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(6) AN ASSESSMENT OF NAVAL AND MARINE AVIATION STUDENTS' ATTITUDES TOWARD WOMEN WITH SPECIFIC REFERENCE TO NAVAL AVIATION.

(10) Annette G. Baisden, Rosalie K. Ambler and Norman E. Lane

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AN ASSESSMENT OF NAVAL AND MARINE AVIATION STUDENTS' ATTITUDES TOWARD WOMEN WITH SPECIFIC REFERENCE TO NAVAL AVIATION

Annette G. Baisden, Rosalie K. Ambler, and Norman E. Lane

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Approved by

Ashton Graybiel, M.D.
Assistant for Scientific Programs

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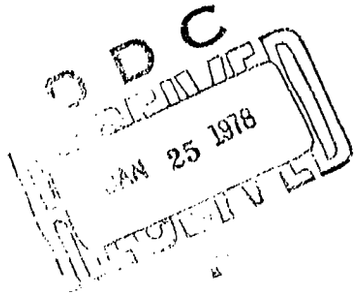
Captain R. E. Mitchel, MC, USN
Commanding Officer



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Naval Aerospace Medical Research Laboratory
Naval Air Station
Pensacola, Florida 32508

SUMMARY PAGE

THE PROBLEM

In support of the efforts to extend the equal rights and opportunities to women, the Navy admitted women into its aviation training program. At present the opportunity is limited to helicopter and multi-engine transport duty. Upon passage of the Equal Rights Amendment, however, women will have to be considered for combat roles as well. The inherent problems seem formidable to many. The purpose of this study was to measure peer group's acceptance and to determine the effects of the admission of women upon male participation in naval aviation.

FINDINGS

A modified Attitude Toward Women Scale (AWS) was administered to 383 male flight students during their first week of training. Analysis of variance, using multiple regression analyses, of marital status, procurement source, student type, and number of sisters indicated the only significant main effect on attitude was procurement source. The results showed that: 1) the overall attitudes of entering naval officer students and aviation officer candidates on the AWS were significantly more liberal than those of the college normative population, and 2) the overall attitudes of entering Marine flight students did not differ from those of the college population but were significantly more conservative than those of the naval populations.

RECOMMENDATIONS

The results support the conclusion that young men upon entering naval aviation training generally are willing to accept women as their peers, and this acceptance is considered important because of the all-volunteer force and continuing need to meet recruiting quotas. It is recognized, however, that senior acceptance as well as peer acceptance is relevant, and future studies should include the assessment of the attitudes of senior officers toward women.

INTRODUCTION

The role of women in American society has been examined intensely and challenged widely in recent years as part of accelerating changes in the economic, social, moral, and legal forces which drive contemporary culture. Under such examination the socially accepted role for the female has been found to rest upon a foundation of stereotypical notions and historical pressures that have intermingled to produce the concepts which are now viewed as fallible.

In a review of the literature Baisden (1) found an abundance of subjectively written material, tracing the historical development of the American woman's role in society, describing in detail how sociotechnological forces lead to sex-role stereotyping, and explaining the evolving role of the female in terms of sociopsychological factors. There is also much that documents past and present discriminatory practices against women in legislation, in occupational restrictions, in educational policies, and in social relationships.

The objective attempts to measure attitudes toward women have dealt largely with roles of women within specific occupational groups. For example, assessments of business and industry indicate that males, particularly the married ones and the executive, have negative attitudes toward working women (2, 7). However, empirical data related to measurement of more general attitudes, such as those toward femininity, chivalry, and social-sexual conduct, are scarce. Unavailability of such data is due in part to the absence of standardized instruments for measuring contemporary society's attitudes.

In an effort to remedy the situation Spence and Helmreich (12) developed the Attitude Toward Women Scale (AWS). It is based on the Kirkpatrick Belief Pattern Scale for Measuring Attitudes Toward Feminism (6), which was composed of propositions adapted from a list of official resolutions of feminist organizations. Some degree of construct validity was demonstrated since the items followed feminist issues and were uniformly judged as feminist or anti-feminist. Obsolete items were revised in developing the AWS to reflect current attitudes, and attempts were made to describe roles in major areas of activities in which men and women are being granted equal rights.

