	93.9 (2.5)	45.2 (3.5)	67.1 (4.3)	67.6 (4.5)	86.2 (2.8)	81.3 (3.1)	82.9 (2.8)	55.3 (3.8)	57.7 (3.2)
4th Rctg Bde	469	94.1 (1.2)	48.6 (2.6)	63.0 (2.5)	72.4 (2.9)	88.8 (1.5)	80.8 (2.1)	85.2 (1.7)	48.7 (2.7)	59.1 (2.3)
5th Rctg Bde	260	92.9 (1.7)	41.7 (4.6)	65.1 (3.9)	72.4 (3.9)	88.8 (2.5)	85.6 (1.8)	89.4 (2.0)	52.5 (4.3)	54.2 (3.8)
6th Rctg Bde	240	93.9 (2.1)	43.2 (5.1)	64.1 (3.0)	71.3 (4.0)	85.6 (2.4)	82.5 (2.6)	83.6 (2.6)	47.0 (4.7)	59.7 (3.2)
16-17 Years Old	715	94.5 (0.9)	44.0 (2.0)	64.8 (2.4)	73.6 (1.8)	86.7 (1.3)	82.6 (1.5)	80.9 (1.7)	52.7 (2.5)	59.9 (2.1)
18-19 Years Old	413	95.1 (0.9)	48.8 (2.6)	62.1 (2.5)	73.9 (3.0)	88.8 (1.5)	84.2 (2.0)	87.6 (1.7)	52.5 (2.9)	58.1 (2.8)
20-21 Years Old	234	93.4 (2.0)	43.3 (4.3)	67.2 (3.8)	71.6 (3.9)	89.0 (2.1)	85.2 (2.8)	89.0 (2.0)	53.0 (4.2)	55.6 (3.8)
22-24 Years Old	252	92.0 (2.2)	46.8 (3.3)	63.6 (3.1)	66.3 (3.0)	86.9 (2.7)	82.4 (2.8)	87.0 (2.6)	46.9 (3.5)	56.3 (3.4)
TOTAL PMAS	1,614	93.9 (0.6)	45.7 (1.4)	64.3 (1.2)	71.7 (1.5)	87.7 (0.9)	83.4 (1.0)	85.5 (0.8)	51.5 (1.8)	57.8 (1.4)

TABLE SP-9 KNOWLEDGE/RECALL - UNAIDED PLUS AIDED

Similar to Last Quarter

- Combined unaided and aided recall of active Army advertising is again the highest of all services.
  - For PMAS youth, combined recall for Army advertising is 93.9% compared with 87.7% for Air Force, 85.5% for the Marine Corps and 83.4% for the Navy.
- Large increases are again observed in all categories when responses to aided recall questions are added to unaided recall (Table SP-8). The largest increases are observed in those categories with the lowest levels of unaided recall such as the Army ROTC and the smallest increases are in categories with the highest unaided recall levels such as the active Army.
- College-oriented high school students have higher levels of combined recall for Army advertising than the work-oriented. They also tend to have higher recall of Army Reserve ads.

Different from Last Quarter

- Last quarter, work-oriented high school students were more likely than the college-oriented to remember ROTC advertising. This quarter, a significant decrease in combined recall levels for the work-oriented reverses the difference--it is now the college-oriented who tend to have greater recall of ROTC ads (44.3% vs. 37.1%) ($z = 1.69$, $p < .09$).
- Combined recall of JRAP advertising decreased this quarter among Recruiting Market males (56.7% vs. 61.5%) ($z = -2.56$, $p < .03$) and high school graduates not currently enrolled in school (56.0% vs. 63.5%) ($z = -2.18$, $p < .05$).

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SPRING - WINTER DIFFERENCES IN
PERCENTAGE SEEING/HEARING MILITARY ADVERTISING

SAMPLE GROUPS	N	Army Components				Other Military Branches				JRAP
		ACTIVE	ROTC	ARNG	USAR	USAF	NAVY	USMC	USCG	
RECRUITING MARKET: MALES [PMAS + SMS]		-	-	-	-	+	+	-	-	-2.56
FEMALES [PFAS + SFS]		-	-	+	-	+	+	-	-	-
TOTAL RECRUITING MARKET		-2.00	-	-	-	+	+	-	-	-
PMAS: College Freshmen and Sophomores		+	+	-	+	+	+	+	-	+
H.S. Students [College-Oriented]		-	+	+	+	-	-	-3.54	+	-
H.S. Students [Work-Oriented]		+	-3.51	-	-	+	+	-	-	-
H.S. Graduates Not Currently Enrolled		-	+	-	-	+	+	+	-	-2.18
1st Rctg Bde		+	-	-	-	-	-	-	-	-
2nd Rctg Bde		-	-	-	-	-	-	-	-	-
4th Rctg Bde		-	+	-	+	+2.47	-	+	-	-
5th Rctg Bde		-	-	+	-	+	+2.22	+	+	-
6th Rctg Bde		+	+	+	+	-	+	+	-	-
16-17 Years Old		-	-	-	+	-	-	-2.92	-	-
18-19 Years Old		+	+	-	-	+	-	-	-	-
20-21 Years Old		+	+	+	+	+	+2.06	+2.01	+	-
22-24 Years Old		+	+	-2.50	-	+	+	+	-	-
TOTAL PMAS		-	+	-	-	+	+	-	-	-2.38

Note: Numbers are z scores for significant quarter-to-quarter differences (i.e., $p < 0.05$; $\pm$ 2 s.e.)
Signs indicate the direction of changes that are not statistically significant.

