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# ATTITUDES OF AIRMEN TOWARD THE WEIGHTED AIRMAN PROMOTION SYSTEM

Walter C. Vertreace, et al

Air Force Human Resources Laboratory
Brooks Air Force Base, Texas

April 1973

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# ATTITUDES OF AIRMEN TOWARD THE WEIGHTED AIRMAN PROMOTION SYSTEM

By

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PERSONNEL RESEARCH DIVISION
Lackland Air Force Base, Texas 78236

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The more favorable attitudes towards the WAPS system were held by airmen who had been promoted under the system, although both promoted and nonpromoted personnel feel that WAPS is fairer than the whole-man system with promotion boards. Although a substantial number of the first term enlistees felt that they did not know enough about the old system to make a comparison, the general consensus was that WAPS is fairer than the old system

An egocentric effect, much like that found with promote/nonpromote status, was found when using term of enlistment as the independent variable. Third termers favored giving more importance to time in service, while first term airmen did not. First term airmen placed more value on the Specialty Knowledge Test

Aptitude test scores of airmen, who felt that WAPS tests should be increased in importance, were higher than those for airmen who would give the tests less weight. However, lower aptitude personnel rated specialty knowledge tests current and adequately covering the career field. As a test, the SKT was regarded more favorably by the lower aptitude group than by their higher aptitude peers.


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## FOREWORD

This work was conducted under Project 7719, Air Force Personnel System Development on Selection, Assignment, Evaluation, Quality Control, Retention, Promotion, and Utilization; Task 771904, Development, Analysis, and Improvement of Tools and Techniques for Performance Evaluation and Measurement.

This report has been reviewed and is approved.

Harold E. Fischer, Colonel, USAF
Commander

## ABSTRACT

The Weighted Airman Promotion System (WAPS) was designed to select airmen for promotion on the basis of six weighted factors. It was instituted as a means for increasing knowledge of standing in promotion competition and insuring equitable promotion opportunities. The present survey was initiated to assess the attitudes of airmen affected by WAPS and determine if airmen perceive WAPS as having fulfilled its objectives.

The more favorable attitudes towards the WAPS system were held by airmen who had been promoted under the system, although both promoted and nonpromoted personnel feel that WAPS is fairer than the whole-man system with promotion boards. Although a substantial number of the first term enlistees felt that they did not know enough about the old system to make a comparison, the general consensus was that WAPS is fairer than the old system.

An egocentric effect, much like that found with promote/nonpromote status, was found when using term of enlistment as the independent variable. Third termers favored giving more importance to time in service, while first term airmen did not. First term airmen placed more value on the Specialty Knowledge Test.

Aptitude test scores of airmen, who felt that WAPS tests should be increased in importance, were higher than those for airmen who would give the tests less weight. However, lower aptitude personnel rated specialty knowledge tests current and adequately covering the career field. As a test, the SKT was regarded more favorably by the lower aptitude group than by their higher aptitude peers.

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# ATTITUDES OF AIRMEN TOWARD THE WEIGHTED AIRMAN PROMOTION SYSTEM

## I. INTRODUCTION

The Weighted Airman Promotion System (WAPS), designed to select airmen for promotion on the basis of six statistically weighted factors, was instituted by the Air Force in June of 1970 as a means for increasing knowledge of standing in promotion competition and insuring equitable promotion opportunities among enlisted personnel. The factors selected by Headquarters, United States Air Force as relevant under the WAPS were: Time in Grade (TIG), Time in Service (TIS), Specialty Knowledge Test scores (SKT), Promotion Fitness Examination scores (PFE), Airman Performance Report ratings (APR) and decorations received. Each factor was given a statistically weighted value, which was applied to the airman's raw score for that factor; the products were summed to give the airman's promotion score (Koplyay, 1969).

For each Air Force Specialty Code (AFSC), the airmen with scores above a certain cutoff point were promoted; those who fell below that point were issued a WAPS Score Notice (AF Form 545), which identified the cutoff value and presented the airman's scores for the six factors.

