# Project Athena III

1 June 1979

# Report of the Admission of Women to the U.S. Military Academy (Project Athena III)

by

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TABLE OF CONTENTS


| | Page |
|---|---|
| LIST OF TABLES | iii |
| LIST OF ILLUSTRATIONS | viii |
| LIST OF APPENDICES | ix |
| ACKNOWLEDGEMENTS | x |
| ABSTRACT | xii |
| EXECUTIVE SUMMARY | xiii |
| INTRODUCTION | 1 |
| Background | 2 |
| Current Program Objectives | 3 |
| CHAPTER 1 ADMISSIONS | 9 |
| Applicant Profile | 9 |
| Entrance Characteristics | 14 |
| Admissions Standards | 17 |
| Life Style Preferences | 19 |
| Personality Variables | 22 |
| Motive to Achieve | 31 |
| Attitudes Toward Women's Roles | 47 |
| Summary | 52 |
| CHAPTER 2 CADET BASIC TRAINING | 54 |
| Male and Female Performances | 54 |
| Personality Variables as Indicators of Individual Adjustment | 60 |
| Stress in Cadet Basic Training | 63 |
| Male and Female Ratings of Leadership | 75 |
| Attrition | 79 |
| Summary | 81 |
| CHAPTER 3 ACADEMIC YEAR | 85 |
| Female and Male Academic Performance | 85 |

Page

Physical Training in the Academic Year . . . . . 93
Male and Female Sports Programs . . . . . 100
Attrition Comparison Over Time . . . . . 105
Leadership Ratings During the Academic Year. . . . . 110
Summary . . . . . 115

CHAPTER 4 CADET FIELD TRAINING . . . . . 117

Male and Female Cadet Military Training Performance. . . . . 117
Male and Female Performance in Physical Training Activities. . . . . 130
Differences Between Male and Female Injury/Illness Rate. . . . . 132
Leadership Performance for Women for Women-Led vs. Men-Led Groups . . . . . 132
Summary . . . . . 148

CHAPTER 5 CADET ADVANCED TRAINING. . . . . 150

Male and Female Cadet Performance at Cadet Troop Leader Training. . . . . 150
Drill Cadet Performance . . . . . 161
Cadet Military Specialty Training Performance. . . . . 161
Summary . . . . . 170

CHAPTER 6 ONGOING PROGRAMS AND THE FUTURE. . . 171

Social Relationships: Dating . . . . . 172
Social Relationships: Fraternization . . 179
Social Relationships: Human Sexuality. . 185
Institutional Plans to Overcome Sexism. . 189
West Point Interactions with Washington: Female Staff and Faculty . . 194
West Point Interactions with Washington: Branching and Dual Careers. 194
Summary . . . . . 196

CONCLUSIONS . . . . . 199

LIST OF REFERENCES. . . . . 201

LIST OF TABLES


| TABLE | | Page |
|---|---|---|
| 1. | Applicant Profile by Year . . . . . | 10 |
| 2. | Entrance Characteristics by Sex Classes of '80, '81, and '82 . . . . . | 15 |
| 3. | Legend for Entrance Characteristics by Sex. . | 16 |
| 4. | Life Style Preferences - Classes of '80, '81, and '82 . . . . . | 20 |
| 5. | Correlations Between the Tennessee Self-Concept Scale and the Personal Attributes Questionnaire, (PAQ) . . . . . | 24 |
| 6. | Correlations Between Internal Locus of Control and the PAQ. . . . . | 28 |
| 7. | Correlations Between Physical Aptitude and the PAQ. . . . . | 29 |
| 8. | Leadership Potential Score of Candidates Admitted to West Point by Class and by Sex . . . . . | 34 |
| 9. | Comparisons of Mean Scores in Achievement Factors by Sex by Group. . . . . | 36 |
| 10. | Analysis of Variance, ANOVA, by Mastery Subscale by Class by Sex . . . . . | 38 |
| 11. | ANOVA: Personal Unconcern by Class by Sex. . | 39 |
| 12. | ANOVA: Competitiveness Subscale by Class by Sex . . . . . | 40 |
| 13. | Multiple Classification Analysis: Competitiveness by Class by Sex. . . . . | 41 |
| 14. | ANOVA: Work by Class by Sex. . . . . | 43 |

TABLE Page


15. Multiple Classification Analysis: Work by Class by Sex . . . . . 44

16. ANOVA: Achievement Scales by PAQ and by Sex for West Point Cadets . . . . . 46

17. Comparison of Attitude Toward Women Scores (AWS) for Men and Women at Several Institutions . . . . . 49

18. Sex Role Attitudes of Cadets and Army Personnel. . . . . 50

19. Average Weekly Percent of Male and Female Cadets Reporting to Reconditioning . . . . . 58

20. Cadet Basic Training (CBT), Sick Call Visits 7 July - 26 August . . . . . 59

21. Changes in Motivation and Self Concept by Sex, Class of 1980, After One Year At West Point . . . . . 62

22. Life Event Stress Table . . . . . 65

23. Life Change Units at Entrance for Cadets at West Point. . . . . 66

24. Stressors in Cadet Basic Training . . . . . 68

25. Psychological Responses to Stress in CBT Class of 1980. . . . . 70

26. Mean Psychological Responses to Stress at Common Points of Time CBT 76-78. . . . . 71

27. Physiological Data on Stress CBT 77-78. . . . 73

28. Physiological Stress Indicator. . . . . 74

29. Correlations of All Predictors with Measures of Leadership Ability. . . . . 77

30. CBT Attrition, for the Classes of '80, '81, and '82. . . . . 80

| TABLE | | Page |
|---|---|---|
| 31. | Reasons Given for Attrition by Men and Women: Classes of '80, '81, and '82 . . . . . | 82 |
| 32. | Factors Which Attritees Said Were Positive Reasons to Stay at West Point. . . . . | 83 |
| 33. | A Comparison of Core-Course Grades by Class by Sex . . . . . | 87 |
| 34. | Scholastic Aptitude Test Scores Broken Down by Class by Sex . . . . . | 89 |
| 35. | Female Cadet Performance in Military Science, (MS), by Class. . . . . | 91 |
| 36. | Academy Grade Distributions by Sex for Academic Year, (AY), 77-78 . . . . . | 92 |
| 37. | Physical Education Program for Plebe (Freshman) Class Men and Women . . . . . | 96 |
| 38. | Physical Performance Measures Taken During the Academic Year - Mean Time in Minutes . . | 98 |
| 39. | Physical Aptitude Test. . . . . | 99 |
| 40. | Women's Intercollegiate Teams . . . . . | 102 |
| 41. | Support for Women's Intercollegiate Athletic Programs . . . . . | 104 |
| 42. | Cummulative Gross Attrition Rates of Male and Female Cadets Classes of '80, '81, and '82 July 1978-May 1979 . . . . . | 106 |
| 43. | Factors Discriminating Attritees Versus Stayers For Men and Women in the Class of 1980. . . . . | 108 |
| 44. | Leadership Ratings For Women by Class . . . . | 111 |
| 45. | Means, Standard Deviations, and Correlations of All Predictors with Measures of Leadership Ability . . . . . | 113 |

TABLE Page


46. Training Committee Chief Evaluations of Military Skills For Men and Women . . . . . 121

47. Training Results - Cadet Field Training Recondo Performance . . . . . 126

48. Recondo 1978 Administrative Data . . . . . 127

49. Recondo Patch Data . . . . . 129

50. Department of Physical Education, (DPE), Run Fallouts CFT, 10 July-18 August 1978. . 131

51. Injury/Illness Rate. . . . . 133

52. Independent Variables: Cadet Company, Training Detail, and Leader Sex . . . . . 136

53. Hierarchial Analysis of Variance, ANOVA),: Criterion Consideration . . . . . 138

54. Multiple Classification Analysis . . . . . 139

55. Nine Personality Measures of Male and Female Leaders. . . . . 142

56. Simple Regression Results Using Nine Personality Characteristics to Predict Group Performance . . . . . 143

57. Correlations of Leader's Intelligence With Performance on the Structured Task . . 146

58. Cadet Participation in Cadet Troop Leader Training by Location by Branch. . . . . 153

59. Cadet Troop Leader Training Counseling Form Results. . . . . 155

60. Cadet Troop Leader Training Satisfaction For Men and Women in the Class of 1980. . . 158

61. Drill Cadet Program Locations. . . . . 162

| TABLE | | Page |
|---|---|---|
| 62. | Army Physical Fitness Test Minimums for Airborne School . . . . . | 164 |
| 63. | Summary of Female and Male Cadet Military Specialty Training, (CMST), Performance . . | 168 |
| 64. | Cadet CMST Percent Graduated Summary . . . . | 169 |
| 65. | Survey of Male and Female Cadet Opinions about Dating . . . . . | 175 |
| 66. | Survey of Male and Female Cadet Opinions about Fraternization. . . . . | 183 |
| 67. | Questions on Sex Sponsored by the American Council on Education. . . . . | 188 |

## LIST OF ILLUSTRATIONS


| FIGURE | | Page |
|---|---|---|
| 1. | Oath Ceremony . . . . . | 8 |
| 2. | In Processing . . . . . | 13 |
| 3. | Physical Training Performance in CBT. . . . . | 56 |
| 4. | Military Training in CBT. . . . . | 67 |
| 5. | The Academic Classroom. . . . . | 86 |
| 6. | Physical Training During the Academic Year. . | 94 |
| 7. | Women's Sports. . . . . | 101 |
| 8. | Military Training in Cadet Field Training . . | 118 |
| 9. | The Third Class Armor Training. . . . . | 120 |
| 10. | The Recondo Training In Cadet Field Training. | 123 |
| 11. | Women In Leadership During Cadet Field Training . . . . . | 135 |
| 12. | Social Relationships. . . . . | 173 |

Page

APPENDICES. . . . . 207

Appendix A . . . . . 207
Appendix B . . . . . 210
Appendix C . . . . . 213
Appendix D . . . . . 216
Appendix E . . . . . 219

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ABSTRACT

Report on the Admission of Women to the U.S. Military Academy - Project Athena III

This monograph provides a comprehensive summary of the significant actions taken from the period May 1978 to May 1979 to integrate women into the Corps of Cadets at West Point. The monograph contains six major areas divided as chapters. The first chapter consists of a discussion about the admission of new cadets. Chapter two describes the first summer training. Chapter three includes a discussion of activities during the academic year. Chapter four highlights the second summer training experiences. Chapter five presents results of the third summer training, and chapter six describes ongoing programs, unresolved issues, and future problems. The monograph concludes that women are being effectively assimilated into the Corps of Cadets and that they are receiving the training and development which should help them succeed as future officers.

# EXECUTIVE SUMMARY

The study of the performance of women as cadets at West Point was formalized in 1975. The program, entitled Project Athena, is a longitudinal research project designed to assess how well women are being integrated into the Corps of Cadets, and to study how well women are being trained to succeed as officers after graduation. Although the study began with the Class of 1980, each subsequent class with women is also being studied to allow comparisons, over time, within and between classes going through the same eduactional and training experiences.

Data for this monograph have been derived from surveys, interviews, quasi-experiments, direct observations, and archival records. This report analyzes the third year of coeducation covering the period May 1978 thru May 1979. The following is a brief summary of the findings.

A comparison of the Classes of 1980, 1981, and 1982 reveal that the entrance characteristics for female and male cadets are very similar. The Whole Candidate Score comparisons indicate that admissions standards have not been lowered at West Point merely to accommodate the admission of women. A review of the personality variables collected at entrance suggests no discernable pattern of differences due to gender.

Although attitudes toward womens' roles in society and in the military are more traditional for men than for women, each incoming class of males is less traditional than the previous class.

Except for adjustments necessitated for physical strength differences, women experienced the same training as men in Cadet Basic Training. Women continue to fall out of the runs in greater numbers than do the men in Cadet Basic Training. Women who do not perform well on physical performance measures typically receive lower ratings in leadership by the men. Both male and female cadets who have scored high on measures of Academy commitment, appear to adjust well. Except for women in the Class of 1980, male and female cadets experience similar levels of psychological stress during Cadet Basic Training. Attrition in the Class of 1980 shows a higher resignation rate for women than men at the end of Cadet Basic Training. Women from all of the classes continue to state that their reasons for resigning are similar to those given by the men.

During the academic year, women do slightly better in Humanities, Social Sciences, and Behavioral Sciences courses. The men's performance is better in Military Science and some applied science courses. The physical training program was changed for plebe year women based upon empirical reports

documenting clear physiological performance differences. In leadership, there appears to be a continuing relationship between physical performance and leadership ratings for women. The attrition rate for women is higher than for men in each class. However, the difference between the rates for the Classes of 1981 and 1982 is not as great as the attrition noted for the Class of 1980.

During Cadet Field Training, women performed the same training tasks as did the men. However, there still remains a pronounced difference between men and women in physical training performance. Generally women perform less well.

Women on Cadet Troop Leader Training performed similar duties as did the men. However, women were not assigned to branch duties in Infantry, Armor, or Air Defense Artillery. The match between women's expectations and experiences in Cadet Troop Leader Training was lower than the match for men. Nevertheless, an overwhelming majority of men and women valued the experience as positive.

Social relationships between women and men continue to grow. Women have more liberal opinions about dating than do the men. Since the arrival of women, policies regarding fraternization have been revised. Some issues affecting women after graduation are beyond the full control of officials at West Point. Women are concerned about branch choices and dual-career opportunities.

In conclusion, with the admission of women in the Class of 1983 this summer, the integration of women into each class of the Corps of Cadets is complete. Progress is being made toward the goal of the full assimilation of women.

## Introduction

This monograph describes the results of the third year of coeducation at West Point. It serves as a compendium of the more significant actions taken from the period July 1978 through May 1979 to promote the full assimilation of women into the Corps of Cadets. This publication will focus especially on a summary of research studies and educative program activities which support the integration process. A longitudinal perspective is gained by viewing each class - 1980, 1981, and 1982 - by comparing similar characteristics and experiences each class has encountered over time. The report is also cross-sectional because it describes the Class of 1980 at a point in time, the third year, as the women in the class continue to expand into new roles and experiences.

The monograph which follows contains six major areas divided into chapters. The first chapter consists of a discussion about the admission of new cadets. The second chapter will describe the cadet basic training program and the adjustments the Academy has made since the integration of women as cadets began. The third chapter will include a discussion of Academy life during the academic year. Chapter four will present the results of research regarding the training

at Cadet Field Training at Camp Buckner. In chapter five, a discussion of the Cadet Troop Leader Training and Drill Cadet Training experiences will be highlighted. Finally, chapter six will conclude with unresolved issues and future problems facing women after graduation.

## Background

Project Athena is a longitudinal program which was initiated as a result of the Department of the Army Study Group recommendation #135a, "Establish a continuing comprehensive study of the performance of women as cadets and subsequent to graduation." An informal program of study of women as future cadets and their potential impact on the Military Academy was initiated by the Office of Institutional Research in 1974. The program was formalized in 1975 under the title of Project Athena. The project was co-directed by Dr. Nora Kinzer from the Army Research Institute and Major Alan Vitters from the Office of Military Leadership. The Dean of the Academic Board at West Point created a research position which was filled by Major Vitters from academic year 1976-1977 through academic year 1977-1978. In March 1978, the Dean approved an extension of a research position from June 1978 through June 1980. Two new co-directors, Dr. Jack M. Hicks from the Army Research Institute and

Major Jerome Adams from the Department of Behavioral Sciences and Leadership, replaced Dr. Kinzer and Major Vitters in June 1978.