The purpose of the present study was to explore the attitudes of male military personnel toward attempts to grant women equal rights in pursuing traditionally masculine roles. Since the AWS is an empirical measure of attitudes toward masculine superiority, social-sexual relationships, and equal opportunity for women, it was judged to be a most appropriate measure for this exploratory study. Impetus for the study was a program established by the Navy to expand equal rights and opportunities for women. As part of the program several women have been selected for training as naval aviators. For a successful implementation of the program the present male population must be willing to accept the new role for women. Full acceptance may require some changes in attitude on the part of the male majority. Studies across a broad spectrum of discrimination in

the Navy indicate that females feel discriminated against to a greater degree than males and that attitudes projected by naval personnel constitute the major area where considerable action needs to be effected (10). The present study, therefore, investigated the attitudes of male military aviation trainees toward females as measured by the AWS, as well as their attitudes toward the acceptance of women in military aviation. The following hypotheses were made:

1. Because of cultural similarities, the attitude of the entering naval flight student populations toward women as measured by the AWS is comparable to that of college students.

2. Since the Marine Corps is noted for its traditional orientation and its extreme emphasis on masculinity, the entering Marine student is more conservative on the AWS than the Navy and college student.

3. The attitudes of the married males are more conservative than those of single males, thus substantiating the findings of Bass and Alexander (2).

4. Because of the traditional stereotype role of the male providing protection for the female, males with sisters have more conservative attitudes than those without sisters.

PROCEDURE

SUBJECTS

The subjects were 383 male naval and Marine aviator and flight officer students in the initial stages of aviation training at the Naval Aviation Schools Command, Pensacola, Florida. As such, they constituted a relatively homogeneous population with respect to age, physical and psychiatric characteristics, intelligence, and education. The age range was 21 to 29 years with the mean age being 23 years. The population consisted of 228 single men (60% of the sample) and 155 married men (40% of the sample). All of the subjects were college graduates and represented schools throughout the United States. With respect to sisters, 108 subjects (28% of the sample) reported none, and 275 (72% of the sample) reported one or more. The population encompassed three sub-groups:

1) Aviation officer candidates (AOCs), who were recent college graduates procured from civilian life.

2) Naval officers under instruction (OIs), who were recent graduates of an officer training program such as the Naval Academy or NROTC.

3) Marine officers under instruction, who were recent graduate of Officer Candidate School or Platoon Leader Course.

ASSESSMENT MEASURE

Attitudes were measured by means of the Attitudes Toward Women Scale (AWS) devised by Spence and Helmreich (12). It consists of 55 statements for which there are four response alternatives: agree strongly, agree mildly, disagree mildly, and disagree strongly. The items describe the roles, rights, and privileges of women in such areas as vocational and educational pursuits (e.g., "There should be a strict merit system in job appointment and promotion without regard to sex."); dating and courtship (e.g., "A woman should be as free as a man to propose marriage."); sexual behavior (e.g., "Women have an obligation to be faithful to their husbands."); and marital roles (e.g., "As head of the household, the husband should have more responsibility for the family's financial plans than his wife."). The response to each item is on a scale of 0 to 3, the low value indicating a traditional or conservative attitude and the high score a more liberal, profeminist one. The subject's score on the scale is the sum of the 55 items, with possible scores ranging from 0 to 165.

An additional 20 items were developed for this study to assess attitudes specific to the military situation of the population (e.g., "Despite the American ideal of equality of the sexes, there are certain jobs, such as naval aviators, which should not be held by a woman."). The items reflected questions raised in opposition to the expanded role of women in the Navy. A panel of Navy psychologists was used to dichotomize the items as liberal or conservative. The new items were dispersed within the AWS and were given the same response alternatives. The scoring procedure was identical. The subject's score on the military scale (MS) is the sum of the 20 items, with possible scores ranging from 0 to 60.

METHOD

Subjects were tested in a classroom setting in groups of 3 to 60 by the investigator, who was female. All subjects were told that they were participating in a study evaluating the acceptance of women for naval aviation training. Participation was not compulsory, and the subjects were asked to take the questionnaire anonymously.