The present study was initiated during the spring of 1971, one year after the inception of WAPS. On the basis of the 1971 survey data, information from earlier surveys, and the Uniform Airman Record file, the authors attempted to assess the attitudes of airmen affected by WAPS.

## II. RESEARCH OBJECTIVES AND DESIGN

The primary objective of the study was to determine if the enlisted populace felt that the WAPS had achieved its goals of fairness and visibility. This was approached through cross-tabulations by race, grade, and other demographic variables. Promote/nonpromote status was expected to play an important part in these attitudes. A second purpose of the study was to identify differences in attitudes towards the WAPS which may be attributable to aptitude level. It was conceivable that airmen who do not perform well on tests of aptitude also do not perform well on achievement-oriented tests such as the Specialty Knowledge Test and Promotion Fitness Examination, and that they, therefore, would be less in favor of a test-oriented promotion system like the WAPS.

Response differences between survey responses, by demographic variables, are reported in frequency and percentage form; Duncan's Multiple Range Test was used to verify differences in aptitude test scores between response categories. The aptitude measure used was the General Aptitude Index of the Airman Qualifying Examination, as this score is readily available from the Uniform Airman Record.

## III. SAMPLE SELECTION

The survey booklets were sent to the servicing Consolidated Base Personnel Offices (CBPOs) of bases within each Major Command. These CBPOs distributed the surveys to a three percent random sample of all enlisted personnel on active duty during March of 1971.

A total of 18,254 subjects received the questionnaire. During the first exploratory cross-tabulations of the data, subjects who did not report their active duty grade (N=311) or who reported an active duty grade of commissioned officer (N=181) were excluded, giving a total N of 17,762.

Further reduction of the sample was necessary in order to compare aptitude test score means for personnel in different response classes, as cases could not be used for which Airmen Qualifying Examination scores were not available or for which blank or improper entries were found in the UAR.

## IV. THE SURVEY QUESTIONNAIRE

The survey was composed of 58 questions designed to gather information about the WAPS program, general opinions of the WAPS system, and the subjects' preparation for testing. The items were first administered to a mixed sample of 120 officers and enlisted personnel to insure that the questions were understandable and meaningful, acceptable at the supervisory level, and conveyed the proper information. Changes in the questions resulting from this pretesting were incorporated in the final questionnaire. The surveys were completed under directions, which made clear to

the airmen examined, that the data would not be made available to their superiors or be used for other than research purposes.

## V. DATA ANALYSIS

The analysis of the survey data was conducted in three phases. Phase I concerned the general Characteristics section (demographic data). Percentage distributions were prepared to show the population characteristics of the sample including command of assignment, sex, race, grade, time in service, age, education, marital status, attitude towards reenlistment, and Air Force Specialty Code (AFSC).

The Phase II was designed to determine the existence of response differences among various population subgroups in attitudes dealing with certain aspects of the WAPS program. Information from Phase I was used in selecting the independent variables: race, grade, enlistment term, education, reenlistment attitude, and promote/nonpromote status. Dependent variables were survey items dealing with opinions towards WAPS and with the extent to which airmen believed that WAPS promoted the right people.

Phase III of the analysis was designed to determine whether airmen of differing aptitude levels also differ in their attitudes towards the WAPS. This involved comparing aptitude test score means for the various response categories in each item used. The Duncan's Range Test was applied as the appropriate test of significance of differences between these means.

## VI. RESULTS AND DISCUSSION

### Characteristics of the Population

The racial composition of the sample was 86.21 percent white, 11.26 percent black, and 2.18 percent other. It was originally planned to distribute by both sex and race, but only 1.46 percent of the population was female (N=263), and black females numbered only 27 (.07 percent).