Current Program Objectives

Two global objectives of the first two years of the research were:

(1) To prepare for the actual integration of the Corps of Cadets by studying what impact the Academy as an institution was having on women entering in the Class of 1980 and

(2) To analyze the effect on the Academy of admitting individual female cadets (Vitters and Kinzer, 1977).

With the admission of the Class of 1983 in the summer of 1979, integration of women into each class of the Corps will be complete. However, the full assimilation of women within the Corps of Cadets is still a formative process. Thus, the two current major objectives of Project Athena are:

(1) To systematically evaluate the assimilation of women into all phases of academy cadet life and

(2) To analyze the performance of women graduates starting with the Class of 1980.

In support of the current major objectives, several research activities are being conducted. All of the

activities are intended to support the longitudinal design of studying the Class of 1980 throughout the four years of training and development as well as to systematically analyze the same research issues for each subsequent class. The intent is to provide decision makers at the United States Military Academy with multiple measures of the problems studied so that recommendations and subsequent decisions will be made based upon sound, scholarly research. It is also intended, where practical, to identify issues before they become major concerns, thereby allowing the decision makers at West Point to plan preventive actions rather than remedial procedures.

Some of the specific activities under current investigation are:

(1) Personality characteristics:

(a) Are there personality variables which are different for male and female cadets?

(b) Are personality variables good predictors of male and female cadets' motives to achieve success?

(c) Are personality variables good indicators of how well men versus women will adjust to the rigors and stress of Academy life?

(2) Attitudes:

(a) What are male cadets' attitudes toward women's roles?

(b) Have attitudes changed as a result of specific educative programs?

(c) Is there a correlation between attitudes toward women's roles and acceptance of women as cadets?

(3) Leadership:

(a) Are there differences between men and women cadet leaders?

(b) Are there perceptions of differences by the subordinate members when the followers have male versus female leaders?

(c) Are there personality factors of the leader and of the group followers which moderate leadership performance?

(d) Are male and female cadets' leadership evaluations similar?

(4) Individual performance:

(a) Do male and female cadets perform equally well in summer training?

(b) Do male and female cadets perform equally well in the academic setting?

(5) Social relationships:

(a) Has coeducation caused special problems in dating between male and female cadets?

(b) Have issues of fraternization impacted on the effectiveness of the Chain of Command since women have arrived?

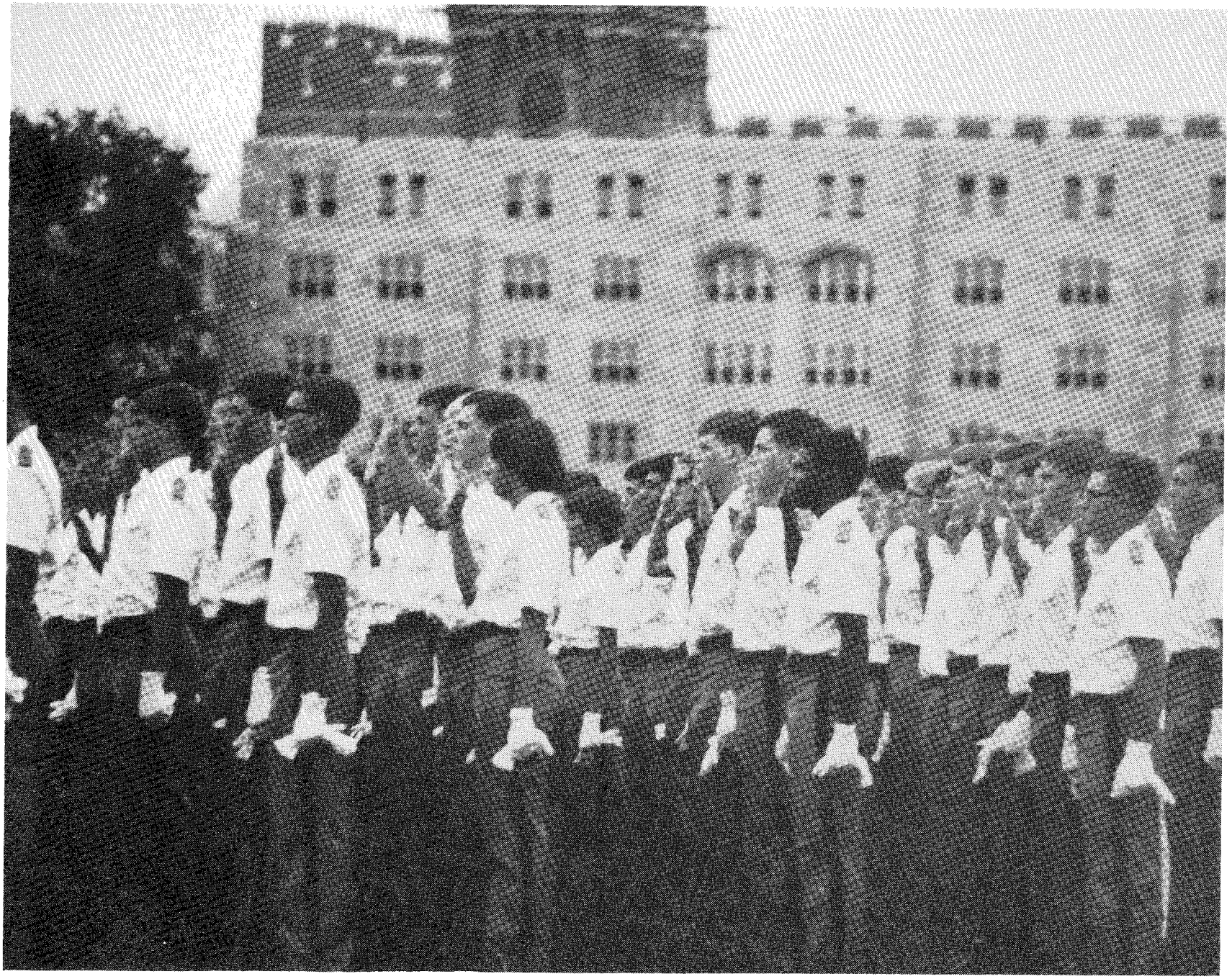
(6) Institutional long term planning:

(a) How have senior academy policy planners been active in developing a systematic program to overcome sexism within the Corps of Cadets?

(b) How have senior academy officials been interacting with Department of the Army on issues affecting male and female cadets after graduation?

The remainder of this document will bring together the results of several research projects conducted during academic year 1978-1979 in an attempt to provide some answers to many of the questions just raised. The descriptive comparison of each class' performance during the previous summer will be highlighted. The physiological and psychological class characteristics will be displayed. The intent is not primarily to make any class comparisons, per se. Rather, the comparisons will be three separate illustrations of the same factor over time. Thus, a time series comparison will help to interpret trend developments within the areas of interest for West Point decision makers. The report will also extend beyond the descriptive format of previous reports. That is, causal and moderating

relationships among the variables being studied will begin to be clarified so that decision makers can more fully understand the patterns and influences of the factors being studied.



## Chapter 1

## ADMISSION

The main questions addressed in this chapter on admission are: (1) What is the applicant profile by Class? (2) What are the entrance characteristics of each incoming class since the admission of women as cadets? (3) Have the admissions standards been lowered at West Point to accommodate the admission of women? (4) What sociological differences exist between male and female cadets and the general college student population on life style preferences? (5) Are there personality variables which differentiate between the new male and female cadets and (6) What are male cadets' attitudes toward women's roles?

### Applicant Profile

The Office of Admissions has carefully monitored the number of applicants applying to West Point since the first admission of women in 1976. The applicant profile for each class with women is given at Table 1. The data describe the number of applicant files started, the number nominated and examined, the number qualified, and lastly, the number admitted. The data illustrate that there has been a small but steady decline in the past three years in the total applicant files started. The decrease is primarily a reflection of a decline in the smaller number of male applicants. Perhaps

Table 1

Applicant Profile by Year

| | Men | Women | Totals | % | |
|---|---|---|---|---|---|
| | | | | M | F |
| Applicant Files started: | | | | | |
| 1976 - Cl of '80 | 11,358 | 867 | 12,225 | 93 | 7 |
| 1977 - Cl of '81 | 9,868 | 828 | 10,696 | 92 | 8 |
| 1978 - Cl of '82 | 9,381 | 876 | 10,257 | 91 | 9 |
| Nominated and Examined: | | | | | |
| 1976 | 6,130 | 631 | 6,761 | 91 | 9 |
| 1977 | 5,616 | 534 | 6,150 | 91 | 9 |
| 1978 | 5,295 | 525 | 5,820 | 91 | 9 |
| Qualified: | | | | | |
| 1976 | 2,474 | 176 | 2,650 | 93 | 7 |
| 1977 | 2,433 | 152 | 2,585 | 94 | 6 |
| 1978 | 2,381 | 197 | 2,578 | 92 | 8 |
| Offered Admission: | | | | | |
| 1978 | 1,818 | 172 | 1,990 | 91 | 9 |
| Enrolled: | | | | | |
| 1976 | 1,366 | 119 | 1,485 | 92 | 8 |
| 1977 | 1,367 | 104 | 1,471 | 93 | 7 |
| 1978 | 1,271 | 125 | 1,396 | 91 | 9 |

Source: U.S.M.A., Office of Admissions

the most interesting group of statistics is that which indicate the percentage of women admitted into each class. In 1976, 8% of the Class of 1980 were women. In 1977 only 7.1% of the entering Class of 1981 were women. In 1978 9% of the Class of 1982 were women. Whereas the 125 women admitted in 1978 represents the largest group to date, the numbers are short of the Academy's desired goal of 10%. A recently published concept paper entitled "Study of the Integrated Services of Men and Women Within the Corps of Cadets" approved by the Superintendent summarizes West Point's policy on admitting women as follows:

> "The Military Academy has no rigid quotas for numbers of women to be admitted or graduated. For the entering Classes of 1980, 1981, and 1982 the U.S. Military Academy has tried to admit ten percent of a class with women. This in keeping with general policy guidelines which DCSPER, DA, uses for planning future women officer accessions. Whereas no quota or ceiling is being sought or imposed, Army planners do forecast a need for at least ten percent of the officer corps being women."

Starting with the Class of 1984, the goal for women has been increased to 15%. The rationale for this increase is due in part to the high attrition of women in coeducational classes. It is important to note that the number of males admitted to a given class is not fixed. Also, women candidates are not being accepted merely because they are women. Rather, the problem arises because there have not

been sufficient qualified women candidates who are interested in pursuing a military career. Thus, the Academy has not been able to attract enough women who would ultimately go on to graduate and fill the ten percent accession requirements which Army needs forecast. The situation is more tenuous when voluntary attrition reduces the relatively small base of women admitted. In sum, the Academy faces two issues: (1) to seek new resource pools for women candidates heretofore untapped and (2) to examine more closely the reasons why women cadets resign. If cadets voluntarily resign because they do not believe that the military is what they truly want, it is a healthy decision for the individual and the institution. If, however, cadets leave because they feel they are not accepted, then strong negative sanctions must be enforced to discourage this from happening.* More will be said about the latter issue in Chapter 6.

*Cadets who choose to resign are given an exit interview questionnaire to elicit the major reasons why the cadets chose to leave West Point. There is a growing concern among counselors conducting exit interviews that the reasons many cadets give on the questionnaires mask their true feelings. Thus, a mail-out survey has been sent to all female resignees to determine if the reasons they gave were how they actually felt or what they thought they needed to say in order to facilitate their outprocessing. The results of this mail-out will be available by early 1980.

Entrance Characteristics

The entrance characteristics broken down by sex for the Classes of '80, '81, and '82 are given at Table 2. A legend of the standardized abbreviation codes is provided at Table 3. In essence, when a candidate applies for admission three criteria are applied: (1) academic potential of performance, (2) physical development potential, and (3) leadership potential. The quantified representation of these three areas is reflected in the Whole Candidate Score, (two other criteria not discussed also affect the final admission: a nomination and successfully passing a physical health examination).

In terms of Whole Candidate Scores, the averages for men in the Classes of '80, '81, and '82 are relatively similar. With the exception of the Class of 1981, the average Whole Candidate Score for admission for men was around 5,960. The slight decline for men in the Class of 1981 is probably attributable to the lower CEER. CEER, College Entrance Examination Board, is a combination of college board scores and high school class standing. For women, the Whole Candidate Score has been similar to that of the men - 5,950+ excepting the Class of 1980. The women in the Class of 1980 used the exact same PAE, Physical Apptitude Examination, as the men. That component score accounted for

Table 2

Entrance Characteristics By Sex
Classes of '80, '81 and '82

| | | Men | | | Women | | |
|---|---|---|---|---|---|---|---|
| | | '80 | '81 | '82 | '80 | '81 | '82 |
| WCS | N | 1381 | 1365 | 1269 | 119 | 104 | 125 |
| | Mean | 5960.8 | 5925.6 | 5959.89 | 5761.6 | 5950.4 | 5958.2 |
| LPS | N | 1381 | 1365 | 1269 | 119 | 104 | 125 |
| | Mean | 606.7 | 607.1 | 602.4 | 594.9 | 594 | 596.8 |
| PAE[1] | N | 1377 | 1361 | 1268 | 119 | 104 | 125 |
| | Mean | 555.7 | 562.8 | 560 | 278.2* | 517.4 | 516.7 |
| ACEER | N | 349 | 348 | 371 | 30 | 19 | 43 |
| | Mean | 595.5 | 588.9 | 592.8 | 606.4 | 605. | 590.6 |
| CEER | N | 1033 | 1017 | 898 | 80 | 85 | 82 |
| | Mean | 598 | 590.8 | 601 | 621.4 | 608.8 | 618.15 |
| SAT-V | N | 1033 | 1017 | 898 | 80 | 85 | 82 |
| | Mean | 548.8 | 546.5 | 558.4 | 569.3 | 562.2 | 577.3 |
| SAT-M | N | 1033 | 1017 | 898 | 80 | 85 | 82 |
| | Mean | 639.2 | 629.6 | 639.2 | 626.5 | 620 | 613.3 |
| ACT-EN | N | 349 | 348 | 371 | 39 | 19 | 43 |
| | Mean | 22.5 | 22.3 | 23.2 | 23.7 | 23.8 | 24.11 |
| ACT-MA | N | 349 | 348 | 371 | 39 | 19 | 43 |
| | Mean | 28.8 | 28.4 | 29.1 | 27.9 | 28.2 | 27.9 |

[1]Both men and women must score a minimum of 450 points on the PAE.

*Women in the Class of 1980 were evaluated using the physical standards of the men's scale.

Source: Office of Institutional Research, U.S.M.A.

Table 3

Legend for "Entrance Characteristics By Sex"

| | |
|---|---|
| WCS | Whole Candidate Score, a weighted composite score of the CEER (or ACEER), LPS and PAE. |
| LPS | Leadership Potential Score. |
| PAE | Physical Aptitude Examination. |
| ACEER | A weighted composite score of three ACT tests and a standardized High School Rank score. |
| CEER | A weighted composite score of two College Entrance Examination Board tests and a standardized High School Rank score. |
| SAT-V | Scholastic Aptitude Test - Verbal. |
| SAT-M | Scholastic Aptitude Test - Mathematics. |
| ACT-EN | American College Test - English. |
| ACT-MA | American College Test - Mathematics. |

Source: Office of Institutional Research, U.S.M.A.

the difference in the average Whole Candidate Scores for women falling below 5,900. In summary, the average Whole Candidate Scores for male and female candidates have been similar for each class with the exceptions noted.