PERCENTAGE ANSWERING KNOWLEDGE OF ARMY OFFERS AND BENEFITS QUESTIONS CORRECTLY
(Standard Error)

SAMPLE GROUPS	N	Active Army Knowledge: If Enlist Eligible for College $	Total Education Benefits	Army Benefits Better?	Offer GI Bill: ARMY	USAF	NAVY	USMC	Minimum Duty Tour	Delayed Entry Allowed	Army Reserve and Army National Guard Knowledge: 17 Year Old Eligible to Join	H.S. Graduation Required	Scholar Athlete Sponsor	If Enlist Eligible for College $	Maximum GI Bill College $
RECRUITING MARKET:															
MALES [PMAS + SMS]	934	94.1 (0.9)	26.0 (1.9)	15.5 (1.2)	83.0 (1.4)	44.5 (1.9)	44.1 (2.1)	51.3 (2.1)	38.1 (1.7)	81.0 (1.6)	65.9 (1.9)	78.4 (1.8)	30.7 (2.1)	84.0 (1.4)	9.1 (1.0)
FEMALES [PFAS + SFS]	198	89.0 (3.1)	13.2 (3.0)	9.4 (2.5)	74.2 (3.9)	51.6 (4.2)	51.2 (4.9)	51.0 (4.8)	28.2 (4.3)	75.8 (4.2)	56.5 (4.1)	73.1 (3.9)	33.8 (5.4)	84.9 (3.0)	6.8 (2.0)
TOTAL RECRUITING MARKET	**1,132**	**91.4 (1.6)**	**19.3 (1.9)**	**12.3 (1.4)**	**78.4 (2.2)**	**48.2 (2.3)**	**47.8 (2.8)**	**51.1 (2.9)**	**32.9 (2.5)**	**78.3 (2.5)**	**61.0 (2.2)**	**75.6 (2.2)**	**32.3 (3.2)**	**84.5 (1.7)**	**7.9 (1.1)**
PMAS:															
College Freshmen and Sophomores	132	95.4 (1.7)	34.2 (4.2)	19.7 (4.1)	87.0 (3.2)	38.8 (5.2)	41.6 (5.4)	48.5 (5.4)	48.4 (5.0)	82.2 (4.8)	61.3 (5.3)	76.7 (4.3)	40.2 (4.6)	87.5 (3.4)	12.8 (3.6)
H.S. Students [College-Oriented]	328	97.0 (1.1)	26.2 (2.6)	14.8 (1.9)	89.2 (1.8)	45.1 (3.4)	46.1 (3.6)	54.3 (3.1)	37.0 (2.9)	79.9 (2.8)	64.0 (3.1)	77.9 (2.8)	33.0 (2.8)	89.3 (2.3)	7.0 (1.7)
H.S. Students [Work-Oriented]	82	93.7 (2.8)	25.5 (6.0)	18.1 (4.7)	90.4 (3.3)	40.7 (5.2)	48.1 (6.3)	60.5 (6.1)	23.2 (5.4)	73.1 (6.0)	60.0 (6.3)	73.0 (5.2)	24.3 (5.8)	85.3 (4.2)	3.5 (2.7)
H.S. Graduates Not Currently Enrolled	269	91.1 (1.7)	23.1 (2.4)	15.7 (2.2)	75.8 (2.7)	43.6 (3.6)	40.0 (3.3)	47.1 (3.7)	43.1 (3.4)	87.0 (2.5)	68.2 (2.6)	78.3 (2.6)	26.1 (3.4)	77.2 (2.5)	9.6 (1.7)
1st Rctg Bde	185	92.7 (2.2)	29.4 (2.8)	13.4 (3.0)	78.7 (2.8)	43.2 (3.8)	38.9 (4.1)	51.9 (3.6)	39.4 (3.9)	80.7 (4.1)	60.5 (3.4)	75.6 (2.8)	30.4 (3.3)	83.9 (3.0)	9.5 (2.6)
2nd Rctg Bde	138	93.6 (3.2)	22.9 (3.9)	18.1 (3.6)	87.7 (3.5)	43.6 (4.6)	49.5 (4.4)	53.5 (4.8)	39.6 (5.0)	81.8 (3.2)	65.7 (6.4)	80.0 (5.8)	29.1 (4.4)	76.8 (4.8)	4.0 (2.0)
4th Rctg Bde	231	96.6 (1.3)	25.0 (2.9)	18.1 (2.5)	83.7 (2.7)	39.4 (3.9)	40.0 (3.4)	49.0 (3.9)	42.6 (2.9)	86.1 (2.6)	72.6 (2.8)	82.3 (2.6)	31.3 (4.1)	87.8 (2.7)	12.9 (2.7)
5th Rctg Bde	135	92.4 (2.2)	23.0 (5.3)	13.1 (4.3)	85.2 (3.5)	41.1 (4.1)	44.1 (4.5)	46.4 (5.0)	33.8 (4.1)	81.2 (3.5)	62.0 (4.9)	74.7 (5.4)	32.2 (5.3)	86.2 (2.6)	8.7 (2.6)
6th Rctg Bde	122	94.9 (2.0)	31.2 (5.9)	19.3 (3.4)	84.6 (4.0)	48.9 (6.2)	45.2 (6.2)	53.9 (4.9)	45.8 (4.3)	82.3 (4.0)	61.6 (5.9)	72.8 (4.5)	31.6 (5.5)	83.2 (4.7)	7.2 (2.6)
16-17 Years Old	355	96.5 (1.1)	26.5 (2.5)	16.7 (2.0)	88.0 (1.6)	40.0 (3.0)	42.6 (3.2)	51.4 (3.1)	34.6 (2.7)	79.8 (2.7)	61.4 (3.1)	75.2 (2.7)	33.9 (2.9)	89.9 (2.0)	7.3 (1.5)
18-19 Years Old	204	96.9 (1.3)	32.2 (3.7)	16.3 (3.0)	87.0 (2.7)	41.3 (3.9)	46.5 (3.8)	53.7 (3.5)	44.6 (4.4)	85.9 (2.5)	71.8 (3.5)	85.0 (2.6)	28.9 (3.5)	88.0 (2.6)	11.5 (2.7)
20-21 Years Old	121	92.3 (3.4)	28.1 (5.0)	15.4 (4.4)	81.3 (4.1)	44.7 (6.2)	40.1 (5.6)	48.8 (6.2)	41.5 (5.0)	79.3 (4.1)	60.7 (5.1)	73.2 (5.2)	33.9 (4.6)	79.4 (4.0)	7.4 (3.3)
22-24 Years Old	131	[illegible].6 (3.5)	17.9 (2.7)	16.7 (3.8)	74.6 (4.0)	48.2 (5.5)	42.1 (5.1)	48.6 (5.4)	43.3 (4.2)	85.6 (3.9)	65.4 (4.3)	75.4 (4.4)	26.0 (4.5)	73.1 (4.3)	9.0 (2.7)
TOTAL PMAS	811	94.1 (0.9)	26.4 (1.9)	16.3 (1.3)	83.6 (1.5)	43.0 (2.0)	43.0 (2.1)	50.9 (2.1)	40.3 (1.8)	82.5 (1.7)	64.8 (2.0)	77.4 (1.8)	30.9 (1.9)	83.8 (1.5)	8.8 (1.1)