Almost half of the subjects (46 percent) were in their first enlistment, and 42 percent were in the third or later enlistment. Figure 1 is the bimodal distribution by total active federal military service, showing peaks for the 0-3 year and 16-20 year groups. These correspond roughly to the 20-23 and 34-38 age groups in Figure 2. The sharp

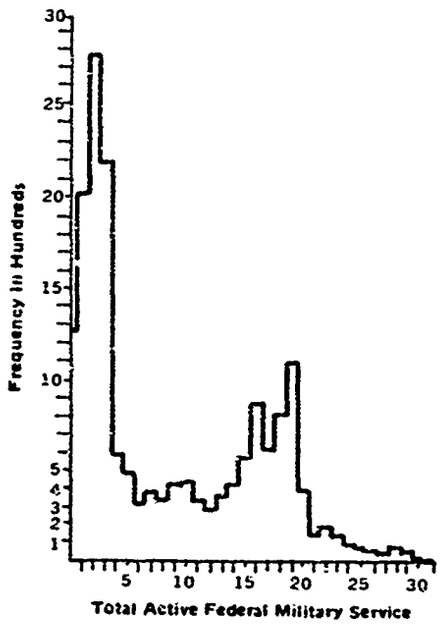


*Fig. 1.* **Sample distribution of military service (N=17,762).**

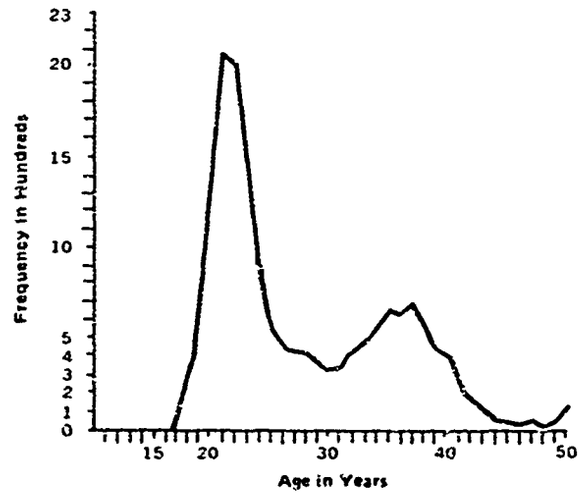


*Fig. 2.* **Sample age distribution.**

frequency drop, after the 3-4 year service interval and the 19-20 year interval, is illustrative of the number of personnel who leave service after their first tour or after retirement at 20 years. The 16-20 year peak reflects the force buildup of the Korean War and the entrance date of many of the E-5s and E-6s surveyed.

The distribution of grade in the study sample (Figure 3) approximates a normal curve with the majority of subjects in the E-4 through E-5 range and the smallest frequencies at the extremes (E-1 and E-9). The greatest number of subjects are in the grades directly affected by the WAPS (E-3 through E-6). In terms of level of education by grade, the preponderance of college graduates is contained within the grades E-1 through E-3, and the greatest accumulation of high school graduates with no college experience falls within the grades E-1 through E-3 and E-6. Over all nine enlisted grades, however, the distribution of education is roughly equivalent. Education level is calculated in terms of demographic information requested from the respondent.

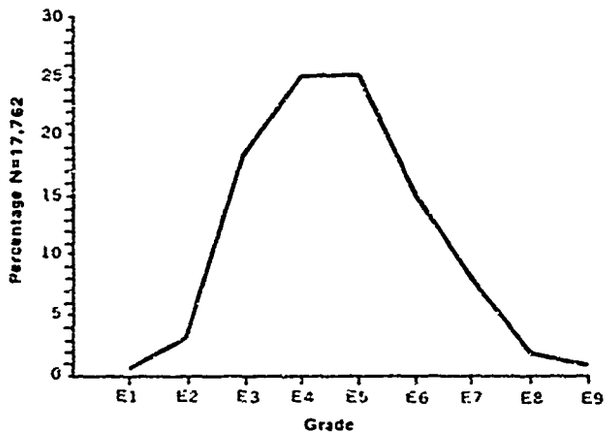


*Fig. 3.* **Sample grade distribution.**

About a third of the sample (35 percent) responded that they would definitely or most likely reenlist, more than a third (42 percent) responded in the negative, and the remainder were undecided. Analysis of these data by grade (Table 1), however, indicates a marked inclination against reenlistment in the lower grades (E-1 through E-4) and for reenlistment in the upper grades (E-7 through E-9).