ANALYSIS AND RESULTS

The initial procedure was to establish scale reliability. K-R formula 20 reliability coefficients of .91 for the AWS and .80 for the MS were obtained.

Scores on the AWS and MS were analyzed by a series of 2 x 2 x 3 x 2 analyses of variance. Since subclass Ns were unequal and disproportionate, a

general linear model approach using summary variables was employed for all ANOVAs in the manner used by Cohen (4). For such analyses, sums of squares for each source of variance represent the unique contributions of that source to the squared multiple correlation. The correlation matrix is presented in Appendix A. ANOVA summary tables for the MS and AWS are presented as Tables I and II.

For the MS, only the Procurement Source variable was significant. Table III presents statistics for the military groups. Significant ts were obtained in comparisons between the Navy OIs and the Marines ($p < .01$) and between the OIs and AOCs ($p < .05$). The Marine sample did not differ from the AOC sample.

For the AWS, Procurement Source was again a significant main effect ($p < .001$). Interactions significant at or beyond the .05 level were observed for Type by Number of Sisters and for Marital Status by Type by Procurement Source. Tables IV and V present AWS statistics relevant to these interactions. A significant t ($p < .05$) was obtained between pilots and NFOs without a sister. The triple interaction appears to be attributable to differences observed between the extreme scoring groups, the married pilot Marines and the married NFO OIs, and other subgroups. Because of the small and disproportionate Ns, no interpretation of this interaction is considered practicable without replication.

Table VI compares AWS means and standard deviations for military subgroups used in this study and for the male University of Texas sample reported by Spence and Helmreich. Significant ts at or beyond the .05 level were obtained between the college sample and both AOCs and Navy OIs and among the three military groups, with the Marine being the most conservative. The Marine sample did not differ significantly from the college sample.

DISCUSSION

The first hypothesis, asserting that the overall attitudes of the entering naval flight student populations are comparable to those of the college population on the AWS, was not supported. The more liberal attitudes of the naval officers and aviation officer candidates might be explained by regional differences, Texas being a conservative state, or by educational differences. The college population was composed of introductory psychology students, while the naval population was composed of recent college graduates. The liberalizing effect of education has been well documented (9, 11).

The findings concerning the second hypothesis, that the entering Marines have more conservative attitudes toward women than either the naval or college population, were mixed. The fact that Marines were significantly more conservative than the naval population may be the result of Marine training. Basic to

Table I

ANOVA Summary Table for Military Attitude Scale

Source	df	SS	MS	F
Marital Status	1	.000393	.000393	.155213
Type (Pilot-NFO)	1	.000572	.000572	.225908
Source (AOC, Marine, Navy 01)	2	.032094	.016047	6.337678**
Sisters	1	.005296	.005296	2.091627
Married x Type	1	.002675	.002675	1.056478
Married x Source	2	.010371	.005186	2.047986
Married x Sisters	1	.000794	.000794	.313586
Type x Source	2	.002215	.001108	.437599
Type x Sisters	1	.007991	.007991	3.156003
Source x Sisters	2	.003356	.001678	.662717
Married x Type x Source	2	.013445	.006722	2.654818
Married x Type x Sisters	1	.001029	.001029	.406398
Married x Source x Sisters	2	.001491	.000746	.294629
Type x Source x Sisters	2	.006250	.003125	1.234202
Married x Type x Source x Sisters	2	.005423	.002712	1.071090
Error	358	.906605	.002532	
Total	382	1.000000		

**p < .01

Table II

ANOVA Summary Table for AWS

Source	df	SS	MS	F
Marital Status	1	.000032	.000032	.012898
Type (Pilot-NFO)	1	.000250	.000250	.100766
Source (AOC, Marine, Navy 01)	2	.049495	.024748	9.975010***
Sisters	1	.000651	.000651	.262394
Married x Type	1	.001766	.001766	.711809
Married x Source	2	.002737	.001368	.551390
Married x Sisters	1	.001985	.001985	.800081
Type x Source	2	.005050	.002525	1.017735
Type x Sisters	1	.013014	.013014	5.245466*
Source x Sisters	2	.005215	.002608	1.051189
Married x Type x Source	2	.019853	.009926	4.000806*
Married x Type x Sisters	1	.002297	.002297	.925836
Married x Source x Sisters	2	.002346	.001173	.472793
Type x Source x Sisters	2	.004226	.002113	.851673
Married x Type x Source x Sisters	2	.002769	.001384	.557840
Error	358	.888314	.002481	
Total	382	1.000000		