Similar to Last Quarter

- Proportions of PMAS indicating knowledge of the Army's offers and benefits remains remarkably stable across quarters.

- General knowledge of Army offers remains widespread while specific information continues to be less well known.

  - Of PMAS youth, 94.1% know that the Army offers educational benefits for enlistment and 82.5% know of the delayed entry program.

  - However, only 26.4% correctly specify the maximum amount of educational benefits available, only 16.3% know that the educational benefits available through Army enlistment are better than those offered by other services, and 40.3% are aware that the minimum tour of duty in the Army is two years.

  - Youth in all sample groups are again more likely to associate the G.I. Bill with the Army than with other services ($p < .05$ for all relevant 51 comparisons). For example, 83.6% of the PMAS correctly answered that the Army offers the G.I. Bill while only 43.0% were correct when asked about the Air Force, 43.0% about the Navy, and 50.9% about the Marine Corps.

- Knowledge of the eligibility requirements and educational benefits offered by the Army Reserve and Army National Guard are also relatively high in all sample groups and quite stable across quarters.

  - Of PMAS youth, for example, 77.4% are aware that high school graduation is not required before enlisting, and 64.8% know that 17-year-olds may enlist.

  - Of PMAS youth, 83.8% know that the Army Reserve and National Guard offer educational benefits, but only 8.8% can specify the correct maximum amount of benefits available.

  - Knowledge of the amount of Reserve and Guard educational benefits is again low for work-oriented high school students making them less likely to have this information than college freshmen and sophomores (3.5% vs. 12.8%) ($z = 2.07$, $p < .05$) or high school graduates not currently enrolled (3.5% vs. 9.6%) ($z = 1.91$, $p < .06$).

- Again this quarter, there are few significant regional differences in knowledge of the Army's benefits and offers.