*Table 1.* **Attitude Towards Reenlistment by Grade**

| | Grade | | | | | | |
|---|---|---|---|---|---|---|---|
| | E-1—E-4 | | E-5—E-6 | | E-7—E-9 | | |
| Attitude | Number | Percent | Number | Percent | Number | Percent | Total |
| Positive | 1,007 | 11.9 | 4,158 | 57.3 | 1,127 | 54.3 | 6,292 |
| Neutral | 2,772 | 32.9 | 984 | 13.6 | 264 | 12.7 | 4,020 |
| Negative | 4,641 | 55.0 | 2,097 | 28.9 | 669 | 32.3 | 7,407 |
| Blank | 13 | .2 | 16 | .2 | 14 | .7 | 43 |
| Total | 8,433 | | 7,255 | | 2,074 | | 17,762 |

There is no indication of the effect of the high percentage of undecided responses on the actual reenlistment behavior of the airmen.

The airmen were queried as to their promote/nonpromote status according to the WAPS. The question provided five possible responses, but only three are directly relevant from a population comparison standpoint: A yes answer implies the airman has been selected for promotion under the WAPS; "No" he was tested but not promoted, or thirdly, the airman was not eligible for WAPS promotions. Almost three fourths of the subjects fell into these three categories, the others having been either not tested (19 percent) or tested but not notified of the results (9 percent). For the promote/nonpromote comparisons in this study, the percentages refer to those who were tested and notified of the results (5,067, 28.52 percent promoted and 5,810, 32.71 percent not promoted) or who were not eligible for promotion under the WAPS (1,847, 10.39 percent).

### Information About the WAPS

Items in the survey, which dealt specifically with information regarding the WAPS, revealed that enlisted personnel largely have favorable attitudes about the information program. For the most part they believe that they are adequately informed about WAPS, and that information regarding the WAPS is readily available to airmen. A WAPS briefing was received by 77 percent of the sample; 64 percent reported that the briefings gave an adequate understanding of the system and 13 percent answered that they fell short of this goal.

Although more airmen received their most recent information on WAPS from briefings and the WAPS booklet than from any other single source, a larger percentage would prefer to receive WAPS information from a number of sources, including group briefings, Commander's Call, WAPS movies, and Air Force publications.

### General Opinion of WAPS

Opinions as to the fairness of the WAPS were divided among those who felt that WAPS was a fair and equitable promotion system (44 percent) and those who did not (40 percent). An even greater percentage of negative responses was found when the subjects were asked if they felt that WAPS would select the right people for promotion.

With the hypothesis that those who had been selected for promotion under the WAPS (N=4,595) would give more favorable responses to the system than would those who had been tested but not promoted (N=5,376) or who were not eligible (N=1,632), these statistics were analyzed according to promote/nonpromote status. When asked if they felt WAPS would select the right people for promotion, 47 percent of the promotees responded in the affirmative with 34 percent negative responses. The nonpromotees, however, registered only 28 percent positive responses with over half (55 percent) responding negatively. Non-eligible airmen gave 47 percent positive and 30 percent negative responses. As shown in Table 2, a similar response trend was found for the survey question dealing with airman opinions as to the fairness of WAPS.

*Table 2.* **Opinions as to Fairness of WAPS by Promotion Status**

| Status | Item Responses | | | Total |
|---|---|---|---|---|
| | Yes | No | No Opinion | |
| Promoted (N) | 2502 | 1480 | 613 | 4595 |
| Promoted % | 54.5 | 32.2 | 13.3 | 100.0 |
| Nonpromotees (N) | 1897 | 2802 | 677 | 5376 |
| Nonpromotees % | 35.3 | 52.1 | 12.6 | 100.0 |
| Ineligible (N) | 851 | 462 | 319 | 1632 |
| Ineligible % | 52.1 | 28.3 | 19.6 | 100.0 |

There is general agreement across promotion categories that the WAPS is fairer than the promotion board system; 32 percent of the promotees chose the "I don't know" response, compared to only 9 percent of the nonpromotees. Almost all of the nonpromotees believed that they knew enough about the old system to make a comparison; whereas, only two-thirds of the promoted group believed they possessed such knowledge. About a fifth (22 percent) of the noneligible airmen chose the "I don't know" option.