Admissions Standards

The admissions standards have not been lowered at West Point to accommodate women as cadets. A close inspection of the characteristics which comprise the Whole Candidate Score support this claim. The average LPS, Leadership Potential Score, for men and women is quite similar. This finding is important because in most high schools, women do not have the same opportunities in individual and team athletic sanctioned sports programs as do men. Thus, competitive points awarded to male candidates for letters earned for football, hockey, lacrosse, golf, etc. are typically not available for women. Female candidate scores do reflect a very high degree of excellence in those areas in which they are eligible to be awarded leadership points.

The marked difference in Physical Aptitude for the women in the Class of 1980 could suggest a lowering of PAE standards. Women in the Class of 1980 were evaluated using the physical standards of the men's scale. Based upon research published by Project 60 (Peterson and Kowal, 1976); Project Summertime (Stauffer 1976); and a policy memorandum by Brigadier General

Ulmer, then Commandant of Cadets, on the doctrine of equivalent training, the grading of the Physical Aptitude Examination was modified for female candidates for Classes '81, and '82. The grading scale for men on the Physical Aptitude Examination is based on all men tested during the past ten year period. The scale for women is based on the scores obtained by the admitted women for the Classes of 1980 and 1981. Both scales cover the same range of total points (200 - 800). Common test events for men and women include the Modified Basketball Throw, Standing Long Jump and the 300 yard Shuttle Run. The Flexed Army Hang was substituted for the Pull Ups.

The academic preparation of the male and female candidates is quite similar. Women score, on the average, slightly higher on the verbal portion of the Scholastic Aptitude Test. In general men score slightly higher on the mathematics portion of the Scholastic Aptitude Test. A discussion of actual class performance will be provided later in Chapter 3. Because the CEER, College Entrance Examination Boards, include a standardized high school rank score with the composite of the CEER scores, women on average have higher overall high school class rankings than the men. In sum, the calibre of female candidate is as

high as the men when comparing Whole Candidate criteria. The modification in PAE scores is a conscious decision based upon empirical research on selected anthropometric physical performance measures.

Life Style Preferences

One of the still unresolved issues to be addressed in Chapter 6 is the problems of managing dual careers among couples. One baseline measure of the sociological differences between newly admitted male and female cadets and their dual career choices is their value of life style preferences. Table 4 lists the choices taken two to three days after admission for cadets in terms of marriage, children, and careers. The results of a Gallup Poll of other college women are listed on the far right column for comparison. Overwhelmingly 84% or greater of the men in each class prefer marriage and a full-time job. These statistics are not surprising. The career pattern for male officers does not inhibit this preference.

For women, more than 40% in each class at entrance prefer marriage, children, and a full-time job. If we combine the first two choices, more than 70% of the women prefer at least marriage and a full-time job. Less than 15% of the female cadets at entrance prefer to be single and have a full-time job. These statistics are surprising-- women are saying that they want both marriage and careers, not one or the other.

Table 4

Life Style Preferences*
Classes of '80, '81 and '82

| Choice | MEN '80 | MEN '81 | MEN '82 | WOMEN '80 | WOMEN '81 | WOMEN '82 | Gallup Poll (Women only) |
|---|---|---|---|---|---|---|---|
| Married, children, full-time job | 74 | 79 | 77 | 46 | 47 | 42 | 45 |
| Married, no children, full-time job | 10 | 12 | 12 | 25 | 26 | 35 | 8 |
| Married, children, no full-time job | 3 | 2 | 3 | 11 | 14 | 11 | 31 |
| Married, no children no full-time job | 1 | 1 | 1 | 2 | 0 | 2 | 1 |
| Single, full-time job | 10 | 6 | 6 | 14 | 14 | 11 | 15 |

*Preferences are stated in percentages.

**Due to non-response codes a few percentages do not total 100%.

Source: Office of Institutional Research, U.S.M.A.

There are fewer than 15% of the women who at entrance want to combine marriage, children, and no full-time job. However, one cannot directly question the motivational intent and commitment based solely on these responses. An analysis of the reasons for attrition, to be discussed fully later, does not identify resignation because of marriage as a major factor for women.

In sum, a majority of men and women at entrance prefer both marriage and career. The problem becomes pronounced when we view the dilemma of women. For example, if a woman at graduation marries a male officer, unique problems of branch and assignment choices emerge from this relationship. Current Army policies do not guarantee accompanied dual assignments throughout a career. The situation would be worse if the military couple were separated by two or more year groups because career developmental assignements would be less compatible. Finally, marriage between a female officer and a working, non-military spouse would exacerbate problems still further. Conclusions and recommendations around this dual career issue will be treated more fully in Chapter 6. Nevertheless, at admission women and men prefer both marriage and careers.

Personality Variables

To address the question of whether there are personality variables which are different for males and females entering as new cadets, Academy officials authorized the collection and storage of a large data base of trait-based and sex-role related personality variables. Since little research has been conducted which examines the traits of women with respect to their abilities to succeed in non-traditional roles, the basic strategy at West Point has been to systematically collect data on each class. Starting with the Class of 1980, measures of psychological differences between male and female cadets have been collected during the first week that the cadets arrive. The research at West Point has been concerned with studying cadet motives and self concepts to better predict how well they will adjust later to Academy life.

There is a growing body of research on psychological measures of femininity and masculinity. One frequently cited instrument is the Personal Attributes Questionnaire, PAQ. A copy of the instrument is listed at Appendix A, The PAQ has been used to study how men and women describe themselves on a four-fold category system: hi masculine only, hi feminine only, hi masculine and hi feminine (androgynous), or low masculine and low feminine (undifferentiated). Spence and Helmreich, who developed the PAQ,

have reported that there is some misunderstanding of the terms psychological masculinity and psychological femininity. Spence and Helmreich use the term masculinity to refer to agentic attributes like competitiveness, independence, roughness, etc. which have been more typically ascribed to men in American society. The term femininity is used to identify attributes such as warmth, expressiveness, kindness, gentleness, and the ability to devote oneself to others. These attributes have been used more typically to describe women in our society.

Research by Broverman et al., (1972), suggests that masculine or feminine sex-role stereotypes can possibly have a negative effect on personal self-concept and self-esteem. Officers at West Point are concerned that women, as a group, may hold more of a negative opinion of their own worth relative to men. Such a condition might in turn lead to low levels of achievement-oriented behavior necessary for successful adaptation into Academy life.

In order to investigate this premise, the PAQ scores taken at entrance were correlated with three other personality variables: (1) the Tennessee Self Concept Scale (Fitts, 1965), (2) the Rotter scale of internal versus external directed locus of control of reinforcement (Rotter, 1966), and (3) a measure of Physcial Aptitude Examination.

Table 5

Correlations Between the
Tennessee Self Concept Scale and the PAQ

| Self-Concept | PAQ Scale | | | |
|---|---|---|---|---|
| | Masculinity | | Femininity | |
| | M | F | M | F |
| N | 1196 | 106 | 1196 | 106 |
| Physical | .48*** | .54*** | .20*** | .18* |
| Moral | .29*** | .35*** | .18*** | .26** |
| Family | .24*** | .40*** | .17*** | .19* |
| Social | .45*** | .48*** | .39*** | .38*** |

***p <.001
**p <.01
*p <.05

All measurements were taken at entrance, in 1976.

Source: Dr. Priest, Office of Institutional Research, U.S.M.A.

The Tennessee Self Concept Scale was chosen because it measures personal self-concept on four dimensions: physical self-concept, moral self-concept, family self-concept, and social self-concept. Although the exact nature of the relationship between self-concept and sex-role attributes is not clear, it is possible that negative self-concepts linked with high feminine sex-role attributes may hinder achievement-oriented behavior.

The correlation between the masculinity and femininity scales and those of the Tennessee Self Concept Scale are given at Table 5. Looking at the results, the physical self-concept correlates .28 more highly with psychological masculinity than it does for psychological femininity for both men and women. What this means is that both men and women give self-attributions of psychological masculinity; they have higher physical self-concept. Those new male and female cadets who describe themselves as more feminine (empathetic, helpful, understanding, kind, aware of feelings of others) do not have as high a physical self-concept. The implications of this strength of relationship will be discussed more fully in Chapter 2, when PAQ is used as a variable to predict performance and adjustment in Cadet Basic Training. A more detailed description of

research using the PAQ is reported elsewhere (Priest, Prince, and Adams, 1979). Also, the notion of physical self-concept will be discussed in relation to differential ratings of leadership ability of male and female cadets in Chapter 3.

The moral self-concept, family self-concept, and social self-concept are all highly correlated with psychological masculinity for both men and women. In sum, the new cadet entering West Point appears to have a higher self-attribution of psychological masculinity and self concept. In a follow-up administration of the PAQ, Priest and Prince (1979) report:

> ". . . no changes in masculinity of self-attributions for either gender, although men became significantly less feminine in self attribution. This means that men were less likely to describe themselves as warm, understanding of others, helpful, gentle, devoted to others, kind, aware of the feelings of others --after a year of West Point training. The change seems to indicate a decrease in traits that might be valuable traits for a leader to have in certain kinds of situations ....
>
> For the women cadets, the results show that exposure to the masculine environment of West Point did not adversely affect the feminine side of their self-concept (warm, etc.), while maintaining or slightly increasing the masculine (competitive, etc.) aspects."

The internal versus external locus of control scale, developed by Rotter, has been used to explain individual differences in approach behavior in ambiguous or threatening situations. Rotter explains that the effects of rewards and punishments (reinforcers) may be viewed as either outside of the control of the person (external locus of control) or the result of the behavior of the person (internal locus of control). The relationship between locus of control and the sex-role attributes of female and male cadets could provide some answers about which cadets are more likely to successfully adapt to the cadet environment. Table 6 provides the results of the relationship between the PAQ scores of masculinity and femininity with the inner directed and external directed locus of control for the Class of 1980. The results show that men and women who score high on masculinity also perceive more inner directed control of reinforcements in the cadet environment. Cadets who score higher on the femininity sex-role attributes perceive more external directed control by their environment. Although no measure of internal/external locus of control was given to the Class of 1981, a shorter version of the Rotter scale developed for the National Longitudinal Study of High School Seniors (Tabler, 1977) was given to the Class of 1982 at entrance. The correlations

Table 6

Correlations Between Internal
Locus of Control and the PAQ

| | | Number | Masculinity | Femininity |
|---|---|---|---|---|
| Rotter[a] IE | Males | 1,278 | -.18** | -.09** |
| | Females | 114 | -.29** | -.17* |
| National[b] Longitudinal Survey | Males | 1,244 | .32** | .02 |
| | Females | 125 | .21* | .07 |

**$p<.001$
*$p<.05$

[a]Given in 1976, high scores indicate external locus of control.

[b]Given in 1978, high scores indicate internal locus of control.

Source: Dr. Priest, Office of Institutional Research, U.S.M.A.

Table 7

Correlations Between
Physical Aptitude and the PAQ

| Class | | Number | Masculinity | Femininity |
|---|---|---|---|---|
| 1980 | Men | 1,275 | .16* | .08* |
| | Women | 114 | .23* | .04 |
| 1981 | Men | 1,360 | .15* | .08* |
| | Women | 102 | .10 | -.34* |
| 1982 | Men | 1,252 | .13* | .06* |
| | Women | 125 | .05 | .01 |

*$p<.05$

Source: Dr. Priest, Office of Institutional Research, U.S.M.A.

between psychological masculinity and internal locus of control are clearly higher than those associated with self-attributions of psychological femininity.

The strength of relationship between physical aptitude scores and measures of psychological masculinity and femininity for each class entering with women is given at Table 7. The results reveal the strongest correlation between masculinity and physical aptitude. In summary, the investigation of the sex-role measure of the Personal Attributes Questionnaire, PAQ, with other personality variables at entrance indicates that both male and female cadets with self-attributions of psychological masculinity (competitiveness, assertiveness, etc.) also have high self esteem, a positive physical self-concept, a positive personal self concept, and a strong sense of inner directed control- a sense of operating on the environment rather than being a victim of circumstances. In general, these results indicate similarities for men and women entering as new cadets. That is, there does not appear to be any gender specific pattern emerging from the personality variables studied thus far. These results underscore the importance of continuing to study cadet self-concepts and motives throughout the four-year education and training experience.

Motive to Achieve

Another set of personality variables analyzed for male and female cadets is their motive to achieve success. An extensive amount of literature has been developed exploring the validity and utility of the concept of achievement motivation (McClelland, 1951; McClelland, Atkinson, Clark, and Lowell, 1953; Atkinson, 1957; 1964). The related motive fear of success was popularized by Horner (1968). Since then, several researchers have reported studies which have shown that males and females differ in the activities in which they typically express their needs to achieve. Veroff and Feld (1970), report that highly educated women who are high in achievement needs feel restricted by marriage and make child rearing an achievement goal. Less educated women report that having children appears to satisfy achievement needs. Bronfenbrenner (1974), has emphasized that there is a confusion in many adolescents regarding life goals and their attainment. Confusion may be particularly noted in girls who have not seriously thought beyond becoming a wife and mother. Articulation of achievement needs as they have been typically conceived may be inhibited or impeded in girls who are oriented toward these domestic goals. Young men, however, quite uniformly face a normative expectation of vocational attainment.

Spence and Helmreich (1978), assumed that the nature of achievement motivation was essentially the same in both males and females. However, Spence and Helmreich also concluded that significant patterns of sex differences do exist between women and men based upon expectations about family planning, educational aspirations, and perceived psychological masculinity and femininity. Thus, they developed the Work and Family Orientation scale to measure achievement. The Work and Family Orientation Questionnaire contains a number of statements describing achievement related attitudes and behaviors. The statements fall into four categories of achievement motivation: Mastery-statements describing a preference for difficult, complex challenging tasks; Work-statements describing a desire to work hard and to keep busy; Competitiveness-statements concerning the desire to best others in interpersonal competition; and Personal Unconcern-statements describing concern about the negative reaction of others to one's achievement (Fear of Success). A copy of the 23-item scale is provided at Appendix B. Research was conducted at West Point to determine if the female and male cadets differed in their motives to achieve. A more detailed description of the methodology used in the research is reported elsewhere (Adams, Priest, Prince and Hicks, 1979; Adams, Priest, and Prince, 1979).

Because the Work and Family Questionnaire, WOFO, was administered only at one point in time to all classes of cadets, the researchers were sensitive to the criticism that class and sex differences might be a function of intervening factors (e.g. age, maturation, specific class characteristics, etc.). Fortunately, West Point has very good data on achievement as measured by the quantified whole candidate evaluation used to admit candidates as plebe cadets. The Leadership Potential Score, a weighted combination of faculty appraised scores on work and competitiveness, athletic achievement, and extra-curricular achievement is available on each admitted class. Table 8 shows the results for the Classes of 1980, 1981, and 1982 broken down by sex.

The Leadership Potential Score (LPS) has a range of 200 to 800. As the mean scores show, there are virtually no differences between females and males at entrance for each class. Although it is important to note that the separate components were not available to differentiate athletic achievement in competitive sports from achievement in other extra-curricular activities, overall, men and women have similar achievement levels at entrance as evidenced by these admissions screening criteria.

Table 8

Leadership Potential Score
of Candidates
Admitted to West Point
By Class And By Sex

| Class | Male | Female |
|---|---|---|
| 1980 | 607 | 601 |
| 1981 | 607 | 594 |
| 1982 | 602 | 597 |

Note: Mean LPS Scores Range 200-800 possible

SOURCE: Mr. J. W. Houston, Office of Institutional Research, USMA, West Point, NY

Source: Project Athena

Recall that Spence and Helmreich (1978) assumed that the nature of achievement motive was basically the same for men and women. However, they consider some differences in achievement scores to be moderated by education and career aspirations. Table 9 presents the comparison of mean scores in achievements for three groups by sex.