- The decrease noted last quarter in correct identification of the Marine Corps with the G.I. Bill continues this quarter with a significant drop for high school graduates not currently enrolled (47.1% vs. 59.1%) ($z = -2.19$, $p < .05$). Decreases are also found this quarter in identifying the Army with the G.I. Bill, especially by high school grads (75.8% vs. 84.1%) ($z = -2.21$, $p < .05$) and youth in the Northeast (1st Recruiting Brigade) (78.7% vs. 87.1%) ($z = -2.15$, $p < .05$).

Different from Last Quarter

- Significant increases appear this quarter for knowledge that Army benefits are better than those of other services for high school graduates (15.7% vs. 9.9%) ($z = +2.10$, $p < .05$) and 22- to 24-year olds (16.7% vs. 5.6%) ($z = +2.56$, $p < .04$).

- This quarter college freshmen and sophomores still tend to be more likely than the other educational groups to know how much money can be earned for college by enlisting in the Army ($p < .15$ for 2 of the 3 relevant comparisons; of these, $p < .05$ for 1 comparison), the Army Reserve and National Guard ($p < .15$ for 2 of the 3 relevant comparisons; of these, $p < .05$ for 1 comparison). However, college-oriented high school students are no longer more likely to have this knowledge than the work-oriented or high school grads.

- Age differences appear this quarter for the first time in knowledge of the Army's offers.

  - Older youth are less likely to know that the Army offers educational benefits (16- to 17-year olds vs. 22- to 24-year olds: 96.5% vs. 88.6%) ($z = 2.15$, $p < .05$). Older youth are also more likely than those who are younger to know about educational benefits offered by the Army Reserve and National Guard (16- to 17-year olds vs. 22- to 24-year olds: 89.9% vs. 73.1%) ($z = 3.54$, $p < .01$). Identification of the Army with the G.I. Bill also decreases with age (16- to 17-year olds vs. 22- to 24-year olds: 88.0% vs. 74.6%) ($z = 3.11$, $p < .01$).

  - 18- to 19-year olds tend to be more likely than youth in other age categories to know the maximum amount of Army educational benefits and to know that 17-year-olds and non-high school graduates can enlist in the Army Reserve and National Guard ($p < .20$ for 4 of the 6 relevant comparisons; of these, $p < .05$ for 2 comparisons).

SPRING - WINTER DIFFERENCES IN
PERCENTAGE ANSWERING KNOWLEDGE OF ARMY OFFERS AND BENEFITS QUESTIONS CORRECTLY

SAMPLE GROUPS	N	Active Army Knowledge: If Enlist Eligible for College $	Total Education Benefits	Army Benefits Better?	Offer GI Bill: ARMY	USAF	NAVY	USMC	Minimum Duty Tour	Delayed Entry Allowed	Army Reserve and Army National Guard Knowledge: 17 Year Old Eligible to Join	H.S. Graduation Required	Scholar Athlete Sponsor	If Enlist Eligible for College $	Maximum GI Bill College $
RECRUITING MARKET: MALES [PMAS + SMS]		-	+	+	-	-	-	-	-	-	+	+	+	-	+
FEMALES [PFAS + SFS]		-	+	+	+	+	-	-	-	-	-	+	+	-	-
TOTAL RECRUITING MARKET		-	+	+	+	+	-	-	-	-	+	+	+	-	-
PMAS: College Freshmen and Sophomores		-	-	+	-	-	-	+	+	-	-	+	+	+	+
H.S. Students [College-Oriented]		+	-	-	+	+	+	+	+	+	+	-	-	-	-
H.S. Students [Work-Oriented]		+	+	+	+	-	+	+	-	-	+	+	-2.32	-	+
H.S. Graduates Not Currently Enrolled		-	+	+2.10	-2.21	-	-	-2.19	-	-	-	-	+	-	-
1st Rctg Bde		-	+	-	-2.15	-	-	+	-	-	-	+	-	-	-
2nd Rctg Bde		-	-	+	+	-	+	-	+	-	-	-	+	-2.02	-
4th Rctg Bde		-	-	+	-	-	-	-	-	+	+	+	-	+	+
5th Rctg Bde		+	-	+	+	-	+	-	-	-	-	-	+	+	+
6th Rctg Bde		-	+	-	-	+	+	+	-	-	+	-	+	-	-
16-17 Years Old		+	+	-	+	-	+	+	+	+	+	-	-	+	-
18-19 Years Old		+	-	-	-	-	+	+	+	-	+	+	-	-	+
20-21 Years Old		-	+	-	-	-	-	-	+	-	-	-	+2.08	-	-
22-24 Years Old		-	-	+2.56	-	+	-	-	-	-	-	-	+	-	+
TOTAL PMAS		-	-	+	-	-	-	-	-	-	+	-	+	-	+

Note: Numbers are z scores for significant quarter-to-quarter differences (i.e., $p < 0.05$; ± 2 s.e.)
Signs indicate the direction of changes that are not statistically significant.