When given a choice between WAPS and the Whole Man concept with promotion boards, 61 percent of the promotees chose WAPS against 19 percent who chose boards. Among the nonpromoted airmen, the choices were 40 percent WAPS, 46 percent boards. Results for the ineligible sample revealed 50 percent choosing WAPS and 28 percent boards. As expected, about half of the promoted airmen thought that their chances

for promotion were better under the WAPS; half the nonpromoted airmen believed WAPS hurt their chances. Less than a sixth of the promoted group rated their chances less under WAPS, and about a third of the nonpromotees rated their chances under WAPS to be increased.

The airmen were queried as to their opinions of the most desirable and the most undesirable features of the WAPS. As Table 3 indicates, 40 percent of the airmen see promotion assessment as the most desirable feature, consistent with the aims of the system. Opinions as to the most undesirable feature are split between control of promotions by job specialty category (AFSC), annual testing, and overall WAPS program. Table 4 displays the responses obtained when airmen were asked which of the six factors in the WAPS equation would be increased or decreased in weight.

*Table 3.* **Desirable and Undesirable Features of WAPS**

| Item | Most Desirable | | Most Undesirable | |
|---|---|---|---|---|
| | Number | Percent | Number | Percent |
| Annual testing | 1,198 | 6.7 | 2,941 | 16.6 |
| Visibility | 7,079 | 39.9 | 682 | 3.8 |
| Central selection | 1,447 | 8.1 | 1,895 | 10.7 |
| AFSC Promotion Control | 3,303 | 18.6 | 3,161 | 17.8 |
| Overall WAPS Program | 1,767 | 9.9 | 2,848 | 16.0 |
| Don't know/no opinion | 2,931 | 16.5 | 6,133 | 34.5 |
| Blank | 37 | .2 | 102 | .6 |
| Total | 17,762 | 100.0 | 17,762 | 100.0 |

*Table 4.* **Survey Based Recommendation for Weight Changes, WAPS Variables**

| Item | Increase Number | Weight Percent | Decrease Number | Weight Percent |
|---|---|---|---|---|
| None-all properly weighed | 3,725 | 21.0 | 3,021 | 17.0 |
| Time in Grade | 2,437 | 13.7 | 1,423 | 8.0 |
| Time in Service | 2,604 | 14.7 | 1,960 | 11.0 |
| Promotion Fitness Examination (PFE) | 604 | 3.4 | 5,101 | 28.7 |
| Specialty Knowledge Test (SKT) | 4,067 | 22.9 | 882 | 4.9 |
| APRs | 3,817 | 21.5 | 1,627 | 9.2 |
| Decorations | 391 | 2.2 | 3,658 | 20.6 |
| Blank | 117 | .7 | 90 | .5 |
| Total | 17,762 | 100.0 | 17,762 | 100.0 |

Only 3 percent of the subjects thought that the PFE should be increased in weight, while 29 percent would devalue it. The similar percentages for decorations were 2 and 21 percent, respectively, making these the two most unpopular of the WAPS factors.

Twenty-six percent of personnel in their first enlistment would increase the weight of SKT compared with 18 percent of the third term group. The corresponding percentages for weight of APRs were 25 and 17 percent, respectively. An unexpected finding was that 25 percent of the third term airmen would decrease the value of decorations, although these are the people most likely to possess decorations. This is compared to 17 percent for first term airmen.

Nonpromoted airmen are apparently more negative towards the PFE than are those who were promoted, as 38 percent (as opposed to 25 percent promotees) would devalue it. Also, the nonpromoted airmen favor testing every cycle over the present system of one test being good for two cycles 36 versus 28 percent for promotees; promoted airmen chose the present system 36 to 29 percent for nonpromoted.