The results of Table 9 show that Ph.D. holding scientists had the highest scores for achievement for Mastery, Work, and Personal Unconcern. Scientists had the lowest mean scores for individual competitiveness. West Point cadets had the second highest mean scores for Mastery, Work, and Competitiveness. West Point males were also high on Personal Unconcern; female cadets were slightly lower than other college women on Personal Unconcern. Whereas it is not appropriate to assume that University of Texas college students are not high on the motive to achieve, it is a fair statement to conclude that the Ph.D. scientists and West Point cadets are more homogeneous groups in educational and career aspirations. Thus, without trying to infer causal relationships from these descriptive data, there are higher achievement factor mean scores for persons with high educational and career positions and persons with high educational and career aspirations on three dimensions.

Table 9

Comparison of Mean Scores
In Achievement Factors
By Sex - By Group

| | | Ph.D. Scientists | West Point Cadets | | U Texas College Students | | Max Score |
|---|---|---|---|---|---|---|---|
| | | Mean | Mean | SD | Mean | SD | |
| Mastery | M | 21.27 | 20.60 | 4.36 | 19.26 | 4.40 | 32 |
| | F | 24.24 | 21.40 | 4.08 | 18.04 | 4.60 | |
| Work | M | 20.73 | 20.91 | 3.05 | 19.80 | 3.03 | 24 |
| | F | 22.72 | 21.74 | 2.38 | 20.30 | 2.86 | |
| Competi- | M | 11.98 | 14.83 | 3.15 | 13.63 | 3.82 | 20 |
| tiveness | F | 10.76 | 14.50 | 3.27 | 12.20 | 3.79 | |
| Personal | M | 11.46 | 10.15 | 2.72 | 10.02 | 2.81 | 16 |
| Unconcern | F | 11.12 | 9.88 | 2.81 | 10.24 | 2.74 | |
| Sample | M | 125 | 3474 | | 606 | | |
| Sizes | F | 25 | 253 | | 849 | | |

Source: Project Athena

However, Ph.D. scientists were lowest on the competitiveness factor and West Point cadets the highest.

When the four achievement subscale scores of the WOFO scale were analyzed by class and by sex interesting results were found. Table 10 shows the results for the Mastery subcale. These results indicate that there were differences between classes. There were no differences due to sex. When the Personal Unconcern dimension was analyzed, Table 11, class differences were statistically significant. There was no statistically significant difference due to sex.

When the Competitiveness subscale was analyzed by class and by sex statistically significant differences appeared for both predictors. Table 12 shows the significant results. Although class year and gender were both significant, more variation was accounted for by class differences than sex as evidenced by the magnitude of difference .001 for class versus .01 for sex. Also Table 13 summarizes the difference within each class and between males and females. The plebe class appears the most competitive and there is an almost linear trend of less competitiveness for each class. Women as a group are also less competitive than men. A note of caution should be added that there were no differences in competitiveness at entrance (Table 8) yet the longer the cadets stay at West Point the less individually

Table 10

Analysis of Variance* Mastery Subscale
By Class-By Sex

| Source | Mean Square | F | Significance of F |
|---|---|---|---|
| Main Effects | 166.96 | 8.92 | 0.001 |
| Class | 182.14 | 9.73 | 0.001 |
| Sex | 67.53 | 3.61 | 0.06 |
| 2 Way Inter-Action Class-Sex | 15.61 | 0.83 | 0.43 |

*HIERARCHICAL approach (option 10) invokes the stepdown procedure. The sum of squares associated with the main effect of the first variable is not adjusted for any other variables. The sum of squares for the main effect for the second variable considered is adjusted only for the first variable and so on with each additional variable considered (see NIE et. al. 1970).

Source: Project Athena

Table 11

Anova
Personal Unconcern
By Class-By Sex

| Source | Mean Square | F | Significance of F |
|---|---|---|---|
| Main Effects | 24.78 | 3.39 | 0.009 |
| Class | 28.30 | 3.87 | 0.009 |
| Sex | 15.58 | 2.13 | 0.144 |
| 2 Way Inter-Action Class-Sex | 9.81 | 1.34 | 0.26 |

Source: Project Athena

Table 12

Anova Competitiveness Subscale
By Class-By Sex

| Source | Mean Square | F | Significance of F |
|---|---|---|---|
| Main Effects | 112.08 | 11.52 | 0.001 |
| Class | 139.44 | 14.33 | 0.001 |
| Sex | 58.94 | 6.06 | 0.014 |
| 2 Way Inter-Action Class-Sex | 0.92 | 0.09 | 0.910 |

Source: Project Athena

Table 13

Multiple Classification Analysis
Competitiveness
By Class - By Sex

| Variable & Category | | Unadjusted Dev'n Eta | Adjusted for Independent Variables Dev'n Eta |
|---|---|---|---|
| Class | N | | |
| 79 | 823 | -.36 | -.40 |
| 80 | 788 | -.11 | -.10 |
| 81 | 1010 | -.14 | -.13 |
| 82 | 1098 | .48 | .49 |
| | | .11 | .11 |
| Sex | | | |
| Male | 3467 | .02 | .03 |
| Female | 252 | -.33 | -.47 |
| | | .03 | .04 |

Source: Project Athena

competitive they describe themselves. Perhaps this is a manifestation of the cohesion and cooperation which occurs in training and development.

The results of the Work subscale dimension, given at Table 14, indicate that there are differences (main effects) between classes and between sexes. A further inspection of the differences is given at Table 15. Plebes show the highest motive to work hard and keep busy, with the linear difference becoming more negative across classes. Perhaps this is some testimony to the tremendous stress of the fourth class system. The data also show women's scores are higher on desire to work hard and keep busy.

Overall the data add support to the assumption that the motive to achieve is basically the same for men and women when they have similar educational and career aspirations. This is an important finding for the Academy which is committed as an institution to the full utilization of the integrated services of men and women. On two dimensions, Mastery and Personal Unconcern there are no sex differences between cadets with high educational and career aspirations. Although class differences were noted, there is a linear declining trend for the differences noted for Work and Competitiveness the longer cadets remain.

Table 14

Anova
Work
By Class-By Sex

| Source | Mean Square | F | Significance of F |
|---|---|---|---|
| Main Effects | 118.39 | 13.83 | 0.001 |
| Class | 107.33 | 12.54 | 0.001 |
| Sex | 98.54 | 11.51 | 0.001 |
| 2 Way Inter-Action Class-Sex | 11.91 | 1.39 | 0.25 |

Source: Project Athena

Table 15

Multiple Classification Analysis:
Work
By Class-By Sex

| Variable & Category | | Unadjusted Dev'n Eta | Adjusted for Independent Variables Dev'n Eta |
|---|---|---|---|
| Class | N | | |
| 79 | 823 | -.49 | -.45 |
| 80 | 788 | -.16 | -.17 |
| 81 | 1010 | .15 | .14 |
| 82 | 1098 | .35 | .33 |
| | | 0.11 | 0.09 |
| Sex | | | |
| Male | 3467 | -.05 | -.04 |
| Female | 252 | .75 | .61 |
| | | 0.07 | 0.06 |

Source: Project Athena

There are other personal attributes which account for differences in achievement motivation between men and women: family background, and self-attributions of masculinity and femininity. Research was conducted to examine the relationship between the achievement scales of Mastery, Personal Unconcern, Competitiveness, and Work with the Personal Attributes Questionnaire varying the sex of the respondent. The results are given at Table 16. As the table data show, there were statistically significant differences (main effects) for measures of psychological masculinity and femininity on all achievement dimensions. There were two significant main effects due to sex, one for Mastery and one for Work. There were no significant interaction effects of psychological masculinity and femininity by sex. The important finding is that the magnitude of the effects associated with psychological masculinity and femininity are clearly markedly higher than those associated with sex. These findings add further supportive evidence to the similarity of female and male cadets.

In summary, the personality variables examined support the notion that male and female cadets are more similar than different. On the self-attributions of psychological masculinity and femininity males did not describe themselves

Table 16

Analysis of Variance of Achievement Scales
by PAQ and by Sex for West Point Cadets

| | Mastery | | | Work | | |
|---|---|---|---|---|---|---|
| Source | MS | F | P | MS | F | P |
| PAQ | 2093.31 | 121.86 | .000 | 531.49 | 64.66 | .000 |
| SEX | 197.40 | 11.49 | .001 | 164.22 | 19.98 | .000 |
| PAQ x SEX | 13.04 | .76 | .52 | 12.09 | 1.47 | .22 |

| | Competitiveness | | | Personal Unconcern | | |
|---|---|---|---|---|---|---|
| Source | MS | F | P | MS | F | P |
| PAQ | 520.41 | 55.43 | .000 | 93.72 | 12.93 | .000 |
| SEX | 12.02 | 1.28 | .26 | 8.67 | 1.20 | .27 |
| PAQ x SEX | 23.88 | 2.54 | .06 | 15.35 | 2.12 | .10 |

Source: Project Athena

only as highly masculine, nor did women describe themselves as only highly feminine. Both females and males who adopted the masculine characteristics of independence, active, competitive, etc. were also positive on personality measures of inner directed control, positive self-esteem and positive self-concept. When women and men described their motives to achieve in terms of Mastery, Personal Unconcern, Competitiveness and Work, the strongest differences were found between class years not between sex. When PAQ was analyzed with achievement, strong differences again were due to psychologicalcal perceptions not to innate gender differences. Thus, the personality variables of both male and female cadets at entrance are quite similar.

Attitudes Toward Women's Roles

Prior to the arrival of women cadets of the Class of 1980, the decision was made to study sex role attitudes toward women using the Attitude Toward Women Scale (AWS) developed by Spence, Helmreich, and Stapp in 1973. The concern being examined was - whether persons with traditional attitudes toward women have an effect on the assimilation of women as cadets. The AWS is a 25 item measure of traditionalism in attitude toward women's rights and roles in society. Low scores represent traditional (conservative)

attitudes, high scores represent liberal (egalitarian) attitudes. A copy of the instrument is given at Appendix C. Dr. Priest, in the Office of Institutional Research, has been using this instrument to test the "contact hypothesis." That is, over time, all cadets will become more liberal and egalitarian as they are exposed to progress of female cadets.

In 1977 the Army Research Institute developed an instrument which measured sex-role attitudes toward women in the Army (ARIWS). The ARIWS is a seven item scale. A copy of the survey is given in Appendix D. Again negative scores indicate conservative attitudes, while positive scores may be interpreted as more egalitarian attitudes.

A comparison of the AWS scores for the Classes of 1980, 1981, and 1982 is illustrated at Table 17. The results indicate that the male plebes in the Class of 1982 appear to be more egalitarian toward women's sex-roles than male plebes in the previous two classes. The degree of difference between the males and females is showing a decline in statistical difference. Dr. Priest suggests that one possible explanation for the difference noted in the Class of 1982 is the visible presence of female cadets in leadership roles in the summer training, Cadet Basic Training.

Table 17

Comparison of AWS* Scores for Men and Women at Several Institutions

| Cadets: | '80 | '81 | '82 |
|---|---|---|---|
| Men | | | |
| $\bar{X}$ | 42.35 * | 42.56 * | 44.10* |
| SD | 9.93 | 10.05 | 10.15 |
| Women | | | |
| $\bar{X}$ | 57.29 * | 56.24 * | 56.38* |
| SD | 8.65 | 9.10 | 9.63 |
| t Test | 17.49 | 14.32 | 13.53 |
| Univ. of Texas | | | |
| Men - 1975 | | | |
| $\bar{X}$ | 47.16 | | |
| SD | 12.78 | | |
| Women - 1975 | | | |
| $\bar{X}$ | 53.16 | | |
| SD | 12.56 | | |
| U.S.M.A. - Faculty | | | |
| Men | | | |
| $\bar{X}$ | 48.83 | | |
| SD | 11.64 | | |

*$p<.001$

*The AWS (Attitudes Toward Women Scale) is a 25 item instrument designed to measure traditionalism (low scores) or egalitarianism (high scores) in attitude toward the rights and roles of women in society (Spence, Helmreich, and Stapp, 1973; Spence and Helmreich, 1972).

Source: Dr. Priest, Office of Institutional Research, U.S.M.A.

Table 18

Sex Role Attitudes of Cadets
and Army Personnel

| Cadets: | '80 | '81 | '82 |
|---|---|---|---|
| Men | | | |
| $\bar{X}$ | -2.32* | -1.08* | -0.95* |
| SD | 2.10 | 1.85 | 1.88 |
| N | 916 | 1,359 | 1,251 |
| Women | | | |
| $\bar{X}$ | 1.46* | 1.61* | 1.77* |
| SD | 2.03 | 1.93 | 1.73 |
| N | 75 | 102 | 125 |
| t Test | | 13.62 | 16.59 |
| Commissioned Army Officers[1] | | | |
| $\bar{X}$ | -0.07 | | |
| SD | 2.87 | | |
| N | 2,113 | | |

*p .001

[1] For the Army as a whole the mean test score was zero, in 1975. Thus, male cadets are still more negative when compared to active Army personnel.

Source: Office of Institutional Research, U.S.M.A.

A comparison of the ARIWS scores for the Classes of 1980, 1981, and 1982 is shown on Table 18. As one may expect given the AWS results, the plebes from the Class of 1982 have less traditional attitudes toward women in the Army than the previous years' men in Classes 1980 and 1981. Several factors may account for the observed changes over time. Dr. Priest offers the following possible explanations:

a. Men may become less traditional over time and with each incoming class. Perhaps men entering West Point accept the fact that women are in the Army and that there is a growing expansion of women in non-traditional roles.

b. It may also be possible that as men become more sophisticated as a result of the intellectual ardor of higher education men learn to express their negative views about women in non-traditional roles with more moderation. If this view is true, opposition to women in non-traditional roles has not changed fundamentally. Rather, the social desirability of expression may be operating. Males are making self reports of what they consider to be socially desirable answers rather than their true feelings.

The impact of educational programs discussed in Chapter 6 may also have an impact on cadet attitudes. In general, these results are encouraging and more evaluation of cadet attitudes with performance criteria will continue in the future.

Summary

The applicant profile by class shows a slight downward trend in the number of total candidates. Fewer males have applied for admission for each of the past three years. Female candidates still fall short of a desired objective of ten percent. The major reason for the shortfall appears to be the lack of qualified and interested female candidates applying for admission.

The entrance characteristics for female and male cadets are quite similar. Concomitantly, a closer inspection of each of the factors which make up the Whole Candidate Score, reveals that admission standards have not been lowered at West Point to accommodate the admission of women. Women have high Leadership Potential Scores, despite the lack of many team sports for which male candidates receive points. Physical Aptitude challenges women on the same events as men excepting the flex arm hang for pull-ups

and the comparison of women with previous women admitted. Men and women are intellectually similar on Scholastic Aptitude scores. Women, on average are slightly higher on the verbal component than men. The men are slightly higher on average on the mathematics component.

A review of the personality variables taken on new female and male cadets at entrance suggests no discernible pattern of differences are noted between classes more than between males and females. Men and women with similar education and career aspirations have similar motives to achieve success.

Attitudes toward women's roles in society and women's roles in the Army are more traditional for men than for women. However, an inspection of data taken at entrance for three classes shows a statistically significant positive change. This suggests that each incoming class of males is less traditional in its sex-role attitudes toward women's roles.