PERCENTAGE REGULARLY VIEWING OR LISTENING TO VARIOUS TYPES OF PROGRAMMING
(Standard Error)

SAMPLE GROUPS	N1	Types of TV Shows: Sports	Mystery	Drama	Music	Comedy	Movie	Talk	N2	Types of Radio Programs: News	Classical	Pop	Country	Sports	Talk	Rock	Easy
RECRUITING MARKET:																	
MALES [PMAS + SMS]	603	80.0 (1.7)	61.7 (2.7)	47.4 (2.2)	68.5 (2.6)	87.1 (1.7)	84.7 (1.6)	43.3 (2.4)	818	57.6 (2.1)	17.9 (1.6)	55.4 (1.7)	31.2 (2.4)	50.9 (1.9)	20.8 (1.7)	80.8 (1.8)	45.2 (2.0)
FEMALES [PFAS + SFS]	135	42.9 (5.4)	61.2 (4.6)	80.5 (4.0)	64.6 (5.4)	90.1 (3.0)	93.4 (2.3)	60.2 (4.6)	189	60.7 (4.0)	16.9 (3.4)	67.3 (4.4)	33.2 (4.5)	14.5 (3.4)	26.0 (4.8)	81.3 (3.2)	55.3 (4.9)
TOTAL RECRUITING MARKET	738	**60.3 (3.2)**	**61.4 (2.6)**	**65.0 (2.4)**	**66.4 (3.4)**	**88.7 (1.8)**	**89.3 (1.4)**	**52.3 (2.7)**	1,007	**59.3 (2.4)**	**17.4 (2.0)**	**61.8 (2.5)**	**32.2 (2.5)**	**31.4 (2.1)**	**23.6 (2.7)**	**81.1 (1.9)**	**50.6 (2.6)**
PMAS:																	
College Freshmen and Sophomores	89	87.2 (3.4)	63.2 (6.9)	53.0 (6.8)	63.2 (6.8)	88.0 (4.2)	81.1 (5.6)	46.7 (5.7)	134	52.0 (5.7)	21.4 (4.9)	56.0 (5.4)	24.1 (4.5)	59.2 (4.0)	21.1 (4.3)	82.1 (4.0)	50.0 (4.9)
H.S. Students [College-Oriented]	217	82.6 (2.4)	62.4 (4.0)	37.9 (3.4)	78.0 (3.2)	90.2 (2.6)	81.0 (2.5)	34.7 (3.4)	266	47.6 (4.1)	13.7 (2.5)	62.5 (3.5)	20.0 (2.4)	52.5 (3.1)	15.6 (2.6)	86.2 (2.2)	36.4 (2.7)
H.S. Students [Work-Oriented]	71	85.8 (4.5)	58.6 (7.9)	42.3 (6.8)	77.9 (5.4)	90.9 (4.3)	88.3 (5.5)	40.0 (6.7)	80	48.2 (6.2)	17.6 (6.5)	37.9 (7.2)	37.5 (8.1)	46.0 (6.8)	20.2 (6.4)	75.4 (6.7)	41.2 (7.0)
H.S. Graduates Not Currently Enrolled	153	75.4 (3.9)	61.2 (5.2)	52.0 (4.2)	60.5 (4.7)	83.2 (4.1)	88.1 (2.9)	43.4 (5.6)	214	66.1 (3.9)	13.8 (2.9)	60.8 (3.5)	33.0 (4.0)	52.2 (3.6)	19.8 (3.2)	84.3 (3.0)	47.5 (3.0)
1st Rctg Bde	120	78.5 (4.2)	55.9 (4.6)	47.4 (5.4)	69.5 (6.0)	89.2 (3.4)	83.1 (3.9)	29.7 (4.6)	158	56.6 (4.3)	15.1 (3.9)	59.4 (4.0)	15.9 (3.6)	58.7 (3.9)	22.0 (4.1)	90.9 (2.2)	43.1 (3.8)
2nd Rctg Bde	88	81.8 (5.5)	70.8 (6.2)	45.7 (6.3)	71.6 (6.3)	83.3 (6.0)	82.3 (5.1)	43.6 (5.3)	118	63.1 (3.7)	17.9 (3.4)	58.2 (5.7)	34.0 (5.1)	50.6 (4.1)	24.6 (4.5)	81.1 (3.8)	43.9 (5.0)
4th Rctg Bde	151	80.6 (2.9)	61.2 (6.0)	54.1 (4.6)	64.2 (5.0)	87.1 (3.1)	87.6 (3.3)	37.0 (4.1)	199	56.5 (4.0)	11.6 (2.4)	61.2 (4.1)	23.1 (3.8)	50.8 (3.9)	15.4 (2.2)	86.7 (2.4)	39.0 (2.8)
5th Rctg Bde	100	81.5 (3.5)	54.0 (7.2)	36.3 (6.2)	71.7 (7.0)	81.7 (6.4)	87.1 (4.2)	52.8 (5.3)	116	48.6 (6.2)	21.4 (4.8)	55.8 (6.1)	49.1 (6.0)	44.4 (5.3)	22.6 (4.2)	78.8 (5.3)	41.7 (5.5)
6th Rctg Bde	71	85.8 (3.7)	70.6 (5.9)	47.6 (6.5)	67.4 (8.0)	97.1 (1.9)	80.6 (6.3)	45.5 (6.6)	103	52.2 (8.7)	15.3 (3.9)	53.1 (5.4)	23.3 (4.8)	59.5 (4.1)	10.2 (4.2)	76.0 (4.7)	54.4 (4.4)
16-17 Years Old	242	81.6 (2.6)	61.8 (3.5)	37.0 (3.2)	76.4 (3.0)	89.1 (2.6)	83.1 (2.7)	33.8 (3.3)	293	44.9 (4.0)	11.1 (1.9)	52.6 (3.9)	23.2 (2.4)	49.4 (3.2)	14.4 (2.2)	87.6 (2.0)	34.2 (2.9)
18-19 Years Old	131	83.3 (3.2)	61.2 (5.0)	51.3 (4.9)	70.1 (4.8)	94.5 (2.2)	85.4 (3.1)	38.2 (4.5)	196	53.5 (4.3)	18.1 (3.3)	61.8 (3.6)	27.3 (3.9)	53.2 (3.6)	19.8 (3.4)	84.3 (2.7)	40.1 (4.1)
20-21 Years Old	69	79.1 (4.8)	65.5 (8.0)	54.9 (7.2)	63.2 (6.4)	88.6 (4.0)	80.1 (5.0)	49.8 (7.3)	99	61.0 (6.2)	14.3 (4.2)	62.9 (5.7)	35.8 (6.8)	57.6 (4.8)	17.1 (3.8)	81.8 (4.9)	52.2 (6.0)
22-24 Years Old	88	80.3 (5.0)	59.2 (6.7)	49.2 (5.5)	59.8 (5.6)	75.8 (5.8)	88.7 (3.8)	47.7 (7.2)	106	69.4 (5.8)	21.1 (4.7)	56.3 (5.5)	27.5 (4.5)	54.8 (5.5)	25.8 (5.1)	77.8 (4.3)	56.8 (4.8)
TOTAL PMAS	530	**81.3 (1.7)**	**61.7 (3.1)**	**46.5 (2.3)**	**68.7 (2.6)**	**87.3 (2.0)**	**84.5 (1.9)**	**40.9 (2.5)**	694	**55.6 (2.5)**	**15.8 (1.6)**	**57.9 (2.1)**	**27.6 (2.2)**	**53.2 (1.9)**	**18.9 (1.4)**	**83.5 (1.6)**	**44.1 (1.8)**