Asked if the Time in Grade (TIG) eligibility requirement should be changed, the majority (55 percent) favored its remaining as it is, 30 percent would like it shortened, and 7 percent would increase it. The expected relationship between term of enlistment and responses to the above question did occur; 45 percent of first term airmen would shorten the requirement while only 15 percent of the reenlistees would take such action.

More than half of the personnel believed that WAPS should be expanded to include grades E-8 through E-9, but this group was largely made up of E-1s through E-6s. The supergrade personnel were against such WAPS expansion.

### Preparation for WAPS Testing

Of the airmen surveyed who were tested under the WAPS, 52 percent made use of the base WAPS study and reference library (Table 5). Nineteen percent were on bases which did not have such a library. In the promoted group, 46 percent used the library when it was available, compared to 56 percent of the nonpromoted group. Stated differently, of the people in the promoted or nonpromoted groups who used the library for study, 41 percent were promoted. Of these who did not use the library facilities (those who studied alone, in small groups, or not at all, using only material obtained from such sources as orderly rooms, CBPOs, and OJT sections), 57 percent were promoted.

*Table 5.* **Use of WAPS Library by Promotion Status Including Only Subjects Tested Under the WAPS Promotion Status**

| | Status | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Promoted | | Not Promoted | | Other | | Total Tested | |
| Item | Number | Percent | Number | Percent | Number | Percent | Number | Percent |
| Library not available | 866 | 17.8 | 1,116 | 19.8 | 301 | 19.7 | 2,283 | 19.0 |
| Did use library | 2,253 | 46.3 | 3,166 | 56.3 | 820 | 53.6 | 6,239 | 51.9 |
| Did not use library | 1,743 | 35.8 | 1,341 | 23.8 | 408 | 26.6 | 3,492 | 29.0 |
| Total | 4,862 | 99.9 | 5,623 | 99.9 | 1,529 | 99.9 | 12,014 | 99.9 |

Of those surveyed who used the WAPS libraries (Table 6), only 34 percent considered the available reference materials to be entirely sufficient for both SKT and PFE. Twenty-eight percent found the materials to be only minimally adequate for both SKT and PFE. The materials were found to be totally inadequate by 14.6 percent. Sixteen percent of the nonpromoted personnel who used the library rated its facilities as totally inadequate, compared to 13 percent of the promotees. Sixty percent of the nonpromotees rated the library as minimally adequate or entirely sufficient for both SKT and PFE, as opposed to 64 percent of the promotees. This indicates that, of those who used the library, the promoted airmen tend to respond more favorably about it; but the promotees are less likely to have used the library in the first place, 46 percent having never used the library against 32 percent in this category for the nonpromoted group.

### Aptitude Differences in Survey Response

The General Aptitude Index, of the Airman Qualifying Examination (AQE), was selected as the aptitude measure for this analysis. These scores were retrieved from the Uniform Airman Record for 14,923 subjects. Duncan's Range Test was used to determine if the general aptitude level of subjects, who gave a given response, differed significantly from the aptitude level of those choosing alternative responses.

When used in this fashion the aptitude criterion is not absolute; there are no high AQE and low AQE groups, which retain their identity throughout the analysis of all survey items. Instead, aptitude scores were compared on an item-by-item basis. Mean differences reported are those which were significant at the .05 or .01 level of confidence.

*Table 6.* **Evaluation of Library Reference Materials by Subjects Who Have Used the WAPS Library**

| Item | Promote | Nonpromote | Other | Total |
|---|---|---|---|---|
| Totally inadequate | 12.9 | 16.0 | 14.2 | 14.6 |
| Adequate for SKT, not PFE | 7.8 | 8.3 | 8.5 | 8.2 |
| Adequate for PFE, not SKT | 14.9 | 15.9 | 14.3 | 15.2 |
| Only minimally adequate for both | 27.9 | 29.0 | 26.4 | 28.0 |
| Entirely sufficient for both | 36.5 | 30.8 | 36.5 | 34.0 |

Subjects with higher general aptitude scores tend to have more positive general opinions of the WAPS. They tend to feel that the WAPS is a fair and equitable promotion system that will select the right people for promotion. Asked how WAPS compares with the old system in terms of fairness, higher aptitude airmen either say they don't know enough about the old system to make a comparison, or they see WAPS as fairer; subjects with significantly lower aptitude scores see WAPS as about the same or less fair. Subjects who report they are adequately informed about the WAPS and who believe such information is readily available to airmen have higher AQE scores than those who responded negatively to these items ($p < .01$). In general, high aptitude airmen prefer the WAPS, while lower scoring subjects prefer the whole-man system with promotion boards.