## Chapter 2

## CADET BASIC TRAINING

The main questions addressed in this chapter on Cadet Basic Training, are: (1) Do female and male cadets perform equally well in Cadet Basic Training? (2) What personality variables are good indicators of how well men versus women will adjust to Academy life? (3) What is the impact of stress on female cadets during Cadet Basic Training? (4) Are there similar factors which predict female and male cadet leadership evaluation ratings at the end of CBT? and (5) Are there different attrition rates for female and male cadets by the end of Cadet Basic Training?

### Male and Female Performance

In a recent "Report On the Integration of Women" in 1979, the Commandant of Cadets highlighted the performance of women in Cadet Basic Training as follows:

> Women in the Class of 1981 were better prepared for Cadet Basic Training than women in the Class of 1980. Women in the Class of 1982 were even better prepared than women in the Class of 1981. It appears that:
>
> The novelty of being one of the 'first women at West Point' has subsided, and female cadets are now committed to four years at the Academy and a commission in the Army.

> Admissions has painted a realistic portrait of what a woman can expect at West Point.
>
> The officer and cadet cadres of Cadet Basic Training have exercised a positive supportive leadership style during this critical eight-week period . . . .

Cadet Basic Training continues to focus on individual performance and development with special emphasis on physical fitness. Women performed alongside men in all phases of training. Minimal adjustments necessitated by the empirically documented strength differences allowed women to carry the lighter M-16 rifle during Bayonet training. Also, three running groups: the Black group constituting the fastest twenty-five percent of the class, the Gold group the next fastest, constituting fifty percent of the class, and the Grey group comprising the other twenty-five percent were introduced for the Class of 1982. There were six women cadets in the Black (fastest) running group.

Major Dillon, the director of training operations for Cadet Basic Training in 1978 states that, "The Class of 1982 participated in a more intensive PT program than in years past. The program included <u>more</u> PT sessions and the running pace was faster than in years past."

As with previous years, women tended to experience a greater difficulty in keeping pace in the runs than did their male peers. Table 19 illustrates the average weekly percent of male and female cadets reporting to reconditioning in lieu of the morning reveille exercise for the Classes of 1980, 1981, and 1982. As the data indicate, women had a higher fallout rate than men for each year. Moreoever, although the Commandant considered women in the Class of 1982 as better prepared for Cadet Basic Training, the more intensive PT program cited by Major Dillon no doubt contributed to the poorer performance of the women in the Class of 1982 when compared to the women in the Class of 1981.

Women in the Class of 1982 had a higher incidence of sick call visits than men. Table 20 provides a comparison for the Classes of 1980, and 1982. (There were no sick call reports maintained by sex for the Class of 1981 during Cadet Basic Training). The lessons learned from the stress fractures and the blister rubs that women in the Class of 1980 experienced were incorporated in the cadet cadre preparation training for the two subsequent classes. Thus, one reason for the lower sick call rate for women in the Class of 1982 was the

Table 19

Average Weekly Percent of Men and Women Cadets Reporting to Reconditioning in Lieu of Morning Reveille Exercise During CBT's '76, '77, and '78.

| Men | Wk #1 | Wk #2 | Wk #3 | Wk #4 | Wk #5 | Wk #6 | Wk #7 | Avg. Per Week |
|---|---|---|---|---|---|---|---|---|
| '80 | 3.4 | 4.3 | 4.0 | 5.4 | 5.0 | 5.5 | 5.6 | 4.7 |
| '81 | 2.8 | 4.3 | 4.2 | 3.1 | 5.0 | 4.6 | 3.4 | 3.9 |
| '82 | 2.9 | 2.6 | 4.1 | 5.0 | 4.5 | 5.7 | 4.6 | 4.2 |
| **Women** | | | | | | | | |
| '80 | 7.5 | 10.4 | 7.7 | 7.8 | 11.5 | 24.7 | 26.3 | 13.7 |
| '81 | 10.0 | 10.0 | 7.0 | 8.0 | 11.2 | 7.0 | 6.3 | 8.5 |
| '82 | 7.2 | 7.9 | 10.1 | 14.8 | 15.1 | 15.9 | 11.9 | 11.8 |

Source: Department of Physical Education, U.S.M.A.

Table 20

CBT Sick Call Visits
7 Jul - 26 Aug

| | 1976 | 1977 | 1978 |
|---|---|---|---|
| Men | 2,231 | | 2,453 |
| (Base strengths) | 1,300 | 1398 | 1,297 |
| Women | 744 | | 561 |
| (Base strengths) | 110 | 104 | 125 |
| Totals | 2,975 | 1,709* | 3,014 |

* For CBT 1977, the New Cadet Basic Training Morbidity Reports made no breakdowns by sex.

Source: Keller Army Hospital, U.S.M.A.

preventive attention squad leaders exercised for the welfare of their subordinates.

In summary, female and male cadets continued to receive the same training with the few modifications cited earlier. Overall, women's performances were comparable to those of the men during Cadet Basic Training. However, when training required physical strength, particularly upper body strength and running stamina, women experienced more difficulty than the men.

## Personality Variables as Indicators of Individual Adjustment

In an early report, Priest, Prince and Vitters (1977) described changes in male and female cadet self-concepts, attitudes, and motivation for the Class of 1980 at the end of Cadet Basic Training. They concluded that the results for the Class of 1980 seemed positive: an increase in a measure of academy graduation commitment, no decline in a measure of military career commitment, an increase in a measure of internal locus of control and an increase in a measure of positive self-concept.

In 1979, Priest and Prince report that repeated measures of academy graduation commitment, military career commitment, test anxiety, and masculinity/femininity were

given to the Class of 1980 at the end of one year at West Point. The results of their findings are summarized at Table 21. The results indicate that men in the Class of 1980, who had been higher in the measure of academy graduation commitment than women, decreased significantly after two years at West Point. The women in the Class of 1980 did not show a statistically significant decline for the same time period. Both women and men in the Class of 1980 decreased in their commitment to a career in the military. Dr. Priest notes that "students in other professions tend to show a similar decline in professional idealism over time..." Thus, these data should not be considered alarming.

On measures of test anxiety (Sarason, 1962), both female and male cadets report a reduction of anxiety in test-taking and related situations involving performance evaluation.

The data show no statistically significant changes in self-attributions for men and women on the psychological measure of masculinity. However, men provided a statistically significant decline in their self-attributions of femininity. This means that after one year at West Point male cadets were more likely to describe themselves more as active than passive, rough than gentle, not emotional

Table 21

Changes In Motivation and Self Concept
By Sex, Class of 1980, after One Year at West Point

| | | N | August 1976 | August 1977 | t |
|---|---|---|---|---|---|
| Academy Graduation Commitment | M | 803 | 60.14 | 55.24 | 9.52*** |
| | F | 62 | 59.62 | 56.29 | 2.06* |
| Military Career Commitment | M | 686 | 76.05 | 68.58 | 11.17*** |
| | F | 55 | 71.64 | 70.32 | .50 |
| Test Anxiety | M | 833 | 5.08 | 3.90 | 12.31*** |
| | F | 63 | 6.35 | 4.97 | 4.69** |
| Spence Short Form PAQ: | | | | | |
| Masculinity | - Males | 841 | 24.13 | 24.29 | -1.17 |
| | - Females | 63 | 22.09 | 22.84 | -1.82 |
| Femininity | - Males | 842 | 22.12 | 21.70 | 3.07** |
| | - Females | 63 | 23.16 | 23.06 | 0.26 |

***p .001
**p .01
*p .05

Source: Office of Institutional Research, U.S.M.A.

than emotional, etc. There was no statistical change for women on the measure of psychological femininity

In summary, there is no evidence that West Point training and experience is psychologically defeminizing for women in the Class of 1980. Perhaps even more should be said about this personality variable and individual adjustment. Measures of psychological femininity and cultural femininity are distinct. The former may refer to abstract concepts of motivations and personality. The latter more typically relates to appearance, hair style, clothing, use of perfume, and makeup. In their attempt to adjust as cadets, women in the Class of 1980 avoided traditional culturally feminine behavior, favoring trousers not skirts, no make-up and short hair styles. No doubt, if the women in the Class of 1980 had ascribed to more culturally feminine actions, the more they would have stood out as women and not as cadets.

Stress in Cadet Basic Training

The study of stress in Cadet Basic Training evolved from the planning for the admission of women into the Class of 1980. Senior officials at West Point were concerned about how women would react to the stress of

Cadet Basic Training. A longitudinal program of studying stress in Cadet Basic Training was initiated in 1976. A more detailed report of these findings is reported elsewhere, (Prince, Leister, and Deller, 1979). The study examined the psychological and physiological responses of new cadets to stress as well as identifying stressful events in the training environment. Prince, Leister, and Deller report that "a major source of psychological threat is rapid environmental change because it creates a demand for adjustment. Rapid change has been found to be closely related to both psychological and physiological stress responses."

Using the Holmes and Rahe (1970) Life Event Table shown at Table 22, Prince et. al., hypothesized that new cadets experience more than 300 impact units at the beginning of Cadet Basic Training. Table 23 shows the similarity of life change units. Moreover, the change which new cadets experience is exacerbated by major features of the training environment given at Table 24.

The Multiple Affective Adjective Checklist was used to measure Anxiety, Depression, and Hostility in cadets in the Classes of 1980, 1981, and 1982 at various times during their Cadet Basic Training.

Table 22

Life Event Table

| Rank | Life Event | Scale of Impact |
|---|---|---|
| 1 | Death of spouse | 100 |
| 2 | Divorce | 73 |
| 3 | Marital separation | 65 |
| 4 | Jail term | 63 |
| 5 | Death of close family member | 63 |
| 6 | Personal injury or illness | 53 |
| 7 | Marriage | 50 |
| 8 | Fired at work | 47 |
| 9 | Marital reconciliation | 45 |
| 10 | Retirement | 45 |
| 11 | Change in health of family member | 44 |
| 12 | Pregnancy | 40 |
| 13 | Sex difficulties | 39 |
| 14 | Gain of new family member | 39 |
| 15 | Business readjustment | 39 |
| 16 | Change in financial state | 38 |
| 17 | Death of close friend | 37 |
| 18 | Change to different line of work | 36 |
| 19 | Change in number of arguments with spouse | 35 |
| 20 | Mortgage over $10,000 | 31 |
| 21 | Foreclosure of mortgage or loan | 30 |
| 22 | Change in responsibilities at work | 29 |
| 23 | Son or daughter leaving home | 29 |
| 24 | Trouble with in-laws | 29 |
| 25 | Outstanding personal achievement | 28 |
| 26 | Wife begins or stops work | 26 |
| 27 | Begin or end school | 26 |
| 28 | Change in living conditions | 25 |
| 29 | Revision of personal habits | 24 |
| 30 | Trouble with boss | 23 |
| 31 | Change in work hours or conditions | 20 |
| 32 | Change in residence | 20 |
| 33 | Change in schools | 20 |
| 34 | Change in recreation | 19 |
| 35 | Change in church activities | 19 |
| 36 | Change in social activities | 18 |
| 37 | Mortgage or loan less than $10,000 | 17 |
| 38 | Change in sleeping habits | 16 |
| 39 | Change in number of family get-togethers | 15 |
| 40 | Change in eating habits | 15 |
| 41 | Vacation | 13 |
| 42 | Christmas | 12 |
| 43 | Minor violations of the law | 11 |

SOURCE: T. H. HOLMES and R. H. Rahe, "Life Event Table", Journal of Psychosomatic Research, Vol. II, 1970, pp. 214-215

Table 23

Life Change Units at Entrance
For Cadets at West Point

| Event | Units of Stress |
|---|---|
| Change to Different Line of Work | 36 |
| Change in responsibilities at Work | 29 |
| Outstanding Personal Achievement (x2) | 28 |
| Begin or End School | 26 |
| Change in Living Conditions | 25 |
| Revision of Personal Habits | 24 |
| Trouble with Boss | 23 |
| Change in Work Hours or Conditions | 20 |
| Change in Residence | 20 |
| Change in Schools | 20 |
| Change in Recreation | 19 |
| Change in Church Activities | 19 |
| Change in Social Activities | 18 |
| Change in Sleeping Habits | 16 |
| Change in Number of Family Get-Togethers | 15 |
| Change in Eating Habits | 15 |
| Total | 353 |

Source: Dept of BS&L, U.S.M.A.

Table 24

Stressors In Cadet Basic Training

1. Separation from home and a relatively supportive environment.

2. Known, comfortable environment replaced by a strange, demanding, competitive environment with high, sometimes vague standards.

3. High degree of social isolation due to nature of relationship of new cadets to officer and cadet cadre, lack of time for sharing experience with other trainees.

4. Frequent, often constant correction of shortcomings.

5. Little feedback concerning success and meeting standards.

6. Previous experience as a high achiever creates expectation of success which is not fulfilled.

7. Physical and psychological overextension unlike any other previous experience.

8. Loss of control, no personal freedom, high degree of regimentation.

9. Little or no evidence of factors which motivated new cadets to come here - education, status - instead only hard work, sweat, loss of status, frustration, and conflict over correctness of decision to become a cadet.

10. Perception that CBT equals all of plebe year.

11. Multiple demands, insufficient time.

12. Familiar ways of dealing with change and stress are not available or not allowed by cadre.

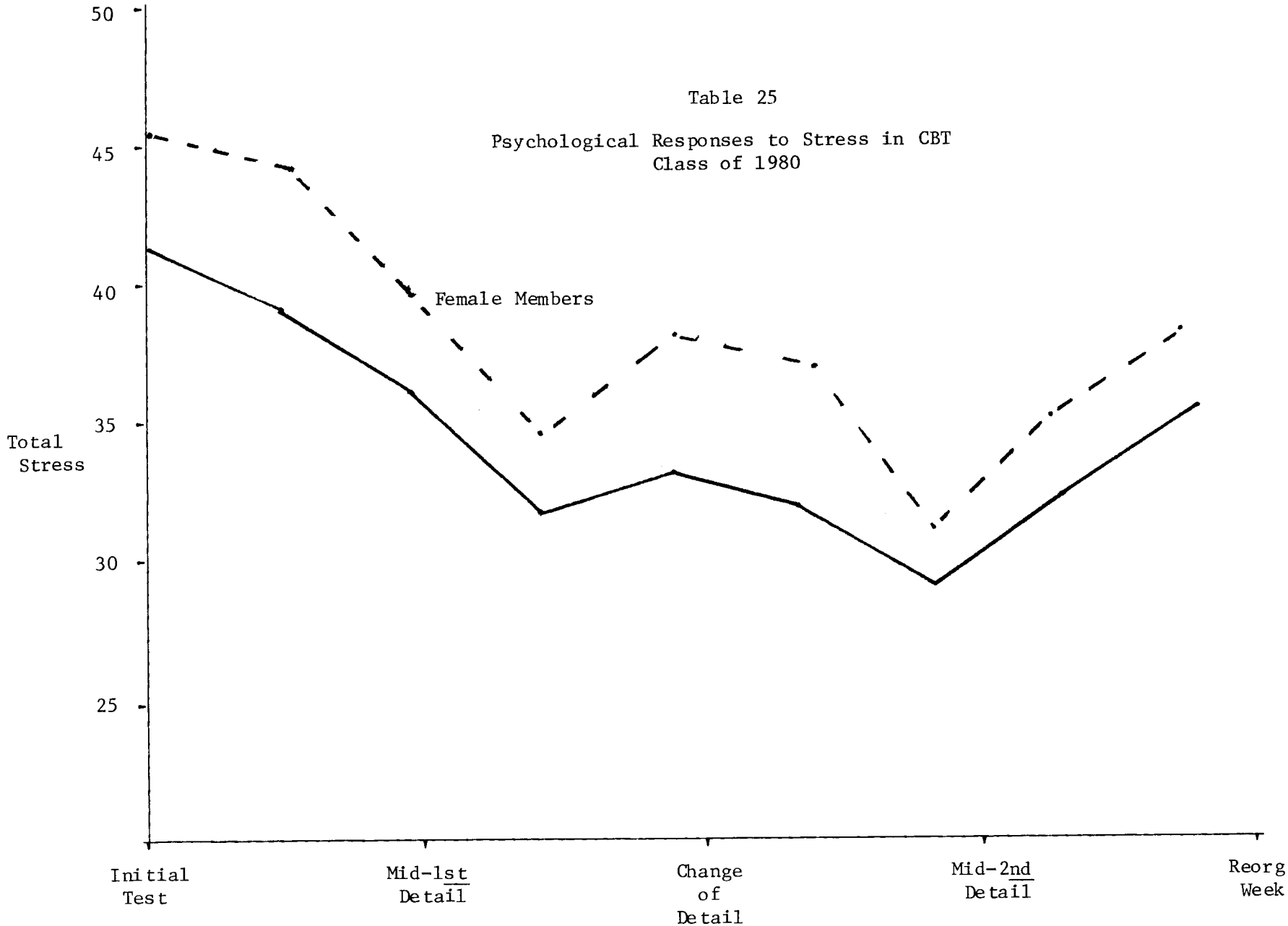
Source: Department of BS&L, U.S.M.A.