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

Table III

Selected Statistics for the Military Attitude Scale

1 Marines (N = 48)		2 AOC (N - 211)		3 OI (N = 124)		t Values		
$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.	1 vs 2	1 vs 3	2 vs 3
27.4	9.0	30.1	8.7	32.3	8.1	1.89	3.26**	2.29*

* $p < .05$
** $p < .01$

Table IV

A Comparison of AWS Scores by Type and Number of Sisters

Sisters				No Sisters				t Values					
1 Pilot (N = 164)		2 NFO (N = 111)		3 Pilot (N = 56)		4 NFO (N = 52)							
$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D	$\bar{X}$	S.D.	1 vs 2	1 vs 3	1 vs 4	2 vs 3	2 vs 4	3 vs 4
93.5	19.6	97.0	19.5	99.2	19.1	91.9	17.1	1.46	1.92	.56	.70	1.70	2.10*

* $p < .05$

Table V

Mean AWS Scores by Marital Status by Type by Procurement Source

	MARINE				AOC				OI			
	Pilot		NFO		Pilot		NFO		Pilot		NFO	
	Single	Married	Single	Married	Single	Married	Single	Married	Single	Married	Single	Married
Mean	89.7	78.9	87.2	93.5	90.9	96.3	96.4	94.6	102.5	98.4	89.9	107.2
s.d.	17.2	14.3	21.9	25.9	19.6	21.0	19.3	17.6	18.0	19.0	18.2	14.1
N	18	16	6	8	59	33	70	49	56	38	19	11

Table VI

Selected Statistics for AWS Scores of Male College and Military Aviation Students

1 College (N=713)		2 Marine (N=48)		3 AOC (N = 211)		4 OI (N = 124)		t Values					
$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.	1 vs 2	1 vs 3	1 vs 4	2 vs 3	2 vs 4	3 vs 4
89.3	22.5	86.4	18.6	94.4	19.2	98.7	18.4	1.02	3.28**	5.64**	2.67**	4.22**	2.51*

* $p < .05$
** $p < .01$

Marine training is the development of aggressive characteristics and the concept that the individual Marine is custodian of tradition. Aggression to the Marine means learning how to protect not only one's life but also one's masculinity (3). The primary objective of Marine Corps aviation, combat, would be thwarted by the admission of women who by law would be non-combatant personnel. The significant difference between the attitudes of OIs and AOCs is not readily explained.

The third hypothesis, that the attitudes of the married males are more conservative than the single males, was not supported. The data failed to substantiate the findings of Bass and Alexander (2) who surveyed graduate students employed in business and industry. They were, however, in agreement with the findings of Heriot and Meyerriecks (4) who surveyed undergraduate college students. Since courses of study have been found to influence liberal or conservative attitudes (11), it is plausible that the difference may be attributed to courses of study or occupation rather than marriage per se.

The final hypothesis that males with sisters have more conservative attitudes than those without sisters was not supported. The experimental design here was not planned for exhaustive exploration of this area, however. For example, the effect upon attitudes by the number of sisters may have been influenced by the individual's rank order of birth and whether the sisters were younger or older, factors which were not measured.

In summary, the results indicate that young men upon entering naval aviation training are willing to accept women as their peers. Acceptance is especially important because of the all-volunteer force and continuing need to recruit. The favorable attitudes suggest that the admission of women into military aviation will not have an adverse effect upon male participation. However, the policies regarding the role of women in military service are not made by young officers but by career naval officers of senior rank. The next step of equal importance is, therefore, determination of acceptance by those higher in authority. Since it is possible that attitudes become more conservative with rank, as suggested by Janowitz (5), future research should include the assessment of the attitudes of senior officers toward women. Implications for future research includes the measurement of attitudes as a function of education, occupation, and more specific sibling affiliation.