With reference to the factors which go into the WAPS equation, higher scoring airmen would increase the weight of SKT and give less weight to Time in Service, Time in Grade, and APRs. Low-aptitude personnel would de-emphasize SKT and PFE. It is not surprising that low-aptitude subjects would not favor the importance placed on testing, as these are the people more likely to perform poorly on such tests. Low scorers tend to favor testing one time for competition to each grade, while a higher scoring group favors SKT-PFE testing every cycle, every other cycle, or any time desired to improve test scores.

In spite of their negative attitudes towards testing, lower aptitude subjects tend to have positive feelings toward the quality of the tests. Although they believe the SKT was too long (higher aptitude people feel it was too short), they consider the SKT current and adequately covering the career field. Also, subjects who rate the SKT as excellent, good, or fair score significantly lower on AQE than those who rate it poor or very poor. Although additional research is necessary to determine the existence of a trend, it appears that the higher the aptitude level, the more the subject favors a promotion system based on testing and the more critical he is of the tests that make up the system. Table 7 shows the aptitude test score means for subjects who responded to the questions dealing with opinions of SKT and PFE. Significant differences are given at the .05 and .01 levels of confidence.

*Table 7.* **Opinions of SKT and PFE**

| Item | SKT AQE Mean | SKT SD | PFE AQE Mean | PFE SD |
|---|---|---|---|---|
| A Excellent | 59.31 | 21.40 | 60.53 | 21.00 |
| B Good | 60.50 | 20.87 | 61.95 | 20.47 |
| C Fair | 61.48 | 20.60 | 62.65 | 20.74 |
| D Poor | 64.69 | 20.66 | 63.70 | 20.90 |
| E Very Poor | 65.20 | 19.80 | 62.71 | 20.84 |
| | **Significant Differences** | | **Significant Differences** | |
| | A C ($p<.01$) | | A C ($p<.05$) | |
| | A D ($p<.01$) | | A E ($p<.05$) | |
| | A E ($p<.01$) | | A D ($p<.01$) | |
| | B D ($p<.01$) | | C E ($p<.01$) | |
| | B E ($p<.01$) | | | |
| | C D ($p<.01$) | | | |
| | C E ($p<.01$) | | | |

Higher aptitude subjects are less likely to have used the WAPS study and reference library or to have participated in group study as opposed to studying alone. They consider their chances for promotion under the WAPS to be the same as under the previous system, while the lower aptitude scorers feel they have much less chance with WAPS.

## VII. CONCLUSIONS AND RECOMMENDATIONS

The mixed attitudes regarding the overall WAPS system are largely due to promote/nonpromote status, promoted airmen being decidedly more positive towards the system than nonpromoted

airmen. Even with this expected trend present, the pluralities of both groups felt that the WAPS was fairer than the whole-man system with promotion boards, although about a fourth of the non-promoted airmen saw WAPS as less fair.

Although promotion assessment was rated as the most desirable feature of the WAPS, about a third of the respondents feel that more information should be included on the score notice. It is suggested that the score notice be revised to include more information about the airman's relative standing among his peers.

The aptitude test data show high-aptitude subjects to be more in favor of WAPS testing than low-aptitude subjects. However, since there is probably some interaction between promote/nonpromote status and general aptitude variables, future research should consider these two effects separately and simultaneously.

## REFERENCE


**Koplyay, J.B.** *Field test of the weighted airman promotion system: Phase II. Validation of the system for grades E-4 through E-7.* AFHRL-TR-69-102, AD-697 798. Lackland AFB, Tex.: Personnel Research Division, Air Force Human Resources Laboratory, May 1969.