A comparison of the psychological responses to stress for males and females in the Class of 1980 during Cadet Basic Training is given at Table 25. As the graph shows there was a higher level of response to stress reported by women in the Class of 1980 than by men. When stress response levels were compared between female and male cadets at Cadet Basic Training for the Classes of 1981 and 1982, no difference was found. Thus, the difference found in the Class of 1980, may be attributable to the uniqueness of what the women experienced in being the pioneer class at West Point.

A comparison of self reports of responses to stress for the Classes of 1980, 1981, and 1982 for similar points in time is provided at Table 26. The data show that the plebes in the Classes of 1981 and 1982 reported higher levels of response to stress at the middle of the first detail than did members of the Class of 1980 at the same point in time. In addition, the plebes in Classes of 1980 and 1982 report a high level of response to stress at the end of Cadet Basic Training when one might predict that these scores should be lower due to the completion of Cadet Basic Training. Data for the Class of 1981 were not available for the similar point in time. Academy officials are aware of the high stress reported at the end of Cadet Basic Training, and stress management programs have been initiated as a result of these data.

Table 25

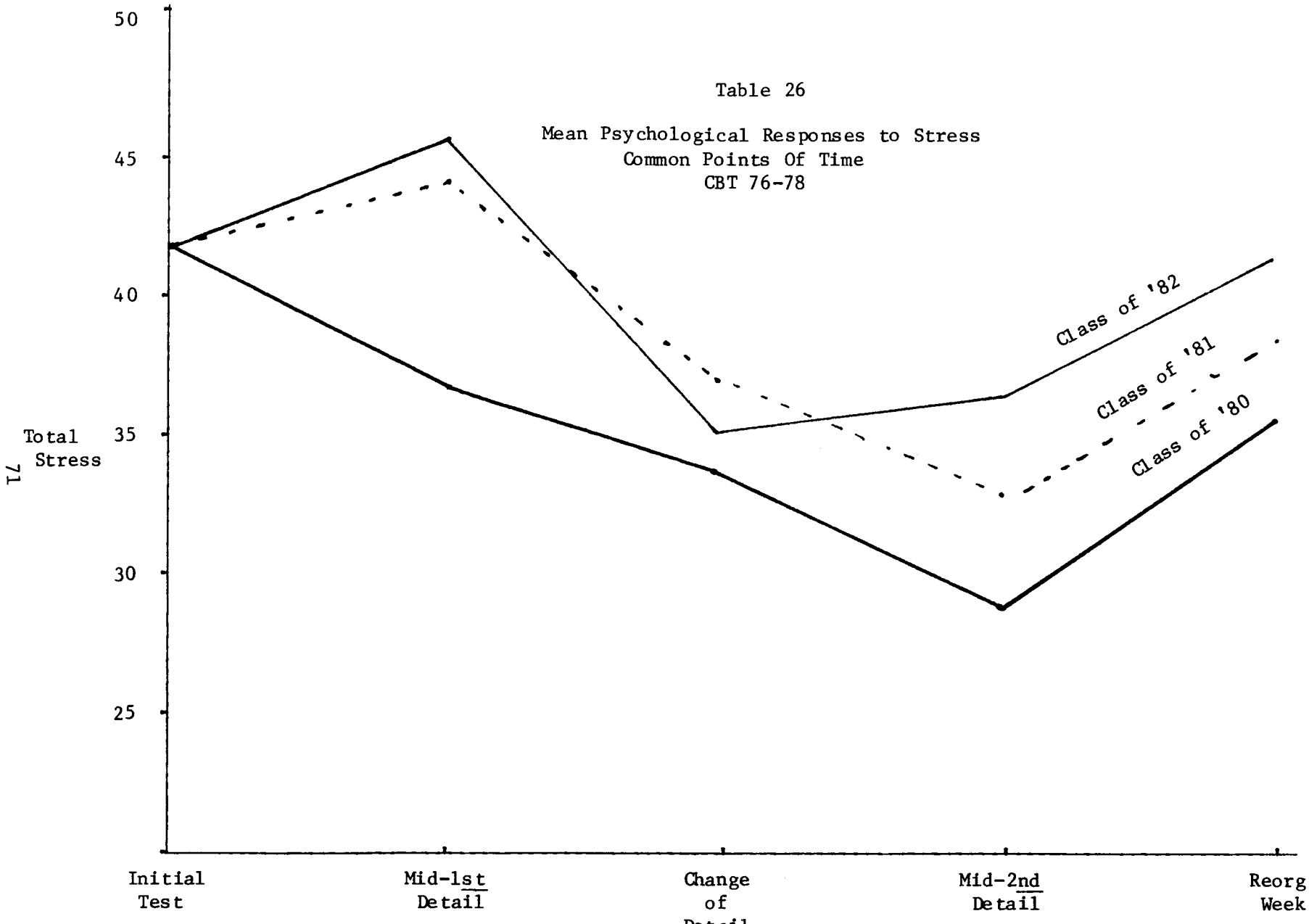
Psychological Responses to Stress in CBT
Class of 1980




Source: Dept. of BS&L, U.S.M.A.

Table 26

Mean Psychological Responses to Stress
Common Points Of Time
CBT 76-78




Source: Dept. of BS&L, U.S.M.A.

In addition to measures of psychological response to stress, some measures of physiological response to stress were also reported on members of the Classes of 1980, 1981, and 1982, see Table 27. These results show the physiological indicators at mid-detail for male and female cadets in Classes of 1981 and 1982. The data suggest that the physiological indicators are similar for both groups experiencing Cadet Basic Training.

Another physiological indicator of stress for women in the Classes of 1980, 1981, and 1982 is the absence of a regular menstrual cycle since the start of Cadet Basic Training. Table 28 shows the results. These data are indicative of the effects of high stress environment on women since it is well established that hormone secretion, which is responsible for the onset of menses, is highly related to psychological stress (Gunderson, 1978).

In summary, Cadet Basic Training is a highly stressful situation for both male and female cadets. Excepting the Class of 1980, there were no differences in the psychological effects of stress on men and women. Training programs have been developed to help new cadets more effectively cope with stress.

Table 27

Physiological Data on Stress
CBTs '77 and '78

| Frequency of Instances Time 1 | Item | Frequency of Instances Time 2 |
|---|---|---|
| 3-6 | Headaches | 1-2 |
| 1-2 | Dizziness | < 1 |
| < 1 | Hyperventilation | < 1 |
| 1-2 | Diarrhea | 1-2 |
| 3-6 | Sleep Disturbance | 3-6 |
| 1-2 | Nausea | 3-6 |
| 3-6 | Constipation | 1-2 |
| 3-6 | Muscle Tension | 3-6 |

< = less than

SOURCE: Dept of BS&L, U.S.M.A.

Table 28

Physiological Stress Indicator
(Female Menstruation Surveys)

| | Regular Menses Prior to USMA | Had Never Menstruated Nov - 4° Year |
|---|---|---|
| Class '80 | 86% | 20% * |
| Class '81 | 82% | 45% |
| Class '82 | 84% | 58% |

* 0, 1, or 2 periods by Nov. - 56%

SOURCE: USMA, DPE

Male and Female Ratings of Leadership

In the two earlier reports on Project Athena, a number of descriptive data were reported on women's performance and adjustment. This author decided to reexamine these data for the Class of 1980 to determine, post hoc, how well the large set of data could predict institutional ratings of leadership ability. Because the leadership rating system has been completely revised each year since the admission of women, comparisons between and within classes are not possible. Thus, what is reported here is based on members of the Class of 1980 who received leadership evaluations at the end of their Cadet Basic Training. A more detailed description of this analysis is reported elsewhere. (Yoder, Rice, Adams, Prince, and Priest, 1979).

The focus of the study was to examine a posteriori the ability of several categories of variables to predict leadership. The categories included, physical, attitudinal, personality, and demographic factors collected prior to extrance and during Cadet Basic Training. Examples of each category are: marksmanship, academy commitment, masculinity, and sex, respectively.

Because of the large number of subjects (N = 1110) in this data set, a significant correlation is not necessarily meaningful. An arbitrary cut-off correlation of .20 as the level of association will be used. Thus, the following discussion is restricted to variables which correlated with leadership ratings at approximately $r = .20$. (Even when the data for women are examined separately, $r = .20$ is significant at $p < .05$.) The results are listed at Table 29. The most interesting findings concern the differences in what is significant for men and women. The strongest correlate of leadership ratings taken after basic training is the cadet score on the physical aptitude examination (PAE), male ($r = .36$) and female ($r = .40$). Similar strong effects are found for scores on a scale measuring cadets' attitudes toward physical activity (PAS); ($r = .22$) for men ($r = .37$) for women.

The continuing relationship of physical measures to leadership ratings is again demonstrated with counts of dropping out of the two-mile runs (FALLOUT) during CBT. The more a woman falls out during CBT, the lower is her leadership rating after CBT ($r = -.58$). FALLOUT is not related to leadership ratings taken for men. There are very few men who failed to complete the two-mile runs,

Table 29

Correlations of all Predictors
With Measures of Leadership Ability

| | All Cadets (N = 1110) CBT | Male Cadets (N = 1024) CBT | Female Cadets (N = 86) CBT |
|---|---|---|---|
| Physical | | | |
| Physical Aptitude Exam | .44 | .36 | .40 |
| Attitude Toward Physical Activities | .23 | .22 | .37 |
| Marksmanship - CBT | .23 | .22 | .11 |
| Fall out - CBT | -.32 | -.09 | -.58 |
| Attitudinal | | | |
| AWS - Entrance | -.17 | -.06 | -.16 |
| Military Commitment | .10 | .09 | .15 |
| Desire to Graduate | .10 | .09 | .07 |
| Organizational Commitment | .04 | .03 | .17 |
| Satisfaction w/Academy | .06 | .05 | .12 |
| Personality | | | |
| Rotter - Entrance | -.01 | -.01 | .05 |
| Test Anxiety - Entrance | -.02 | 0 | .14 |
| PAQ Femininity - Entrance | .13 | .16 | .04 |
| PAQ Masculinity - Entrance | .20 | .20 | .14 |
| Demographics | | | |
| High School Clubs | -.09 | -.04 | .04 |
| College Courses | -.04 | -.04 | -.12 |

r is a statistical symbol used to denote the strength of relationship (correlation) between two factors on a standardized scale of 0 to $\pm$ 1.0. The closer the score to $\pm$ 1.0 the greater the relationship.

Source: Project Athena

the average (not shown here) was less than one, while women dropped out more frequently. Because of the low variability among these scores for men, it is no wonder that FALLOUT fails to correlate with leadership ability for men.

Moreover, marksmanship scores during CBT are positively related to leadership ratings after CBT for men ($r = .22$).

Finally, one personality variable, masculinity (as measured by male-valued items on the Personal Attributes Questionnaire), was related to ratings at the end of Cadet Basic Training for both men ($r = .20$) and women ($r = .14$). Men and women who rated themselves as being more masculine received higher leadership scores than did their counterparts with less masculine self-images.

In summary, these results paint a picture of leadership ratings at West Point that is related to what is stereotypically masculine--physical prowess, positive attitude about physical activity, and a masculine self-image. In a traditionally male-oriented subsystem, leadership for members of the Class of 1980 seems to be related to masculinity both for men and for the newly admitted women cadets.

Attrition

There have been several reports comparing the attrition of women and men of the Class of 1980, (Vitters and Kinzer, 1977; White, Willis, Kuspa, and Adams, 1979; Priest, 1979). In addition, counselors from the Cadet Counseling Center have been conducting exit interviews of each female and male resignee. Although a few women have resigned from the Military Academy in the Classes of 1980 and 1981 in order to marry graduating first classmen, the majority of women tend to report similar reasons for resigning as do men.

An analysis of attrition over the Cadet Basic Training time period for men and women in the Classes of 1980, 1981, and 1982 is given at Table 30. As reported earlier (Vitters and Kinzer, 1977), women in the Class of 1980 had the highest attrition rate. The attrition levels for women in the Classes of 1981 and 1982 appear to have leveled off. Thus, the "fish bowl" effect of being the first group of women coupled with the more traditional attitudes toward women's roles had some influence on attrition for the women in the Class of 1980. The rate for men over the three year period fluctuated with the Class of 1981 having the smallest attrition rate.

An analysis of exit interview questionnaires was

Table 30

CBT Attrition for the Classes of '80, '81 and '82

| Men | 1980 | 1981 | 1982 |
|---|---|---|---|
| Number resigned | 135 | 101 | 149 |
| % | 9.7% | 7.3% | 11.5% |
| Total entered | 1,419 | 1,398 | 1,298 |

| Women | | | |
|---|---|---|---|
| Number resigned | 19 | 10 | 13 |
| % | 16% | 9.5% | 10.4% |
| Total entered | 119 | 105 | 125 |

Source: Office of the Dean, U.S.M.A.
(U.S.C.C. Status Report - 17 Sept '78)

conducted for attriters from the Classes of 1980, 1981, and 1982. The reasons given for leaving are summarized in Table 31. No differences were found between women and men. This does not mean that differences do not exist. Rather, there is a strong suspicion that once a male or female cadet decides to leave, he/she may formulate a response of what the institution wants to hear rather than how the cadet may truly feel.

In Table 32 is a list of factors which attriters from the Classes of 1980, 1981, and 1982 said were positive reasons to stay at West Point. The prestige of West Point was the most positive factor cited by resignees from each class. Father's opinion of West Point was rated second, mother's opinion of West Point was rated third, and the need for financial assistance was rated as fourth.