Similar to Last Quarter

- In general, the patterns of programming preferences are fairly stable across quarters.
- Youth are once again more likely to describe themselves as regular radio listeners than as regular television viewers.
  - Of PMAS youth, for example, 85.6% say they listen to radio regularly, compared with only 65.4% who say they watch television regularly. This difference is consistent among educational segments, sexes, regions, and age groups.

Television

- Overall, PMAS youth have the highest preferences for comedy (87.3%), movies (84.5%), and sports (81.3%) programs. They are least likely to regularly watch dramatic (46.5%) and talk (40.9%) shows.
- Males are more likely than females to watch sports programs on TV (80.0% vs. 42.9%) ($z = 6.55$, $p < .01$) while females are more likely than males to prefer drama, movies and talk shows ($p < .01$ for all 3 comparisons).
- Regular viewing of talk shows tends to increase with age (16- to 17-year olds vs. 22- to 24-year olds: 33.8% vs. 47.7%) ($z = 1.76$, $p < .08$).

Radio

- For PMAS youth generally, radio rock programs are clearly the most popular (83.5%) with pop (57.9%) programming a fairly distant second. Classical music (15.8%) and talk shows (18.9%) are least preferred.
- The popularity of country music programs varies both regionally and by level of education. Southeastern (2nd Recruiting Brigade) and Southwestern (5th Recruiting Brigade) youth and work-oriented high school students and graduates who are not currently enrolled tend to be more likely than the other regional and educational groups to report regularly listening to country music ($p < .20$ for 10 of the 11 relevant comparisons; of these, $p < .05$ for 6 comparisons).
- The popularity of news, classical, talk, and easy listening programming tends to increase with age ($p < .05$ for all 4 comparisons of 16- to 17-year olds with 22- to 24-year olds). Regular listening to rock music decreases with age (16- to 17-year olds vs. 22- to 24-year olds: 87.6% vs. 77.8%) ($z = 2.07$, $p < .05$).
- Males are more likely than females to listen to radio sports programs (50.9% vs. 14.5%) ($z = 9.35$, $p < .01$) while pop and easy listening are more popular among females ($p < .05$ for both comparisons).

Different from Last Quarter

Television

- This quarter, regular viewing of dramatic shows tends to increase with age (16- to 17-year olds vs. 22- to 24-year olds: 37.0% vs. 49.2%) ($z = -1.92$, $p < .06$) while the popularity of music programming decreases with age (16- to 17-year olds vs. 22- to 24-year olds: 76.4% vs. 59.8%) ($z = 2.61$, $p < .01$). Last quarter, there were no significant age differences for either type of programming.

- Again this quarter, there are no clear differences among PMAS educational segments or among regional groups in programming preferences. Rather, there are isolated differences between groups in the popularity of particular types of television programming.

  - For example, Westerners (6th Recruiting Brigade) are more likely than Southwesterners (5th Recruiting Brigade) to watch comedy shows regularly (97.1% vs. 81.7%) ($z = 2.31$, $p < .01$). Regular comedy viewing is up significantly this quarter in the West (97.1% vs. 87.7%) ($z = +2.06$, $p < .05$).

  - Music programs and music videos are most popular with high school students ($p < .10$ for all 4 relevant comparisons and $p < .05$ for 3 comparisons).

Radio

- Listening to sports programs increased significantly this quarter for college freshmen and sophomores (59.2% vs. 37.0%) ($z = +3.20$, $p < .05$) and Westerners (6th Recruiting Brigade) (59.5% vs. 43.2%) ($z = +2.24$, $p < .05$).

SPRING - WINTER DIFFERENCES IN
PERCENTAGE REGULARLY VIEWING OR LISTENING TO PROGRAMS WITH ARMY ADVERTISING

SAMPLE GROUPS	N1	Types of TV Shows: Sports	Mystery	Drama	Music	Comedy	Movie	Talk	N2	Types of Radio Programs: News	Classical	Pop	Country	Sports	Talk	Rock	Easy
RECRUITING MARKET: MALES [PMAS + SMS]		-	+	+	+	-	-	-		+	+	-	-	+	+	+	+
FEMALES [PFAS + SFS]		-	-	-	-	+	+	-		+	+	+	+	-	-	+	-
TOTAL RECRUITING MARKET		-	-	+	-	-	+	-		+	+	-	-	-	-	+	-
PMAS:																	
College Freshmen and Sophomores		+	+	+	+	+	+	-		-	-	-	-	+3.20	-	+	+
H.S. Students [College-Oriented]		-	+	-	+	-	-	-		+	+	-	-	+	-	+	+
H.S. Students [Work-Oriented]		+	+	+	-	-	-	+		+	+	-	-	+	+	-	-
H.S. Graduates Not Currently Enrolled		-	+	+	-	-	+	-		+	-	+	-2.09	-	-	+	+
1st Rctg Bde		-	-	+	+	-	-	-3.39		+	+	+	-	+	+	+2.08	+
2nd Rctg Bde		-	+	-	+	-	-	-		+	+	-2.33	-	+	+	+	+
4th Rctg Bde		-	+	+2.64	+	-	+	-		+	-	+	-	-	-	+	-
5th Rctg Bde		+	+	+	-	-	+	+2.48		-	+	-	+	+	-	-	+
6th Rctg Bde		+	+	+	-	+2.06	-	-		+	-	-	+	+2.24	-	-	+
16-17 Years Old		-	-	-	+	-	+	-		+	+	-	+	+	-	+	+
18-19 Years Old		-	+	+	-	+	-	-		+	+	-	+	+	+	+	-
20-21 Years Old		+	+	+	+	+	+	+		+	-	-	-	+	-	-	-
22-24 Years Old		-	-	+	-	-3.07	+	-		-	+	-	-2.64	+	-	+	+
TOTAL PMAS		-	+	+	+	-	-	-		+	-	-	-	+	-	+	+

Note: Numbers are z scores for significant quarter-to-quarter differences (i.e., $p < 0.05$); $\pm$ 2 s.e.)
Signs indicate the direction of changes that are not statistically significant.

TABLE SP-12
PERCENTAGE WITH INTENTION TO ENLIST IN ARMY COMPONENTS
[PMAS MONTHLY TOTALS]
(Standard Error)

MONTHS	N1	Unaided Intention				Aided Intention				N2	Army ROTC
		General Intention	Active Army	USAR	ARNG	General Intention	Active Army	USAR	ARNG		
April	560	2.2 (0.7)	1.2 (0.4)	0.2 (0.2)	0.7 (0.4)	25.6 (2.6)	13.3 (2.2)	13.6 (1.7)	13.5 (1.9)	386	17.7 (2.1)
May	486	2.2 (0.7)	1.8 (0.6)	0.2 (0.2)	0.3 (0.3)	23.7 (2.0)	11.5 (1.3)	12.1 (1.6)	12.5 (1.9)	355	15.1 (1.9)
June	568	2.0 (0.8)	1.2 (0.7)	0.7 (0.5)	0.1 (0.1)	24.5 (2.9)	15.8 (2.6)	15.2 (1.9)	10.9 (1.8)	417	16.8 (2.6)
TOTAL	1,614	2.1 (0.4)	1.4 (0.3)	0.4 (0.2)	0.4 (0.2)	24.7 (1.3)	13.7 (1.2)	13.7 (1.0)	12.3 (1.0)	1,158	16.6 (1.2)

TABLE SP-13
PERCENTAGE "AGREE" OR "STRONGLY AGREE" WITH ACTIVE ARMY ATTRIBUTE STATEMENTS
[PMAS MONTHLY TOTALS]
(Standard Error)

MONTHS	N	Job Variety	Physical Challenge	Proud Experience	Step Btwn HS & Col.	Leader Skills	Hi-Tech Equipment	Civilian Career	Self Confidence	Develop Potential	Mental Challenge	Mature & Responsible	Skill Training	Hi-Trained Co-Workers	△ Money for Ed.
April	526	56.3 (2.6)	79.9 (2.4)	66.0 (2.3)	45.4 (2.5)	71.1 (2.2)	75.6 (1.8)	50.7 (2.1)	71.5 (2.5)	66.9 (2.3)	67.0 (3.1)	75.8 (2.0)	70.2 (2.7)	72.7 (2.6)	73.9 (2.0)
May	458	57.6 (2.5)	77.2 (2.5)	64.0 (2.4)	46.3 (2.1)	72.7 (2.7)	76.1 (3.1)	53.7 (3.0)	70.0 (2.9)	66.2 (3.1)	64.0 (2.7)	71.7 (2.4)	71.5 (2.7)	72.9 (2.7)	68.9 (2.6)
June	542	55.9 (2.5)	80.0 (3.1)	66.7 (2.5)	45.6 (2.5)	71.6 (2.7)	75.7 (2.7)	51.6 (3.2)	72.7 (2.7)	67.8 (2.7)	65.7 (2.5)	74.6 (2.4)	73.0 (2.1)	69.9 (2.5)	72.7 (2.1)
[redacted]	[redacted]	56.8 (1.4)	79.1 (1.7)	65.7 (1.6)	45.7 (1.4)	71.7 (1.5)	75.8 (1.5)	51.9 (1.6)	71.5 (1.7)	67.0 (1.6)	65.6 (1.5)	74.2 (1.3)	71.6 (1.4)	71.7 (1.5)	72.8 (1.3)

△ indicates wording for question item(s) was changed significantly. See Appendix E.

TABLE SP-14
PERCENTAGE SEEING/HEARING MILITARY ADVERTISING
[PMAS MONTHLY TOTALS]
(Standard Error)

MONTHS	N	Army Components				Other Military Branches				JRAP	NONE
		ACTIVE	ROTC	ARNG	USAR	USAF	NAVY	USMC	USCG		
April	560	80.9 (2.1)	1.0 (0.4)	11.8 (1.3)	7.8 (1.1)	66.4 (2.0)	61.5 (2.3)	64.7 (1.8)	14.6 (1.5)	4.8 (0.9)	2.6 (0.7)
May	486	88.0 (1.7)	1.4 (0.5)	11.3 (1.6)	10.6 (1.7)	71.3 (2.6)	61.3 (2.7)	70.5 (2.5)	16.1 (2.1)	4.9 (1.4)	1.8 (0.6)
June	568	84.6 (1.7)	2.9 (0.8)	11.6 (1.6)	9.0 (1.4)	62.1 (1.8)	60.8 (2.0)	62.0 (2.3)	12.7 (2.0)	7.4 (1.2)	3.0 (0.6)
TOTAL	1,614	84.3 (1.0)	1.8 (0.3)	11.6 (0.9)	9.0 (0.8)	66.2 (1.2)	61.2 (1.3)	65.4 (1.2)	14.4 (1.1)	5.8 (0.7)	2.5 (0.4)

Addition to Appendix B

School Year 86/87 - Spring Quarter

ROTC Regions have been redefined since Winter quarter. The changes are shown below.

Changes to ROTC Regions

Previous to Spring Quarter	State	As of Spring Quarter
1	Florida	3
1	Georgia	3
3	New Mexico	4

Addition to Appendix E

School Year 86/87 - Spring Quarter

Changes Winter to Spring Quarter

Table 3. Perceptions - Active Army

Money for Ed.

Winter: ...an opportunity to obtain money for college or vocational school?
Spring: ...an excellent opportunity to obtain money for college or vocational school?

Table 4. Perceptions - Army Reserve

Money for Ed.

Winter: ...an opportunity to obtain money for college or vocational school?
Spring: ...an excellent opportunity to obtain money for college or vocational school?

Table 5. Perceptions - Army National Guard

Money for Ed.

Winter: ...an opportunity to obtain money for college or vocational school?
Spring: ...an excellent opportunity to obtain money for college or vocational school?

Table 7. Enlistment-Related Behaviors

Taken ASVAB

Winter: In the past six months, have you taken a written test used for the Army, such as the Armed Services Vocational Aptitude Battery?

Spring: Have you ever taken a written test used for the Army, such as the Armed Services Vocational Aptitude Battery?

In the past six months, have you taken a written test used for the Army, such as the Armed Services Vocational Aptitude Battery?

Addition to Appendix B

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