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APPENDIX A

INTERCORRELATION MATRIX

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
1.	Military Scale		.67	-.02	.02	-.05	-.14	-.07	-.03	-.01	-.16	-.06	-.05	-.11	-.06	-.10	-.12	-.01	-.18	-.07	-.06	-.15	-.09	-.12	-.05	-.18
2.	Attitude Toward Women Scale			-.01	-.02	-.05	-.17	-.03	-.03	.00	-.15	-.03	-.07	-.17	-.08	-.07	-.14	.02	-.18	-.06	-.03	-.13	-.11	-.17	-.02	-.17
3.	Married/Single				.02	-.04	.07	-.05	.66	.63	.31	.75	-.05	.04	-.02	-.09	.04	.37	-.25	.55	.47	.26	-.06	.02	.30	.23
4.	Pilot/NFO					-.31	.10	.07	.47	-.18	.05	.04	.48	.27	.74	-.22	.14	.26	.18	.39	-.11	.08	.38	.25	.21	.16
5.	AOC/Marine - Navy O1						-.42	-.07	-.19	.47	-.29	-.09	.51	-.35	-.28	.71	-.36	.28	-.23	-.19	.35	-.24	.40	-.32	.22	-.21
6.	Marine/Navy O1 - AOC							.04	.10	-.20	.68	.06	-.21	.82	.13	-.30	.86	-.12	.55	.10	-.15	.57	-.17	.76	-.09	.50
7.	Sister(s)/No Sisters								.03	-.11	-.01	.39	-.03	.09	.54	.49	.20	-.04	.04	.28	.24	.13	.28	.18	.15	.12
8.	Married Pilot									.22	.27	.56	.18	.18	.35	-.14	.10	.57	.38	.83	.19	.28	.12	.15	.46	.35
9.	Married AOC										-.14	.40	.20	-.16	-.17	.26	-.17	.59	-.11	.14	.75	-.11	.14	-.15	.47	-.10
10.	Married Marine											.25	-.15	.53	.06	-.20	.54	-.08	.81	.26	-.19	.83	-.12	.46	-.06	.72
11.	Married, with Sister(s)												-.05	.07	.22	.12	.13	.26	.25	.73	.63	.35	.06	.11	.40	.30
12.	Pilot AOC													-.18	.30	.36	-.18	.55	-.12	.10	.17	-.12	.80	-.16	.44	-.11
13.	Pilot Marine														.27	-.25	.80	-.10	.67	.18	.12	.51	-.14	.92	-.08	.66
14.	Pilot, with Sister(s)															.01	.23	.15	.16	.52	.00	.15	.52	.33	.28	.22
15.	AOC, with Sister(s)																-.26	.18	-.16	.04	.50	-.17	.57	-.23	.31	-.15
16.	Marine, with Sister(s)																	-.10	.51	.16	-.13	.66	-.15	.88	-.08	.57
17.	Married Pilot AOC																		-.06	.41	.48	-.07	.41	-.09	.80	-.06
18.	Married Pilot Marine																			.36	-.08	.78	-.09	.58	-.05	.90
19.	Married Pilot, with Sister(s)																				.27	.34	.21	.21	.55	.41
20.	Married AOC, with Sister(s)																					-.08	.28	-.11	.63	-.07
21.	Married Marine, with Sister(s)																						-.10	.56	-.05	.87
22.	Pilot AOC, with Sister(s)																							-.13	.55	-.08
23.	Pilot Marine, with Sister(s)																								-.07	.65
24.	Married Pilot AOC, with Sister(s)																									-.05
25.	Married Pilot Marine with Sister(s)																									

Two-Tailed Significance Values

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The attitudes of Navy and Marine Corps aviation trainees toward women on several factors, including acceptance into aviation training, are considered. The results, which indicate that the attitudes of naval officers are significantly more liberal than the college normative population, are discussed in terms of their utility in the successful implementation of women into military aviation, their effect upon male participation, and their significance in a time of an all-volunteer force and continuing need to recruit.

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