## Summary

To summarize, except for adjustments necessitated for physical strength differences women experienced the same training as men in Cadet Basic Training. Even though each succeeding class of women to enter West Point was better prepared than the previous class, the emphasis on physical fitness has also intensified. Thus, women

Table 31

Reasons Given for Attrition
By Men and Women Classes of '80, '81, and'82

| | '80 | '81 | '82 |
|---|---|---|---|
| Distance U.S.M.A. from home | -* | 29% | 37% |
| Marriage/Family | 25% | 28% | 30% |
| Close Supervision | 38% | 51% | 66% |
| Pressure & Stress | 18% | 33% | 54% |
| 4th Class System | 17% | 50% | 72% |
| LDR Eval. Syst. | 21% | - | - |
| Major not at U.S.M.A. | 45% | 54% | 43% |
| Cadet Chain of Command | 16% | - | - |
| Civil. Schl. more attractive | 36% | 47% | 73% |
| Parades & Ceremonies | 18% | 25% | 26% |
| Lack Privacy to be alone | 33% | 41% | 69% |
| Fewer Opportunities to Date | 33% | 30% | 33% |
| No Privacy In Living Area | 24% | 33% | 53% |
| No Equal Treatment | 23% | 17% | 21% |
| U.S.M.A. Not what Expected | 25% | 42% | 60% |
| Discipline/Regimentation | 32% | 40% | 76% |
| Dehumanizing CBT | - | 15% | 60% |
| Correction by Upperclassman | 21% | 50% | 38% |
| Too little privacy/ Restrictions | - | 54% | 76% |
| Cadet Basic Training | - | - | 49% |

- Means less than 10%

Source: Project Athena

Table 32

Factors Which Attriters Said Were Positive
Reasons to Stay at West Point

| | '80 | '81 | '82 |
|---|---|---|---|
| Father's Experience . . . . . | - | - | 32% |
| Mother's Attitude . . . . . | - | - | 37% |
| Father's Opinion . . . . . | 50% | 53% | 61% |
| Mother's Opinion . . . . . | 42% | 51% | 54% |
| Money (need) . . . . . | 46% | 50% | 56% |
| Job Market . . . . . | 42% | 49% | 49% |
| U.S.M.A. Prestige . . . . . | 61% | 70% | 75% |
| Honor System . . . . . | 34% | 36% | 42% |
| Military Training . . . . . | 44% | 43% | 24% |
| Athletic Participation . . . . | 50% | 45% | 55% |
| Opinion of Friends . . . . . | 27% | 25% | 44% |
| People you can share problems . | 23% | 22% | 17% |
| Being Accepted by Peers . . . . | 24% | 27% | 24% |

| Reasons for coming to West Point | 1st | 2nd | 3rd | Average |
|---|---|---|---|---|
| Class of '80 | | | | |
| To be an officer | 46% | 15% | 17% | 26% |
| Good education | 26% | 51% | 16% | 31% |
| Finance education | 19% | 19% | 33% | 24% |
| Class of '81 | | | | |
| To be an officer | 36% | 16% | 19% | 24% |
| Good education | 42% | 32% | 19% | 31% |
| Finance education | 13% | 27% | 30% | 23% |
| Class of '82 | | | | |
| To be an officer | 15% | 11% | 14% | 13% |
| Good education | 45% | 31% | 14% | 30% |
| Finance education | 13% | 37% | 20% | 23% |

Source: Project Athena

continue to fall out on runs in greater numbers than do their male peers. Both male and female cadets who had been high on measures of academy commitment and military commitment gradients appear to adjust well. Both men and women who make self attributions of highly psychological masculinity also adjust well. There is no evidence of women becoming less psychologically feminine as a result of this West Point experience. Except for women in the Class of 1980, male and female cadets experience similar levels of psychological stress. Physiological indicators of psychological stress have also been well substantiated for each class. The leadership ratings tend to value stereotypically masculine physical activities and self-image. Women who do not perform well on physical performance measures typically receive lower leadership ratings. Attrition in the Class of 1980 shows a higher resignation rate for women than for men. The attrition rates for women in 1981 and 1982 appear about equal after Cadet Basic Training. Women from all classes continue to state that their reasons for resigning are similar to those given by male resignees.

## Chapter 3

## ACADEMIC YEAR

The questions addressed in this chapter on the academic year are: (1) Do women and men perform equally well in classes? (2) Have there been any modifications in the physical training program to accommodate women? (3) Are female cadets participating in all sports programs? (4) Are the differences in attrition rates for male and female cadets changing over time? and (5) Are there differences between men and women in leadership evaluations during the academic year?

### Female and Male Academic Performance

As mentioned in Chapter 1, Admissions, the women admitted to West Point are very well qualified in academic preparation. Thus, when an analysis of the core course grades for the first semester of last year was conducted, there were no major surprises (see Table 33). For the Class of 1982, the women, on average, tended to receive slightly higher grades in Foreign Language and Philosophy. The males in the Class of 1982 did slightly better in Math and Military Science.

For the Class of 1981, women received slightly

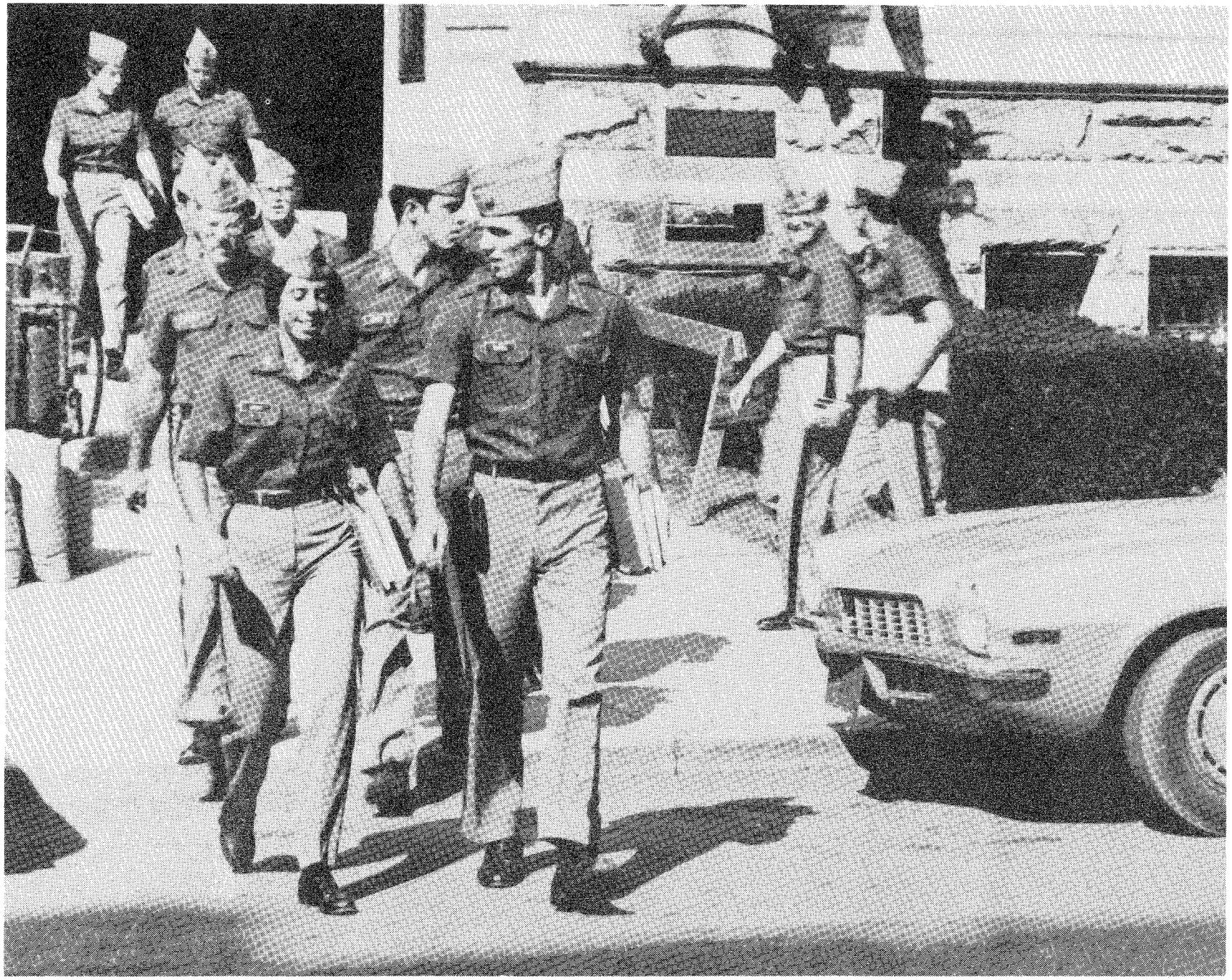


Table 33

A Comparison of Core Course Grades
by Class, by Sex

| Courses Run During AY 78-79 | | Average Grades | | Statistically Significant? |
|---|---|---|---|---|
| | | Men | Women | |
| **Class of 1982** | | | | |
| EN 101 | English | 1.94(C) | 1.94(C) | No |
| LZ 101 | Foreign Language | 2.78(B-) | 3.05(B) | Yes* |
| MA 103 | Math | 2.40(C+) | 2.18(C+) | Yes* |
| HI 101 | History | 2.32(C+) | 2.26(C+) | No |
| HI 103 | History | 2.36(C+) | 2.23(C+) | No |
| PL 100 | Philosophy | 2.88(B) | 3.10(B) | Yes* |
| EF 105 | Engineering Fund (Computer Science) | 2.54(B-) | 2.12(C) | Yes* |
| MS 101 | Military Science | 2.49(C+) | 2.23(C+) | Yes* |
| **Class of 1981** | | | | |
| LZ 200 | Foreign Languages | 2.76(B-) | 2.80(B-) | No |
| PY 201 | Psychology | 2.27(C+) | 2.64(B-) | Yes* |
| SS 201 | Economics | 2.55(B-) | 2.47(C+) | No |
| SS 202 | Poli. Sci | 2.52(B-) | 2.53(B-) | No |
| SS 252 | Advanced Poli. Sci. | 3.13(B) | 3.33(B+) | Yes* |
| HI 201 | History | 2.51(B-) | 2.51(B-) | No |
| HI 203 | History | 2.56(B-) | 2.69(B-) | No |
| CH 200 | Chemistry | 2.99(B) | 2.95(B) | No |
| MA 201 | Math | 2.59(B-) | 2.40(C+) | Yes* |
| PH 201 | Physics | 2.70(B-) | 2.40(C+) | Yes |
| **Class of 1980** | | | | |
| LZ 300 | Foreign Language | 3.23(B+) | 3.17(B+) | No |
| LW 300 | Law | 2.54(B-) | 2.44(C+) | No |
| ME 303 | Engineering Mechanics | 2.44(C+) | 2.31(C+) | No |
| ME 304 | Thermo-Fluids | 2.36(C+) | 2.57(B-) | Yes* |
| EE 300 | Electrical Engineering | 2.67(B-) | 2.68(B-) | No |
| MS 301 | Military Science | 2.56(B-) | 2.14(C) | Yes* |

t Test
*$p<.01$
Source: Office of the Dean, U.S.M.A.

higher grades in Psychology and Political Science. The men, on average, did slightly better in Math and Physics. For the Class of 1980, women interestingly did better than men in Thermo-Fluids. The men did better in Military Science.

Overall, it appears that women do better in Humanities, Social Sciences, and Behavioral Sciences while the men tend to score a little higher in Math, Engineering, Physics, and Military Science. The only anomaly is the better performance by women of the Class of 1980 is in Thermo-Fluids. The average group difference for men and women in Math versus verbal courses is related to their Scholastic Aptitude Test scores. Table 34 reviews the math and verbal by class and by sex. As is evident, men come to West Point with a stronger math potential score than women. Conversely, women's scores on the verbal predictor of academic success are higher than those for men.

A cautionary note is warranted that statistically significant differences may not have practical significance to decision makers. Statisticians and psychometricians will agree that whenever research is done with large sample sizes and a series of independent

Table 34

Scholastic Aptitude Test Scores Broken Down By Class and Sex

| | SAT (M) | | SAT (V) | |
|---|---|---|---|---|
| | Male | Female | Male | Female |
| 1980 | 639 | 626 | 549 | 570 |
| 1981 | 630 | 620 | 547 | 562 |
| 1982 | 639 | 613 | 558 | 577 |

Source: Admissions, U.S.M.A.

tests of significance are run, the probability of finding statistically significant differences increases.

It is also interesting to note that the average womens' performance in Military Science is lower than that of the men in each class. This difference has persisted in each Military Science course: Military Heritage, Map Reading and Tactics. Table 35 illustrates the female cadet performance for three classes. The data show that over sixty percent of the women in each course perform below the mean. Clearly, women as a group are doing less well in this course than in the other academic areas. The director of the Department of Military Instruction is aware of the differential performance of men and women in Military Science. He has encouraged that research be conducted to identify factors which appear to account for the women's poorer performance.

In summary, women and men perform well in academics, excepting Military Science classes. In the other courses the differences apparently balance out since there are no significant differences between men and women in overall grade average, numbers on the Dean's list or numbers declared deficient. Table 36 shows the grade percentage

Table 35

Female Cadet Performance In M.S. By Class

| | Class of 1982 | Class of 1981 | | Class of 1980 | | | |
|---|---|---|---|---|---|---|---|
| | M.S. 101 | M.S. 101 | M.S. 102 | M.S. 101 | M.S. 102 | M.S. 202 | M.S. 301 |
| Above Mean | 37.7% | 38.2% | 32% | 36.2% | 28% | 30% | 33.3% |
| At Mean | 0.1% | 0.1% | 2% | 0% | 1% | 0% | 3.2% |
| Below Mean | 62.2% | 61.7% | 66% | 63.8% | 71% | 70% | 63.5% |
| Top Quarter | 16.8% | 22.5% | 11.9% | 11.7% | 9.2% | 10% | 11% |
| Second Quarter | 17.8% | 16.8% | 20.2% | 14.9% | 18.4% | 20% | 27% |
| Third Quarter | 24.3% | 36% | 21.5% | 42.6% | 25.3% | 27.5% | 19% |
| Bottom Quarter | 41.1% | 24.7% | 46.4% | 30.8% | 47.1% | 42.5% | 43% |

Mean is determined by summing all grades dividing by the number of cadets.

Source: Department of Military Instruction, U.S.M.A.

Table 36

Academic Grade Distribution by Sex
for AY 77-78

| Grade | Men | Women |
|---|---|---|
| A | 14.9% | 15.3% |
| B | 42.4% | 42% |
| C | 35% | 35.6% |
| D | 5.8% | 5.7% |
| F | 1.6% | 2% |

(Number of courses = 29)

Source: Office of the Dean, U.S.M.A.

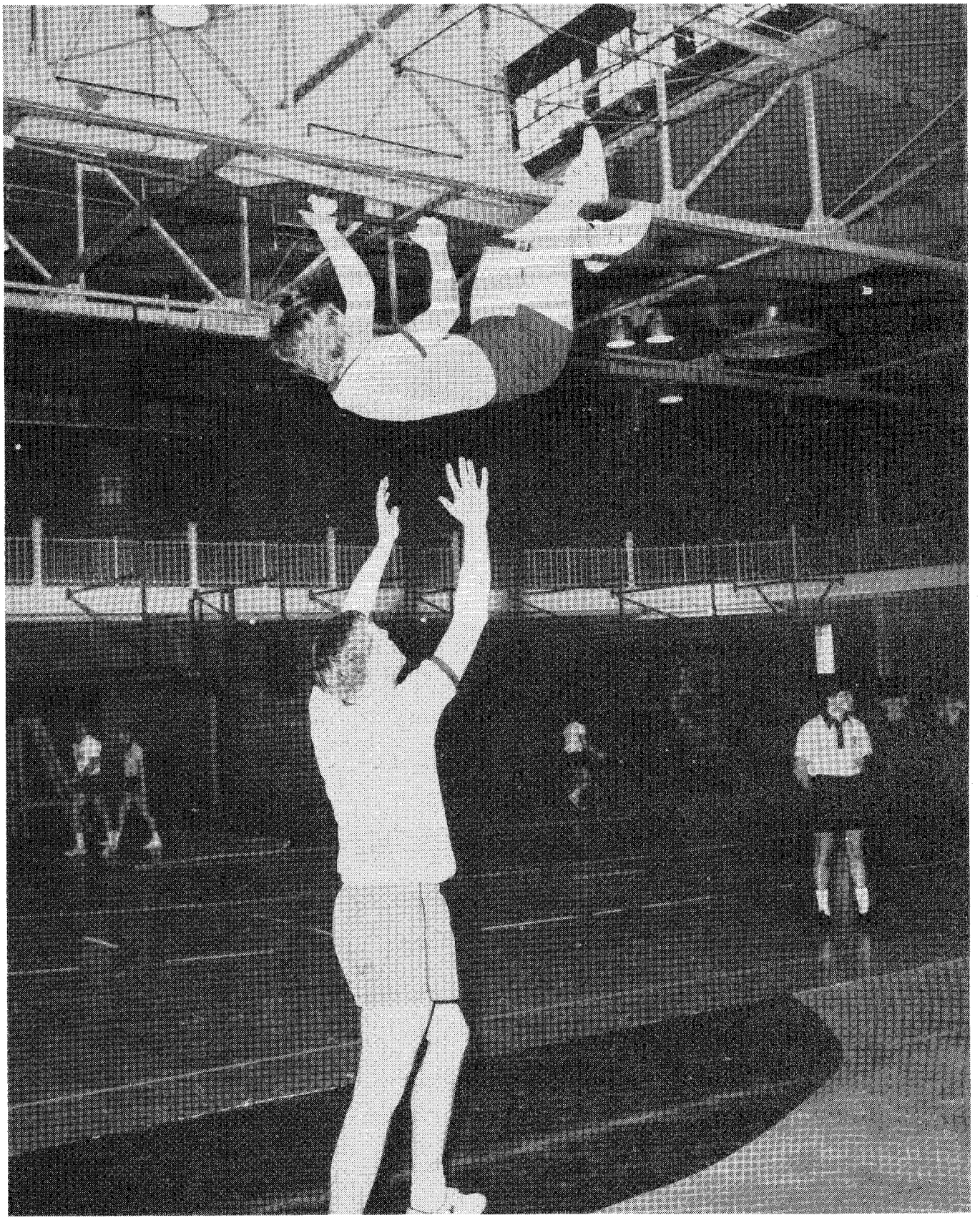
of academic performance by sex.

Physical Training in the Academic Year

At the end of the first year of coeducation at West Point, Colonel Anderson, the Director of the Department of Physical Education concluded:

> "With all physical fitness tests and core courses completed, women cadets' performance has made it clear that separate courses and or orders of merit for men and women are necessary in the physical education program. It was previously held that if women could be assimilated into the physical education program with minimal changes, a single course designation and order of merit including both men and women would be appropriate. However, the physical performance differences between men and women cadets have been such that by the time all the changes were made to the program to accommodate the women cadets, two different courses emerged."

Before women entered the Academy the only planned changes were that women would take self-defense classes in lieu of boxing and wrestling and that some women's skills would replace men's skills in gymnastics instruction (emphasis was on single track). However, when the first physical fitness test was administered, it became evident changes in the testing program were also necessary. For example, if the female and male cadets' performances on the two mile run were graded on the same scale, 61 women (86%) would have failed the test.



In comparison, only 52 men (4.8%) would have failed the test. Similar results occurred on the PAT where 77 women would have failed the test if they were graded on the same scale as men.

On 16 May 1977, the Academic Board approved separate men's and women's fourth class physical education courses. Women take two courses in self-defense in lieu of the boxing and wrestling courses required for men. The women's gymnastics course is modified to eliminate some of the upper body activity, substituting balance and agility exercises. In swimming, men and women must meet the same standards. In upperclass physical education, men and women take the same course of instruction. Separate grading standards are used only for those activities where physiological differences between men and women require adjustments to be made. The physical fitness tests for each class contain the same test items, but cadet performance is graded using separate men's and women's scales. The Indoor Obstacle Course has been modified for women by lowering the vault. The revised physical education program for plebe men and women is shown at Table 37. The effectiveness of the physical education program

Table 37

Physical Education Program for Plebe Class
Men and Women

PE 100 (men)

Boxing
Wrestling
Swimming
Men's Gymnastics
2-Mile Run (men's scale)
PAT (men's scale)
Obstacle Course (men's scale)

PE 100 (women)

Self-Defense
Self-Defense
Swimming
Women's Gymnastics
2-Mile Run (women's scale)
PAT (women's scale)
Obstacle Course (Women's scale)

Source: Dept. of Physical Education, U.S.M.A.

is measured through the testing of the Indoor Obstacle Course, the Two-Mile Run and the Physical Aptitude Test. The results of Indoor Obstacle Course and the Two-Mile Run are given at Table 38. In each case, the average women's times were well below the minimums required. It is evident that separate standards for the same tests are warranted for men and women. The results of the Physical Aptitude Test is given at Table 39. The performance levels for men across classes is quite similar. The same holds true comparing women across classes.

In summary, there are modifications in the physical education program for men and women based upon research data which illuminated physiological performance differences. The law which directs the admission of women to the service academies makes it permissible for West Point to treat women cadets differently, if differences are linked to physiological differences between men and women. The changes made in physical performance prior to the admission of women were well publicized. As women initially experienced difficulty in achieving single track standards, further adjustments became necessary. However, the reasons for the additional standard changes were not well publicized, especially to the males in the

Table 38

Physical Performance Measures Taken During the Academic Year - Mean Time in Minutes

| Classes | '80 | '81 | '82 | Qualifying Times |
|---|---|---|---|---|
| Indoor Obstacle Course | | | | |
| Men | 3:07 | 3:07 | 3:09 | 3:45 |
| Women | 5:14 | 5:25 | 5:07 | 7:09 |
| Two-Mile Run | | | | |
| Men | 13:02 | 13:03 | 13:03 | 13:95 |
| Women | 15:08 | 16:00 | 15:06 | 17:10 |

Source: Department of Physical Education, U.S.M.A.

Table 39

Physical Aptitude Test
(given to freshman
class each December)

| Classes | '80 | '81 | '82 | Minimums |
|---|---|---|---|---|
| Men - Mean scores | | | | |
| Pull ups - repetitions | 9.4 | 10.1 | 10.2 | 6 |
| Standing long jump - inches | 90.4 | 90.6 | 91.8 | 86 |
| Modified basketball throw - feet | 68.8 | 70.6 | 70.7 | 62 |
| 300 yard Shuttle run - seconds | 58.8 | 58.5 | 58.2 | 62 |
| Women - Mean scores | | | | |
| Pull ups | 1.58 | 2.8 | 1.96 | - |
| Standing long jump | 75.5 | 74.0 | 74.5 | 72 |
| Modified basketball throw | 41.9 | 43.3 | 43.3 | 39 |
| 300 yard Shuttle run | 65.5 | 65.3 | 66.0 | 69 |

Source: Department of Physical Education, U.S.M.A.

Corps of Cadets. As a result, men perceive a lowering of standards to accommodate women. This misperception of lower versus dual standards has had a negative impact on the acceptance of women by their peers. This is especially true reviewing the physical performance data of Cadet Basic Training and leadership ratings discussed in Chapter 2.

Male and Female Sports Programs

Women cadets are not allowed to participate in certain physical contact intramural sports; e.g., football, boxing, and wrestling. Separate women's events such as track and swimming have been added to Brigade Open Tournaments. Women may be members of co-educational club and intercollegiate teams not engaged in contact sports provided they compete on an individual basis; e.g., pistol, orienteering, and riding. Although the Office of Intercollegiate Athletics is currently reviewing compliance to Title IX requirements affecting women's sports, there are presently nine women's teams designated as intercollegiate. All are recognized by the Association of Intercollegiate Athletics for Women of which the Military Academy is a member. The nine teams are given at Table 40. The

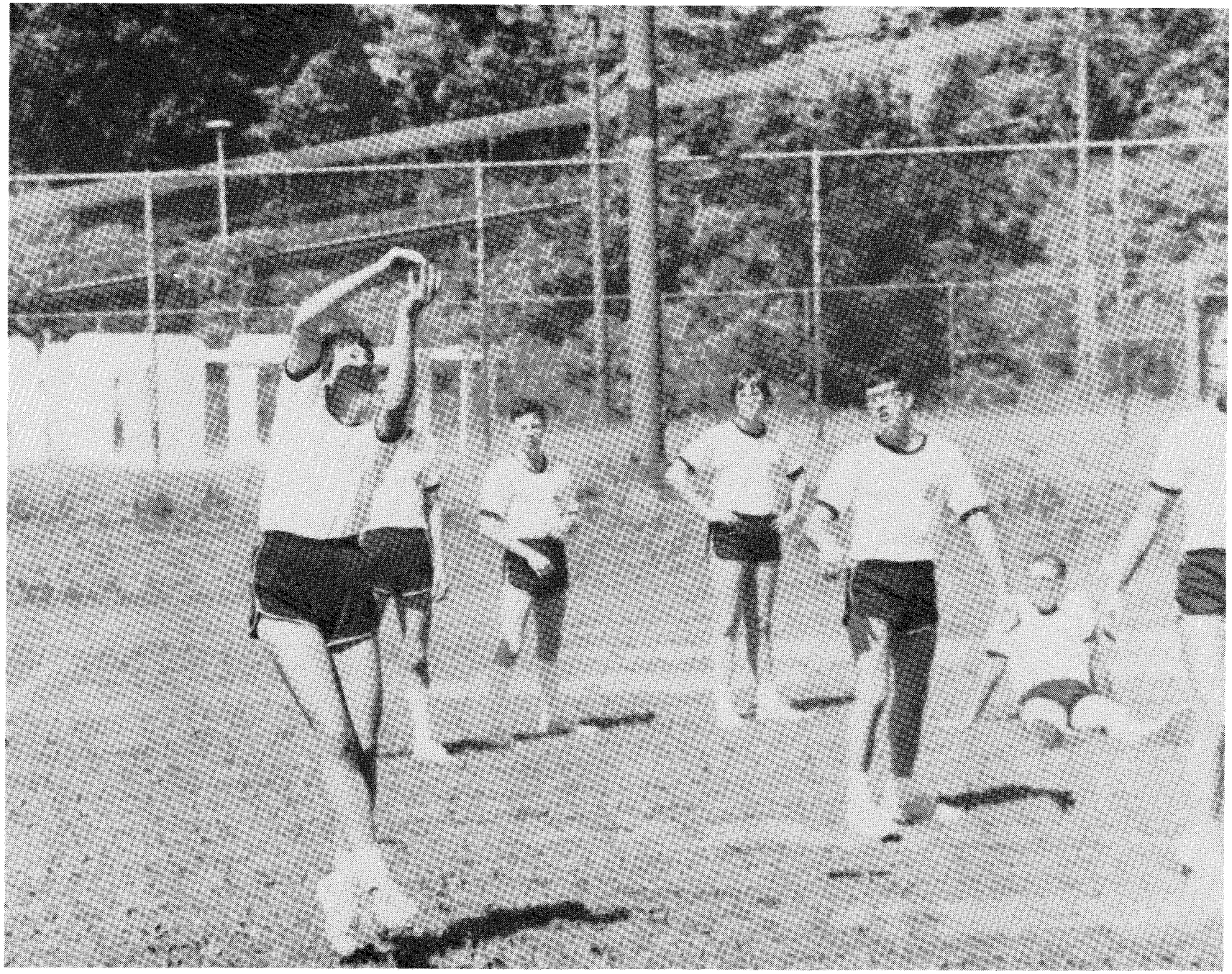


Table 40

Women's Intercollegiate Teams

| | 1978 Season | |
|---|---|---|
| | Won | Loss |
| Basketball | 21 | 5 |
| Cross-country | 6 | 3 |
| Gymnastics | 10 | 5 |
| Softball | 14 | 9 |
| Swimming | 12 | 0 |
| Track (Indoor) | 6 | 4 |
| Track (Outdoor) | 6 | 2 |
| Volleyball | 16 | 9 |
| Tennis | 7 | 4 |

SOURCE: Office of Intercollegiate Athletics, U.S.M.A.

win/loss rates reflect a very favorable overall record. All of the women's varsity teams had better than a 50% win record. The swimming team had a perfect 12-0 record.

In addition to intercollegiate or varsity teams, the Director of Intercollegiate Athletics has stated that

> "If there are insufficient numbers of women with adequate skills to organize a full intercollegiate team, those women who are to train in a sport will be assigned to the comparable men's team. Their numbers will not count against the men's team authorization. As numbers of women with required skills are available, separate women's teams will be established."

The specific amount of support provided for women's intercollegiate sports is listed at Table 41. Thus, the support accorded to women's sports is similar to that of men. However, there is not a "key sport" in season for any women's team. Key sport is a designation given to a primary sport in season like football or basketball. Women's sports have been allocated approximately six percent of last year's athletic budget. A comparison of the number of intercollegiate sports for women (9), and for men (23), and total participation 183/257 for women versus 1000/3600 for men, indicates that women at West Point are afforded opportunities to participate in intercollegiate sports.

Table 41

Support for Womens' Intercollegiate Athletic Programs

| Item | Level I - Varsity Fully Supported | Level II Junior Varsity | Level III ODIA Club |
|---|---|---|---|
| Approved Post-Season participation | X | X | X |
| Awards | Army "A" | JV "A" | Club |
| Athletic Supplies & Equipment | X | X | X |
| Awards Banquet/ Picnic | X | X | X |
| Coaches' Meetings/ Conferences | Note 1 | Note 1 | Note 1 |
| Entry Fees | X | X | X |
| Facilities | 1st Priority | 2d Priority | 3d Priority |
| Membership Dues | X | X | X |
| ODIA Vehicles | 1st Priority | 2d Priority | 3d Priority |
| Officials | X | X | X |
| Participation in Donor Program | X | X | X |
| Recruiting Support | X | | |
| Team Travel | X | Note 2 | |
| Training Room | X | X | X |
| Training Tables | X | X | X |

Note 1: Support determined on a case-by-case basis.

Note 2: Transportation and accommodation expenses will be paid for those level II teams when no level I team exists during AY 78-79 and AY 79-80.

Source: Office of Intercollegiate Athletics, U.S.M.A.

Attrition Comparison Over Time

The attrition rates and reasons for attrition after Cadet Basic Training were discussed in Chapter 2. An analysis of the cumulative attrition rates for male and female cadets by class after Cadet Basic Training is given at Table 42. As expected, the men in the Class of 1980 who have been here three years have the highest male attrition rates - 38.2%. Men in the Class of 1981 after two years at West Point have an attrition rate of 27.2%. Men in the Class of 1982 have slightly more than 20% attrition after one year.

For women, the Class of 1980 has the highest rate. This is expected given the disproportionately higher attrition they experienced after their Cadet Basic Training. One-third of the women in the Class of 1981 have resigned after two years at West Point. There has been a 23.2% attrition rate of the women in the Class of 1982 who have been here one year. The reader should be cautioned against interpreting percentage comparisons of attrition between men and women because the total number of women in each class is very small.

In a study of attrition for the men and women in the Class of 1980, Priest (1979), used a discriminant statistical analysis to isolate factors to predict attrition for two groups - men versus women - over four points in time. The results of Priest's study are that: