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A STUDY OF MILITARY-CIVIL SERVICE DIFFERENCES IN QUALITY OF LIFE

THESIS

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of the Air Force Institute of Technology
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Requirements for the Degree of
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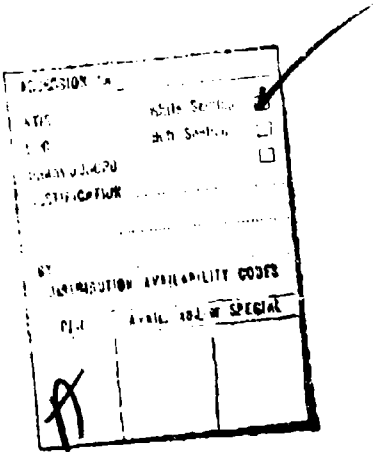

by

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Graduate Systems Analysis

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Preface

This thesis is a part of my efforts to fulfill the requirements for the degree of Master of Science in Systems Analysis from the Air Force Institute of Technology. I sincerely hope that it will provide Air Force planners and managers some insight into the differences between military and civilian personnel concerning their Quality of Life.

My conclusions are based on an advanced statistical procedure -- discriminant analysis. I have devoted a subsection to the discussion of discriminant analysis, so that an individual with some knowledge of statistics can understand my calculations. Chapters I, II, and V are not written in statistical jargon and are broader in scope; therefore, I believe that even if an individual knows nothing about statistical procedures, he will still find these three chapters understandable and interesting.

Every conclusion is based on classical statistical techniques, and I attempted to present the appropriate statistic for each conclusion. However, in a study as extensive as this, it is possible that an error might have been made. Any such error is mine and mine alone.

I wish to thank my advisor, Major Charles McNichols, who suggested the topic for this thesis and helped me learn all about the wonderful world of discriminant analysis. I also wish to express my appreciation to Lieutenant Colonel T. Roger Manley, who provided help and encouragement throughout the entire research effort. I extend my thanks to my typist, who did an excellent job -- especially when you consider that she had to work with me.

Finally, I thank my wife, Betty, for proofreading my work and insuring that all my sentences had subjects and verbs, commas and periods, and things like that. Her patence, encouragement, and understanding helped me make it through this monumental task.

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Abstract

Under the direction of the Chief of Staff of the Air Force, three surveys concerning the Quality of Air Force Life were administered to active duty Air Force members, Air Force Civil Service employees, and spouses of active duty Air Force members. This study analyzed the differences in Air Force members (military) and Civil Service employees (civilian), concerning the Quality of Life surveys. Many differences, not related to the Quality of Life, were known to exist and were discussed. The two groups often do the same work, even side by side, yet the two groups do not always share the same rewards and benefits. Discriminant analysis techniques were used to analyze the data. Discriminant analysis is a very powerful analytical tool that allows the analyst to distinguish between two or more populations. After the data was examined, military individuals were found to value the Health and Free Time aspects of their lives more than civilians, but they were less satisfied with them. Members of each group preferred to be supervised by, supervise, and work with members of the same group. Civilians seemed to be more satisfied with their jobs than military members. In relation to military members, civilians considered their grade too low for their work; civilians did not believe that their present jobs were preparing them to assume greater responsibility in the future; civilians had more job freedom; civilians received less recognition for a job well done and less feedback about job performance; and civilians had a higher opinion of military leadership. Both groups indicated a preference for male, rather than female, supervisors.

A STUDY OF MILITARY-CIVIL SERVICE DIFFERENCES IN QUALITY OF LIFE

I. Introduction

The AFMIG Survey

In March of 1975, the Chief of Staff of the Air Force established the Air Force Management Improvement Group (AFMIG). This was a temporary organization whose broad charter was

> To make a good service better...by examining the organization and management of the Air Force as they relate to or impact on the human resource...and by developing initiatives which enhance both the quality of leadership in the Air Force and the well-being of Air Force people (General Ellis, 1975).

The approach adopted by the study group in its attempt to comply with the charter was to examine various aspects of the Quality of Air Force Life (QOAFL). To accomplish this, nine factors were identified and examined in depth. These factors were:

1. ECONOMIC STANDARD
2. ECONOMIC SECURITY
3. FREE TIME
4. WORK
5. LEADERSHIP/SUPERVISION

6. EQUITY
7. PERSONAL GROWTH
8. PERSONAL STANDING
9. HEALTH

In the summer and fall of 1975, AFMIG administered the Quality of Air Force Life Survey to active duty Air Force (AF) personnel and AF civil service employees. (Henceforth, "civilians" identifies AF civil service employees; "military" is defined as active duty AF personnel, and "AF personnel" includes both civilians and military.) The two surveys were divided into nine sections, each related to a QOAFL factor. There were 150 questions on the military survey and 144 on the civilian survey. Included in each survey were 17 personal and organizational variables. The overall purpose of this study is to investigate the differences in opinions, perceptions, and attitudes of AF military and civilian personnel regarding their Quality of Life.

The Civilian-Military Team

America's defense establishment is far from being an exclusively military organization. The AF alone employs over 250,000 civilians (Air Force Magazine, 1976). Civilians are an indispensable part of the aerospace team. Further, the roles that civilians fulfill are not minor. Very often, civil servants have been stereotyped as clerks and typists; this is incorrect. While some civilians do hold administrative positions, many others now find themselves in more diversified jobs than ever before in the history of Amerian civil service. Indeed, only 5.6% of the civilian responses to the AFMIG survey indicated that

they were primarily employed in administrative duties. There is an ever-growing need for scientists, engineers, technicians, and other trained specialists -- men and women whose knowledge and skills are essential to the increasingly complex activities that support AF missions (Air Force Pamphlet (AFP) 40-5-4).

But the question might arise, "Are civilian employees necessary? Could the AF (and the rest of the Department of Defense) accomplish the mission without civilians?" AFP 40-5-4 gives four reasons why civil servants are necessary to the defense establishment:

1. To acquire abilities not otherwise available,
2. To assure continuity of administration and operation,
3. To obtain a nucleus of trained workers that can be expanded in an emergency, and
4. To free military personnel for military duties.

AFP 40-5-4 continues,

> To expand on these a bit, it is often more efficient and economical to use a civilian who is already qualified for a job than to train an officer, a soldier, seaman, airman, or Marine to do it. A good example would be a scientist of outstanding ability whose work as a civilian could contribute greatly to military research and development. Many such persons are hired to assist the military.
>
> Military personnel are subject to periodic transfer to different areas and duties. Civilian employees, on the other hand, usually work at their particular specialty--often at the same installation -- for years. They thus provide the continuity that is necessary, and sometimes vital, while improving the quality of the support they give.
>
> The advantages of having a nucleus of trained civilians on hand become obvious in an emergency. Civilians thoroughly familiar with their support activities are invaluable in breaking in newcomers during periods of rapid expansion. They make it easier for our defense establishment to go on an emergency footing quickly.

> Freeing military personnel for military duties is a longstanding function of civilian workers. Civilians are employed whenever possible to relieve military personnel of essential support functions. They let military personnel concentrate fully on their primary mission of training to keep combat ready or reacting immediately at full strength when an aggressor strikes.

Why the Interest in Military-Civilian Differences?

Management in the Air Force, similiar to management in business organizations, "...involves the coordination of human and material resources toward objective accomplishment" (Kast and Rosenzweig, 1974). There is a problem associated with management in the AF, however, that is not common to all business organizations. That problem is that the manpower resource comes from two different career services, the professional military and civil servants (Kintner, 1958). The two elements, military and civilian, each have different structures and are regulated by separate authority, but in many job settings the two groups work side by side, doing the same or similiar work. Hunter (1973) indicated the emphasis on having a harmonious military-civilian mix and getting the most from it in the following statement:

> As part of the Personnel Plan and the Total Force Concept, USAF civilian and personnel managers have already drawn a profile of the civilian force and will soon begin the work of modeling a military-civilian structure to study the best cost mix, as force levels draw down and manpower dollars tighten.

The Total Force Concept, as outlined in the Air Force Personnel Plan, called for a more viable integration of the 250,000 civilians and 584,000 military personnel that form the manpower resource of the AF (Hunter 1973, Air Force Magazine, 1976). The intent of the Total Force was to focus on the complementary nature of military-civilian elements,

in anticipation of eliminating, or at least minimizing, differences between the two and forming a "truly Total Force Concept" (Hunter, 1973).

While the demand for civilian skills and talents is growing, cuts in defense and Air Force spending have brought about a steady reduction in the number of AF personnel -- both civilian and military. Since 1968 at the peak of the war in Viet Nam, the AF has been reduced by 37% of its military personnel and by 25% of its civilian force (Air Force Magazine, 1976). AFP 40-5-4 states,

> In view of the keen competition for skilled workers and because of the urgent need to get full value for every dollar spent on defense, it is more important than ever before that the maximum use be made of our highly competent military-civilian team. This can be achieved only if military and civilian personnel cooperate as fully as possible and work together in harmony.

Many managers and commanders have individually attempted to promote harmony between the two elements. Shortly after Colonel Irby B. Jarvis assumed the position of Wright-Patterson Air Force Base (AFB) Commander, he expressed his views on military-civilian relations to the Dayton Daily News (1972):

> We're all in this ball game together, working for the United States, the Defense Department and the U.S. Air Force... I call everybody a blue suiter, he says, using the term usually applied to wearers of the Air Force uniform. I'm a believer in people and there's only one color at Wright-Patterson -- that's Air Force blue.

General Jack J. Catton, as commander of Air Force Logistics Command (AFLC), spoke to 500 civilian and military supervisors at AFLC headquarters at Wright-Patterson AFB. Referring to the teamwork of military and civilians, General Catton stated, "... I didn't say you officers, or you sergeants, or you civil service personnel. I didn't break it out

because it can't be broken out..." (Skywrighter, 1972).

Attempts at improving military-civilian relations have not been limited to commanders. An article in The Airman (1967) implied that the two groups work so closely together that differences were not discernible; further, the article stated, "If it weren't for the clothes they wear, you wouldn't be able to tell the military from the civilians in the Air Force."

Behavioral Implications

Despite these and other attempts to imply that no differences exist between military and civilians, the fact remains: differences do exist. These differences may be unimportant to the military and civilian team members, but to say that none exist is to be in error. Further, differences can be important, because they may affect personnel behavior.

French (1974) believes that a person has a ratio of input to outcome ("input" being work, suggestions, etc. while "outcome" is pay, job satisfaction, fringe benefits, etc.), and as long as this ratio is constant for all team members, then an "equitable" situation exists. If an inequitable situation arises -- real or perceived -- then personnel feel unfairly treated and adjust their behavior patterns. Adams (1963) defines inequity as follows:

> Inequity exists for Individual A whenever his perceived job inputs and/or outcomes stand psychologically in an obverse relation to what he perceives are the inputs and/or outcomes of Individual B. (P.424)

Adams (1963) also developed hypotheses about perceived inequity as it relates to organizational consequences.

> Individual A may increase his inputs if they are low relative to Individual B's inputs and to his own outcomes. If, for example, Individual A's effort were low compared to Individual B's and to his own pay, he could reduce inequity by increasing his effort on the job.
>
> Individual A may decrease his inputs if they are high relative to Individual B's inputs and to his own outcomes. If Individual A's effort were high compared to Individual B's and to his own pay, he might reduce his effort and productivity.
>
> Individual A may "leave the field" when he experiences inequity of any type. This may take the form of quitting his job or obtaining a transfer or reassignment, or of absenteeism. (P. 427-429)

Another possible behavioral impact of perceived inequity is that conflict may arise. Conflict is defined as "tensions, hostile attitudes, and antagonistic interests between groups, even if the phenomena have not resulted in open struggle" (Borg, 1971). Albanese (1975) makes the following observations about conflict: (The author's comments are in parentheses.)

1. Conflict always arises within a context of interdependence. (Thus, if military personnel and civilians are not interdependent, it's unlikely that conflict will arise.)
2. Much of conflict grows out of similiarities in the requirements of organization members. (If military personnel and civilians have similiar requirements -- which they do --, then conflict will probably appear.)
3. Conflict can also grow out of differences in requirements of organization members. (The relevance of this observation to the AF is that if two people are working side-by-side doing the same job, and one has more demanding job requirements,

then conflict will be the result.)

4. Some conflict is useful and some is harmful. (The harmful aspects of conflict are obvious: rebellion, absenteeism, sabotage, etc. The useful aspects arise because conflict may bring about necessary changes in organizational policy and/or structure.)

Albanese (1975) further notes,

> The point is that conflict is neither good nor bad; rather, it is an inevitable feature of organization life that arises out of the interdependencies, differences, and similiarities of organization members and their needs. Although some types of conflict have greater potential for contribution to organization effectiveness than others, the impact of conflict depends largely on the manner in which the conflict is handled. (P. 266)

In summary, the principal reason for studying differences -- real and perceived -- in military and civilian personnel is that if these differences are viewed as inequitable, then serious behavioral reactions may occur. Knowing what these differences are should be of use to AF planners and managers.

Related Studies

In a review of the literature, the author found very few studies that analyzed military-civilian differences. It seems that this was not an area of concern prior to the creation of AFMIG. Stephenson and Gantz (1965) studied a Navy organization engaged in research and development at China Lake, California. Two specific barriers to the unification of military and civilian personnel cited in the study were:

1. The custom of dressing military in uniform when they are in

essentially nonmilitary roles, and

2. The short tours of duty, since military personnel are often reassigned somewhere else before there is any real payoff for the effort needed to make them truly effective members of a team.

Dunham (1971) surveyed 225 General Service (GS) level personnel for his "Study of Environmental Factors Influencing Perceived Career Progression of Civil Service Employees." He included the following question, allowing the individuals to provide their own responses:

> What is the most frustrating thing (factor, person, influence, entity, etc.) in your work situation?

The most frequent response concerned supervision. The point is that this group of civilians did not say military supervision. This was an excellent opportunity for civilians to speak out if they perceived any conflict existed with military supervisors, but they did not. The author concludes that this study tends to imply that no conflict exists, as seen by this small sample of GS level employees, in the area of supervision.

Wagner (1971) surveyed 219 GS level employees and 110 AF officers to determine the type of organizational climate that existed in combined military-civilian work groups. Wagner discovered that civilians very definitely were aware of the presence of military officers within the combined work group. Some of the factors that received unfavorable comments were the officers' short tour length and resulting organizational changes with each military supervisor replacement, autocratic management techniques, and inexperienced military personnel assigned to positions

requiring extensive experience and knowledge of logistics and procurement. Further, Wagner states,

> Military personnel were viewed as forming a group with experiences and characteristics that are generally not found among the civilian population within the work environment, and the civilian views himself as being an outsider to that group. (P.75)

Wagner did not report the officers' observations concerning the GS level employees.

Apple and Lutz (1973) itemized 14 inherent differences between the military and civilian personnel systems. They surveyed 323 officers to ascertain the effects of these differences. These differences and their results will be discussed in Chapter II.

Ellis and Welch (1975) attempted to determine if perceived differences were found to exist, were they functional or dysfunctional? Ellis and Welch surveyed 78 military and 79 civilians in a System Program Office (SPO) of the Aeronautical Systems Division (ASD), Air Force System Command (AFSC), Wright-Patterson AFB, Ohio. They concluded:

1. The degree of conflict related to differences of perceived goals was relatively low.
2. Each group -- civilians and military -- saw its own group contributing more than the other group to organizational goals. This difference was considered not to be dysfunctional.

Purposes of this Study

The AFMIG surveys were not as limited as the preceding studies. AFMIG was authorized and established by the Chief of Staff of the Air Force, thereby placing a tremendous emphasis on the importance of the

surveys. Consequently, almost 11,000 military members and 17,000 civilians responded.

When the surveys were returned, AFMIG did a brief analysis of each group of surveys. Results were compared on a few questions, and differences between military and civilian co-workers were indicated. This study will analyze all common areas of both surveys to determine all differences between military and civilian personnel pertaining to their perceptions of their Quality of Life. The questions will be divided into five general areas: QOAFLI's, Job, Leadership, Finance, and People Related.

The second purpose is to investigate the influence of supervisors on perceptions of Quality of Air Force Life. That is, did civilians (military) with military supervisors have the same perceptions of their QOAFL as civilians (military) with civilian supervisors?

In a study funded by the Office of Naval Research and by the U. S. Army Research Institute for the Behavioral and Social Sciences, Bachman and Blair (1975) investigated the beliefs of career military people and civilians about the military. (Civilians in that study were not civil service.) They found that the variance of military responses was less than the variance of civilian responses. Underlying this study was the assumption that military members are basically conformists and tend to reflect the views of high-ranking officials.

The third purpose of this study is to determine if the variance of responses of career military members was the same as the variance of responses of AF civil servants pertaining to their QOAFL.

Assumptions

The assumptions on which this research is based are:

Assumption 1: The surveys were conducted on a random basis, and the samples surveyed are truly representative of the military and civilian populations. The author had nothing to do with either the preparation of the surveys or the collection of the data, so this is a necessary assumption. Discussion of this under "Advantages" will reveal that this is a valid assumption.

Assumption 2: Enough data exists to perform a meaningful analysis. This will be shown to be a valid assumption in "Advantages".

Assumption 3: The responses to the surveys were sincere. In other words, people, when answering the survey questions, answered each question earnestly, and answers were not randomly marked. This too will be demonstrated to be a good assumption.

Assumption 4: The responses to a survey are by definition only ordinal data at best, and many responses will be only nominal. Ordinal data is such that it can only be rank ordered, i.e. "less than" or "greater than". For example, on a question that has five possible responses, a response of five is greater than a response of one, but may or may not be five times as great as a response of one. Further, the difference between response A and response B may not be perceived as the same difference as between response B and response C. Interval data, however, is such that the difference between A and B is the same as between B and C. (For a complete discussion of data measurement scales, see Siegel 1956.) It has been a point of discussion for some time as to whether parametric statistics can be used with ordinal data; it is

generally accepted that this may not be done. Labovitz (1970) argues that, except for extreme situations, interval statistics can be applied to any ordinal-level variable. Labovitz continues,

> Although some small error may accompany the treatment of ordinal variables as interval, this is offset by the use of more powerful, more sensitive, better developed, and more clearly interpretable statistics with known sampling error.

Nie (1975) adds, "Statistical purists disagree with some or all of these suggestions, but more and more data analysts are following them, especially when the research is exploratory or heuristic in nature." The author assumes that this ordinal data can be treated as interval.

Limitations

The limitations of this research effort are:

Limitation 1: An inherent limitation in any survey is that the only areas that can be analyzed are those which the survey asked about. The AFMIG surveys concentrated on Quality of Air Force Life; therefore, no other areas, such as politics or religion, can be investigated. This is not a problem -- AFMIG was attempting to measure the QOAFL, and not any other areas.

Limitation 2: People's attitudes and opinions change over time. The variables that distinguish military and civilian co-workers may change. If these surveys were to be administered again today, undoubtedly the responses would be somewhat different. This presents no difficulty in analyzing the data, but AF planners, managers, and other users of the results must take into consideration any possible changes.

Limitation 3: The third limitation involves the possible responses.

In a structured survey, an individual will mark only one of the possible choices. For example, if the individual has only four possible responses, then he must pick the one closest to his real choice, even though it may not reflect his true opinion.

Limitation 4: The survey subjects were guaranteed anonymity, so there was and is no way of following up survey results by requestioning specific individuals. So, for example, if an individual left half of his responses blank, there is no way to find out why.

Advantages

The advantages of this research effort are the following:

Advantage 1: In many surveys that are accomplished for a Thesis effort, the student has to develop the survey and the measurement schemes, obtain official AF approval, administer the survey, collect the data, and enter it into some computer storage for analysis. This would present a challenge for any student. Because these surveys were initiated by the Chief of Staff of the Air Force, an elite group of experts was selected to accomplish all of the above functions. This fact should eliminate any questions as to the appropriateness of the survey instrument and the data collection methods.

Advantage 2: A tremendous amount of data was gathered. Almost 11,000 military personnel and 17,000 civilians responded to the surveys. Although not all of this data was used in the research, it did allow the author to use a large enough amount to easily negate many of the problems with survey data discussed under "Limitations" and should lead to meaningful conclusions about the AF populations.

Advantage 3: The surveys were strongly supported by the Chief of Staff. This fact, plus the guarantee of anonymity, would have tended to cause the survey responses to be sincere and candid. Also, a large number of individuals chose to make qualitative comments, and the content of those comments indicated sincerity.

II. Differences

Military and civilian personnel often work side by side, doing the same job. Even when the jobs are not identical, there is still a lot of teamwork involved between the two groups in order to accomplish the mission of the organization. It is the duty and responsibility of every supervisor who has civilian and military subordinates, to integrate these two groups into an effective work group. However, the inescapable fact remains that the two personnel systems are vastly different. It is the purpose of this chapter to discuss some of these differences.

Air Force and Civil Service Differences

In 1973 Apple and Lutz identified 14 areas in which differences ist between military and civilian personnel systems. These 14 areas were:

1. Pay
2. Leave policies
3. Medical benefits
4. Retirement plan
5. Promotions
6. Transfer policies
7. Dress and personal appearance
8. Periodic performance evaluations
9. Eligibility for training
10. Eligibility for duties not connected with the primary job assignment

11. Procedures for resolving differences

12. Overtime

13. Use of base facilities

14. Physical fitness

Pay. Whether or not differences in pay exist for a military man and a civilian working side by side is an extremely complicated question. Very often, however, this is where their salaries are compared. These comparisons are awkward, for the two pay systems are structured entirely differently, and there is no official (AF stamp of approval) way to compare military and civilian grades.

The military pay is composed of three principle components. The first one is base pay and is determined by rank and years of service. The second component is Basic Allowance for Subsistence (BAS). All officers receive the same amount, while enlisted personnel may receive differing amounts dependent upon their qualifying for separate rations. The third component of military pay is Basic Allowance for Quarters (BAQ); the allowance varies by rank and marital status. Additionally, many officers qualify for aviation pay, which is determined by years of aviation service (Air Force Magazine, May, 1976).

Civil service pay depends on whether the employee is General Schedule (GS), Supervisory Pay Schedule (WS), Leader Pay Schedule (WL), or Non-Supervisory Pay Schedule (WG). For GS employees, the amount of pay is one lump sum payment based on grade and current step rate. The step rate is determined by the individual's length of service and performance records (Air Force Regulation (AFR) 40-527).

While the GS salaries are universal, or basically the same everywhere

throughout the world, WS, WL, and WG are different. GS pay is based on "equal pay for equal jobs"; WS, WL, and WG are based on "equal pay for equal jobs within a certain geographic locale". So a WG-10 at Wright-Patterson AFB might earn a different amount than a WG-10 at Robins AFB, while a GS-10 will earn the same at both bases. To determine WS, WL, and WG pay rates, local industry and craft unions are surveyed annually to ascertain the going rate for that locale. These local surveys serve as a basis for the pay scales (Air Force Pamphlet (AFP) 40-19).

Another difference in the pay systems is the fact that military personnel only pay Federal and State Income Taxes on their base pay and aviation pay, if so entitled; BAS and BAQ are non-taxable. Civilians pay income taxes on their entire salaries. According to the United States Senate Appropriations Committee, this tax savings is worth $406 to an Airman Basic, and it increases up to $3627 for a General (U.S. News and World Report, December 8, 1975).

As pointed out above, no official means exist to equate military and civilian grades. Apple and Lutz (1973) were able to obtain an unofficial comparison of military officer and GS grades from the 2750th Air Base Wing Civilian Personnel Branch to aid the reader in making comparisons of pay; the 2750th Air Base Wing Civilian Personnel Branch would not provide this author with these comparisons, so Apple and Lutz's were used. Table I equates these grades.

Table II shows Regular Military Compensation (RMC). RMC includes basic pay, allowances for quarters and subsistence, and the tax advantage related to the two tax-exempt allowances. Table III lists aviation pay for those entitled members. The GS pay schedule is shown in Table IV;

Table I

Unofficial Comparison of Military Officer Ranks and Equivalent Civil Service (General Schedule) Grades

Air Force	Civil Service
Colonel (0-6)	GS 15
Lieutenant Colonel (0-5)	GS 14
Major (0-4)	GS 13
Captain (0-3)	GS 12
Lieutenant (0-2 & 0-1)	GS 11

Source: Apple and Lutz, 1973

Table II

Regular Military Compensation

Here Is What Your Regular Military Compensation Is

PAY GRADE	Under 2	Over 2	Over 3	Over 4	Over 6	Over 8	Over 10	Over 12	Over 14	Over 16	Over 18	Over 20	Over 22	Over 26
COMMISSIONED OFFICERS														
O-10	—	—	—	—	—	—	—	—	—	—	—	—	—	[illegible]
O-9	—	—	—	—	—	—	—	—	—	—	—	—	—	46028.24
O-8	—	—	—	—	—	—	—	—	—	—	45647.28	—	46874.05	[illegible]
O-7	—	—	—	—	—	—	—	—	—	—	43030.30	43143.21	43036.61	43030.14
O-6	23602.08	—	26010.62	—	—	—	26800.64	26824.25	27570.80	31227.80	32852.86	33734.17	34016.37	37510.77
O-5	19280.37	—	23243.31	23227.02	23200.53	23203.53	23800.57	24833.72	26104.25	27836.86	29108.04	29848.37	30857.83	—
O-4	16607.87	—	20277.56	20276.08	20677.30	21830.70	22554.80	23801.46	24408.22	25308.63	25660.86	—	—	—
O-3	15247.86	16606.41	17420.71	18848.56	19704.50	20200.25	21221.27	22120.37	22603.07	—	—	—	—	—
O-2	13353.80	14241.83	16308.98	16831.70	17111.54	17111.07	—	—	—	—	—	—	—	—
O-1	11304.07	11730.86	13561.96	13651.08	—	—	—	—	—	—	—	—	—	—
COMMISSIONED OFFICERS WITH MORE THAN 4 YEARS OF ENLISTED SERVICE														
O-3	—	—	—	16866.01	19080.36	20287.84	21221.43	22120.46	22871.31	—	—	—	—	—
O-2	—	—	—	16830.01	17111.07	17567.87	18333.64	18841.36	18388.86	—	—	—	—	—
O-1	—	—	—	13656.31	14272.98	14880.06	15110.31	15661.30	16141.87	—	—	—	—	—
WARRANT OFFICERS														
W-4	—	—	—	—	—	—	0	19887.80	20418.00	21022.84	21480.31	22083.04	22716.32	24163.01
W-3	—	—	—	—	15661.80	16342.14	17059.00	17408.23	17836.61	18082.27	18857.12	19488.30	20080.57	20880.84
W-2	—	—	13802.80	13784.01	14323.42	14886.28	15310.25	15775.43	16130.83	16673.01	16801.78	17418.50	18006.87	—
W-1	11080.30	12120.63	12120.38	12842.68	13256.95	13880.96	14071.77	14488.56	14810.46	15327.98	15738.54	16178.87	—	—
ENLISTED MEMBERS														
E-9	—	—	—	—	—	—	—	17474.07	17787.73	18117.41	18430.86	18738.58	19650.46	21121.53
E-8	—	—	—	—	—	14016.66	15184.11	16474.06	15788.82	16068.83	16343.06	16845.00	17378.74	18880.06
E-7	11608.80	12160.01	12302.28	12607.70	12887.83	13180.78	13457.87	13763.00	14180.79	14477.06	14772.57	14812.84	15840.47	17113.82
E-6	10218.98	10784.74	11078.84	11382.94	11633.63	11824.21	12224.20	12870.18	12851.40	13241.12	13386.79	—	—	—
E-5	9182.40	9670.33	9881.23	10238.01	10880.70	10841.86	11220.01	11408.28	11651.04	—	—	—	—	—
E-4	8427.60	8723.21	8078.38	9564.52	9800.76	—	—	—	—	—	—	—	—	—
E-3	7888.64	8179.57	8402.54	8632.56	—	—	—	—	—	—	—	—	—	—
E-2	7487.27	—	—	—	—	—	—	—	—	—	—	—	—	—
E-1	6680.66	—	—	—	—	—	—	—	—	—	—	—	—	—

Source: Air Force Times, Vol. 37, No. 15:4.

Table III
Aviation Service Pay

PHASE I

Monthly Rate	Years of Aviation Service (including flight training) As an Officer
$100	2 or less
$125	over 2
$150	over 3
$165	over 4
$245	over 6

PHASE II

Monthly Rate	Years of Service as an Officer
$225	over 18
$205	over 20
$185	over 22
$165	over 24 but not over 25
0	over 25

NOTE: An officer in pay grade 0-7 may not be paid at a rate greater than $160 a month. And an officer in pay grade 0-8 or above may not be paid at a rate greater than $165 a month.

Source: Air Force Magazine, May, 1976.

Table IV

GS Pay Schedule

Steps	1	2	3	4	5	6	7	8	9	10
GS-1	$5,810	$6,004	$6,198	$6,392	$6,586	$6,780	$6,974	$7,168	$7,362	$7,556
2	6,572	6,791	7,010	7,229	7,448	7,667	7,886	8,105	8,324	8,543
3	7,408	7,655	7,902	8,149	8,396	8,643	8,890	9,137	9,384	9,631
4	8,316	8,593	8,870	9,147	9,424	9,701	9,978	10,255	10,532	10,809
5	9,303	9,613	9,923	10,233	10,543	10,853	11,163	11,473	11,783	12,093
6	10,370	10,716	11,062	11,408	11,754	12,100	12,446	12,792	13,138	13,484
7	11,523	11,907	12,291	12,675	13,059	13,443	13,827	14,211	14,595	14,979
8	12,763	13,188	13,613	14,038	14,463	14,888	15,313	15,738	16,163	16,588
9	14,097	14,567	15,037	15,507	15,977	16,447	16,917	17,387	17,857	18,327
10	15,524	16,041	16,558	17,075	17,592	18,109	18,626	19,143	19,660	20,177
11	17,056	17,625	18,194	18,763	19,332	19,901	20,470	21,039	21,608	22,177
12	20,442	21,123	21,804	22,485	23,166	23,847	24,528	25,209	25,890	26,571
13	24,308	25,118	25,928	26,738	27,548	28,358	29,168	29,978	30,788	31,598
14	28,725	29,683	30,641	31,599	32,557	33,515	34,473	35,431	36,389	37,347
15	33,789	34,915	36,041	37,167	38,293	39,419	40,545	41,671	42,797	43,923
16	39,629	40,950	42,271	43,592	44,913	46,234	47,555	48,876	50,197	
17	46,423	47,970	49.517	51,064	52,611					
18	54,410									

NOTE: Federal law limits the pay of people in top grades to $39,600 per year.

Source: Air Force Times, November 15, 1976.

the pay schedules for WG, WL, and WS are not presented, because they may differ from one geographical area to another.

The author would like to reiterate a point made earlier: when a military individual and a civilian are working side by side, doing the same job, it is virtually impossible to determine if they are receiving equal pay. It is not hard to understand how an inequity might be perceived in this area.

Leave Policies. Another difference between military and civilian personnel is that leave is earned and used in diverse manners. The system for the military is relatively straightforward; all military members, regardless of rank or length of service, accrue leave at 2½ calendar days for each month of active service (Air Force Manual (AFM) 177-373, Vol. III). Consequently, military personnel are entitled to 30 days of leave per year.

Civilian employees earn leave in a completely contrasting way. First, a civilian is placed in one of the following three categories:

Category 1 -- Employees with less than three years of service.

Category 2 -- Employees with three but less than 15 years of service.

Category 3 -- Employees with 15 or more years of service (AFR 40-630). Moreover, civilians must be continuously employed for a 90-day period before any leave can be credited to or used by a civil service employee (AFR 40-630). After this 90-day period, a civilian earns annual leave as shown in Table V.

"Sick leave" is nonchargeable leave for a military person, but he must have written authorization from a physician to be absent from duty due to illness (AFM 177-373, Vol. III). For civil service employees,

Table V

Hours Annual Leave Credit for Civil Servants Per Pay Period

Leave Category	First 25 Pay Periods	Last Pay Period
1	4	4
2	6	10
3	8	8

Source: AFR 40-630.

Table VI

Military Medical Benefits

Rank	Medical Benefits per year
0-10	$ 869
0-9	1172
0-8	1172
0-7	1172
0-6	1477
0-5	1477
0-4	1477
0-3	1477
0-2	1172
E-9	1477
E-8	1477
E-7	1477
E-6	1477
E-5	1172
E-4	869
E-3	564
E-1	564

Source: U.S. News and World Report, December 8, 1975

however, sick leave is chargeable leave, and it is left up to each individual's discretion as to whether he should stay home and recuperate. Full-time civilians, regardless of grade, earn sick leave at the rate of ½ day per pay period (AFR 40-630).

When a military person has taken leave, his supervisor certifies the last duty day that the individual was present for duty before he departed, and the next duty day that the individual was present for duty. Then every day in that period that the individual has been on leave is charged as leave unless the individual signs in on a non-duty day, in which case the sign-in day is moved back one day (AFM 177-373). This is not the case with the civilian co-workers. Civilians are only charged leave for absences on regular workdays -- days on which they normally would work and receive pay. Thus, if a military and civilian each left on leave the Saturday before Thanksgiving, and each returned the Sunday after Thanksgiving, the military individual would be charged with eight days of annual leave, while the civilian would have been charged with only four days. Leave, however, is charged to the civilians by the hour, not by the day; so in this example, the civilian would have been charged with 32 hours of leave (Federal Personnel Manual, 1969).

Medical Benefits. Medical benefits that military personnel have are often cited as an incentive to a career in the Armed Forces. Military personnel are provided medical services that include inpatient, outpatient, dental, and related professional care. These services are provided virtually free for active duty and retired military and their authorized dependents (AFM 168-4). This medical care is generally

provided at military installations; even in the cases where care is provided at off-base facilities, it costs the military members very little. According to the U. S. Senate Appropriations Committee, medical benefits are shown in Table VI.

Civilians do not share in these benefits to the same degree that military members do. Civilian employees are entitled to, at little or no expense, emergency care, care for on-the-job illnesses or injuries, and some outpatient care from military medical facilities. This outpatient care is limited to:

(a) Pre-employment physical examinations,

(b) Immunizations (when authorized),

(c) Examinations following sickness absenteeism, when indicated,

(d) Examinations upon request of employee's supervisor or competent medical authority,

(e) Periodic examinations to determine effect of environment (AFR 168-6).

Other than these exceptions, civilians must provide for medical care for themselves and for their dependents. There is a type of group insurance available to civilians; moreover, the federal government, through the Federal Employees Health Benefits Program, pays part of the cost. The Federal Employees Health Benefits Program is a voluntary program designed to protect the civilian and his family against medical costs, and to provide this protection at a lower cost than the civilian could as an individual (The Federal Employees Health Benefits Program, 1969).

Retirement Plan. The military retirement system has been another great incentive to the military career. One of the first items to be noted about the military retirement system is that it is non-contributory, i.e., military members do not actually contribute money into a central fund as is done with many retirement programs in business and industry. Also, there is no minimum age limit to retirement; retirement eligibility is based on length of service. In general, military personnel may retire any time after completion of 20 years of active duty military service. Once retired, military personnel have virtually the same medical benefits and use of base facilities as do active duty personnel. Computation of military pay is straightforward: 2½% of the years in service times the monthly base pay that he would receive in his active duty grade or the highest grade in which he served satisfactorily (AFM 35-7).

Table VII shows the value of retirement benefits, as determined by the Senate Appropriations Committee.

Table VII

Military Retirement Benefits

Rank	Value of Retirement Benefits
O-10	$7709
O-9, O-8	7696
O-7	6923
O-6	6155
O-5	5085
O-4	4314
O-3	3638
O-2	588
E-9	3619
E-8	3077
E-7	2730
E-6	2382
E-5	1853
E-4	322
E-3	294
E-1	254

Once again, the civilian retirement system is quite different from the military retirement system. The civilian retirement system is a contributory one: civilians pay in 7% of their salary into a fund. However, the government also contributes to civilian retirement. To be eligible for retirement, a civilian must be in one of the three following categories:

(1) Age 62 and completing at least 5 years of civilian service.

(2) Age 60 and completing 20 years of creditable service, including 5 years of civilian service.

(3) Age 55 and completing 30 years of creditable service (Obligations, Benefits, and Privileges of Membership in the United States Civil Service Retirement System, 1970).

The minimum age requirement will be noted. The differences in retirement eligibility between the two populations mean that most military personnel can retire in their early forties while civilians can not retire until at least age 55.

Once a civilian is eligible for retirement, he may either take a single lump-sum payment or he may choose annuity payments (Standard Form 105). To compute the annuity payments, it is first necessary to determine an individual's "high-3" average salary, which is his highest average salary during any three consecutive years. After determining this amount, the following formula applies:

(a) Take: 1½% of the "high-3" average salary and multiply the result by 5 years of service.

(b) Add: 1 3/4% of the "high-3" average salary multiplied by years of service between 5 and 10.

(c) Add: 2% of the "high-3" average salary multiplied by all service over 10 years of service (Standard Form 105).

Promotions. Promotion for a military officer is based on length of service and the officer's personnel file. Included in this personnel file are performance reports, training reports, decorations, various jobs held, academic and professional military education, and other miscellaneous personal data. Promotion is virtually automatic to the rank of First Lieutenant. For promotion to Captain and higher ranks, a central selection board convenes and reviews the records of all officers eligible for promotion to a certain rank. Eligibility is based on years of service in the present rank and is not dependent upon the grade authorization for the position that the officer is currently holding. The board then identifies the officers to be promoted.

Enlisted personnel are not promoted in the same manner. Until recently, selection for E-8 and E-9 was basically the same as that of officers. The new method, implemented in August, 1976, will be in two phases. In Phase One, all eligibles will be scored under the following point system:

(1) Supervisory Exam -- A new test to be revised annually, it is scored by the percentage of right answers given. Maximum possible-100 points.

(2) Airman Performance Report (APR) mean -- The overall ratings from performance reports covering the last five years (no more than 10 reports) will be averaged and multiplied by 15. Maximum possible-135 points.

(3) Professional Military Education (PME) -- Training in residence or by correspondence will count. A command-level NCO academy counts 15 points and the USAF Senior NCO Academy carries 25. Maximum possible-35 points.

(4) Decorations -- A Medal of Honor counts 15 points, an AF Cross 11, a Distinguished Service Medal or Silver Star 9, Legion of Merit or Distinguished Flying Cross 7, Bronze Star, Airman's Medal or Meritorious Service Medal 5, Air Medal or Commendation Medal 3 and Purple Heart 1. Equivalent medals of other services count the same. Maximum possible-25 points.

(5) Time in Grade -- Each month in grade counts one half of one point. Maximum possible-60 points.

(6) Time in Service -- Each month counts one-twelth of one point. Maximum possible-25 points (Air Force Times, August 2, 1976).

The maximum number of points in Phase One will be 380. In Phase Two, a central board meets and evaluates the records in the same manner as for officers. The maximum score an individual can receive in Phase Two is 450 points, making the grand total 830 points. Those individuals with the highest scores over both phases combined will be promoted (Air Force Times, August 2, 1976).

Promotion to the lower enlisted ranks is different yet. Promotion to E-2, E-3, and E-4 is virtually automatic. For selection to E-5, E-6, and E-7, competition is similar to Phase One of selection for promotion to E-8 and E-9. Airmen in these grades compete under the Weighted Airmen Promotion System (WAPS). "Under this system, personnel data elements are collected, validated, processed, and converted to weighted factor

scores for promotion selection purposes" (AFR 39-29). Table VIII shows the points and factors used under WAPS.

Table VIII

WAPS Points and Factors

Factors	Maximum Points
Specialty Knowledge Test (SKT) Score	100
Promotion Fitness Examination (PFE) Score	100
Time in Service	40
Time in Grade	60
Decorations	25
APRs	135
Total	460

(AFR 39-29).

The civilian promotion system is administered under the Merit Promotion System, and like the military promotion systems, it is designed to promote civilians to a higher grade based on open competition between eligible employees.

> The promotion program is administered through promotion plans developed, established, and issued by HQ USAF, major commands, or installations with central civilian personnel offices. They are based on guidelines published by the Civil Service Commission in FPM chapter 335 and by HQ USAF in AF Supplement to Basic FPM chapter 335 (AF 3351). Each plan identifies the positions it covers and describes the procedures that apply in identifying, evaluating, and selecting employees for advancement to positions covered by the plan. Servicing civilian personnel offices make these plans available to supervisors and employees served by them (AFR 40-335).

Transfer Policies. Military personnel accept as a fact of life that they will move from one geographical area to another at frequent intervals. In fact, recruiters have taken this aspect of military life that some believe is a disadvantage, and advertise that the Air Force offers "travel opportunities" nonexistent outside the military life. Once a

military person has a permanent change of station (PCS), he is guaranteed a minimal length of time at the location before he receives another PCS (AFR 36-20). Due to "needs of the Air Force", however, these minimal times on station may be waived.

As will be pointed out later, civilians do not PCS as often as military personnel. Civil service regulations, however, do stress the theme of mobility and state that "...commands should develop positive programs that encourage voluntary mobility on the part of employees" (AFR 40-303). "Generally, a civil servant applies for and accepts a job at a government installation with the same reasoning that he would use in going to work for a commercial enterprise" (Apple and Lutz, 1973). "In fact, he may serve his entire career in the same area, living within the same community" (Nierstheimer, 1964).

Dress and Personal Appearance. AFR 35-10 is explicit in explaining why strict requirements of dress and personal appearance are necessary for military personnel. AFR 35-10 states:

> Each Air Force member must maintain a high standard of dress and personal appearance. Personnel who do not comply with the standards of personal appearance contained in this chapter may be considered for involuntary separation under provisions of AFR 36-3 (officers) and AFM 39-10 or AFM 39-12 (enlisted) as appropriate. The standard consists of four elements -- neatness, cleanliness, safety, and military image. The first three are absolute, objective criteria required for the efficiency, health and well-being of the force. The fourth--military image--is a subjective but necessary element of the standard because the American public and its elected representatives draw certain conclusions as to military effectiveness based on what they see, that is, the image the Air Force presents of the Air Force. This appearance must instill public confidence and leave no doubt that the service member lives by a common standard and is responsive to military order and discipline. Subjective judgment as to what constitutes the proper image differs in and out of the military. The Air Force has to spell out what is and is not an acceptable image. Neither the

> Air Force nor the public expects absolute uniformity of appearance. Each member has the right, within established parameters, to express individuality through appearance. However, the image of a disciplined service member who can be relied upon to do the job when called requires sufficient standardization and uniformity to exclude the extreme, the unusual, and the fad. One of the conditions which adversely affects the image of the Air Force is obesity. When an individual's overweight condition is such that it substantially detracts from the military image of the Air Force, the member is obese. Therefore, an Air Force member who is not in compliance with the weight standards of AFR 50-49 and is obese does not meet the standards of personal appearance required by this regulation.

The regulation -- AFR 35-10 -- then establishes these minimum standards for uniforms, hair, sideburns, mustaches, beards and goatees, and wigs. The standards are established for all personnel -- male and female, officer and enlisted (AFR 35-10).

The subject of civilian personal appearance is addressed by AFR 40-735:

> Employees are expected to comply with reasonable apparel and grooming standards that derive from consideration of health, safety, and type of position occupied. Any prohibitions by supervisors on employee dress and appearance must be based on a clear showing that the prohibited things contribute to an unsafe, non-productive, or disruptive work environment. Personal displeasure of supervisors for styles and modes of dress and grooming that may be currently in vogue is not an adequate criterion for making such a determination. Discussions between a supervisor and an employee on an alleged failure to comply with reasonable standards must precede the imposition of disciplinary action.

The differences are obvious enough not to warrant further discussion. Suffice it to say that military personnel must conform to very stringent standards of dress and personal appearance while the civilian is allowed much more freedom.

Periodic Performance Reports. Apple and Lutz (1973) discussed

this area extensively. Their effort, however, was directed at officers, not all military personnel. Since their study, the new Officer Effectiveness Report (OER) system has come into being. The differences in this area are now no longer relevant, with the exception of one difference. Apple and Lutz (1973) determined that only the last performance report is maintained for civilians in their personnel file, while all performance reports are maintained for military personnel.

Eligibility for Training. Educational opportunities exist at almost every Air Force base, both in the United States and at bases abroad. Many universities and colleges offer courses after duty hours that allow an individual to earn a Bachelor's Degree, a Master's Degree, and even a Ph. D.

These programs are generally open to both military and civilian personnel, as far as the Air Force is concerned. Of course, the individual still must meet the college or university's standards. All personnel are encouraged to improve their educational backgrounds by taking advantage of these on-base educational programs.

If the Air Force determines a need for a specific skill or knowledge, the Military Personnel Center (MPC) at Randolph AFB, will identify individuals (usually officers) to attend classes full time to develop the necessary skills and requirements. The full-time participation in collegiate studies may take place at a civilian institution or at the Air Force Institute of Technology (AFIT) at Wright-Patterson AFB, Ohio (AFM 50-5, AFR 53-8).

Formal education in institutions of higher learning is only part

of the education of career Air Force (military and civilian) personnel. Professional Military Education (PME) is an integral part of an individual's military training. AFR 53-8 states: "The prime purpose of Air Force professional military education is to develop experts in aerospace power, ..." For officers, PME "... is designed to provide the knowledge of military matters needed by all officers, regardless of their Air Force specialty." (AFR 53-8). For NCO's, PME "... is designed to prepare selected noncommissioned officers for positions of greater responsibilities by broadening their leadership and managerial capabilities, and by expanding their perspective of the military profession" (AFR 50-39).

These educational opportunities also exist for civilians, with the qualification found in AFR 40-410:

> ...many programs exist or may be established to aid supervisors in solving employee and employee-skill problems. These include: Orientation, Apprentice, Self-Development, On-the-Job, Cooperative Work Study at the graduate or undergraduate level, and other specific training programs for meeting specific skill shortages (emphasis added).

In other words, in order for civilians to participate in many training and educational programs, the program must relate directly to their job. Military members, on the other hand, are encouraged and expected to participate in educational programs, regardless of whether or not the program relates directly to the job.

Eligibility for Duties not Connected with the Primary Job Assignment. There are many jobs in the Air Force that are necessary to be performed at all organizational levels, regardless of the size of the organization.

In many organizations, there are simply more jobs than individuals to perform these jobs. Moreover, many of these jobs do not require a full-time position. Depending on the size of the organization, some jobs may require only a few minutes each day. These type jobs are commonly known as "additional duties", in that they are additional to the individual's primary duty. There are other jobs or tasks that require accomplishment after normal duty hours and on weekends and holidays. Examples of such jobs are duty officers, officer of the day (OD), charge of quarters (CQ), and supervisor of flying (SOF).

Both military and civilian personnel are eligible for both type duties; however, supervisors must consider the fact that if such duties require an individual to work after normal duty hours, then the civilian would be eligible for overtime compensation while the military member would not. So, because many supervisors are forced to be frugal beings, additional duties have become identified more with military personnel than with civilians.

At times, it is necessary for personnel to be assigned to a different job for short periods of time. This presents no problems for military members; many times military individuals are detailed out--even to other organizations. When civilians are detailed out, however, the situation is different. In this situation, AFR 40-321 states: "... a record of the detail must be placed in the employee's official personnel folder because the experience and training gained is important for additional placement benefits for promotion or assignment during reduction-in-force."

Procedures for Resolving Grievances. Both military and civilian

personnel have the right to air their complaints. AFR 123-11 says: "All members of the Air Force, military or civilian, have the right to present complaints without fear of retaliatory action." The complaints are submitted through supervisory channels and hopefully will be resolved at the lowest practical echelon level. If not resolved at one level, the individual can pursue his grievance to higher levels and to the Inspector General (IG), if he so desires (AFR 123-11). AFR 40-771 and AFR 123-11 give all the details for submission of grievances, and will not be repeated here.

The difference the author wishes to point out in this area concerns labor unions. When a civilian is a member of an authorized union, he may obtain the help of a highly skilled specialist in an attempt to resolve the complaint. At the present time, no such assistance is available to the military member.

Overtime. Local commanders establish normal duty hours designed to meet the local mission requirements. Generally, an eight-hour day, 40-hour week is established. Although these specific duty hours are established locally, they are limited by executive order and with minor exceptions may not exceed eight hours per day or 40 hours per week for civilians (Nierstheimer, 1964). Any authorized work in excess of this qualifies the civilian for overtime compensation. GS employees may receive this overtime compensation in compensatory time off, if desired (AFR 40-552).

There is no such thing as overtime for military personnel. As Pentagon officials told U. S. News and World Report (1975), "... a

military man, unlike civilian federal employees, is on duty 24 hours a day, with no opportunity for overtime." If a military person is to work in excess of the established normal duty hours, his supervisor, conditions permitting, may allow him compensatory time off. This action would be done only at the local unit, however, and would be the exception--definitely not the rule.

Use of Base Facilities. Base facilities are defined by AFR 147-14 as any separate units of real property at which exchange selling and administrative or support functions such as retail sales, food services, and concessions are performed. Base exchange (BX) and commissary benefits are substantial, according to the Senate Appropriations Committee (U. S. News and World Report, 1975). The use of base facilities is limited to active duty military, retired military, and their dependents.

In those rare cases where civilians reside on a military installation, at the convenience of the government, civilians may have some limited privileges (AFR 147-14). Another exception is that civilians are authorized to use BX snackbars and cafeterias. Other than these minor exceptions, base facilities are for active duty military personnel, retired military personnel, and their dependents.

Special Services is another area where civilians may not be allowed to participate. The Special Services Program includes

a. Sports. Self-directed, directed, competitive, instructional, and spectator sports programs conducted within or on gymnasiums, courts, and sport fields.

b. Motion Pictures. Entertainment motion picture services as established by the Army and Air Force Motion Picture Service.

c. Social Recreation Programs. Social, cultural, competitive, and creative activities (directed, self-directed, and self-motivated), coffee house activities, holiday events, tours, and other varied recreation services geared for the young airman.

d. Entertainment Programs. Music, theater, base entertainment, unit and commercial entertainment, and touring shows, including the technical supporting arts of direction, staging, music arranging, and so forth.

e. Arts and Crafts Programs. Instructional based activities in ceramics, fine art, jewelry/art metal, photography, vehicle repair, woodworking, and miscellaneous hand crafts provided within arts and crafts centers, specialized crafts facilities, and auto hobby shops.

f. Aero Clubs. Recreation flying activities conducted as membership clubs.

g. Youth Activities. Creative, social educational, cultural, sports, and civic activities for eligible preteens, junior teens, and senior teens.

h. Recreation Membership Clubs. Activities designed to meet the recognized needs of individuals. These clubs include, but are not limited to, automotive, motorcycle, scuba, sports parachute, snowmobile, watercraft, and rod and gun clubs. They are operated as membership club nonappropriated fund instrumentalities. (Volume IX of AFR 215-1 provides guidance for these clubs and individuals desiring to participate in these activities but not associated with a club.)

i. Outdoor Recreation. Outdoor activities to include, but not be limited to, hunting, fishing, boating, riding, and camping provided at recreation areas, FAMCAMPS, marinas, beaches, skating rinks, swimming pools, ski slopes, playground/picnic/park areas, and so forth.

j. Open Messes. Open messes and related activities, which provide facilities, equipment, and services for recreation, dining, social, and morale purposes.

k. Libraries. General, technical, research, and academic library services.

l. Special Services Supply and Support Requirements. Funding and supply activities in support of morale and recreation programs and of recreation equipment check-out systems.

m. Child Care Programs. Supervised care of children housed in a building or portion of a building specifically identified for child care purposes.

n. Golf Facilities. Golf courses, driving ranges, putting greens, pro shops, and snack bars in support of golfing activities.

o. Bowling Centers. Bowling lanes, pro shops, snack bars, and instructional and competitive activities in support of bowling interests (AFR 215-1).

The Special Services Program is designed primarily to provide adequate facilities and maximum opportunities for active duty military personnel and their dependents to participate in leisure-time activities that stimulate, develop, and maintain their mental, physical, and social well-being. Installation commander may authorize additional categories of participants (retired military personnel and their dependents, DOD civilian personnel and their dependents, and so forth), provided active duty military personnel are not deprived nor restricted in their participation in the

program, adequate facilities are available, and such participation is not otherwise prohibited (AFR 215-1).

It will be noted that civilian personnel are authorized participation in these activities only in limited circumstances as outlined above. If two people are working side by side, doing the same job, and one participates in all the above programs while the other one is prohibited, could a perceived inequity arise?

Physical Fitness. Military personnel are expected to be physically fit. The official Air Force program to promote physical fitness is found in USAF Aerobics, AFP 50-56, which states: "The purpose of the aerobics conditioning program is to develop a higher level of fitness among airmen of all ages by providing an easily followed, interesting, and somewhat demanding program." To insure that military personnel remain somewhat fit, each individual is required to take a physical fitness test each year. If a person fails to maintain a certain level of fitness, then that individual is "...counseled by commanders and placed in a remedial conditioning program" (AFR 50-49).

Air Force personnel must maintain their weight within allowable tolerances. As pointed out earlier, an individual whose weight exceeds the weight standards of AFR 50-49 may be in violation of AFR 35-10 (AFR 35-10). If an individual is determined to be outside the weight limits, then he is entered into a weight control program. If the individual still is unable to meet the standards, the individual can face administrative action such as:

(1) a comment on an effectiveness report,

(2) administrative separation from the Air Force, or

(3) denial of reenlistment (AFR 50-49).

If the individual is on flying status and exceeds the weight limits, the individual could lose his aviation service pay (AFR 160-43).

Note: The physical fitness test for women is administered through AFP 50-5-2.

Civilians face no such physical fitness program. Each job has certain physical requirements associated with it, but once the initial requirements are met, there is no comparable physical fitness system.

Conclusions. As pointed out in Chapter I, Apple and Lutz (1973) surveyed 323 officers. One of the items of interest was whether or not the officers perceived their personnel system as favorable, unfavorable, or indifferent as compared to the civilian personnel system. Their results are summarized in Table IX.

A Comment. The author has discussed these differences because they relate to this study -- not to advocate that one group "has it better" than another group. This discussion relates to this study in two ways. First, some questions on the AFMIG surveys were concerned with these differences. Second, after this study, another difference may be added to the list already discussed. This potential difference is, of course, in perceptions of the quality of Air Force life.

TABLE IX

Perceived Differences of Officers

Response Group	Inherent Differences														
	Pay	Leave Policies	Medical Benefits	Retirement Plan	Promotions	Transfer Policies	Dress and Personal Appearance	Periodic Performance Evaluations	Eligibility for Training	Eligibility for Duties Not Connected With Your Primary Job Assignment	Procedure for Resolving Grievances	Overtime	Use of Base Facilities	Physical Fitness
Total Officers	F	I	F	F	F	U	F	F	F	I	I	U	F	F
Lieutenant	I	I	F	F	F	I	I	F	F	I	I	U	F	F
Captain	F	F	F	F	F	I	F	F	F	I	I	U	F	F
Major	F	I	F	F	F	U	F	F	F	I	I	U	F	F
Lt. Colonel	F	U	F	F	F	U	F	I	F	I	I	U	F	F
Colonel	F	I	F	F	F	I	F	F	F	I	I	U	F	F

F=Favorable U=Unfavorable I=Indifferent

Source: Apple and Lutz (1973)

III. Methodology and Conceptual Background

The AFMIC Surveys

The AFMIC Surveys were conducted during May and June of 1975. The surveys were administered at random to a cross section of Air Force active duty personnel and Air Force civil service employees. The samples were stratified by grade to assure adequate returns from all grades for analysis purposes. A total of 10,996 useable AF surveys and 17,110 civilian surveys were returned.

There were 150 questions on the military survey and 144 on the civilian survey; included in each survey were 17 personal and organizational variables (Manley, 1975). It is necessary to point out that there were many questions on each survey that were not on the other. Some questions were strictly military-related (i.e., "Have you ever used the Enlisted Advisory Council?"), while others were of concern only to civilians (i.e., "Do you belong to a union?"). Generally, questions that were not common to both surveys were of no importance to this research effort. The two surveys were compared, and all common questions were studied in detail. Some of these questions seemed to be of less importance than others in differentiating between the military and civilian populations (i.e., "How helpful was your sponsor on your last PCS?") and were eliminated from further consideration. There remained 75 common questions, which are included in Appendix A. For identification purposes, since the common questions did not have common numbers on the respective surveys, the author renumbered the questions from 1 to 75. These were the variables that were used for the analysis.

The data was examined in two different ways. First, all variables (questions) were included in the analysis. Second, the variables were divided into five subsets:

(1) QOAFLI'S

(2) Job related

(3) Leadership related

(4) Finance related

(5) People related

When the variables were analyzed in these subsets, the same variables that were important in discriminating within each subset also turned out to be most important when all variables were analyzed collectively. Alternately stated, variables that were not included in one of these five subsets did not prove to be important in discriminating between the populations.

The data was divided into subsets to facilitate the overall analysis, and in hopes of illuminating any small differences that might have gone unnoticed if the analysis had been accomplished collectively. The particular subsets were chosen because the variables lent themselves to this type of division.

As the total number of cases was over 28,000 and analysis of this much data would involve an astronomical amount of computer time, it was decided to analyze the data by drawing two random subsamples from the total sample of 28,000, and comparing the results. Each subsample included 427 civilians and 366 military members.

In order to perform statistical computations on the variables, it was necessary to transform the alphabetic responses to numerical values.

The coding scheme that was used follows: A=1, B=2, ..., Z=26, 0=27, ..., 4=31.

QOAFL Indicators

Distributed throughout both surveys were questions about nine Quality of Air Force Life Indicators (QOAFLI's). These QOAFLI's and the method of scoring them were developed by Dr.'s Manley, McNichols, and Gregory. Each QOAFLI was scored in two dimensions -- one a measure of satisfaction and the other a measure of importance. An example of a QOAFLI question is the one concerning ECONOMIC STANDARD.

ECONOMIC STANDARD: Satisfaction of basic human needs such as food, shelter, clothing; the ability to maintain an acceptable standard of living.

57. WHAT DEGREE OF IMPORTANCE DO YOU ATTACH TO THE ABOVE?

A.....B.....C.....D.....E.....F.....G

LOW IMPORTANCE	MEDIUM IMPORTANCE	HIGH IMPORTANCE

66. TO WHAT DEGREE ARE YOU SATISFIED WITH THE ECONOMIC STANDARD ASPECTS OF YOUR CURRENT LIFE?

A.....B.....C.....D.....E.....F.....G

HIGHLY DISSATISFIED	NEUTRAL	HIGHLY SATISFIED

The other eight QOAFLI's with their variable numbers in parentheses follow:

ECONOMIC SECURITY: Guaranteed employment; retirement benefits; insurance; protection for self and family. (58 and 67)

FREE TIME: Amount, use, and scheduling of free time alone, or in voluntary associations with others; variety of activities engaged in. (59 and 68)

WORK: Doing work that is personnally meaningful and important; pride in your work, job satisfaction; recognition for my efforts and my accomplishments on the job. (60 and 69)

LEADERSHIP/SUPERVISION: Has my interests and that of the Air Force at heart; keeps me informed; approachable and helpful rather than critical; good knowledge of the job. (61 and 70)

EQUITY: Equal oppurtunity in the Air Force; a fair chance at promotion; an even break in my job/assignment selections. (62 and 71)

PERSONAL GROWTH: To be able to develop individual capacities; education/training; making full use of my abilities; the chance to further my potential. (63 and 72)

PERSONAL STANDING: To be treated with respect; prestige; dignity; reputation; status. (64 and 73)

HEALTH: Physical and mental well-being of self and dependents; having illnesses and ailments detected, diagnosed, treated and cured; quantity and quality of health care and services provided. (65 and 74)

Measures

Job Related. To compare the various populations (to be defined later), the following questions were identified as relating to Jobs. (Possible responses are omitted here but can be found in Appendix A.)

20. How do you evaluate your present Air Force job?
21. Do you think your present job is preparing you to assume future positions of greater responsibility?
22. Do you want a job which has greater responsibility than your current job?
23. Which one of the following shows how much of the time you feel satisfied with your job?
24. Choose the one of the following statements which best tells how well you like your job.
25. Which one of the following best tells how you feel about changing your job?
26. Which one of the following shows how you think you compare with other people?

28. Which one of the following best describes your feelings towards long term employment with the Air Force?

29. The Air Force requires me to participate in too many activities that are not related to my job.

32. Are you given the freedom you need to do your job well?

33. Does your immediate supervisor give you recognition for a job well done?

34. Do you feel that the work you are now doing is appropriate to the grade you hold?

35. Would you rather work for (i.e., be rated by) a military or civilian supervisor?

38. Would you rather supervise military or civilian personnel?

39. Would you rather work with military or civilian co-workers?

42. In what career fields should military women work in the Air Force?

43. Would you rather work for a man or a woman supervisor?

44. There are more favorable features about the Air Force as a place to work than unfavorable ones.

48. How often are you given feedback from your supervisor about your job performance?

49. How often do you and your supervisor get together to set your personal performance objectives?

56. Combined Job Satisfaction score.

60. WORK QOAFLI -- Importance

69. WORK QOAFLI -- Satisfaction

Even though Variables 60 and 69 are QOAFLI's, they were included in this subset as they were directly related to it. Other QOAFLI's will

be included in the other subsets as they relate to the specific subset.

The Job Satisfaction score was determined by using variables 23, 24, 25, and 26. The variables and scoring system follow:

23. Which one of the following shows how much of the time you feel satisfied with your job?

    7. All the time
    6. Most of the time
    5. A good deal of the time
    4. About half of the time
    3. Occasionally
    2. Seldom
    1. Never

24. Choose one of the following statements which best tells how well you like your job.

    1. I hate it
    2. I dislike it
    3. I don't like it
    4. I am indifferent to it
    5. I like it
    6. I am enthusiastic about it
    7. I love it

25. Which one of the following statements best tells how you feel about changing your job?

    1. I would quit this job at once if I could
    2. I would take almost any other job in which I could earn as much as I am earning now

3. I would like to change both my job and my occupation

4. I would like to change my present job for another one

5. I am not eager to change my job, but I would do so if I could get a better job

6. I cannot think of any jobs for which I would exchange

7. I would not change my present job for any other

26. Which one of the following shows how you think you compare with other people?

7. No one likes his job better than I like mine

6. I like my job much better than most people like theirs

5. I like my job better than most people like theirs

4. I like my job about as well as most people like theirs

3. I dislike my job more than most people dislike theirs

2. I dislike my job much more than most people dislike theirs

1. No one dislikes his job more than I dislike mine

The variables were scored in accordance with the numbering system shown. An individual's job satisfication score was then determined by adding the four responses. The total score will range from 4 to 28. A score of 4 indicates total job dissatisfaction, while a score of 28 represents total job satisfaction.

Leadership Related. The following variables were identified as being significant in analyzing the Leadership related subset.

30. What is your opinion of the quality of military leadership in the Air Force?

31. What kind of influence does your immediate supervisor have on your organization?

32. Are you given the freedom you need to do your job well?

33. Does your immediate supervisor give you recognition for a job well done?

35. Would you rather work for (i.e., be rated by) a military or civilian supervisor?

38. Would you rather supervise military or civilian personnel?

47. Most senior NCO's (Master, Senior, and Chief Master Sergeants) are primarily supervisors rather than technicians.

48. How often are you given feedback from your supervisor about your job performance?

49. How often do you and your supervisor get together to set your personal performance objectives?

61. LEADERSHIP/SUPERVISION QOAFLI -- Importance

70. LEADERSHIP/SUPERVISION QOAFLI -- Satisfaction

Several variables relate to non-commissioned officers (NCO's). These variables were analyzed with the Leadership subset for two reasons. First, NCO's are leaders, and any analysis of this group of Air Force personnel should be done in conjunction with an analysis of leaders. Secondly, only five questions were specifically concerned with NCO's. These questions follow:

47. Most senior NCO's (Master, Senior, and Chief Master Sergeants) are primarily supervisors rather than technicians.

52. I have a lot of respect for most of the senior NCO's (Master, Senior, and Chief Master Sergeants) I know.

53. Most of the NCO's understand and are able to communicate with the people who work with them.

54. NCO prestige has declined over the past several years.

55. Senior NCO's (Master, Senior, Chief Master Sergeants) are usually given jobs with less responsibility than they should have.

Finance Related. The following variables were identified as being important in studying the financial aspects of the populations.

16. Do you hold a second job?

17. Even though the dollar does not go as far as it used to, I am having no problems in making ends meet.

18. The main reason that I have a second job, and/or that my spouse works is that we have to in order to make ends meet.

19. How was your financial situation affected by your last PCS move?

40. An individual can get more of an even break in private sector employment than in Air Force employment.

57. ECONOMIC STANDARD QOAFLI -- Importance

58. ECONOMIC SECURITY QOAFLI -- Satisfaction

66. ECONOMIC STANDARD QOAFLI -- Importance

67. ECONOMIC SECURITY QOAFLI -- Satisfaction

People Related. Included in the analysis of "people" are all variables that relate to interpersonal relations, such as race relations and equality of the sexes. The measures of this subset follow:

10. What is your sex?

36. Race relation training courses are effective in getting people to treat each other better.

37. Are civilian personnel accepted and treated as members of the Air Force community?

42. In what career fields should military women work in the Air Force?

43. Would you rather work for a man or a woman supervisor?

46. Air Force training programs do not do a very good job of preparing people to get along with other people.

62. EQUITY QOAFLI -- Importance

71. EQUITY QOAFLI -- Satisfaction

Populations of Interest

In an attempt to provide more insight into the Quality of Air Force Life, the surveys were divided into several populations to see if any differences existed between the military and civilian populations. The populations of interest were defined as follows:

(1) Military versus civilian personnel

(2) Military with military supervisors versus military with civilian supervisors

(3) Civilian personnel with military supervisors versus civilians with civilian supervisors

(4) Military with military supervisors and civilians with civilian supervisors versus military with civilian supervisors, plus civilians with military supervisors (Criss-Cross).

Examining the military versus civilian populations is the primary purpose of this research effort; these population definitions are obvious. Dividing the military into two populations and the civilians into two populations on the basis of their supervisors was done in an attempt to ascertain the influence of supervisors. It was hypothesized that supervisors do exert some influence on their subordinates' perceptions of Air Force life. The last population definitions were accomplished to see if personnel with like supervisors perceive that they are treated differently

from personnel with unlike supervisors. It is necessary to reiterate that the primary purpose of this research was an attempt to determine if differences exist between military personnel and civilians in their perceptions of the QOAFL; the purpose of defining other populations for analysis was the hope of illuminating the differences between military members and civilians.

Analysis Plan to Accomplish Purposes

The primary purpose of this research effort was to determine if there exist differences between military and civilians pertaining to their perceptions of the QOAFL. To accomplish this, discriminant analysis, T-tests, and F-tests of variances were performed on the QOAFLI's and on the four variable subsets: Job, Leadership, Finance, and People Related.

The second purpose of this study was to investigate supervisor influence relating to military and civilian perceptions of their QOAFL. Several populations were used to measure the influence: military versus military, civilian versus civilian, and "Criss-Cross" populations.

The third purpose of this study was to compare the homogeneity of career military personnel to career civilians. The military and civilian populations were narrowed to include only those people who indicated a "high career intent" on Variable 28.

28. Which one of the following best describes your feelings toward long term employment with the Air Force?

    A. Definitely intend to make a career of Air Force employment

    B. Most likely will make a career of Air Force employment

    C. Undecided

    D. Most likely will not make a career of Air Force employment

E. Definitely do not intend to make a career of Air Force employment Those people who responded with A and B were defined as having a "high career intent" for the purpose of this study. Once the two populations were defined, an F-test of variances was then performed to see if the variances were equal.

Discriminant Analysis -- Conceptual

Discriminant analysis is concerned with formulating a decision rule for classifying objects or people, by using a set of independent variables, into one of two or more mutually exclusive and exhaustive categories. For example, based on an individual's age, income, health, length of time at present address, etc., a credit manager wants to classify that individual as a good or as a poor credit risk. (In this illustration, age, income, health, etc., are independent variables; the categories -- sometimes called populations -- are good risks and poor risks.) This statistical procedure gives the credit manager a way to discriminate (differentiate) between the two categories; hence the name, discriminant analysis.

In making his final decision, the credit manager uses the "discriminant function" (the development of the discriminant function will be discussed later in this section). The discriminant function is of the form

$$Z=b_o+ b_1v_1+b_2v_2+\ldots+b_kv_k \qquad (1)$$

where b_i are known constants

v_i are independent variables

$i=0,1,\ldots,k$

k=number of variables

Z=discriminant score

If a loan applicant's Z is above a boundary value, then he is classified as a good risk. If the applicant's Z is below the boundary value, then he is classified as a poor risk. This is illustrated in Fig. 1 for the one-variable case.

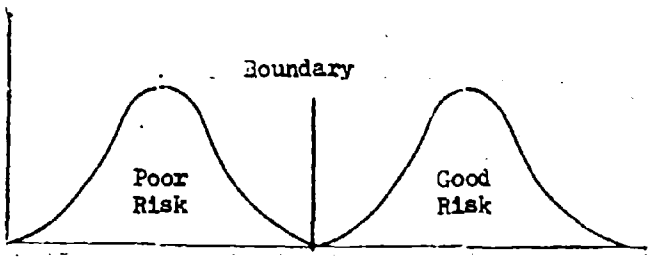


Fig. 1. Example Data Set

Discriminant analysis has not only told the credit manager how to classify the applicant -- it has also told him which variables are important. For example, the credit company may have used 25 or more varibles to process a loan application, while a smaller number might have done just as well.

To explain the computation of the discriminant function, it is first necessary to define some terms. $\underline{u}_1$ is defined as the vector of mean values of all variables for population 1; $\underline{u}_2$ is the vector of mean values for population 2. $\underline{d}$ is a vector of differences of mean values between the two populations; that is, $\underline{d}=\underline{u}_1-\underline{u}_2$. S is the maximum likelihood estimator of Σ -- the covariance matrix, and S^{-1} denotes the inverse of S.

One of the most common statistics in discriminant analysis is a statistic developed by Mahalanobis, and appropriately bears his name. The Mahalanobis statistic (also called the Mahalanobis "distance") is

defined as follows:

$$D^2=\underline{d}'S^{-1}\underline{d} \tag{2}$$

where $\underline{d}'$ is the transpose of $\underline{d}$. D^2 is then transformed to various F-statistics to test different hypotheses about the two groups and the discriminant function. (One hypothesis, of course, is that the two groups are different.) Most procedures and statistics in use that concern discriminant analysis are based on D^2.

In matrix notation, the discriminant function is of the form

$$Z=\underline{b}'\underline{v} \tag{3}$$

For the discriminant function to have value, $\underline{b}$ must be determined. Rao (1973) has shown that to maximize the probability of correct classification

$$\underline{b}=S^{-1}\underline{d} \tag{4}$$

Thus, the discriminant function can be expressed as

$$Z=(S^{-1}\underline{d})'\underline{v} \tag{5}$$

Once the discriminant function has been determined, it is important to know how powerful it is; that is, how well does the discriminant function differentiate between two populations? (Discriminant analysis is applicable to more than two populations; however, as this study was concerned with only two, the author limited his discussion to the two-population situation.) In Fig. 1, there existed a definite boundary between the two populations; in other words, members of one population did not display the same characteristic as members of the other population. If the populations are in fact distributed as in Fig. 1, the discriminant function will be very powerful -- it could differentiate between the two groups with certainty. In many cases, however, there is no clearly defined boundary, but rather some overlap exists between the

two populations, as shown in Fig. 2.

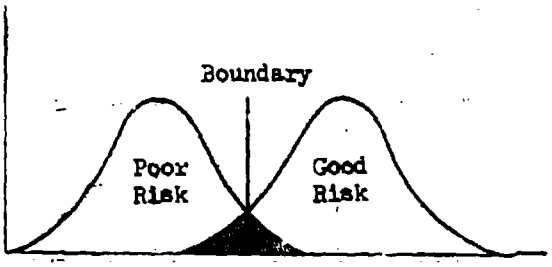


Fig. 2. Example Data Set.

The overlapping (shaded) area of Fig. 2 represents individuals from each population that could be classified into either population. In other words, the individuals in the overlapping area display the same characteristics of the one variable plotted on the horizontal axis. Obviously, the closer the two distributions are together, the greater the overlapping area, and more individuals will be classified into the incorrect population. Alternately stated, the more the populations display the same characteristics, the harder it will be to distinguish the two. The more the discriminant function can discriminate, as in Fig. 1, the more powerful is the discriminant function; if the discriminate function frequently misclassifies individuals, it is less powerful. The concept of power is relative, not absolute.

In an attempt to determine the quality of the discriminant function, the author used two methods -- Wilks lambda (λ) and "percentage correctly classified". Both of these methods are means to evaluate the discriminant function. Defining λ is an eigenvalue problem, and the solution is

$$\lambda \quad \frac{|W|}{|B+W|} \tag{6}$$

where B and W are, respectively, the between--and within--group sums of

squares and crossproducts matrices (Rao, 1973). |B| represents the determinant of B. It can be shown that $0 \leq \lambda \leq 1.0$, and the smaller λ is, the better the discriminant function. It has been demonstrated that even though λ is not based on the Mahalanobis distance, there is a transformation of D^2 that yields the same results as λ.

The second method used by the author to evaluate a discriminant function was "percentage correctly classified". In many discriminant analysis computer programs, after the discriminant function has been determined, the individuals are classified by the discriminant function to determine how many were classified correctly and incorrectly. The percentages are then presented in the form of the following classification chart (also called a "confusion matrix"):

		Predicted 1	Predicted 2
Actual 1		A	B
Actual 2		C	D

Fig. 3. Example Confusion Matrix

where A=% of individuals of population 1 correctly classified in population 1.

B=% of individuals of population 1 incorrectly classified in population 2.

C=% of individuals of population 2 incorrectly classified in population 1.

D=% of individuals of population 2 correctly classified in population 2.

Some other terms must now be defined. Population 1 consists of m individuals with m_1 classified correctly and m_2 classified incorrectly

in Fig. 3; thus, $m_1/m=A$ and $m_2/m=B$. There are n individuals in population 2 such that $n_1/n=C/$ and $n_2/n=D$. Then the "overall percentage correctly classified" is defined as

$$Q=\frac{m_1+n_2}{N} \tag{7}$$

where N=m+n (i.e., all individuals). Further, for this discussion, the author assumes that m>n. Then, if the researcher's purpose is to maximize the overall percentage correctly classified, he can obtain at least m/N classified correctly by classifying all N individuals into population 1 -- but he would misclassify n/N. If the discriminant function can correctly classify no more than m/N, then the discriminant function is powerless and of no value. To determine if the discriminant function can correctly classify more than m/N, the following statistical test was employed:

H_0: $Q^*=P$

H_a: $Q^*>P$

Test Statistic: $t=\frac{Q-P}{S_p}$

Rejection Region: $t>t_\alpha$

Where Q^*=true overall fraction correctly classified

Where $Q=\frac{m_1+n_2}{N}$, estimate of Q^*

$P=m/N$

$S_p=\sqrt{\frac{P(1-P)}{N}}$

α = level of significance

If t is statistically significant, the discriminant function has some degree of predictive power; that is, it is able to predict future observations correctly. Obviously, the larger Q is, the more powerful

the discriminant function.

How do λ and the percentage correctly classified compare? When m/N was approximately 50% (equal population size), and Q was statistically the same, the author found that λ was about .850 to .900. With m/N at 50%, and Q significantly greater at about 80%, λ would drop to about .500. (The smaller λ , the better the discriminant function.)

There are four underlying assumptions in discriminant analysis, which will be discussed in the section on Parametric Tests. Nie (1975) asserts that discriminant analysis is "...very robust and these assumptions need not be strongly adhered to."

When the power of the discriminant function has been ascertained, the analyst then can use it to classify future observations. This study did not concern the future classification of AF personnel. However, discriminant analysis was used because it identified the variables that distinguish between the two surveyed groups; and it provided two standards -- Wilks lambda and the percentage correctly classified -- to evaluate those variables.

Discriminant Analysis and SPSS

Discriminant analysis techniques were accomplished utilizing the Statistical Package For the Social Sciences (SPSS). SPSS provides the analyst with a broad spectrum of analytical capabilities. Most of these were not relevant to this study, because the author did not intend to use this information to classify future observations. For example, the discriminant function per se was not important to the author's analysis; rather, the variables that were identified within the function were of more relevance.

The SPSS implementation of discriminant analysis will use either a "direct" method, or one of five "stepwise" methods, as specified by the analyst, in the development of the discriminant function. When the direct method is chosen, all the variables are entered into the analysis concurrently. The discriminant function is created directly from the entire set of variables, regardless of the discriminating (predictive) power of each of the variables. The direct method is simpler than the stepwise methods, and, therefore requires less computer time and core storage space (Nie, 1975).

Stepwise discriminant analysis is somewhat different. Nie (1975) explains,

> The process begins by choosing the single variable which has the highest value on the selection criterion (this will be discussed later). This initial value is then paired with each of the other variables, one at a time, and the value of the selection criterion is computed. The new variable which in conjunction with the initial variable produces the best criterion value is selected as the second variable 'to enter the equation'. These two are then combined with each of the remaining variables, one at a time, to form triplets which are evaluated on the criterion. The triplet with the best criterion value determines the third variable to be selected. This procedure of locating the next variable that would yield the best criterion score, given the variables already selected, continues until all variables are selected or no additional variable provides a minimum level of improvement ...
>
> As variables are selected for inclusion, some variables previously selected may lose their discriminating power. This occurs because the information that they contain about group differences is now available in some combination of the other included variables. Such variables are redundant and should be eliminated. Thus, at the beginning of each step, each of the previously selected variables is tested to determine if it still makes a sufficient contribution to discrimination. If any are eligible for removal, the least useful is eliminated. A variable which has been removed at one step may re-enter at a later step if it satisfies the selection criterion at that time. (P.447)

If the analyst desires a stepwise method, he has five selection criteria to choose from:

(1) Wilks lambda (WILKS)

(2) Mahalanobis distance (MAHAL)

(3) Maximize the minimum F (MAXMINF)

(4) Minimum Residual (MINRESID)

(5) Rao's V (RAO)

Wilks lambda was discussed previously as a means of evaluating the discriminant function -- all selection criteria can be used for the evaluation purpose. Criteria (2) through (4) are based directly on the Mahalanobis distance, and, as pointed out previously, there exists a transformation of D^2 which yields the same results as λ. For all practical purposes, all stepwise methods of the discriminant analysis subprogram of SPSS can be thought of as generalized D^2's. The author used all five stepwise methods in the analysis of the surveys. The results from all five methods were identical. Whether this phenomeon was due to the similiarities of the stepwise methods or whether it was due to the nature of the data, the author cannot say.

After a stepwise method has been selected, the analyst can have a summary table printed. An example of a summary table with the relevant items is shown in Table X. The summary table presents what transpired at each step of the stepwise procedure; in step 1, FREE TIME/IMPORTANCE was entered into the discriminant function, in step 2, HEALTH/SATISFACTION was added, etc. This continued until all variables with an F-statistic of greater than .01 were included. From the summary table, the variables can be thought of as being listed in descending order of importance; that is, FREE TIME/IMPORTANCE contributed more to the discriminant function than any other variable. HEALTH/SATISFACTION, in conjunction with FREE TIME/IMPORTANCE, contributed more than any other variable that was combined

Table X

Summary Table

Subsample 1 -- Military/Civilian -- 3OAFLI'S

Variable (number)	F	λ
FREE TIME/IMPORTANCE (59)	42.31	.949
HEALTH/SATISFACTION (74)	37.82	.906
PERSONAL GROWTH/SATISFACTION (72)	12.77	.891
FREE TIME/SATISFACTION (68)	13.46	.871
PERSONAL GROWTH/IMPORTANCE (63)	7.86	.862
ECONOMIC STANDARD/SATISFACTION (66)	4.56	.857
PERSONAL STANDING/SATISFACTION (73)	3.30	.854
EQUITY/SATISFACTION (71)	4.35	.849
ECONOMIC SECURITY/SATISFACTION (67)	3.45	.845
ECONOMIC STANDARD/IMPORTANCE (57)	1.67	.844
LEADERSHIP/SUPERVISION/IMPORTANCE (61)	1.07	.843
PERSONAL STANDING/IMPORTANCE (64)	.61	.842
EQUITY/IMPORTANCE (62)	.59	.841
ECONOMIC SECURITY/IMPORTANCE (58)	.21	.841
LEADERSHIP/SUPERVISION/SATISFACTION (70)	.05	.841
HEALTH/IMPORTANCE (65)	.05	.841
WORK/IMPORTANCE (60)	.04	.841
WORK/SATISFACTION (69)	.02	.841

with FREE TIME/IMPORTANCE. The F-statistic shown is related to D^2, and the larger it is for a given variable, the better that variable is. The F-statistic is listed because it can be useful in evaluating the varibles in the function. In general, it was found that an F-statistic value of less than approximately 10.0 implied that the variable was contributing very little to the discriminant function. Wilks lambda was used as the selection criterion, because the author believed it easier to interpret. The smaller λ is, the better the function; λ was .949 when only the first variable had been entered, and it decreased as each suceeding variable was added, implying that the discriminant function was improving. The F-statistic reflects the power of each individual variable; λ is a measurement of the discriminant function with all variables taken collectively. It will be recalled that if λ decreases to about .500, the function is very powerful.

Discriminant Analysis and Bias

Frank, Massey, and Morrison (1965) state that two types of bias arise in discriminant analysis: "search bias" and "sampling bias". "Search bias" results from the development of a discriminant function based on one sample. The analyst formulates his function based on a specific sample; thus, the analyst may eliminate variables in the discriminant function that do not discriminate in his specific sample, but do discriminate in the entire population. If this did happen, then it is obvious that the sample was not representative, and basic assumptions would be violated. To circumvent this problem, the author determined the discriminant function from one subsample and cross-validated the function by using a second subsample. To enable the reader to compare

the variables in the two discriminant functions, a summary table from each subsample will be presented whenever the discriminant functions are discussed.

"Sampling bias" is caused by an incorrect sampling procedure. This type of bias, according to Frank, Massey, and Morrison (1965), is reflected in the percentage correctly classified analysis. Sampling bias arises by evaluating the discriminant function on the same data that enabled the analyst to formulate the function. The bias tends to inflate the percentage correctly classified, making the discriminant function appear to have more predictive power than it actually has. To preclude sampling bias, Frank, Massey, and Morrison (1965) recommend dividing the sample into half. The first half is utilized to determine the discriminant function; the second half of the sample is tested against the discriminant function to measure the predictive power. The author followed this scheme. Two subsamples of 427 civilians and 366 military members were drawn. The second subsample was classified using the discriminant function determined from the first subsample, and then the following t-test was used to determine if sampling bias existed.

$$H_o: Q_1^* = Q_2^*$$

$$H_a: Q_1^* \neq Q_2^*$$

Test Statistic: $$t = \frac{Q_1 - Q_2}{\sqrt{\frac{Q_1(1-Q_1) + Q_2(1-Q_2)}{N}}}$$

Rejection Region: $t > t_{\alpha/2}$

where Q_1^*=true overall fraction correctly classified from subsample 1

Q_2^*=true overall fraction correctly classified from validated confusion matrix

Q_1=estimate of Q_1^*

Q_2=estimate of Q_2^*

The validated confusion matrix is defined as the confusion matrix is defined as the confusion matrix generated when subsample 2 is classified using the discriminant function by subsample 1.

If t is significant, then sampling bias exists, and the discriminant function determined from subsample 1 must be used with caution.

Parametric Tests

In this section, two parametric tests -- the t-test for means and F-test for variance -- will be introduced. Even though discriminat analysis is an advanced parametric technique, it was discussed in a separate section due to the complexity of the technique, plus the fact that it is the primary tool in this research effort. To be able to use the parametric t-test and F-test of variances, four assumptions are necessary. These assumptions were not discussed in Chapter I under Assumptions, as they will only be important to the tests discussed in this section, and not to the entire research effort. The assumptions follow:

(1) The observations must be independent. That is, the selection of any one individual from the population for inclusion in the sample must not bias the chances of any other individual for inclusion, and the score which is assigned to any individual must not bias the score which is assigned to any other individual.

(2) The observations must be drawn from normally distributed populations.

(3) The above populations must have the same variance.

(4) The variance involved must have been measured in at least an interval scale, so that it is possible to use the operations of arithmetic (adding, subtracting, computing means, etc.) on the scores (Siegel, 1956).

With the preceding assumptions, one may use the powerful t-test (also known as Student's t-test) to test for differences in mean values for specific variables. For example, if weight were a variable, it might be of interest to test the hypothesis that the mean weight of officers is equal to the mean weight of enlisted personnel. The t-test is of the form

H_o: $u_{1i} = u_{2i}$

H_a: $u_{1i} \neq u_{2i}$

Test Statistic: $$t = \frac{\bar{X}_{1i} - \bar{X}_{2i}}{\sqrt{\frac{(m-1)S_{1i}^2 + (n-1)S_{2i}^2}{m+n-2}}\sqrt{\frac{1}{m} + \frac{1}{n}}}$$

Rejection Region: $t > t_{\alpha/2}$

where u_{1i}=true mean value of variable i for population 1

u_{2i}=true mean value of variable i for population 2

$\bar{X}_{1i}$=computed mean value of variable i for population 1

$\bar{X}_{2i}$=computed mean value of variable i for population 2

S_{1i}^2=estimated variance of variable i for population 1

S_{2i}^2=estimated variance of variable i for population 2

i=1,2,...,k

k=number of variables

m=number of individuals in population 1

n=number of individuals in population 2

Another parametric test that is of interest to this research is the F-test of variances. The F-test follows:

H_o: $\sigma_{1i}^2 = \sigma_{2i}^2$

H_a: $\sigma_{1i}^2 \neq \sigma_{2i}^2$

Test Statistic: $F = \frac{S_{1i}^2}{S_{2i}^2}$, or $F = \frac{S_{2i}^2}{S_{1i}^2}$

such that $F \geq 1.0$

Rejection Region: $F > F_{\alpha/2,\ m-1,\ n-1}$

Where σ_{1i}^2 = true variance of variable i for population 1

σ_{2i}^2 = true variance of variable i for population 2

The t-test for differences of means and F-tests for differences of variances were accomplished for all populations of interest. For example, the author tested the hypothesis that the mean response and variance of military personnel to FREE TIME/IMPORTANCE was the same as the mean response and variance of civilians to FREE TIME/IMPORTANCE. This was done for every variable and for every population of interest. These results can be found in Appendix B.

When each subsample of 793 was drawn, the t-test and the F-test were used to determine if the two subsamples were statistically the same. Military personnel from sub-sample 1 were compared to military personnel from subsample 2; civilians were tested in the same manner.

One variation of the t-test was presented in Discriminant Analysis -- Conceptual and another variation was presented in Discriminant Analysis and Bias. The first variation was employed on every confusion matrix

generated during the study to determine if the overall percentage correctly classified was significantly different from m/N. The second variation of the t-test was used only in the initial analysis of each variable subset to determine if sampling bias existed.

NOTE: Unless otherwise stated, a level of significance of .05 was used for all t-tests and F-tests.

IV. Analysis

Subsample 1 versus Subsample 2

The analysis plan was to draw two subsamples, each consisting of 427 civilian and 366 military members. The first subsample would provide the basis for analysis, and the second subsample would be used for cross-validation. Once the two subsamples had been formed, the author compared the means for each variable to determine if they were statistically equivalent.

The first test involved the following:

H_o: $u_{1i} = u_{2i}$

H_a: $u_{1i} \neq u_{2i}$

Test Statistic: $$t = \frac{\bar{X}_{1i} - \bar{X}_{2i}}{\sqrt{\frac{(m-1)S_{1i}^2 + (n-1)S_{2i}^2}{m+n-2}} \sqrt{\frac{1}{m} + \frac{1}{n}}}$$

Rejection Region: $t > t_{\alpha/2}$

Where u_{1i} = True Mean Value of Variable i for Population 1

u_{2i} = True Mean Value of Variable i for Population 2

$\bar{X}_{1i}$ = Estimated Mean Value of Variable i for Population 1

$\bar{X}_{2i}$ = Estimated Mean Value of Variable i for Population 2

i = 3,5,6,8,10,15-19,21-26,28-40,42-74

S_{1i}^2 = Estimated variance of Variable i for Population 1

S_{2i}^2 = Estimated variance of Variable i for Population 2

This test was employed to test military personnel from subsample 1 against military personnel from subsample 2, and civilians from each subsample were tested in the same manner. The level of significance

was set at .05. The variables not tested were clearly nominal data. When military personnel from the two subsamples were compared, only one variable had a significantly different mean response -- JOB RECOGNITION (Variable 33).

When the mean responses of civilians from the subsarples were contrasted, the following variables had significant differences:

1. ECONOMIC STANDARD/IMPORTANCE (57)
2. ECONOMIC STANDARD/SATISFACTION (66)
3. WORK/SATISFACTION (69)
4. EQUITY/SATISFACTION (71)
5. PERSONAL GROWTH/SATISFACTION (72)

The variances of the two subsamples were also compared. The following test was used:

H_o: $\sigma_{1i}^2 = \sigma_{2i}^2$

H_a: $\sigma_{1i}^2 \neq \sigma_{2i}^2$

Test Statistic: $F = \frac{S_{1i}^2}{S_{2i}^2}$ or $\frac{S_{2i}^2}{S_{1i}^2}$, such that $F \geq 1.0$

Rejection Region: $F > F_{\alpha/2}$

Where σ_{1i}^2 = True Variance of Variable i for Population 1

σ_{2i}^2 = True Variance of Variable i for Population 2

S_{1i}^2 = Estimated Variance of Variable i for Population 1

S_{2i}^2 = Estimated Variance of Variable i for Population 2

Again, military personnel from each subsample were compared, as were civilians.

The following variables had significantly different variances for military members:

1. Do you want greater responsibility? (22)
2. Over whom would you rather work? (38)
3. ECONOMIC SECURITY/SATISFACTION (68)
4. PERSONAL GROWTH/SATISFACTION (72)

Significant differences of variances for civilians were found for the following variables:

1. How many holidays did you work? (15)
2. Do you hold a second job? (16)
3. Job freedom. (32)
4. Over whom would you rather work? (38)
5. ECONOMIC STANDARD/IMPORTANCE (57)
6. ECONOMIC SECURITY/IMPORTANCE (58)
7. WORK/IMPORTANCE (60)
8. LEADERSHIP/SUPERVISION/IMPORTANCE (61)
9. PERSONAL STANDING/SATISFACTION (73)

The two subsamples appeared to be statistically the same.

QOAFLI's

Military versus Civilians. The initial analysis was performed on the nine QOAFLI's. Each QOAFLI was measured on two scales, IMPORTANCE and SATISFACTION; thus, there were 18 variables. It will be recalled that the nine QOAFLI's and the variable numbers were as follows: (The first number denotes the IMPORTANCE variables, and the second, SATISFACTION.)

1. ECONOMIC STANDARD (57 and 66)
2. ECONOMIC SECURITY (58 and 67)
3. FREE TIME (59 and 68)
4. WORK (60 and 69)
5. LEADERSHIP/SUPERVISION (61 and 70)
6. EQUITY (62 and 71)
7. PERSONAL GROWTH (63 and 72)
8. PERSONAL STANDING (64 and 73)
9. HEALTH (65 and 74)

The results of this initial run are summarized in Tables X and XI.

To determine if any "search bias" existed, the variables in the two discriminant functions were compared. There were four variables in each function with F-statistic values greater than 10.0. (The author stopped at 10.0 because, as pointed out before, it was found that any variable with an F-statistic value of less than 10.0 contributed very little to the discriminant function.) Of these four, FREE TIME/IMPORTANCE, FREE TIME/SATISFACTION, AND HEALTH/SATISFACTION were found in both functions. The fourth variable in subsample 1 was PERSONAL GROWTH/SATISFACTION while PERSONAL GROWTH/IMPORTANCE was the fourth variable in subsample 2. Because the importance variables in each discriminant function were virtually the same, it was concluded that no "search bias" existed.

To investigate "sampling bias", the confusion matrices were examined. Fig. 4 shows the confusion matrix for subsample 1; Fig. 5 shows the validated confusion matrix -- that is, subsample 2 was classified using the discriminant function determined from subsample 1. (The discriminant

Table X

Summary Table

Subsample 1 -- Military/Civilian -- QOAFLI's

Variable (Number)	F	λ
FREE TIME/IMPORTANCE (59)	42.31	.949
HEALTH/SATISFACTION (74)	37.82	.906
PERSONAL GROWTH/SATISFACTION (72)	12.77	.891
FREE TIME/SATISFACTION (68)	18.46	.871
PERSONAL GROWTH/IMPORTANCE (63)	7.86	.862
ECONOMIC STANDARD/SATISFACTION (66)	4.56	.857
PERSONAL STANDING/SATISFACTION (73)	3.30	.854
EQUITY/SATISFACTION(71)	4.35	.849
ECONOMIC SECURITY/SATISFACTION (67)	3.45	.845
ECONOMIC STANDARD/IMPORTANCE (57)	1.67	.844
LEADERSHIP/SUPERVISION/IMPORTANCE (61)	1.07	.843
PERSONAL STANDING/IMPORTANCE (64)	.61	.842
EQUITY/IMPORTANCE (62)	.59	.841
ECONOMIC SECURITY/IMPORTANCE (53)	.21	.841
LEADERSHIP/SUPERVISION/SATISFACTION (70)	.05	.841
HEALTH/IMPORTANCE (65)	.05	.841
WORK/IMPORTANCE (60)	.04	.841
WORK/SATISFACTION (69)	.02	.841

Table XI

Summary Table

Subsample 2 -- Military/Civilian -- QOAFLI's

Variable (Number)	F	λ
FREE TIME/IMPORTANCE (59)	48.16	.943
FREE TIME/SATISFACTION (68)	37.44	.900
HEALTH/SATISFACTION (74)	16.71	.881
PERSONAL GROWTH/IMPORTANCE (63)	10.83	.869
ECONOMIC SECURITY/IMPORTANCE (58)	7.30	.861
HEALTH/IMPORTANCE (65)	7.89	.853
EQUITY/SATISFACTION (71)	5.06	.847
PERSONAL STANDING/SATISFACTION (73)	4.19	.843
LEADERSHIP/SUPERVISION/IMPORTANCE (61)	4.02	.839
PERSONAL GROWTH/SATISFACTION (72)	3.75	.835
WORK/SATISFACTION (69)	3.73	.831
ECONOMIC STANDARD/SATISFACTION (66)	3.07	.827
EQUITY/IMPORTANCE (62)	1.06	.826
ECONOMIC STANDARD/IMPORTANCE (57)	.39	.826
WORK/IMPORTANCE (60)	.11	.826
LEADERSHIP/SUPERVISION/SATISFACTION (70)	.04	.826
ECONOMIC SECURITY/SATISFACTION (67)	.04	.826
PERSONAL STANDING/IMPORTANCE (64)	.02	.826

function was being validated -- not the confusion matrix. The phraseology "validated confusion matrix" was used throughout the study simply because no better expression was found.)

		Predicted: Military	Predicted: Civilian
Actual	Military	65.3%	34.7%
	Civilian	31.6%	68.4%

Fig. 4. Subsample 1 Confusion Matrix -- Military/Civilian -- 20AFLI's

		Predicted: Military	Predicted: Civilian
Actual	Military	65.6%	34.4%
	Civilian	35.3%	64.2%

Fig. 5. Validated Confusion Matrix -- Military/Civilian -- 20AFLI's

The overall percentage correctly classified from subsample 1 was 67.0%, and was 64.8% from the validated confusion matrix. Using the t-test, it was found that the two percentages were statistically equivalent. The implication was that no "sampling bias" existed. Further, the overall percentage correctly classified was significantly greater than P, which was 53.9%. (It will be recalled that P = m/N.) Therefore, the discriminant function could distinguish civilian personnel from their military co-workers.

The most important variable in both discriminant functions was FREE TIME/IMPORTANCE (Variable 59). The power of FREE TIME/IMPORTANCE was illustrated by examining the confusion matrix when it was the only variable in the discriminant function. This is shown in Fig. 6.

		Predicted: Military	Predicted: Civilian
Actual	Military	61.5%	38.5%
	Civilian	40.0%	60.0%

Fig. 6. Confusion Matrix -- Military/Civilian -- FREE TIME/IMPORTANCE

When Fig. 6 was compared to Fig. 4, it was found that adding all the other QOAFLI's increased the percentages correctly classified by only a small amount for both populations. FREE TIME/IMPORTANCE had the highest overall percentage correctly classified of all the QOAFLI's -- 60.1%. (Confusion matrices for each individual variable can be found in Appendix C.) The high percentage for FREE TIME/IMPORTANCE could be anticipated, because of the high value of the F-statistic associated with it, as pointed out in Tables X and XI.

The implication was that Variable 59 -- FREE TIME/IMPORTANCE -- was the most important QOAFLI in differentiating between civilian and military personnel. The next question to be answered is, "To which group was FREE TIME important?" Fig. 7 shows the mean responses to Variable 59.

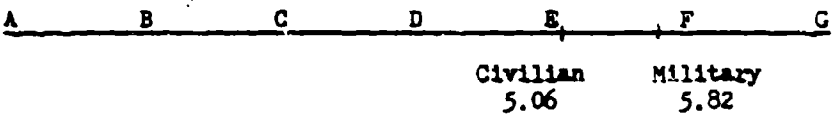


Fig. 7. Mean Responses -- Military/Civilian -- FREE TIME/IMPORTANCE

By using the parametric t-test for differences in means, the author determined that the military mean response was statistically greater than the civilian mean response. Thus, FREE TIME/IMPORTANCE was more

important to military members than to their civilian co-workers.

FREE TIME/SATISFACTION (Variable 68) also had a relatively high F-statistic in both discriminant functions. Examining FREE TIME/SATISFACTION alone, the confusion matrix is shown in Fig. 8.

		Predicted	
		Military	Civilian
Actual	Military	49.7%	50.3%
	Civilian	37.9%	62.1%

Fig. 8. Confusion Matrix -- Military/Civilian -- FREE TIME/SATISFACTION

The overall percentage correctly classified was insignificant at 56.4%, as P was 53.8%. So civilian and military personnel could not be separated, based on their responses to FREE TIME/SATISFACTION. The mean responses follow.

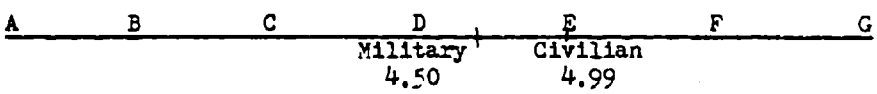


Fig. 9. Mean Responses -- Military/Civilian -- FREE TIME/SATISFACTION

The difference was significant; therefore, civilians were more satisfied with the FREE TIME aspects of their lives than were military persons, even though civilians placed less importance on FREE TIME.

FREE TIME was defined as:

> Amount, use, and scheduling of free time alone, or in voluntary associations with others; variety of activities engaged in.

Why is FREE TIME more important yet less satisfying to the military person? It may be that military people know that they will often be

required to work extra hours, both after duty and on weekends and holidays with no additional compensation. This fact is supported by Variable 15, which reflects the number of holidays an employee worked during the past year. Civilian mean response was ½ days, while the mean response for military members was 2½ days. Military members have less FREE TIME than civilians, and this might seem to suggest that military members would value FREE TIME more.

Referring to Tables X and XI, another common variable with an F-statistic of 10.0 or greater was HEALTH/SATISFACTION (Variable 74). When HEALTH/SATISFACTION was the only variable in the function, the confusion matrix is shown in Fig. 10.

		Predicted	
		Military	Civilian
Actual	Military	41.3%	58.7%
	Civilian	28.3%	71.7%

Fig. 10. Confusion Matrix -- Military/Civilian -- HEALTH/SATISFACTION

HEALTH/SATISFACTION could classify correctly 57.6% overall, which was statistically greater than 53.8%. HEALTH/SATISFACTION, therefore, could discriminate between civilian and military comrades.

The mean responses for HEALTH/SATISFACTION are shown in Fig. 11.

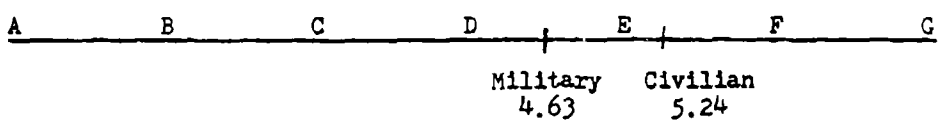


Fig. 11. Mean Responses -- Military/Civilian -- HEALTH/SATISFACTION

This difference was statistically significant; civilians were more satisfied with the HEALTH aspects of their lives than were their military counterparts.

HEALTH was defined as:

> Physical and mental well-being of self and dependents; having illnesses and ailments detected, diagnosed, treated and cured; quantity and quality of health care and services provided.

It was pointed out in Chapter II that military members have these medical services provided practically free of charge -- yet they are less satisfied than civilians who must pay for this care. There was only one other variable directly comparable to 74, and that was HEALTH/IMPORTANCE, Variable 66. In both discriminant functions, it has a low F-statistic -- less than 5.0. The overall percentage correctly classified by HEALTH/IMPORTANCE alone was only 50% which was insignificant; further, the mean responses of the two groups were statistically the same. So the importance of HEALTH was the same to both groups, but civilians were more satisfied with the HEALTH aspects of their lives.

The other QOAFLI that showed up in the top variables was PERSONAL GROWTH -- the SATISFACTION variable (72) in subsample 1 and the IMPORTANCE variable (63) in subsample 2. PERSONAL GROWTH was defined as:

> To be able to develop individual capacities; education/training; making full use of my abilities; the chance to further my potential.

The validated confusion matrix for PERSONAL GROWTH/IMPORTANCE is shown in Fig. 12.

		Predicted	
		Military	Civilian
Actual	Military	63.1%	36.9%
	Civilian	55.0%	45.0%

Fig. 12. Confusion Matrix -- Military/Civilian -- PERSONAL GROWTH/IMPORTANCE

The overall percentage correctly classified was 53.3%, and insignificant. The inference was that PERSONAL GROWTH/IMPORTANCE could discriminate no better than a classification scheme based on chance. The mean responses to PERSONAL GROWTH/IMPORTANCE are depicted in Fig. 13.

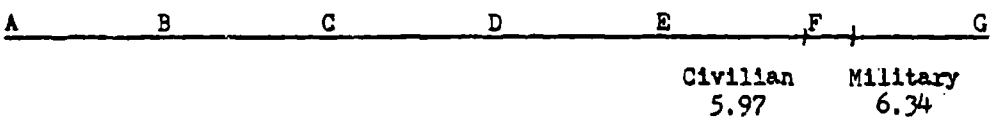


Fig. 13. Mean Responses -- Military/Civilian -- PERSONAL GROWTH/ IMPORTANCE

The difference was significant, and the author concluded that military members viewed PERSONAL GROWTH as more important than did civilians.

PERSONAL GROWTH/SATISFACTION was somewhat more difficult to analyze. It was pointed out earlier in this chapter that the mean responses of civilian personnel to PERSONAL GROWTH/SATISFACTION differed between the two subsamples, a fact which should be kept in mind for this discussion. The validated confusion matrix for Variable 72 (PERSONAL GROWTH/SATISFACTION) is shown in Fig. 14.

		Predicted	
		Military	Civilian
Actual	Military	59.6%	40.4%
	Civilian	56.9%	43.1%

Fig. 14. Confusion Matrix -- Military/Civilian --PERSONAL GROWTH/ SATISFACTION

The overall percentage correctly classified was 50.7%, and was not statistically greater than P, which was 53.8%. PERSONAL GROWTH/ SATISFACTION, therefore, was not an effective discriminator. The

difference in the mean responses of military and civilian personnel from each subsample was not statistically significant. PERSONAL GROWTH was much more important to military people than to their civilian co-workers, but the amount of satisfaction expressed was the same for both groups.

In an attempt to further illuminate any differences, the QOAFLI's were split into two groups -- the IMPORTANCE QOAFLI's and the SATISFACTION QOAFLI's. When the entire set of QOAFLI's was analyzed together, only four seemed to "stand out" from the rest. Dividing the variables into subsets was done to determine if one of the other individual variables might "stand out" within a smaller subset. The results of the discriminant function computed on the IMPORTANCE subset are summarized in Table XII.

Table XII

Summary Table

Military/Civilian -- IMPORTANCE QOAFLI's

Variable (Number)	F	λ
FREE TIME/IMPORTANCE (59)	42.31	.949
PERSONAL GROWTH/IMPORTANCE (63)	1.55	.947
HEALTH/IMPORTANCE (65)	2.60	.944
ECONOMIC STANDARD/IMPORTANCE (57)	1.18	.943
ECONOMIC SECURITY/IMPORTANCE (58)	1.88	.941
WORK/IMPORTANCE (60)	1.00	.940
PERSONAL STANDING/IMPORTANCE (64)	.77	.940
LEADERSHIP/SUPERVISION/IMPORTANCE (61)	.92	.940
EQUITY/IMPORTANCE (62)	.36	.940

As before, FREE TIME was the most powerful; however, in this subset no other variables contributed nearly as much. The author would also like to point out the value of λ -- it decreased to only .940, as compared to .841 before. The confusion matrix is shown in Fig. 15.

		Predicted	
		Military	Civilian
Actual	Military	70.8%	29.2%
	Civilian	45.4%	54.6%

Fig. 15. Confusion Matrix -- Military/Civilian -- IMPORTANCE QOAFLI's

When the subset was compared to FREE TIME/IMPORTANCE alone (Fig. 6), the correct classification of military personnel had improved, but the correct classification of civilians worsened. The same conclusions were drawn from a comparison of this subset to the entire set of QOAFLI's (Fig. 5). The IMPORTANCE QOAFLI's could discriminate between the two populations, since the overall percentage correctly classified of 62.0% was statistically greater than 53.8%. No other variables, taken individually, showed up as significant in this subset.

The results of the SATISFACTION QOAFLI's subset are shown in Table XIII and Fig. 16. Wilks lambda remained relatively high, and the overall percentage correctly classified was 57%, which was significantly larger than 53.8%. As in the other subset of QOAFLI's, no new individual variables appeared to be important.

Military versus Military. The military personnel were divided according to whether their supervisors were military or civilian. The purpose of this division was to determine if civilian and military

Table XIII

Summary Table

Military/Civilian -- SATISFACTION QOAFLI's

Variable (Number)	F	λ
HEALTH/SATISFACTION (74)	21.52	.974
PERSONAL GROWTH/SATISFACTION (72)	17.52	.952
ECONOMIC STANDARD/SATISFACTION (66)	7.14	.944
FREE TIME/SATISFACTION (68)	9.24	.933
EQUITY/SATISFACTION (71)	3.37	.929
PERSONAL STANDING/SATISFACTION (73)	2.76	.926
ECONOMIC SECURITY/SATISFACTION (67)	.79	.925
WORK/SATISFACTION (69)	.08	.925

		Predicted	
		Military	Civilian
Actual	Military	60.7%	39.3%
	Civilian	46.1%	53.9%

Fig. 16. Confusion Matrix -- Military/Civilian -- SATISFACTION QOAFLI's

supervisors affected the military members' perceptions of their QOAFLI's. For all QOAFLI's -- both IMPORTANCE and SATISFACTION-- the results from the two subsamples are summarized in Tables XIV and XV.

Table XIV
Summary Table

Subsample 1 -- Military/Military -- QOAFLI's

Variable (Number)	F	λ
PERSONAL STANDING/SATISFACTION (73)	2.40	.993
ECONOMIC STANDARD/SATISFACTION (66)	3.62	.984
ECONOMIC SECURITY/SATISFACTION (67)	2.24	.977
WORK/SATISFACTION (69)	2.04	.972
HEALTH/SATISFACTION (74)	.97	.970
FREE TIME/SATISFACTION (68)	.39	.968
PERSONAL GROWTH/SATISFACTION (63)	.42	.967
FREE TIME/IMPORTANCE (59)	.76	.965
EQUITY/SATISFACTION (71)	.45	.964
PERSONAL GROWTH/SATISFACTION (72)	.30	.963
HEALTH/IMPORTANCE (65)	.25	.962
EQUITY/IMPORTANCE (62)	.54	.961
LEADERSHIP/SUPERVISION/SATISFACTION (70)	.13	.961
WORK/IMPORTANCE (60)	.15	.960
LEADERSHIP/SUPERVISION/IMPORTANCE (61)	.03	.960

Table XV

Summary Table

Subsample 2 -- Military/Military -- QOAFLI's

Variable (Number)	F	λ
LEADERSHIP/SUPERVISION/IMPORTANCE (61)	5.41	.935
FREE TIME/IMPORTANCE (59)	2.50	.978
HEALTH/SATISFACTION (74)	2.83	.971
PERSONAL GROWTH/IMPORTANCE (63)	2.27	.965
WORK/IMPORTANCE (60)	.96	.962
LEADERSHIP/SUPERVISION/SATISFACTION (70)	.59	.961
EQUITY/SATISFACTION (71)	.65	.959
PERSONAL STANDING/IMPORTANCE (64)	.31	.958
EQUITY/IMPORTANCE (62)	.45	.957
PERSONAL GROWTH/SATISFACTION (72)	.26	.956
FREE TIME/SATISFACTION (68)	.27	.955
PERSONAL STANDING/SATISFACTION (73)	.16	.955
HEALTH/IMPORTANCE (65)	.11	.955
ECONOMIC SECURITY/IMPORTANCE (58)	.13	.954
ECONOMIC STANDARD/SATISFACTION (66)	.08	.954
ECONOMIC STANDARD/IMPORTANCE (57)	.03	.954
ECONOMIC SECURITY/SATISFACTION (67)	.02	.954

The first obvious point is that the top variables of both tables were quite different. It would appear at first glance that search bias existed, but the following discussion will show that the question of search bias was irrelevant in this case. Another point of interest was that not all variables were included in the discriminant function -- the reason was that their associated F-statistic had a value of less than .01. Relatively low F-statistics and high λ's were found, and the inference was that the two populations -- military members with civilian supervisors and military members with military supervisors -- were difficult to differentiate. The validated confusion matrix follows:

		Predicted	
		Military Supervisor	Civilian Supervisor
Actual	Military Supervisor	64.2%	35.8%
	Civilian Supervisor	44.4%	55.6%

Fig. 17. Confusion Matrix -- Military/Military -- QOAFLI's

The military versus military alignment consisted of 346 military personnel with military supervisors, and 18 with civilian supervisors. (The astute reader will notice that two persons were lost: 366 military members were included at the beginning, compared to 364 now. The reason for two surveys being lost was that the division of the military people was based on their response to Variable 11, which was "Who rates you?" If an individual left that question blank, SPSS eliminated his survey from the analysis.) The overall percentage correctly classified was 67.1, which was insignificant -- P was 346/364, or 95%. The conclusion was that the discriminant function was useless, and that was why search bias

was irrelevant. This conclusion was further verified by performing t-tests on the mean responses of each QOAFLI for the two groups -- no difference was significant.

The variables were not broken down into two subsets, nor analyzed individually, because the largest F-statistic for the entire set of QOAFLI's was only 5.41. Dividing the QOAFLI's into different subsets would never have produced a larger F-statistic. Some of the smaller values might have increased, but none could have ever exceeded 5.41.

The conclusion was that it made no difference whether a military person's supervisor was military or civilian, as reflected in that military person's perceptions of his QOAFLI's.

Civilian versus Civilian. The civilian population was also investigated in an attempt to determine the influence of military and civilian supervisors. The summarized results follow:

Table XVI
Summary Table
Subsample 1 -- Civilian/Civilian -- QOAFLI's

Variable (Number)	F	λ
ECONOMIC STANDARD/SATISFACTION (66)	5.30	.987
WORK/IMPORTANCE (60)	8.84	.967
HEALTH/SATISFACTION (74)	4.33	.957
LEADERSHIP/SUPERVISION/IMPORTANCE (61)	2.45	.951
ECONOMIC STANDARD/IMPORTANCE (57)	1.67	.947
EQUITY/IMPORTANCE (62)	1.73	.943
PERSONAL GROWTH/SATISFACTION (72)	1.41	.940
ECONOMIC SECURITY/IMPORTANCE (58)	1.00	.938

Table XVI (Continued)

Summary Table

Subsample 1 -- Civilian/Civilian -- QOAFLI's

Variable (Number)	F	λ
LEADERSHIP/SUPERVISION/SATISFACTION	1.04	.935
FREE TIME/SATISFACTION (68)	.78	.934
FREE TIME/IMPORTANCE (59)	.81	.932
ECONOMIC SECURITY/SATISFACTION (67)	.38	.931
PERSONAL STANDING/SATISFACTION (73)	.32	.930
WORK/SATISFACTION (69)	.43	.929
HEALTH/IMPORTANCE (65)	.12	.929
PERSONAL STANDING/IMPORTANCE (64)	.04	.929
EQUITY/SATISFACTION (71)	.02	.929

Table XVII

Summary Table

Subsample 2 -- Civilian/Civilian -- QOAFLI's

Variable (Number)	F	λ
LEADERSHIP/SUPERVISION/SATISFACTION (70)	1.69	.996
ECONOMIC SECURITY/IMPORTANCE (58)	.88	.994
HEALTH/IMPORTANCE (65)	1.54	.990
PERSONAL GROWTH/IMPORTANCE (63)	.99	.989
EQUITY/IMPORTANCE (62)	.77	.986
ECONOMIC STANDARD/SATISFACTION (66)	.73	.984
ECONOMIC SECURITY/SATISFACTION (67)	1.31	.981
FREE TIME/IMPORTANCE (59)	.96	.979
WORK/IMPORTANCE (60)	.51	.978
EQUITY/SATISFACTION (71)	.30	.977

Table XVII (Continued)

Summary Table

Subsample 2 -- Civilian/Civilian -- QOAFLI's

Variable (Number)	F	λ
PERSONAL STANDING/SATISFACTION (73)	.06	.977
PERSONAL GROWTH/SATISFACTION (72)	.08	.977
FREE TIME/SATISFACTION (68)	.05	.977
WORK/SATISFACTION (69)	.03	.976
ECONOMIC STANDARD/IMPORTANCE (57)	.01	.976

Here again, the F-statistics were comparatively small, while λ was relatively high. The validated confusion matrix follows:

		Predicted	
		Military Supervisor	Civilian Supervisor
Actual	Military Supervisor	54.7%	45.3%
	Civilian Supervisor	49.4%	50.6%

Fig. 18. Confusion Matrix -- Civilian/Civilian -- QOAFLI's

The new group consisted of 420 civilians, 106 having military supervisors, while 314 were supervised by civilians, which made P 75%. The overall percentage correctly classified was 51.7, which was insignificant. The question of search bias proved again irrelevant. These statistics implied that it would be extremely difficult to distinguish civilians' perceptions of their QOAFLI's based on whether their supervisors were military or civilian.

The conclusions were not fully supported by the t-test for differences in mean responses. In subsample 2, all differences were

statistically zero, but not in subsample 1. The mean response for the group supervised by military was greater on ECONOMIC STANDARD/SATISFACTION (Variable 66) and lower on HEALTH/SATISFACTION (Variable 74). So why did these two variables not have larger F-statistics in the discriminant function? There are two reasons. First, the mean responses were not vastly different; the levels of significance were .026 and .043 for Variables 66 and 74, respectively. Second, in Chapter III, the author pointed out that discriminant analysis is also based on variances. For these two variables and those two groups, the levels of significance for the F-test of variances were .466 and .531, respectively. The mean responses were only slightly different, and their variances were the same -- that is why they had relatively low F-statistics in the discriminant function.

The QOAFLI's were not subdivided for the same reasons as given in the preceding section: with such small F-statistics, no more insight could be gained. The conclusion was that civilian perceptions of their QOAFLI's were the same whether they were supervised by military or civilian.

"Criss-Cross". The "Criss-Cross" groups were defined by whether they had "like" or "unlike" supervisors: in group 1 were military personnel with military supervisors and civilians with civilian supervisors, and group 2 consisted of military members with civilian supervisors and civilians with military supervisors. The purpose of such an alignment was to determine if personnel could be differentiated on the basis of whether their supervisor was "like" or "unlike". The results follow:

Table XVIII

Summary Table

Subsample 1 -- "Criss-Cross" -- QOAFLI's

Variable (Number)	F	λ
ECONOMIC STANDARD/IMPORTANCE (57)	3.90	.995
ECONOMIC STANDARD/SATISFACTION (66)	2.10	.992
WORK/IMPORTANCE (60)	2.27	.989
PERSONAL GROWTH/SATISFACTION (72)	1.15	.988
LEADERSHIP/SUPERVISION/SATISFACTION (70)	1.54	.986
PERSONAL STANDING/SATISFACTION (73)	.72	.985
EQUITY/SATISFACTION (71)	.95	.984
ECONOMIC SECURITY/SATISFACTION (67)	.55	.983
FREE TIME/IMPORTANCE (59)	.48	.983
EQUITY/IMPORTANCE (62)	.54	.982
ECONOMIC SECURITY/IMPORTANCE (58)	.31	.982
FREE TIME/SATISFACTION (68)	.28	.981
LEADERSHIP/SUPERVISION/IMPORTANCE (61)	.29	.981
HEALTH/SATISFACTION (74)	.13	.981
PERSONAL GROWTH/IMPORTANCE (63)	.14	.980
PERSONAL STANDING/IMPORTANCE (64)	.13	.980
WORK/SATISFACTION (69)	.04	.980
HEALTH/IMPORTANCE (65)	.02	.980

Table XIX

Summary Table

Subsample 2 -- "Criss-Cross" -- QOAFLI's

Variable (Number)	F	λ
LEADERSHIP/SUPERVISION/IMPORTANCE (61)	3.12	.996
FREE TIME/SATISFACTION (68)	2.71	.993
FREE TIME/IMPORTANCE (59)	2.61	.989
LEADERSHIP/SUPERVISION/SATISFACTION (70)	1.19	.988
HEALTH/IMPORTANCE (65)	.69	.987
PERSONAL GROWTH/IMPORTANCE (63)	1.20	.985
WORK/IMPORTANCE (60)	.47	.985
HEALTH/SATISFACTION (74)	.19	.985
ECONOMIC SECURITY/SATISFACTION (67)	.25	.984
ECONOMIC STANDARD/SATISFACTION (66)	.21	.984
EQUITY/SATISFACTION (71)	.18	.984
PERSONAL STANDING/SATISFACTION (73)	.24	.983
PERSONAL GROWTH/SATISFACTION (72)	.21	.983
WORK/SATISFACTION (69)	.18	.983
PERSONAL STANDING/IMPORTANCE (64)	.16	.983
EQUITY/IMPORTANCE (62)	.10	.983
ECONOMIC SECURITY/IMPORTANCE (58)	.04	.983
ECONOMIC STANDARD/IMPORTANCE (57)	.07	.982

		Predicted: Like	Predicted: Unlike
Actual	Like	58.6%	41.4%
	Unlike	40.4%	51.6%

Fig. 19. Confusion Matrix -- "Criss-Cross" -- QOAFLI's

Extremely small F-statistic values and high λ's again implied that these two groups had too much overlap to successfully discriminate between them. The division of personnel consisted of 660 with "like" supervisors, and 124 with "unlike" supervisors. The overall percentage correctly classified was 57.53, and insignificant, as P was 84.2% (660/784). Again the discriminant function proved to be of no value. The t-test for mean responses verified the uselessness of the function; all differences in mean responses for all QOAFLI's were statistically zero. Because of the extremely low values of the F-statistics, no further breakdown of variables was performed. The author concluded that there were no differences between the two groups in terms of the QUALITY OF LIFE measurements.

JOB RELATED

Military versus Civilian. In the initial run, all variables were included that related to the JOB aspects of the surveys -- these were identified in Chapter III. Tables XX and XXI summarize the results from the two subsamples. When the two discriminant functions were compared, the first four variables were the same. Upon examination of the top nine variables (the point at which any meaningful comparison would stop), eight were found in both functions. The implication was that the questions that differentiated subsample 1 also differentiated

Table XX

Summary Table

Subsample 1 -- Military/Civilian -- JOB

Variable (Number)	F	λ
For whom would you rather work? (35)	282.69	.737
Too many outside activities? (29)	182.70	.598
Over whom would you rather work? (38)	96.32	.533
Career intent. (28)	28.54	.515
Job recognition. (33)	33.15	.494
Work appropriate for grade? (34)	24.08	.479
Favorable features about the AF as a place to work. (44)	13.93	.471
Job preparing you for future? (21)	9.57	.465
You and your supervisor set objectives? (49)	9.42	.460
Rather work for a man/woman? (43)	10.18	.454
Job freedom. (32)	7.04	.450
Your job compared to other people. (26)	6.70	.446
Evaluate your present job. (20)	3.75	.444
Satisfied with your job? (23)	2.47	.442
Where should military women work? (42)	2.46	.441
How do you like your job? (24)	.99	.440
WORK/SATISFACTION QOAFLI (69)	1.46	.439
Feedback from your supervisor? (48)	1.12	.439
With whom would you rather work? (39)	.71	.438
WORK/IMPORTANCE QOAFLI (60)	.31	.438
Combined Job Satisfaction Score (56)	.19	.438

Table XX (Continued)

Summary Table

Subsample 1 -- Military/Civilian -- JOB

Variable (Number)	F	λ
Do you want greater responsibility? (22)	.04	.438
How do you feel about changing jobs? (25)	.03	.438

Table XXI

Summary Table

Subsample 2 -- Military/Civilian --JOB

Variable (Number)	F	λ
For whom would you rather work? (35)	374.27	.678
Too many outside activities? (29)	148.29	.571
Over whom would you rather work? (38)	102.26	.506
Career intent. (28)	33.52	.485
Job preparing you for future? (21)	12.50	.478
Satisfied with your job? (23)	16.00	.468
Favorable features about the AF as a place to work. (44)	8.49	.463
Work appropriate for grade? (34)	10.84	.459
Job recognition. (33)	7.16	.453
Job freedom. (32)	5.81	.449
Where should military women work? (42)	4.42	.447
Rather work for man/woman? (43)	2.86	.445
How do you like your job? (24)	2.92	.444
How do you feel about changing jobs? (25)	3.44	.442

Table XXI (Continued)

Summary Table

Subsample 2 -- Military/Civilian -- JOB

Variable (Number)	F	λ
Evaluate your present job. (20)	2.31	.440
WORK/IMPORTANCE QOAFLI (60)	.47	.440
You and your supervisor set objectives? (49)	.49	.440
Combined Job Satisfaction Score (56)	.22	.440
WORK/SATISFACTION QOAFLI (69)	.18	.440
Your job compared to other people. (26)	.17	.439
Do you want greater responsibility? (22)	.04	.439

subsample 2; therefore, the two discriminant functions appeared to be the same. The first step of cross-validation for this subset is completed as search bias was determined to be negligible.

The author contrasted the summary tables above with the QOAFLI's, Tables X and XI, of the preceding subsection. The value of the highest F-statistic for the QOAFLI subset was 48.16, while in the Job related subset, the largest F-statistic value was 374.27. In the QOAFLI subset, the final λ was .826; in the JOB related area, the first variable that entered the function had a smaller λ. The point is that the QOAFLI's discriminant function was less powerful than the JOB related discriminant function. This was further verified by investigating the validated confusion matrix for the JOB related aspects, as shown in Fig. 20. This was an overall 88.3% correctly classified as compared to 64.8% for the QOAFLI's.

		Predicted: Military	Predicted: Civilian
Actual	Military	86.9%	13.1%
	Civilian	10.5%	89.5%

Fig. 20. Confusion Matrix -- Military/Civilian -- JOB

The confusion matrix from subsample 1 is depicted in Fig. 21.

		Predicted: Military	Predicted: Civilian
Actual	Military	88.8%	11.2%
	Civilian	14.3%	85.7%

Fig. 21. Subsample 1 Confusion Matrix -- Military/Civilian -- JOB

The overall percentage correctly classified was 87.1, and was statistically the same as 88.3 from the validated confusion matrix. The inference was, therefore, that no sampling bias existed. Further, as there was 366 military members and 427 civilians, P was again 53.8%, and the overall percentage correctly classified was significantly greater than P. The conclusion was that the discriminant function could distinguish military personnel from civilians, and the relatively high percentages correctly classified indicated that the function was very powerful.

After the initial run, the author decided to make several additional runs, excluding the top variables one at a time, then two at a time, and then three at a time. The purpose was to determine if some variable that had been buried at the bottom of the subset might rise to the top. When the question "For whom would you rather work?" remained and any other combination of questions was deleted, then "For whom would you rather work?" remained the most important. When the question "For whom

would you rather work?" was the only one omitted, then the variable "Over whom would you rather work?" became the most important. When both "For whom and over whom would you rather work?" were excluded, then "With whom would you rather work?" ascended to the top. When Tables XX and XXI were examined, "With whom would you rather work?" was found very near the bottom with an F-statistic value of only .71 in subsample 1 and was even less than .01 in subsample 2; however, it now had an F-statistic value of 167.67. The purpose of excluding the top variables had been accomplished -- a variable that had previously been "hidden" by more powerful variables was illuminated. It will be observed that the two excluded questions and this question were very similiar: all three concerned working relationships with the opposite population. These three might have been asked, "For whom, with whom, and over whom would you rather work?"

Regardless of which one of the three "work with, for , and over" questions was omitted, the question concerning activities that were not related to the job was always the second most important and became the top variable when all three were deleted during a single run. Table XXII and Fig. 22 summarize the results from the discriminant analysis run when all three of the "work with, for, and over" questions were omitted.

Table XXII

Summary Table

Subsample 1 -- Military/Civilian -- JOB

With Top Variables Missing

Variable (Number)	F	λ
Too many outside activities? (29)	146.39	.844
Job recognition. (33)	46.10	.797
Work appropriate for grade? (34)	40.81	.758
Career intent. (28)	16.82	.742
Job freedom. (32)	13.15	.730
Job preparing you for future? (21)	12.88	.718
Satisfied with your job? (23)	14.28	.705
You and your supervisor set objectives? (49)	10.85	.696
Evaluate your present job. (20)	4.05	.692
Rather work for a man/woman? (43)	2.56	.690
Where should military women work? (42)	1.77	.688
Feedback from your supervisor? (48)	1.86	.687
How do you like your job? (24)	1.77	.685
Favorable features about the AF as a place to work. (44)	1.17	.684
Combined Job Satisfaction Score (56)	.07	.684
Do you want greater responsibility? (22)	.03	.684

		Predicted: Military	Predicted: Civilian
Actual	Military	68.6%	31.4%
	Civilian	25.8%	74.2%

Fig. 22. Confusion Matrix -- Military/Civilian -- JOB with Top Variables Missing

The overall percentage correctly classified was significant at 71.6.

"For, with, and over whom would you rather work?" had a certain amount of intuitive appeal as good discriminators between the military and civilian populations. It seemed logical to hypothesize that members of one group would prefer to work for, with, and over members of the same group. To determine if these hypotheses were true, the mean responses of the three questions were investigated, and the results follow:

35. Would you rather work for (i.e., be rated by) a military or civilian supervisor?

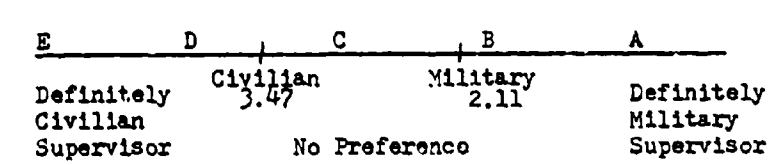


Fig. 23. Mean Responses -- Military/Civilian -- Variable 35

A variation of the t-test was used to test the hypothesis that each mean response was statistically different from a response of "No Preference"; this hypothesis was true. Another item of interest was the distance of each mean response from "No Preference", and whether these distances were significantly different. Once again, the t-test was modified to test this hypothesis, and it was found that the two distances were not the same. The conclusion was that both groups preferred to be supervised by members of their own group, but military personnel were more adamant about it than were their civilian peers. For this question, the modal response was B for military personnel, and C for civilians.

38. Would you rather supervise military or civilian personnel?

A	B	C	D	E
Definitely Civilian	Civilian 2.41	Military 3.53		Definitely Military

Fig. 24. Mean Responses -- Military/Civilian -- Variable 38

The mean responses were statistically different from each other and were also different from the response of "No Preference." The mean responses were equidistant from "No Preference". The modal response for both groups was "No Preference".

39. Would you rather work with military or civilian co-workers?

A	B	C	D	E
Definitely Civilian	Civilian 2.54	Military 3.34		Definitely Military
	No Preference			

Fig. 25. Mean Responses -- Military/Civilian -- Variable 39

The mean responses were different from each other; each mean response was different from "No Preference"; and the mean responses were equidistant from "No Preference". The mode for both populations was "No Preference."

In the following two subsections, the influence of supervisors will be analyzed; that analysis will help provide an insight into the reasons for the stronger preference on the part of military people for military supervisors.

To illustrate the power of each of these three questions -- "For whom, over whom, and with whom would you rather work?" -- Figs. 26, 27, and 28 show the respective confusion matrices when each variable was the only one in the discriminant function.

		Predicted: Military	Predicted: Civilian
Actual	Military	64.5%	35.5%
	Civilian	15.2%	84.8%

Fig. 26. Confusion Matrix -- Military/Civilian -- "For whom would you rather work?"

		Predicted: Military	Predicted: Civilian
Actual	Military	49.2%	50.8%
	Civilian	5.2%	94.8%

Fig. 27. Confusion Matrix -- Military/Civilian -- "Over whom would you rather work?"

		Predicted: Military	Predicted: Civilian
Actual	Military	39.6%	60.4%
	Civilian	4.9%	95.1%

Fig. 28. Confusion Matrix -- Military/Civilian -- "With whom would you rather work?"

The overall percentages correctly classified were 75.4, 73.8, and 69.5, for "For whom, over whom, and with whom", respectively. It was observed that any one of the three questions "For whom, over whom, and with whom would you rather work?" individually could correctly classify a higher overall percentage than could the entire set of QOAFLI's.

Another important variable was 29 -- "Too many outside activities". When it was the only question entered into the discriminant function,

it was not as powerful as the three previously discussed. The exact wording and confusion matrix follows:

29. The Air Force requires me to participate in too many activities that are not related to my job.

		Predicted	
		Military	Civilian
Actual	Military	59.6%	40.4%
	Civilian	21.3%	78.7%

Fig. 29. Confusion Matrix -- Military/Civilian -- Variable 29

This variable could correctly classify 70% overall. To see which group perceived that they were participating in too many activities not related to thei job, mean responses were analyzed.

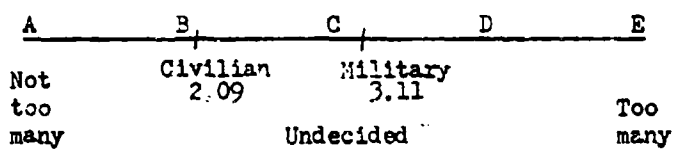


Fig. 30. Mean Responses -- Military/Civilian -- Variable 29

This difference was statistically significant. When the author examined the responses more closely, it was found that 44% of the military responses were either D or E, while only 15% of the civilians responded the same. The implication was that military members perceived that they have to participate in more activities that are unrelated to their job than do civilians.

Another question that stood out was "Career Intent" -- Variable 28. This variable had considerably less predicted power than the four previously discussed variables, which was reflected in the confusion matrix when it was entered alone in the discriminant function.

28. Which one of the following best describes your feelings toward long term employment with the Air Force?

		Predicted	
		Military	Civilian
Actual	Military	42.9%	57.1%
	Civilian	35.6%	64.4%

Fig. 31. Confusion Matrix -- Military/Civilian -- Variable 28

The overall percentage correctly classified was 54.5% and was not statistically greater than P of 53.8%. The mean responses for "Career Intent" are shown in Fig. 32.

A		B		C		D		E
				Undecided				
Career Intent	Civilian 1.48		Military 2.00					No Intent

Fig. 32. Mean Responses -- Military/Civilian -- Variable 28

The difference in mean responses was statistically significant, as were the variances of the two groups -- 1.73 for military members in contrast to only .74 for civilians. The mode for each group was A, but 84% of the civilians indicated A or B, while only 71% of the military people responded the same. The conclusion was that civilians had a higher career intent.

"Job recognition" also scored high in the discriminant function -- it had an F-statistic of 33.15 in subsample 1 and a value of 46.10 in the subset with the top variables excluded. Fig. 33 shows the confusion matrix for "Job recognition" (Variable 33) when it was the only variable in the function. The exact wording was

33. Does your immediate supervisor give you recognition for a job well done?

		Predicted	
		Military	Civilian
Actual	Military	44.5%	55.5%
	Civilian	29.0%	71.0%

Fig. 33. Confusion Matrix -- Military/Civilian -- Variable 33

"Job recognition" could correctly classify 58.8% overall, and that was statistically greater than P of 53.8%. The mean responses to "Job recognition" follow:

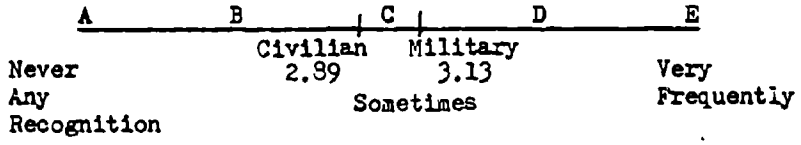


Fig. 34. Mean Responses -- Military/Civilian -- Variable 33

The difference in mean responses was statistically significant. Further, 37% of the civilians responded with A or B, indicating that they never or seldom received recognition, as compared to 18% of the military population. The conclusion was that military people perceived that they received more recognition for a job well done that did civilians.

Variable 34 was "Do you feel that the work you are now doing is appropriate to the grade you hold?" It also possessed some predictive power, as shown in Fig. 35.

		Predicted: Military	Predicted: Civilian
Actual	Military	67.5%	32.5%
	Civilian	45.0%	55.0%

Fig. 35. Confusion Matrix -- Military/Civilian -- Variable 34

The overall percentage correctly classified was 60.8%, and was greater than P of 53.8%. "Work appropriate for grade?" could, therefore, differentiate the two groups. The mean responses for "Work appropriate for grade?" follow:

A	B	C	D	E
		Military 3.30	Civilian 3.57	
Grade Higher than Work		Grade About Right		Grade Lower than Work

Fig. 36. Mean Responses -- Military/Civilian -- Variable 34

The difference in the mean responses was significant; moreover, the mode for military responses was C, while for civilians it was both C and D. The inference was that military and civilian personnel alike perceived their grade or rank as being too low for the work they were doing; civilians, however, felt more strongly about it than their counterparts.

The "Job freedom" variable also deserved investigation.

32. Are you given the freedom you need to do your job well?

When alone in the discriminant function, "Job freedom" correctly classified 54.1% overall. An additional breakdown follows:

		Predicted: Military	Predicted: Civilian
Actual	Military	40.4%	59.6%
	Civilian	34.2%	65.8%

Fig. 37. Confusion Matrix -- Military/Civilian -- Variable 32

The 54.1% correctly classified was not greater than P of 53.8%. In other words, "Job freedom" would not be able to effectively distinguish civilians from ilitary personnel. The mean responses are depicted in Fig. 38.

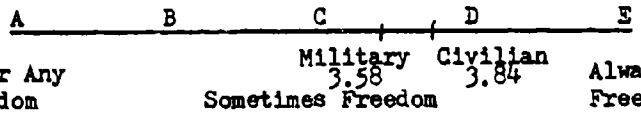


Fig. 38. Mean Responses -- Military/Civilian -- Variable 32

The difference in mean responses was significant; when the responses were examined more closely, the mode was found to be D for military personnel and E for civilians. Alternatively stated, 37% of the civilians responded that they always had the freedom necessary to do their job well, while only 25% of their military peers answered the same.

The other variables pointed out in Tables XX, XXI, and XXII had practically no predictive power when considered individually; rather, their value was to add a small amount of predictive power to the variables already included. For this reason, no more individual confusion matrices will be presented in this subsection. Instead, the author has presented only the t-test results.

21. Do you think your present job is preparing you to assume future positions of greater responsibility?

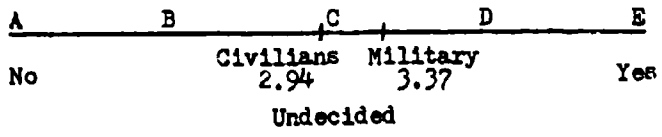


Fig. 39. Mean Responses -- Military/Civilian -- Variable 21

The difference was significant; military personnel believed their jobs were preparing them for the future, while civilian responses were undecided.

23. Which one of the following shows how much of the time you feel satisfied with your job?

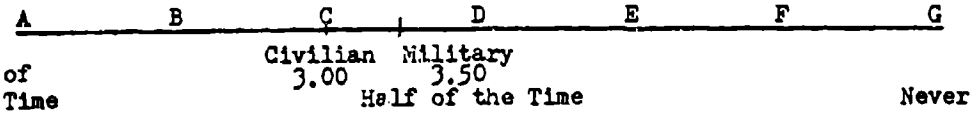


Fig. 40. Mean Responses -- Military/Civilian -- Variable 23

The difference was significant; civilians indicated satisfaction with their jobs more of the time than their military counterparts.

49. How often do you and your supervisor get together to set your personal performance objectives?

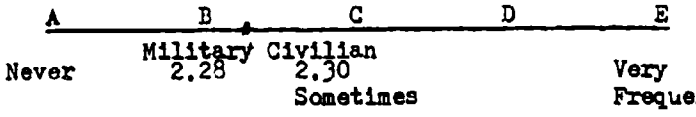


Fig. 41. Mean Responses -- Military/Civilian -- Variable 49

The mean responses were statistically the same.

In summary, when military personnel were contrasted with their civilians co-workers, the most important variables were the intuitively appealing ones: "For whom, over whom, and with whom would you rather

work?" Each group preferred to work for, over, and with members of their own group. Civilians had a higher career intent, were required to participate in fewer outside activities unrelated to their jobs, received less recognition for a job well done, considered their grade too low for their work, had more freedom to do their jobs, expressed more satisfaction with their jobs, and set goals with their supervisors more often than did their military peers. Moreover, civilians expressed the perception that their present jobs were not preparing them for the future to the same extent as military personnel.

Military versus Military. Military personnel were divided into two groups, based on whether their supervisors were civilian or military, and discriminant analysis was attempted. The first step in the cross-validation procedure was to examine both discriminant functions. These results are summarized in Tables XXIII and XXIV.

Table XXIII

Summary Table

Subsample 1 -- Military/Military -- JOB

Variable (Number)	F	λ
Your job compared to other people. (26)	2.85	.992
Evaluate your present job. (20)	4.85	.979
How do you feel about changing jobs? (25)	1.73	.974
WORK/IMPORTANCE QOAFLI (60)	1.87	.969
Job recognition. (33)	1.50	.965
Do you want greater responsibility? (22)	1.35	.961
For whom would you rather work? (35)	.68	.960

Table XXIII (Continued)

Summary Table

Subsample 1 -- Military/Military -- JOB

Variable (Number)	F	λ
Combined Job Satisfaction Score (56)	.71	.958
Job preparing you for future? (21)	.77	.956
You and supervisor set objectives? (49)	.43	.955
Over whom would you rather work? (38)	.56	.953
Job freedom. (32)	.36	.952
Favorable features about the AF as a place to work. (44)	.48	.951
Work appropriate for grade? (34)	.30	.950
K/SATISFACTION QOAFLI (69)	.26	.949
er work for a man/woman? (43)	.19	.949
Feedback from your supervisor? (48)	.15	.948
Care intent. (28)	.14	.948
How you like your job? (24)	.06	.948
Satisfied with your job? (23)	.04	.948
Where should military women work? (42)	.02	.948
With whom would you rather work? (39)	.01	.948

Table XXIV

Summary Table

Subsample 2 -- Military/Military -- JOB

Variable (Number)	F	λ
Rather work for a man/woman? (43)	4.12	.989
You and your supervisor set objectives? (49)	4.17	.977
Too many outside activities? (29)	2.49	.971
For whom would you rather work? (35)	1.56	.967
Your job compared to other people. (26)	1.00	.964
Combined Job Satisfaction Score (56)	4.45	.952
How do you like your job? (24)	2.27	.946
Job recognition. (33)	1.32	.943
How do you feel about changing jobs? (25)	1.30	.939
Satisfied with your job? (23)	2.01	.934
Where should military women work? (42)	.83	.931
Over whom would you rather work? (38)	.50	.930
With whom would you rather work? (39)	1.58	.926
Evaluate your present job. (20)	.35	.925
Job freedom. (32)	.29	.924
WORK/IMPORTANCE QOAFLI (60)	.19	.924
Favorable features about the AF as a place to work. (44)	.11	.923
Do you want greater responsibility? (22)	.09	.923
Work appropriate for grade? (34)	.08	.923
WORK/SATISFACTION QOAFLI (69)	.05	.923
Career intent. (28)	.03	.923
Feedback from your supervisor? (48)	.01	.923

Quite obviously, the discriminant functions were different, but the extremely low F-statistics implied that both functions were worthless. This was illustrated again when the author attempted to validate the confusion matrix shown in Fig. 42.

		Predicted	
		Military Supervisor	Civilian Supervisor
Actual	Military Supervisor	76.3%	23.7%
	Civilian Supervisor	88.9%	11.1%

Fig. 42. Confusion Matrix -- Military/Military -- JOB

P was 95%, as 346 military members were supervised by military personnel, while only 18 had civilian supervisors. The discriminant function classified only 73.1% correctly overall, which was insignificant. Consequently, the conclusion was that it would be extremely difficult to differentiate the two populations. There was another area of interest, however, concerning the three important variables from the preceding subsection: "For whom, over whom, and with whom would you rather work?" These three variables had low F-statistic values in both functions, indicating that they would be of limited use in discriminating between military personnel. To get a better look at the variables, the mean responses were analyzed.

35. For whom would you rather work?

E	D	C	B	A
Definitely Civilian		No Preference	Military Supervisor 2.11 / Civilian Supervisor 2.06	Definitely Military

Fig. 43. Mean Responses -- Military/Military -- Variable 35

The difference was not significant.

38. Would you rather supervise military or civilian personnel?

A	B	C	D	E
Definitely Civilian		No Preference	Military Supervisor 3.53 / Civilian Supervisor 3.44	Definitely Military

Fig. 44. Mean Responses -- Military/Military -- Variable 38

The responses were equal.

39. Would you rather work with military or civilian co-workers?

A	B	C	D	E
Definitely Civilian		No Perference	Military Supervisor 3.34 / Civilian Supervisor 3.33	Definitely Military

Fig. 45. Mean Responses -- Military/Military -- Variable 39

The responses were statistically the same. The conclusion was that military personnel with civilian supervisors were no more inclined to work for, with, or over civilians than were their military comrades who were supervised by military commanders.

Civilians versus Civilians. There were 106 civilians supervised by military personnel, while 314 civilians worked for civilian supervisors. The results from the discriminant analysis performed on these two populations are summarized in Tables XXV and XXVI.

Table XXV

Summary Table

Subsample 1 -- Civilian/Civilian -- JOB

Variable (Number)	F	λ
Career intent. (28)	10.05	.976
For whom would you rather work? (35)	9.04	.955
Work appropriate for grade? (34)	5.64	.943
How do you like your job? (24)	5.34	.931
WORK/IMPORTANCE QOAFLI (60)	3.51	.923
How do you feel about changing jobs? (25)	3.26	.915
Job recognition. (33)	3.92	.907
You and your supervisor set objectives? (49)	8.32	.889
Favorable features about the AF as a place to work. (44)	2.60	.883
With whom would you rather work? (39)	2.70	.877
Do you want greater responsibility? (22)	1.36	.874
Job preparing you for future? (21)	1.00	.872
Where should military women work? (42)	.88	.870
Evaluate your present job. (20)	.58	.869
Over whom would you rather work? (38)	.50	.868
WORK/SATISFACTION QOAFLI (69)	.33	.867
Combined Job Satisfaction Score (56)	.23	.867
Your job compared to other people. (26)	.18	.866
Too many outside activities. (29)	.15	.866
Feedback from your supervisor. (48)	.12	.866
Job freedom. (32)	.08	.865

Table XXVI

Summary Table

Subsample 2 -- Civilian/Civilian -- JOB

Variable (Number)	F	λ
For whom would you rather work? (35)	25.21	.943
Your job compared to other people. (26)	8.07	.925
Job preparing you for future? (21)	5.05	.914
How do you like your job? (24)	3.48	.907
Combined Job Satisfaction Score (56)	3.77	.898
Career intent. (28)	3.06	.892
How do you feel about changing jobs? (25)	2.60	.886
Job freedom. (32)	1.93	.382
Work appropriate for grade? (34)	1.68	.878
Too many outside activities? (29)	1.34	.876
Favorable features about the AF as a place to work. (44)	1.05	.873
Satisfied with your job? (23)	.90	.871
Evaluate your present job. (20)	1.07	.869
With whom would you rather work? (39)	.92	.867
Over whom would you rather work? (38)	1.09	.865
Where should military women work? (42)	.85	.863
You and your supervisor set objectives? (49)	.45	.862
Job recognition. (33)	.36	.861
Feedback from your supervisor? (48)	.23	.861
Rather work for a man/woman? (43)	.06	.861
Do you want greater responsibility? (22)	.04	.861

Table XXVI (Continued)

Summary Table

Subsample 2 -- Civilian/Civilian -- JOB

Variable (Number)	F	λ
WORK/IMPORTANCE QOAFLI (60)	.03	.860
WORK/SATISFACTION QOAFLI (69)	.07	.860

When the discriminant functions were compared, the function derived from subsample 1 yielded very little; subsample 2 produced a function that singled out "For whom would you rather work?" as being important. The predictive power of the two functions was satistically the same as can be seen in Figs. 46 and 47.

		Predicted	
		Military Supervisor	Civilian Supervisor
Actual	Military Supervisor	66.7%	33.3%
	Civilian Supervisor	31.7%	68.3%

Fig. 46. Subsample 1 Confusion Matrix -- Civilian/Civilian -- JOB

		Predicted	
		Military Supervisor	Civilian Supervisor
Actual	Military Supervisor	62.3%	37.7%
	Civilian Supervisor	29.9%	70.1%

Fig. 47. Subsample 2 Confusion Matrix -- Civilian/Civilian -- JOB

Even though "For whom would you rather work?" had an F-statistic value of 25.21 in subsample 2, the final discriminant function derived from subsample 2 was no more effective than the function derived from subsample 1. This was better illustrated by comparing the final Λ's: .865 and .860 for subsamples 1 and 2, respectively.

The validated confusion matrix for civilian versus civilians in the JOB related aspects of their lives is shown in Fig. 48.

		Predicted	
		Military Supervisor	Civilian Supervisor
Actual	Military Supervisor	49.1%	50.9%
	Civilian Supervisor	38.2%	61.8%

Fig. 48. Confusion Matrix -- Civilian/Civilian -- JOB

There were 420 civilians total with 314 supervised by civilians, making P 74.8%. The overall percentage correctly classified for subsample 1, subsample 2, and the validated confusion matrix was 67.9, 68.1, and 58.6, respectively, and all three were insignificant. The implication was that both discriminant functions were useless, and the two groups could not be discriminated based on the JOB related aspects of their lives.

The author again wished to investigate supervisor influence on the three variables, "For whom, over whom, and with whom would you rather work?" The mean responses of civilian versus civilians to these three questions follow:

35. Would you rather work for (i.e., be rated by) a military or civilian supervisor?

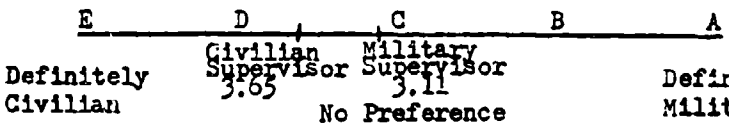


Fig. 49. Mean Responses -- Civilian/Civilian -- Variable 35

The difference was significant.

38. Would you rather supervise military or civilian personnel?

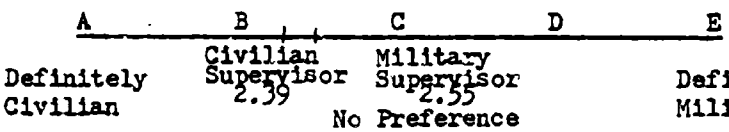


Fig. 50. Mean Responses -- Civilian/Civilian -- Variable 38

For subsample 1, the difference was significant at a level of .02; for subsample 2, the level of significance was .06.

39. Would you rather work with military or civilian co-workers?

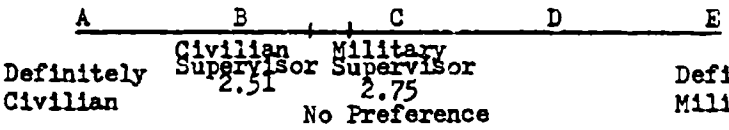


Fig. 51. Mean Responses -- Civilian/Civilian -- Variable 39

Again, the mean responses were not the same.

In summary, all civilians preferred to work for, over, and with other civilians. The responses of civilians with military commanders, however, were not as strong as the responses of civilians with civilian supervisors. In other words, civilians working for military supervisors tended to be more indifferent to these three questions than their civilian peers working for civilian supervisors. This should be contrasted to the military responses to the questions in the preceding subsection -- the military responses were the same, regardless of whether they were

supervised by civilian or military personnel.

"Criss-Cross". For this analysis, AF personnel were divided according to whether their supervisor was "like" or "unlike". The "like" population consisted of military members supervised by military members and civilians supervised by civilians; the "unlike" population contained military personnel commanded by civilians and civilians led by military personnel. Discriminant analysis was then performed on the two populations, and the results are summarized in Tables XXVII and XXVIII.

Table XXVII

Summary Table

Subsample 1 -- "Criss-Cross" -- JOB

Variable (Number)	F	λ
Too many outside activities? (29)	13.68	.983
For whom would you rather work? (35)	5.72	.976
WORK/IMPORTANCE QOAFLI (60)	5.09	.969
You and your supervisor set objectives? (49)	3.64	.965
How do you like your job? (24)	3.42	.960
Combined Job Satisfaction Score (56)	5.71	.953
Job recognition. (33)	2.96	.950
Your job compared to other people. (26)	2.71	.946
Job preparing you for future? (21)	2.93	.943
Career intent. (28)	2.88	.939
Do you want greater responsibility? (22)	1.19	.938
Satisfied with your job? (23)	.78	.937
Work appropriate for grade? (34)	.64	.936

Table XXVII (Continued)

Summary Table

Subsample 1 -- "Criss-Cross" -- JOB

Variable (Number)	F	λ
Where should military women work? (42)	.49	.936
Feedback from your supervisor? (48)	.25	.935
Rather work for a man/woman? (43)	.18	.935
WORK/SATISFACTION QOAFLI (69)	.08	.935
Over whom would you rather work? (38)	.06	.935
With whom would you rather work? (39)	.07	.935
Job freedom. (32)	.06	.935
Evaluate your present job. (20)	.06	.935

Table XXVIII

Summary Table

Subsample 2 -- "Criss-Cross" -- JOB

Variable (Number)	F	λ
Over whom would you rather work? (38)	10.97	.986
Career intent. (28)	8.13	.976
Job preparing you for future? (21)	4.26	.971
How do you like your job? (24)	11.57	.957
Too many outside activities? (29)	2.63	.953
For whom would you rather work? (35)	2.19	.951
Job recognition. (33)	1.58	.949
WORK/IMPORTANCE QOAFLI (60)	1.17	.947

Table XXVIII (Continued)

Summary Table

Subsample 2 -- "Criss-Cross" -- JOB

Variable (Number)	F	λ
With whom would you rather work? (39)	.93	.946
Combined Job Satisfaction Score (56)	.75	.945
How do you feel about changing jobs? (25)	2.22	.942
Satisfied with your job? (23)	1.40	.941
Your job compared to other people. (26)	.83	.940
Where should military women work? (42)	.71	.939
Work appropriate for grade? (34)	.56	.938
Job freedom. (32)	.53	.938
Do you want greater responsibility? (22)	.42	.937
Feedback from your supervisor? (48)	.38	.937
WORK/SATISFACTION QCAFLI (69)	.20	.936
Evaluate your present job. (20)	.12	.936
Rather work for a man/woman? (43)	.09	.936
You and your supervisor set objectives? (49)	.04	.936

The top variables were not the same in the two discriminant functions. The fact that the F-statistics were relatively low, and the λ 's were somewhat high, implied that the "Criss-Cross" differentiation on JOB related aspects would be difficult. Using subsample 1, the validated confusion matrix follows:

		Predicted	
		Like	Unlike
Actual	Like	61.5%	38.5%
	Unlike	46.8%	53.2%

Fig. 52. Confusion Matrix -- "Criss-Cross" -- JOB

The overall percentage correctly classified was 60.2, which was insignificant, as P was 84.2%; this fact, coupled with the low F-statistics and high λ 's indicated that the two groups could not be distinguished in the JOB related aspects of their lives.

LEADERSHIP RELATED

In this subsection, all variables concerning the LEADERSHIP aspects of the Quality of Air Force Life were analyzed. Additionally, the few questions that pertained to NCO's were investigated and recorded later.

Military versus Civilian. As with all variable subsets, a discriminant analysis computer run was initially accomplished on each of the two subsamples. The results are summarized in Tables XXIX and XXX.

Table XXIX

Summary Table

Subsample 1 -- Military/Civilian -- LEADERSHIP

Variable (Number)	F	λ
For whom would you rather work? (35)	282.69	.737
NCO's supervisors or technicians? (47)	140.49	.625
Over whom would you rather work? (38)	81.01	.567
Quality of military leadership? (30)	32.06	.545

Table XXIX (Continued)

Summary Table

Subsample 1 -- Military/Civilian -- LEADERSHIP

Variable (Number)	F	λ
Job recognition. (33)	21.94	.530
Job freedom. (32)	20.34	.517
You and your supervisor set objectives? (49)	5.91	.513
Feedback from supervisor? (48)	1.83	.512
Supervisor's influence? (31)	1.77	.511
LEADERSHIP/SUPERVISION/SATISFACTION QOAFLI (70)	1.12	.510
LEADERSHIP/SUPERVISION/IMPORTANCE QOAFLI (61)	.85	.509

Table XXX

Summary Table

Subsample 2 -- Military/Civilian -- LEADERSHIP

Variable (Number)	F	λ
For whom would you rather work? (35)	374.27	.679
Over whom would you rather work? (38)	123.82	.587
Quality of military leadership? (30)	23.94	.570
Job freedom. (32)	12.66	.561
Job recognition. (33)	13.19	.551
LEADERSHIP/SUPERVISION/IMPORTANCE QOAFLI (61)	4.85	.548
Supervisor's influence? (31)	3.93	.545
Feedback from supervisor? (48)	1.10	.544
LEADERSHIP/SUPERVISION/SATISFACTION QOAFLI (70)	.87	.544

Table XXX (Continued)

Summary Table

Subsample 2 -- Military/Civilian -- LEADERSHIP

Variable (Number)	F	λ
NCO's supervisors or technicians? (47)	.15	.544
You and your supervisor set objectives? (49)	.08	.544

To determine if search bias existed, it was necessary to compare the top variable of the two subsamples. The top variables in both functions were contrasted: there were six variables with an F-statistic value of 10.0 or greater in subsample 1, and five of these six were also important in the second function. Search bias, therefore, was nonexistent.

The second step of the cross-validation procedure was to contrast the confusion matrix of subsample 1 to the validated confusion matrix. The confusion matrices follow:

		Predicted	
		Military	Civilian
Actual	Military	86.6%	13.4%
	Civilian	16.9%	83.1%

Fig. 53. Subsample 1 Confusion Matrix -- Military/Civilian-- LEADERSHIP

		Predicted: Military	Predicted: Civilian
Actual	Military	75.1%	24.9%
	Civilian	15.7%	84.3%

Fig. 54. Confusion Matrix -- Military/Civilian -- LEADERSHIP

To determine if sampling bias existed, the t-test was used to determine if the overall percentages correctly classified were equal. The overall percentages correctly classified were 84.7 and 80.1, for subsample 1 and the validated confusion matrix, respectively, and the two values were not statistically the same. In other words, a small amount of sampling bias, as defined by Frank, Massey, and Morrison (1965), was found to exist in the LEADERSHIP subset. The bias, however, did not present any analytical problems. To compensate for the bias, the author substracted 5% (34.7 less 80.1 was approximately 5) from the overall percentages correctly classified for all confusion matrices presented in this subsection.

The 80.1% correctly classified overall was significantly greater than P, which was 53.8%. Consequently, military personnel could be separated from civilians based on their responses to the LEADERSHIP questions.

Remembering the results of the preceding subsection, it was not surprising to find that "For whom and over whom would you rather work?" were two important variables. Also found to be important were "Job recognition" and "Job freedom". These four variables were discussed previously, and the discussion will not be repeated. The question concerning NCO's that finished near the top in subsample 1 will be

discussed later in this subsection. The only other variable close to the top was Variable 30 -- "Quality of military leadership?" When this variable was entered into the discriminant function alone, the following confusion matrix was generated.

		Predicted	
		Military	Civilian
Actual	Military	65.3%	34.7%
	Civilian	64.6%	35.4%

Fig. 55. Confusion Matrix -- Military/Civilian -- Variable 30

The overall percentage correctly classified was 49.2, and only 44.2 after correcting for sampling bias -- both of which were insignificant. "Quality of military leadership?" was, therefore, not an effective discriminator.

The exact wording of and mean responses to Variable 30 follow:

30. What is your opinion of the quality of military leadership in the Air Force?

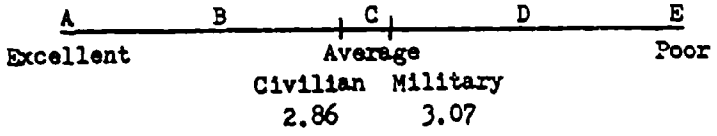


Fig. 56. Mean Responses -- Military/Civilian -- Variable 30

The difference was significant, and the inference was that civilians had a higher opinion of AF leadership than military personnel.

Another discriminant analysis run was conducted with "For whom and over whom would you rather work?" and "NCO's supervisors or technicians?" omitted; the results follow:

Table XXXI

Summary Table

Subsample 1 -- Military/Civilian -- LEADERSHIP with Top Variables Missing

Variable (Number)	F	λ
Job recognition. (33)	41.19	.951
Job freedom. (32)	39.60	.905
LEADERSHIP/SUPERVISION/IMPORTANCE QOAFLI (61)	13.40	.890
Quality of military leadership? (30)	9.64	.879
You and your supervisor set objectives? (49)	8.29	.870
Feedback from supervisor. (48)	4.50	.865
Supervisor's influence? (31)	1.92	.863
LEADERSHIP/SUPERVISION/SATISFACTION QOAFLI (70)	1.02	.862

		Predicted	
		Military	Civilian
Actual	Military	82.0%	38.0%
	Civilian	39.8%	60.2%

Fig. 57. Confusion Matrix -- Military/Civilian -- LEADERSHIP with Top Variables Missing

The overall percentage correctly classified was 60.1, a significant amount.

The only variable that stood out here but not in the initial run was the QOAFLI LEADERSHIP/SUPERVISION/IMPORTANCE -- Variable 61. When Variable 61 was the only variable in the discriminant function, the following confusion matrix resulted:

		Predicted: Military	Predicted: Civilian
Actual	Military	71.6%	28.4%
	Civilian	62.5%	37.5%

Fig. 58. Confusion Matrix -- Military/Civilian -- Variable 61

The overall percentage correctly classified was 53.2, an insignificant amount. The mean responses to LEADERSHIP/SUPERVISION/IMPORTANCE were

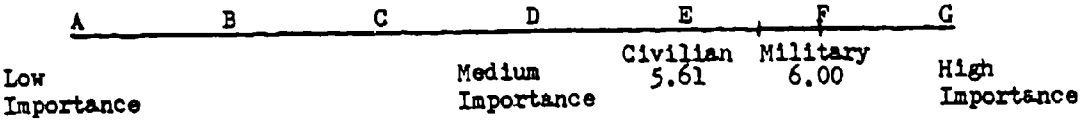


Fig. 59. Mean Responses -- Military/Civilian -- Variable 61

The military mean response was greater than the civilian mean response, signifying that military members believed LEADERSHIP/SUPERVISION to be more important than did civilians.

On the civilian survey in the area concerning NCO's, a possible response was provided for those civilians who did not know an NCO well enough to answer the questions; that response was A. Such a response was not possible on the military survey, because it was assumed that all military people knew an NCO. Table XXXII shows the percentage of civilians who responded that they did not know an NCO.

Table XXXII

Civilians Unacquainted with NCO's

Variable (Number)	Civilians who Responded with "I do not know a Senior NCO."
NCO's supervisors or technicians? (47)	21.8%
Respect for NCO's. (52)	22.5%

Table XXXII (Continued)

Civilians Unacquainted with NCO's

Variable (Number)	Civilians who Responded with "I do not know a Senior NCO."
NCO's understand and can communicate. (53)	22.2%
NCO prestige. (54)	27.9%
NCO responsibility. (55)	27.6%

The author has drawn attention to this for two reasons. First, tne fact that such a large percentage of civilians did not know an NCO was believed to be important in itself. It may be that the scenario discussed earlier, where a military person and a civilian worked side by side, is not always the case. The second reason for pointing out the difference in possible responses on the two surveys was that the discriminant analysis techniques were affected. Since such a large percentage responded with A, it would necessarily have shifted the mean responses and variances drastically. In an attempt to circumvent that problem, those surveys that responded with A -- "I do not know a Senior NCO" -- were eliminated, and then military responses were compared to civilian responses. (There were 285 civilians who knew a Senior NCO.) This analysis allowed an examination of AF personnel who were acquainted with NCO's. To accomplish such an analysis, the author recoded the possible military responses to align them with the possible civilian responses. The mean responses and the confusion matrices for the individual NCO variable follow: (The overall percentages correctly classified were adjusted for the 5% sampling bias.)

47. Most senior NCO's (Master, Senior, and Chief Master Sergeants) are primarily supervisors rather than technicians.

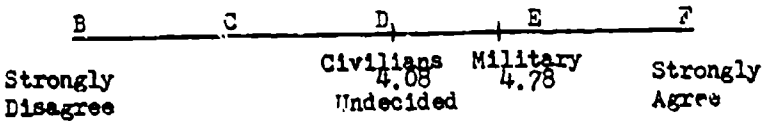


Fig. 60. Mean Responses -- Military/Civilian -- Variable 47

The difference was significant.

		Predicted	
		Military	Civilian
Actual	Military	77.0%	23.0%
	Civilian	56.0%	44.0%

Fig. 61. Confusion Matrix -- Military/Civilian -- Variable 47

The overall percentage correctly classified was significant at 56.2.

52. I have a lot of respect for most of the senior NCO's (Master, Senior, and Chief Master Sergeants) I know.

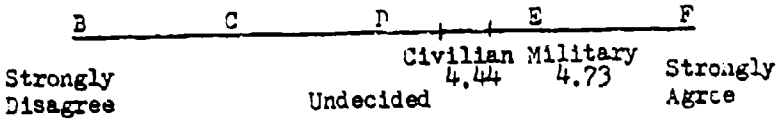


Fig. 62. Mean Responses -- Military/Civilian -- Variable 52

The military mean response was statistically greater than the civilian mean response.

		Predicted	
		Military	Civilian
Actual	Military	74.7%	25.3%
	Civilian	72.2%	27.8%

Fig. 63. Confusion Matrix -- Military/Civilian -- Variable 52

47.2% were correctly classified overall; this percentage was not significant.

53. Most of the NCO's understand and are able to communicate with the people who work with them.

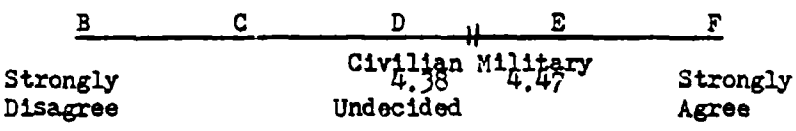


Fig. 64. Mean Responses -- Military/Civilian -- Variable 53

Statistically, the mean responses were identical.

		Predicted	
		Military	Civilian
Actual	Military	65.2%	34.8%
	Civilian	70.8%	29.2%

Fig. 65. Confusion Matrix -- Military/Civilian -- Variable 53

The overall percentage correctly classified of 42.9 was insignificant.

54. NCO prestige has declined over the past several years.

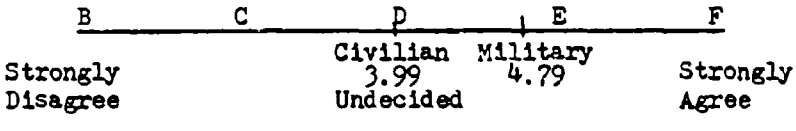


Fig. 66. Mean Responses -- Military/Civilian -- Variable 54

		Predicted	
		Military	Civilian
Actual	Military	68.8%	31.2%
	Civilian	48.1%	51.9%

Fig. 67. Confusion Matrix -- Military/Civilian -- Variable 54

The military mean response was significantly greater than the civilian mean response; the overall percentage correctly classified was significant at 56%.

55. Senior NCO's (Master, Senior, Chief Master Sergeants) are usually given jobs with less responsibility than they should have.

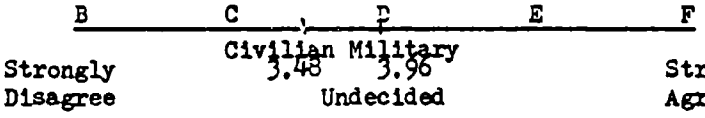


Fig. 68. Mean Responses -- Military/Civilian -- Variable 55

		Predicted	
		Military	Civilian
Actual	Military	60.8%	39.2%
	Civilian	48.9%	51.1%

Fig. 69. Confusion Matrix -- Military/Civilian -- Variable 55

The mean responses were significantly different, while the 51.4% correctly classified was insignificant.

In summary, the variables "For whom and over whom would you rather work?", "Job recognition", and "Job freedom" that were important in the JOB related aspects were also important in the LEADERSHIP aspects of the Quality of Air Force Life. While military personnel responded that LEADERSHIP/SUPERVISION was more important than civilians did, civilians had a higher opinion of AF leadership than military personnel. Approximately 25% of the civilians indicated that they did not know an NCO. When the civilians who were acquainted with NCO's were contrasted with military personnel, it was found that more military people than civilians believed that senior NCO's were supervisors rather than technicians;

military personnel respected NCO's more than civilians; military members believed that NCO prestige had declined more than did civilians; and civilians did not believe that NCO's had less responsibility than they should have, while military members were undecided. Military and civilian personnel agreed that most NCO's understand and are able to communicate with their peers.

Military versus Military. This division of military people was made in an attempt to measure supervisor influence. In group 1 were 346 military members working for military leaders, and group 2 consisted of 18 military persons supervised by civilians. Discriminant analysis was attempted on each subsample for these populations, and the results are summarized in Tables XXXII and XXXIII.

Table XXXIII

Summary Table

Subsample 1 -- Military/Military -- LEADERSHIP

Variable (Number)	F	λ
For whom would you rather work? (35)	3.73	.990
You and your supervisor set objectives? (49)	2.54	.983
LEADERSHIP/SUPERVISION/SATISFACTION QOAFLI (70)	2.08	.977
Supervisor's influence? (31)	3.34	.968
Feedback from supervisor? (48)	1.15	.965
NCO's supervisors or technicians? (47)	.86	.963
Job recognition. (33)	.74	.961
Job freedom. (32)	1.02	.958
Over whom would you rather work? (38)	.34	.957

Table XXXIII (Continued)

Summary Table

Subsample 1 -- Military/Military -- LEADERSHIP

Variable (Number)	F	λ
LEADERSHIP/SUPERVISION/IMPORTANCE QOAFLI (61)	.18	.957
Quality of military leadership? (30)	.14	.956

Table XXXIV

Summary Table

Subsample 2 -- Military/Military -- LEADERSHIP

Variable (Number)	F	λ
LEADERSHIP/SUPERVISION/IMPORTANCE QOAFLI (61)	5.41	.985
Supervisor's influence? (31)	3.33	.976
NCO's supervisors or technicians? (47)	1.90	.971
You and your supervisor set objectives? (49)	1.23	.968
For whom would you rather work? (35)	.99	.965
Job recognition. (33)	1.12	.962
Over whom would you rather work? (38)	.17	.961
Quality of military leadership? (30)	.17	.961
Job freedom. (32)	.04	.961
LEADERSHIP/SUPERVISION/SATISFACTION QOAFLI (70)	.05	.961

All variables had very low F-statistic values, and the λ 's remained relatively high, indicating that discrimination between these populations on the LEADERSHIP aspects of their lives would be difficult.

The confusion matrix implied the same difficulty.

		Predicted: Military Supervisor	Predicted: Civilian Supervisor
Actual	Military Supervisor	75.1%	24.9%
	Civilian Supervisor	83.3%	16.7%

Fig. 70. Confusion Matrix -- Military/Military -- LEADERSHIP

The overall percentage correctly classified was only 72.3, as contrasted with a P of 95.1%. Further, the mean responses for both groups were statistically identical for all variables in the LEADERSHIP aspects of the Quality of Air Force Life. The mean responses were also the same on the questions concerning NCO's. The conclusion, therefore, was that regardless of whether the supervisors were military or civilian, military personnel had the same perceptions of the LEADERSHIP aspects of their lives.

Civilian versus Civilian. There were 106 civilians supervised by military leaders, while 314 civilians had civilians supervisors. The results of discriminant analysis on these populations are summarized below:

Table XXXV

Summary Table

Subsample 1 -- Civilian/Civilian -- LEADERSHIP

Variable (Number)	F	λ
For whom would you rather work? (35)	9.20	.978
NCO's supervisors or technicians? (47)	7.93	.960

Table XXXV (Continued)

Summary Table

Subsample 1 -- Civilian/Civilian -- LEADERSHIP

Variable (Number)	F	λ
You and your supervisor set objectives? (49)	2.96	.953
Job recognition. (33)	10.89	.929
Over whom would you rather work? (38)	1.33	.926
Supervisor's influence? (31)	.77	.924
LEADERSHIP/SUPERVISION/SATISFACTION QOAFLI (70)	.53	.923
Feedback from supervisor? (48)	.17	.922
Quality of military leadership? (30)	.05	.922
Job freedom. (32)	.02	.922
LEADERSHIP/SUPERVISION/IMPORTANCE QOAFLI (61)	.04	.922

Table XXXVI

Summary Table

Subsample 2 -- Civilian/Civilian -- LEADERSHIP

Variable (Number)	F	λ
For whom would you rather work? (35)	25.21	.943
NCO's supervisors or technicians? (47)	6.41	.929
LEADERSHIP/SUPERVISION/SATISFACTION QOAFLI (70)	3.01	.922
Feedback from supervisor? (48)	1.61	.919
Job recognition. (33)	.72	.917
Job freedom. (32)	1.16	.914
Quality of military leadership? (30)	.77	.913

Table XXXVI (Continued)

Summary Table

Subsample 2 -- Civilian/Civilian -- LEADERSHIP

Variable (Number)	F	λ
Supervisor's influence? (31)	.54	.912
You and your supervisor set objectives? (49)	.31	.911
Over whom would you rather work? (38)	.30	.910
LEADERSHIP/SUPERVISION/IMPORTANCE QOAFLI (61)	1.15	.910

Predicted

Actual		Military Supervisor	Civilian Supervisor
	Military Supervisor	56.6%	43.4%
	Civilian Supervisor	32.8%	67.2%

Fig. 71. Confusion Matrix -- Civilian/Civilian -- LEADERSHIP

No additional insight was provided by this analysis -- the only variable of any importance was "For whom would you rather work?", which has already been discussed. The overall percentage correctly classified was 59.5, as compared to a P value of 74.8%. It was concluded that it would be difficult to separate civilians based on whether their bosses were military or civilian in the LEADERSHIP area of their lives.

Again, the author examined those civilians who were acquainted with NCO's. The population definitions remained the same -- civilians versus civilians as defined before. All civilians who responded that they did not know an NCO on any one of the five NCO questions were eliminated. This exclusion of civilians was enlightening in itself --

38% of civilians supervised by civilians responded to at least one NCO question that they did not know an NCO. Further, 22% of the civilians with military commanders indicated that they did not know an NCO; the logical conclusion was that the second group was supervised by military officers. The results of the t-test follow:

47. Most senior NCO's (Master, Senior, and Chief Master Sergeants) are primarily supervisors rather than technicians.

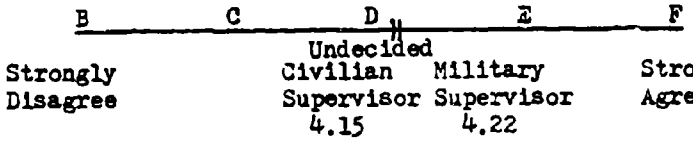


Fig. 72. Mean Responses -- Civilian/Civilian -- Variable 47

52. I have a lot of respect for most of the senior NCO's (Master, Senior, and Chief Master Sergeants) I know.

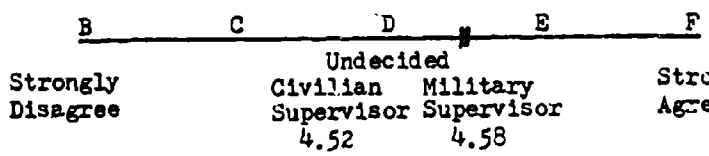


Fig. 73. Mean Responses -- Civilian/Civilian -- Variable 52

53. Most of the NCO's understand and are able to communicate with the people who work with them.

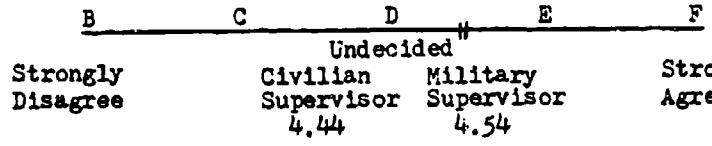


Fig. 74. Mean Responses -- Civilian/Civilian -- Variable 53

54. NCO prestige has declined over the past several years.

B	C	D	E	F
		Undecided		
Strongly Disagree	Civilian Supervisor 4.09	Military Supervisor 4.14		Strongly Agree

Fig. 75. Mean Responses -- Civilian/Civilian -- Variable 54

55. Senior NCO's (Master, Senior, Chief Master Sergeants) are usually given jobs with less responsibility than they should have.

B	C	D	E	F
		Undecided		
Strongly Disagree	Military Supervisor 3.47	Civilian Supervisor 3.63		Strongly Agree

Fig. 76. Mean Responses -- Civilian/Civilian -- Variable 55

No difference was significant; consequently, those civilians who knew NCO's had the same perceptions concerning them, regardless of whether their supervisors were military or civilian.

"Criss-Cross". This division of AF personnel was made according to whether their supervisors were "like" or "unlike", as has been done before. The results of the discriminant analysis follow:

Table XXXVII

Summary Table

Subsample 1 -- "Criss-Cross" -- LEADERSHIP

Variable (Number)	F	λ
For whom would you rather work? (35)	7.29	.991
You and your supervisor set objectives? (49)	3.87	.986
Quality of military leadership? (30)	3.19	.982

Table XXXVII (Continued)

Summary Table

Subsample 1 -- "Criss-Cross" -- LEADERSHIP

Variance (Number)	F	λ
Job recognition. (33)	2.31	.979
NCO's supervisors or technicians? (47)	1.00	.978
Over whom would you rather work? (38)	1.20	.976
Job freedom. (32)	.60	.975
Feedback from supervisor? (48)	.32	.975
LEADERSHIP/SUPERVISION/IMPORTANCE QOAFLI (61)	.13	.975
LEADERSHIP/SUPERVISION/SATISFACTION QOAFLI (70)	.16	.975
Supervisor's influence? (31)	.07	.974

Table XXXVIII

Summary Table

Subsample 2 -- "Criss-Cross" -- LEADERSHIP

Variable (Number)	F	λ
Over whom would you rather work? (38)	10.97	.986
NCO's supervisors or technicians? (47)	6.15	.978
LEADERSHIP/SUPERVISION/IMPORTANCE QOAFLI (61)	2.30	.976
LEADERSHIP/SUPERVISION/SATISFACTION QOAFLI (70)	2.29	.973
Feedback from supervisor? (48)	1.90	.970
For whom would you rather work? (35)	1.41	.969
Job recognition. (33)	.25	.968
Job freedom. (32)	.16	.968

Table XXXVIII (Continued)

Summary Table

Subsample 2 -- "Criss-Cross" -- LEADERSHIP

Variable (Number)	F	λ
Supervisor's influence? (31)	.07	.968
You and your supervisor set objectives? (49)	.04	.968

		Predicted	
		"Like"	"Unlike"
Actual	"Like"	59.2%	40.8%
	"Unlike"	50.8%	49.2%

Fig. 77. Confusion Matrix -- "Criss-Cross" -- LEADERSHIP

P was 84.2%, and the overall percentage correctly classified was only 57.7, which was insignificant. "Unlike" supervisors, therefore, did not influence their subordinates any more differently in the LEADERSHIP aspects of their lives than did "like" supervisors.

FINANCE RELATED

Included in the FINANCE related variable subset were those questions that concerned the financial and economic aspects of the lives of AF personnel. This variable subset was relatively small (only nine variables), but it yielded some interesting results.

Military versus Civilians. The division of AF personnel into military and civilian was performed to investigate the economic differences between the two. Discriminant analysis techniques were applied to each subsample, and the results are summarized in Tables XXXIX and XL.

Table XXXIX

Summary Table

Subsample 1 -- Military/Civilian -- FINANCE

Variable (Number)	F	λ
Finances affected by PCS? (19)	46.76	.944
Why you have a second job/spouse works? (18)	15.32	.926
Do you have a second job? (16)	16.92	.907
ECONOMIC STANDARD/IMPORTANCE QOAFLI (57)	11.59	.894
Problems making ends meet? (17)	5.22	.888
ECONOMIC SECURITY/SATISFACTION QOAFLI (67)	7.39	.879
Private sector versus AF? (40)	3.79	.875
ECONOMIC STANDARD/SATISFACTION QOAFLI (66)	2.11	.873
ECONOMIC SECURITY/IMPORTANCE QOAFLI (58)	.17	.873

Table XL

Summary Table

Subsample 2 -- Military/Civilian -- FINANCE

Variable (Number)	F	λ
Finances affected by PCS? (19)	31.58	.962
Why you have a second job/spouse works? (18)	14.44	.944
Do you have a second job? (16)	3.24	.940
Private sector versus AF? (40)	1.96	.938
ECONOMIC SECURITY/IMPORTANCE QOAFLI (58)	1.49	.936
ECONOMIC STANDARD/IMPORTANCE QOAFLI (57)	4.36	.931
Problems making ends meet? (17)	1.02	.930

Table XL (Continued)

Summary Table

Subsample 2 -- Military/Civilian -- FINANCE

Variable (Number)	F	λ
ECONOMIC SECURITY/SATISFACTION QOAFLI (67)	.54	.929
ECONOMIC STANDARD/SATISFACTION QOAFLI (66)	.50	.929

The principal difference in the two discriminant functions was that four variables had F-statistics of 10.0 or greater in subsample 1, while only two did in subsample 2. The top two variables (19 and 18) in each subsample were the same; the third variable (16) was the same in both subsamples as well, but it had a relatively small F-statistic in subsample 2. Search bias, therefore, was negligible.

The confusion matrix from subsample 1 and the validated confusion matrix follow:

		Predicted: Military	Predicted: Civilian
Actual	Military	63.4%	36.6%
	Civilian	32.8%	67.2%

Fig. 78. Subsample 1 Confusion Matrix -- Military/Civilian -- FINANCE

		Predicted: Military	Predicted: Civilian
Actual	Military	63.1%	36.9%
	Civilian	37.2%	62.8%

Fig. 79. Confusion Matrix -- Military/Civilian -- FINANCE

The overall percentages correctly classified were 65.4 and 62.9, from subsample 1 and the validated confusion matrix, respectively. These two precentages were statistically the same; therefore, sampling bias did not exist. Further, 62.9% correctly classsified overall was significantly greater than P of 53.8%, which means that the discriminant function could effectively categorize military and civilian personnel.

The single most important variable was "Finances affected by PCS?" The exact wording and the possible responses follow:

19. How was your financial situation affected by your last PCS move?

A. Not applicable, I made money or the last PCS move did not adversely affect my financial situation. (Military survey)

A. Not applicable (Civilian survey)

B. 1-2 months to recover

C. 3-4 months to recover

D. 5-6 months to recover

E. 7-8 months to recover

F. 9-10 months to recover

G. 11-12 months to recover

H. More than 12 months to recover

I. I don't know

On the civilian survey, the possible response of A was appropriate for those people who had never made a PCS move and for those not adversely affected by such a move. In Chapter II, it was pointed out that many civilians never change duty stations, while military members do so frequently. Consequently, it was anticipated that the responses from military and civilian personnel would be quite different.

When Variable 19 was the only variable in the discriminant function, the following confusion matrix was generated:

		Predicted	
		Military	Civilian
Actual	Military	49.7%	50.3%
	Civilian	19.9%	80.1%

Fig. 80. Confusion Matrix -- Military/Civilian -- Variable 19

The overall percentage correctly classified of 66.1 was significant. Variable 19 could, therefore, effectively discriminate civilians from military personnel.

The mean responses to "Finances affected by PCS?" follow:

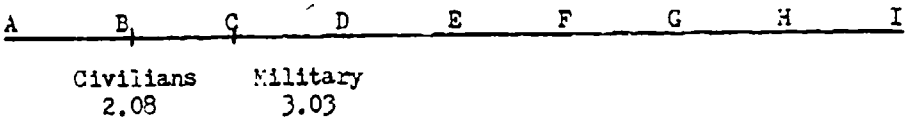


Fig. 81. Mean Responses -- Military/Civilian -- Variable 19

The mean response of the military was statistically greater than the civilian mean response; therefore, PCS moves affected military personnel more adversely than civilians.

This question was then examined response by response. It was found that 73% of the civilians responded with A, as contrasted with 31% of the military responses. The question then arose, "Of those AF personnel adversely affected, how did military and civilian members compare?" The author performed a t-test again on Variable 19, excluding all surveys with a response of A. The results follow:

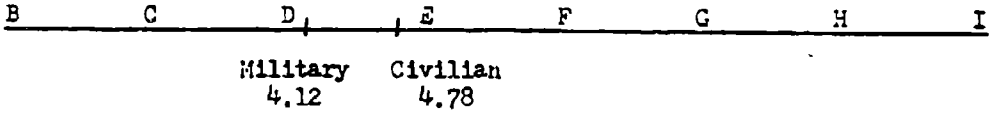


Fig. 82. Mean Responses -- Military/Civilian -- Variable 19 with Response A Omitted

The author had fully anticipated and hypothesized that the mean military response would be greater than the mean civilian response. The military mean response was not greater, and the hypothesis was rejected.

The next most important variable in each function was Variable 18 -- the exact wording and the possible responses follow:

18. The main reason that I have a second job, and/or that my spouse works is that we have to in order to make ends meet.

A. Not applicable

B. Strongly Disagree

C. Disagree

D. Undecided

E. Agree

F. Strongly Agree

When Variable 18 was entered into the discriminant function as the only variable, the following confusion matrix was generated:

		Predicted	
		Military	Civilian
Actual	Military	70.5%	29.5%
	Civilian	62.1%	37.9%

Fig. 83. Confusion Matrix -- Military/Civilian -- Variable 18

The overall percentage correctly classified was insignificant at 53.0.

The mean responses to "Why you have a second job/spouse works?" follow:

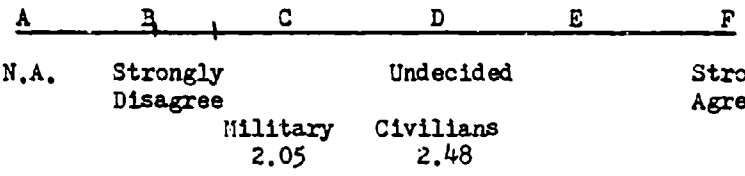


Fig. 84. Mean Responses -- Military/Civilian -- Variable 18

The mean military response was statistically less than the mean civilian response; exactly what this means was not clear because of response A.

When the responses were examined one by one, it was discovered that 67% of military personnel responded with A -- "Not Applicable", while 59% of the civilians did. Response A to "Do you hold a second job?" -- Variable 16 -- was also investigated at this point; approximately 87% of both populations indicated that they did not hold a second job. What those figures meant, of course, was that only 20% of military spouses work, as contrasted with 29% of civilian spouses. It should be remembered that women comprised 35% of the civilian work force, but only 6% of the military.

It was then decided to do another t-test on "Why you hold a second job/spouse works?" with those surveys with an A response excluded. The results follow:

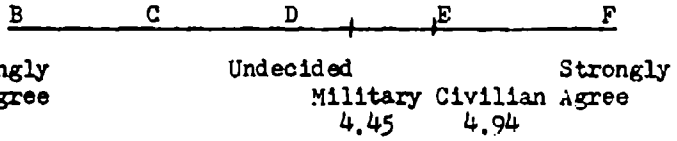


Fig. 85. Mean Responses -- Military/Civilian -- Variable 18 with Response A Omitted

The difference was significant; therefore, those civilians who held a second job and/or their spouses worked had more difficulty making ends meet than did military personnel.

Another question concerning financial difficulty was "Problems making ends meet?". It was not an effective prediction alone, but the mean responses were investigated to try to shed more light on this area.

17. Even though the dollar does not go as far as it used to, I am having no problems in making ends meet.

    A. Strongly Disagree

    B. Disagree

    C. Undecided

    D. Agree

    E. Strongly Agree

In subsample 1, the mean responses were not the same at a significance level of .015; in subsample 2, they were the same at a significance level of .511. The two subsamples were then pooled; the null hypothesis was that the mean responses were equal, and the alternate hypothesis was that the mean military responses was greater. The results follow:

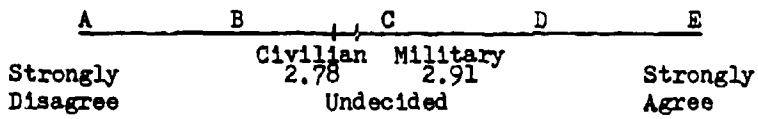


Fig. 86. Mean Responses -- Military/Civilian -- Variable 17

The difference was significant. The inference from both the questions "Problems making ends meet?" and "Why you have a second job/spouse works?" was the same -- military personnel were not having the same financial problems as civilians. This does not necessarily imply that military members were better paid; it may have been that military personnel were better managers of their personal affairs.

Variable 19 -- "Finances affected by PCS?" -- was excluded from the variable subset, and another discriminant analysis run was conducted. The results follow:

Table XLI

Summary Table

Subsample 1 -- Military/Civilian -- FINANCE with Variable 19 Omitted

Variable (Number)	F	λ
ECONOMIC STANDARD/IMPORTANCE QCAFLI (57)	14.89	.932
Why you have a second job/spouse works? (18)	9.47	.970
Do you have a second job? (16)	17.82	.948
ECONOMIC SECURITY/SATISFACTION (67)	5.57	.942
Problems making ends meet? (17)	5.52	.935
Private sector versus AF? (40)	4.78	.930
ECONOMIC STANDARD/SATISFACTION (66)	2.62	.927

No different variables were illuminated; the top three variables in the discriminant function with Variable 19 omitted were in the top four variables of the original subsample 1 discriminant function. The function with Variable 19 omitted was not an effective predictive device, as evidenced below:

		Predicted: Military	Predicted: Civilian
Actual	Military	63.4%	36.6%
	Civilian	49.9%	50.1%

Fig. 87. Confusion Matrix -- Military/Civilian -- FINANCE with Variable 19 Omitted

The overall percentage correctly classified was 56.2, which was insignificant.

In summary, fewer civilians seemed to have made PCS moves than military; however, those civilians who had made PCS moves and were adversely affected financially took longer to recover than military members. Only 1% of AF personnel held a second job, and more civilian spouses worked outside the home than did military spouses. Additionally, civilians seemed to have more difficulty in "making ends meet" than military personnel.

Military versus Military. These populations were analyzed to determine if those military people commanded by military members had different perceptions of the FINANCE aspects of their lives in comparison to military members with civilian supervisors. The results follow:

Table XLII

Summary Table

Subsample 1 -- Military/Military -- FINANCE

Variable (Number)	F	λ
Problems making ends meet? (17)	1.70	.995
ECONOMIC SECURITY/SATISFACTION QCAFLI (67)	2.03	.990
ECONOMIC STANDARD/SATISFACTION QCAFLI (66)	2.24	.984

Table XLII (Continued)

Summary Table

Subsample 1 -- Military/Military -- FINANCE

Variable (Number)	F	λ
Do you have a second job? (16)	1.29	.980
ECONOMIC SECURITY/IMPORTANCE QOAFLI (58)	.07	.980
Private sector versus AF? (40)	.05	.980

Table XLIII

Summary Table

Subsample 2 -- Military/Military -- FINANCE

Variable (Number)	F	λ
Do you have a second job? (16)	4.64	.987
Problems making ends meet? (17)	.61	.986
Private sector versus AF? (40)	.34	.985
ECONOMIC STANDARD/SATISFACTION QOAFLI (66)	.11	.984
Why you have a second job/spouse works? (18)	.10	.984
Finances affected by PCS? (19)	.08	.984
ECONOMIC SECURITY/SATISFACTION QOAFLI (67)	.05	.984
ECONOMIC STANDARD/IMPORTANCE QOAFLI (57)	.03	.984

		Predicted: Military Supervisor	Predicted: Civilian Supervisor
Actual	Military Supervisor	60.1%	39.9%
	Civilian Supervisor	44.4%	55.6%

Fig. 38. Confusion Matrix -- Military/Military -- FINANCE

The overall percentage correctly classified was insignificant at 59.9, as P was 95.1%. The value of the F-statistics and λ 's implied that military personnel were virtually indistinguishable in this area. Additional verification was found by examining the mean responses. In subsample 1, all mean responses were the same; in subsample 2, however, the mean responses to "Do you hold a second job?" were different. The mean responses were the same for the other variables. It will be recalled that the number of military members supervised by civilians in subsample 2 was only 18, a fact which affected the results. To circumvent the problem of having a small sample, the two subsamples were pooled, thereby increasing n from 18 to 43. The t-test was again performed, and the mean responses were statistically identical. It was concluded, therefore, that military members perceived the FINANCE aspects of their lives the same, regardless of whether they were supervised by military or civilian personnel.

Civilian versus Civilian. The results of discriminant analysis for these populations follow:

Table XLIV

Summary Table

Subsample 1 -- Civilian/Civilian -- FINANCE

Variable (Number)	F	λ
ECONOMIC STANDARD/SATISFACTION QOAFLI (66)	5.30	.987
ECONOMIC SECURITY/IMPORTANCE QOAFLI (58)	5.32	.975
Finances affected by PCS? (19)	4.41	.965
ECONOMIC SECURITY/SATISFACTION QOAFLI (67)	2.06	.960
ECONOMIC STANDARD/IMPORTANCE QOAFLI (57)	.75	.958

Table XLIV (Continued)

Summary Table

Subsample 1 -- Civilian/Civilian -- FINANCE

Variable (Number)	F	λ
Why you have a second job/spouse works? (18)	.58	.957
Do you have a second job? (16)	.16	.956
Private sector versus AF? (40)	.11	.956
Problems making ends meet? (17)	.04	.956

Table XLV

Summary Table

Subsample 2 -- Civilian/Civilian -- FINANCE

Variable (Number)	F	λ
Finances affected by PCS? (19)	5.78	.986
Do you have a second job? (16)	3.29	.979
ECONOMIC STANDARD/SATISFACTION QOAFLI (66)	1.52	.975
ECONOMIC SECURITY/SATISFACTION QOAFLI (67)	1.72	.971
ECONOMIC SECURITY/IMPORTANCE QOAFLI (58)	.98	.969
Private sector versus AF? (40)	.31	.968
Why you have a second job/spouse works? (18)	.14	.968
ECONOMIC STANDARD/IMPORTANCE QOAFLI (57)	.07	.968
Problems making ends meet? (17)	.04	.967

		Predicted: Military Supervisor	Predicted: Civilian Supervisor
Actual	Military Supervisor	53.8%	46.2%
	Civilian Supervisor	45.2%	54.8%

Fig. 89. Confusion Matrix -- Civilian/Civilian -- FINANCE

The overall percentage correctly classified was insignificant at 54.5, as P was 74.8%; this, coupled with the values of the F-statistics and λ's, implied that the discriminant functions were useless. Mean responses were also examined: in subsample 1, the mean responses to ECONOMIC STANDARD/SATISFACTION were different at a significance level of .022; but in subsample 2, the difference was significant at .334. The mean response difference to "Do you hold a second job?" was significant at .962 and .046 for subsamples 1 and 2, respectively. Variable 19 -- "Finances affected by PCS?" -- was different for the two subsamples; the mean response difference was significant at .058 and .017 for subsamples 1 and 2, respectively. The mean responses to the other six variables were the same in both subsamples. The resulting conclusion was that it would be very difficult to differentiate civilians in the FINANCE question subset, regardless of whether their supervisors were civilians or military.

"Criss-Cross". This division was accomplished on the basis of whether the individual's supervisor was "like" or "unlike", as defined before. Discriminant analysis was performed and the results are summarized below.

Table XLVI

Summary Table

Subsample 1 -- "Criss-Cross" -- FINANCE

Variable (Number)	F	λ
ECONOMIC STANDARD/IMPORTANCE QOAFLI (57)	3.90	.995
ECONOMIC STANDARD/SATISFACTION QOAFLI (66)	2.10	.992
ECONOMIC SECURITY/IMPORTANCE QOAFLI (58)	1.01	.991
Problems making ends meet? (17)	.93	.990
Do you have a second job? (16)	.99	.989
ECONOMIC SECURITY/SATISFACTION QOAFLI (67)	.52	.988
Why you have a second job/spouse works? (18)	.47	.987
Private sector versus AF? (40)	.43	.987

Table XLVII

Summary Table

Subsample 2 -- "Criss-Cross" -- FINANCE

Variable (Number)	F	λ
Do you have a second job? (16)	5.18	.993
Why you have a second job/spouse works? (18)	.52	.993
ECONOMIC STANDARD/SATISFACTION QOAFLI (66)	.58	.992
ECONOMIC STANDARD/IMPORTANCE QOAFLI (57)	.63	.991
Finances affected by PCS? (19)	.60	.990
Problems making ends meet? (17)	.30	.990
Private sector versus AF? (40)	.21	.990
ECONOMIC SECURITY/SATISFACTION QOAFLI (67)	.17	.990

		Predicted: Like	Predicted: Unlike
Actual	Like	56.2%	43.8%
	Unlike	55.6%	44.4%

Fig. 90. Confusion Matrix -- "Criss-Cross" -- FINANCE

P was 84.2%, so 54.3% classified correctly overall was insignificant. Mean responses to the FINANCE related variables were investigated, and nothing was learned. The insignificance of the overall correct classification, the low F-statistics, and the high λ's all implied the same: these populations could not be discriminated on the basis of their responses to the FINANCE related questions.

PEOPLE RELATED

In this subsection, the variables that involved relationships with other people were analyzed. Since this was a difficult area to explicitly define, the variables in the PEOPLE subset are repeated below.

10. What is your sex?
36. Race relation training courses are effective in getting people to treat each other better.
37. Are civilian personnel accepted and treated as members of the Air Force community?
42. In what career fields should military women work in the Air Force?
43. Would you rather work for a man or woman supervisor?
46. Air Force training programs do not do a very good job of preparing people to get alone with other people.
62. What degree of importance do you attach to the above? (EQUITY)

71. To what degree are you satisfied with the EQUITY Aspects of your current life?

Military versus Civilian. The results of discriminant analysis techniques on these populations follow:

Table XLVIII

Summary Table

Subsample 1 -- Military/Civilian -- PEOPLE

Variable (Number)	F	λ
What is your sex? (10)	83.15	.905
EQUITY/IMPORTANCE QOAFLI (62)	33.72	.868
Civilians members of AF community? (37)	8.23	.859
Race relations training effective? (36)	5.94	.852
Rather work for a man/woman? (43)	3.67	.848
EQUITY/SATISFACTION QOAFLI (71)	1.27	.847
Where should military women work? (42)	1.51	.846
AF training programs effective? (46)	1.02	.844

Table XLIX

Summary Table

Subsample 2 -- Military/Civilian -- PEOPLE

Variable (Number)	F	λ
What is your sex? (10)	66.47	.922
EQUITY/IMPORTANCE QOAFLI (62)	25.31	.894
Rather work for a man/woman? (43)	9.70	.883
Race relations training effective? (36)	2.59	.880

Table XLIX (Continued)

Summary Table

Subsample 2 -- Military/Civilian -- PEOPLE

Variable (Number)	F	λ
Civilians members of AF community? (37)	2.91	.877
AF training programs effective? (46)	1.77	.875
Where should military women work? (42)	1.52	.873
EQUITY/SATISFACTION QCAFLI (71)	.32	.873

"What is your sex?" and EQUITY/IMPORTANCE were the only variables with F-statistic values of 10.0 or greater in both subsamples; therefore, search bias was concluded not to exist.

Subsample 1 confusion matrix and the validated confusion matrix are shown in Figs. 91 and 92 respectively.

		Predicted: Military	Predicted: Civilian
Actual	Military	82.5%	17.5%
	Civilian	48.7%	51.3%

Fig. 91. Subsample 1 Confusion Matrix -- Military/Civilian -- PEOPLE

		Predicted: Military	Predicted: Civilian
Actual	Military	82.2%	17.8%
	Civilian	53.4%	46.6%

Fig. 92. Confusion Matrix -- Military/Civilian -- PEOPLE

The overall percentages correctly classified were statistically equal at 65.7 and 62.1 for subsample 1 and from the validated confusion matrix, respectively. Further, 63.1% was significantly greater than P of 53.8%. The discriminant function, therefore, had no bias and was an effective discriminator.

Variable 10 -- "What is your sex?" -- was expected to be important in discrimination between military and civilian personnel, since 35% of the civilian work force were female, as contrasted with only 6% of the military force. As this fact was previously known, discriminant analysis yeilded no new information. "What is your sex?" was subsequently dropped from the variable subset, and discriminant analysis techniques were again conducted. The results follow:

Table L

Summary Table

Subsample 1 -- Military/Civilian -- PEOPLE with Variable 10 Missing

riable (Number)	F	λ
EQUITY/IMPORTANCE QOAFLI (62)	12.70	.984
Civilians members of AF community? (37)	4.24	.979
Race relations training effective? (36)	5.66	.972
Where should military women work? (42)	2.96	.968
EQUITY/SATISFACTION QOAFLI (71)	1.44	.967
AF training programs effective? (46)	.54	.966
Rather work for a man/woman? (43)	.38	.965

EQUITY/IMPORTANCE was the only variable with an F-statistic greater than 10.0; it will be recalled that EQUITY/IMPORTANCE was second in

importance to "What is your sex?" in the original subsample 1 discriminant function. No other variables were effective in discriminating military and civilian personnel. EQUITY/IMPORTANCE (Variable 62) was entered into the discriminant function alone, and the following confusion matrix was generated:

		Predicted	
		Military	Civilian
Actual	Military	69.1%	30.9%
	Civilian	55.7%	44.3%

Fig. 93. Confusion Matrix -- Military/Civilian -- EQUITY/IMPORTANCE

The overall percentage correctly classified was insignificant at 55.7, so Variable 62 alone was not an effective discriminator.

The definition of EQUITY, the exact question with possible responses, and the mean responses to EQUITY/IMPORTANCE follow:

EQUITY: Equal opportunity in the Air Force; a fair chance at promotion; an even break in my job/assignment selections.

62. What degree of importance do you attach to the above?

A	B	C	D	E	F	G
Low Importance			Medium Importance	Civilian 5.97	Milit 6.3	gh Importance

Fig. 94. Mean Responses -- Military/Civilian -- Variable 62

The military mean response was significantly greater than the civilian mean response, indicating that EQUITY was more important to military members than civilians. The other measurement of the EQUITY SCALE was SATISFACTION, and that variable follows:

71. To what degree are you satisfied with the EQUITY aspects of your current life?

A	B	C	D	E	F	G
Highly Dissatisfied			Neutral	Civilian 4.50	Military 4.56	Highly Satisified

Fig. 95. Mean Responses -- Military/Civilian -- Variable 71

The mean responses were statistically identical; civilian and military personnel expressed the same amount of satisfaction with the EQUITY aspects of their lives.

The only relevant differences found in the PEOPLE aspects of the Quality of Air Force Life between military and civilian personnel were that a higher percentage of women were civilians, and EQUITY was more important to military personnel than civilians.

Military versus Military. Military personnel were again divided into two groups: group 1 was supervised by military members, and group 2 had civilian supervisors. Discriminant analysis was performed on these two populations, and Tables LI, LII, and Fig. 96 summarize the results.

Table LI

Summary Table

Subsample 1 -- Military/Military -- PEOPLE

Variable (Number)	F	λ
Rather work for a man/woman? (43)	4.12	.989
What is your sex? (10)	4.06	.978
AF training programs effective? (46)	.50	.976
Race relations training effective? (36)	.54	.975
Civilians members of AF community? (37)	.78	.973

Table LI (Continued)

Summary Table

Subsample 1 -- Military/Military -- PEOPLE

Variable (Number)	F	λ
Where should military women work? (42)	.57	.971
EQUITY/SATISFACTION QOAFLI (71)	.12	.971
EQUITY/IMPORTANCE QOAFLI (62)	.01	.971

Table LII

Summary Table

Subsample 2 -- Military/Military -- PEOPLE

Variable (Number)	F	λ
Civilians members of AF community? (37)	4.53	.988
Race relations training effective? (36)	2.20	.982
Rather work for a man/woman? (43)	1.41	.978
What is your sex? (10)	1.13	.975
EQUITY/IMPORTANCE QOAFLI (62)	.81	.973
Where should military women work? (42)	.47	.971
AF training programs effective? (46)	.34	.970
EQUITY/SATISFACTION QOAFLI (71)	.05	.970

		Predicted: Military Supervisor	Predicted: Civilian Supervisor
Actual	Military Supervisor	54.9%	45.1%
	Civilian Supervisor	38.9%	61.1%

Fig. 96. Confusion Matrix -- Military/Military -- PEOPLE

The largest F-statistic was less than 10.0; the smallest λ was .970; and the overall percentage correctly classified was 45.9, which was insignificant with P at 95.1%. It was concluded that the two populations (military personnel with military supervisors versus military personnel with civilian supervisors) could not be differentiated by their responses to the PEOPLE questions.

Civilian versus Civilian. Civilians were divided into two groups: those civilians with military supervisors, and those with civilian supervisors. The results of discriminant analysis on these groups follow:

Table LIII

Summary Table

Subsample 1 -- Civilian/Civilian -- PEOPLE

Variable (Number)	F	λ
AF training programs effective? (46)	6.51	.985
What is your sex? (10)	2.22	.979
EQUITY/SATISFACTION QOAFLI (71)	1.18	.977
Where should military women work? (42)	.56	.975
Rather work for a man/woman? (43)	.13	.975
Race relations training effective? (36)	.10	.975
Civilians members of AF community? (37)	.07	.975
EQUITY/IMPORTANCE QOAFLI (62)	.02	.974

Table LIV

Summary Table

Subsample 2 -- Civilian/Civilian -- PEOPLE

Variable (Number)	F	λ
What is your sex? (10)	2.42	.994
Civilians members of AF community? (37)	1.96	.990
Race relations training effective? (36)	1.18	.987
EQUITY/SATISFACTION QCAFLI (71)	.80	.985
AF training programs effective? (46)	.81	.983
EQUITY/IMPORTANCE QCAFLI (62)	.05	.983

		Predicted: Military Supervisor	Predicted: Civilian Supervisor
Actual	Military Supervisor	43.4%	56.6%
	Civilian Supervisor	42.0%	58.0%

Fig. 97. Confusion Matrix -- Civilian/Civilian -- PEOPLE

The overall percentage correctly classified was only 57.6, which was insignificant with a P of 74.8%. The F-statistics were very low, and the λ's were relatively high. The inference was that the civilian populations were virtually the same with regard to the PEOPLE aspects of their lives.

"Criss-Cross". AF personnel were divided according to whether their supervisors were "like" or "unlike", and discriminant analysis was then accomplished; the results follow:

Table LV

Summary Table

Subsample 1 -- "Criss-Cross" -- PEOPLE

Variable (Number)	F	λ
What is your sex? (10)	14.26	.982
AF training programs effective? (46)	3.48	.978
EQUITY/SATISFACTION QOAFLI (71)	1.70	.976
EQUITY/IMPORTANCE QOAFLI (62)	1.11	.974
Race relations training effective? (36)	.74	.973
Civilians members of AF community? (37)	1.03	.972
Where should military women work? (42)	.44	.971
Rather work for a man/woman? (43)	.11	.971

Table LVI

Summary Table

Subsample 2 -- "Criss-Cross" -- PEOPLE

Variable (Number)	F	λ
What is your sex? (10)	14.40	.982
Civilians members of AF community? (37)	6.01	.974
EQUITY/IMPORTANCE QOAFLI (62)	.95	.973
EQUITY/SATISFACTION QOAFLI (71)	1.14	.972
Where should military women work? (42)	.31	.971
AF training programs effective? (46)	.15	.971
Race relations training effective? (36)	.01	.971

		Predicted: Like	Predicted: Unlike
Actual	Like	72.3%	27.7%
	Unlike	59.7%	40.3%

Fig. 98. Confusion Matrix -- "Criss-Cross" -- PEOPLE

The overall percentage correctly classified was an insignificant 67.2 (P was 84.2%). The Λ's remained relatively high, indicating an ineffective discriminant function. Only one F-statistic was greater than 10.0 -- that variable was "What is your sex?". Although everything indicated that discriminant analysis was useless in attemping to differentiate these populations, the author decided to examine the mean responses to "What is your sex?" (Variable 10).

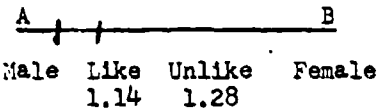


Fig. 99. Mean Responses -- "Criss-Cross" -- Variable 10

This data was not ordinal, and the results should be carefully interpreted. The difference was significant; what this meant was that a higher percentage of women were in the "unlike" population than in the "like" population. In other words, the probability of being supervised by a civilian was higher for military women than for military men; likewise, the probability of being supervised by a military member was greater for a civilian woman than for a civilian man. It must be concluded, however, that the probabilities were not vastly different, or the discriminant function would have been more powerful.

Further Results

Throughout this study, discriminant analysis techniques were utilized to identify those variables which differentiate civilian and military personnel. There were ten variables, not identified by discriminant analysis, that were investigated in this subsection. Seven of these variables had statistically different mean responses for military and civilian personnel; however, discriminant analysis did not identify them as being important. This non-identification could have occurred for any one of several reasons: the variable could have been overshadowed by more powerful variables within a given subset; the variances of the responses could have been equal; and/or the value of the t statistic used in the t-test could have been just inside the rejection region.

Discriminant analysis techniques were not used on two of the eight variables presented in this subsection, because the responses involved only nominal data; therefore, the results of discriminant analysis would have been meaningless. The tenth variable did not fit into any of the variable subsets.

The exact wording, the mean responses, and a discussion of the first six variables follow:

24. Choose the one of the following statements which best tells how well you like your job.

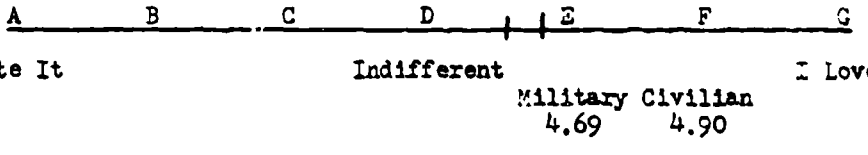
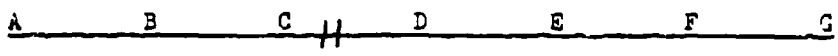


Fig. 100. Mean Responses -- Military/Civilian -- Variable 24

Civilians indicated that they like their jobs more than military members.

26. Which one of the following shows how you think you compare with other people?



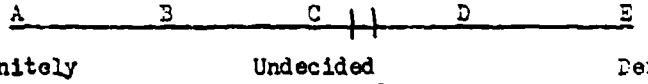
No one Likes His Better — The Same — No one Dislikes His More

Military 3.30 Civilian 3.46

Fig. 101. Mean Responses -- Military/Civilian -- Variable 26

The responses indicate again that civilians were happier in their vocation than military.

37. Are civilian personnel accepted and treated as members of the Air Force community?



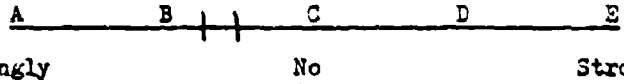
Definitely Not — Undecided — Definitely Yes

Civilian 3.13 Military 3.30

Fig. 102. Mean Responses -- Military/Civilian -- Variable 37

Military personnel believed that civilians were more accepted as part of the AF community than civilians.

43. Would you rather work for a man or woman supervisor?



Strongly Prefer A Man — No Preference — Strongly Prefer A Woman

Civilian 2.30 Military 2.46

Fig. 103. Mean Responses -- Military/Civilian -- Variable 43

Civilians were more chauvinistic than military, even though there was a higher percentage of civilian women than military women. The

responses of Variable 43 are shown below.

Table LVII

Responses to Variable 43

Response	% Military	% Civilian
No Response	1.9	2.8
A. Strongly prefer a man supervisor	8.5	9.1
B. Prefer a man supervisor	43.4	50.6
C. Have no preference	44.8	35.6
D. Prefer a woman supervisor	1.4	1.9
E. Strongly prefer a woman supervisor	.0	.0

There were no "Strongly prefer a woman supervisors" responses -- were there no women "libbers" in the employment of the Air Force?

44. There are more favorable features about the Air Force as a place to work than unfavorable ones.

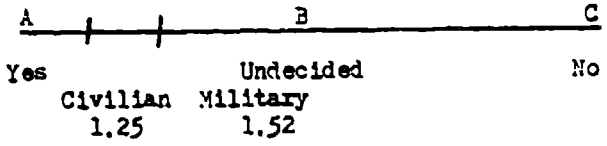


Fig. 104. Mean Responses -- Military/Civilian -- Variable 44

The military did not view the AF as a place to work as favorably as did civilians.

48. How often are you given feedback from your supervisor about your job performance?

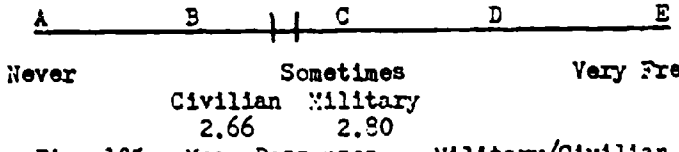


Fig. 105. Mean Responses -- Military/Civilian -- Variable 48

Civilians did not receive as much job feedback as military personnel. The responses to "How much of the time do you feel satisfied with your job?" (Variable 23 -- discussed in JOB subsection); "How well do you like your job?" (Variable 24); and "How your job compares to other people?" (Variable 26) all implied that civilians were more satisfied with their work than military members. The JOB satisfaction score for an individual was determined by summing the responses to Variables 23, 24, 25, and 26. The mean responses to Variable 25, which dealt with changing jobs, were statistically the same. In subsample 1, the mean JOB satisfaction scores were statistically identical; in subsample 2, the mean military JOB satisfaction score was less. Variable 27 asked what factor was most important for satisfying work, and the results follow: (The responses to Variable 27 were only nominal data.)

27. Which one of the following factors do you consider the most essential for having a satisfying job?

	% Military	% Civilian
A. Challenging work	17.2	13.8
B. Recognition for my work	14.5	15.0
C. Sense of achievement	45.6	43.6
D. Encouragement to use initiative and creativity	9.0	7.5
E. Having responsibility for a job	5.7	6.3
F. Having a good supervisor	5.2	3.0
G. Other	2.7	3.7
No Response	.0	2.1

The military and civilian responses indicated that the two groups agreed that "Sense of achievement" was the most important factor for having a satisfying job. The second most important factor to military personnel was "Challenging work", while for civilians, the second most

important factor was "Recognition for my work". Because both military and civilian personnel agreed that the most important factor for a satisfying job was "Sense of achievement", and because civilians were more satisfied with their jobs (from Variables 23, 24, and 26), it follows that civilians sense a higher level of achievement than military personnel.

PERSONAL STANDING: To be treated with respect; prestige; dignity; reputation; status.

64. What degree of importance do you attach to the above?

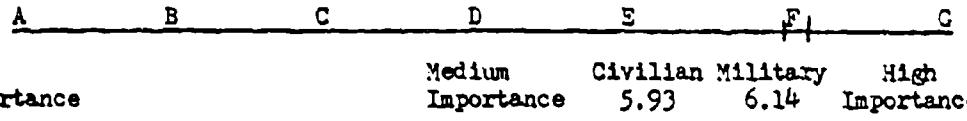


Fig. 106. Mean Responses -- Military/Civilian -- Variable 64

PERSONAL STANDING was more important to military personnel than to civilians.

The second variable that involved nominal data was 41.

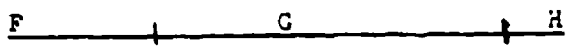
41. How does your supervisor deal with your women co-workers?

	% Military	% Civilian
A. There are no women in my unit	44.8	19.7
My supervisor is a woman and		
B. Expects more from the women workers	.5	1.9
C. Treats men and women the same	6.8	13.8
D. She gives women the easy jobs	1.6	2.1
My supervisor is a man and		
E. Expects more from women than men	.3	4.0
F. Treats men and women the same	36.1	49.2
G. He gives women the easy jobs	7.9	6.1

Since there was a higher percentage of civilian women than military women, the responses of A were not surprising. One interesting point was that military male supervisors expected less from women (see Response E) and more from men (see Response G) than civilian male supervisors.

The question that did not fit into one of the variable subsets was the demographic question concerning education. There were 15 possible responses ranging from "Grammar school (did not graduate)" to "Doctorate degree".

6. What is your highest level of education now (include accepted GED credits)?



Some College But Less Than 1 Year

1 Year College But Less Than Two

2 Years College But Less Than 3

Civilian	Military
6.47	7.80

Fig. 107. Mean Responses -- Military/Civilian -- Variable 6

Each possible response was then examined, and three items of interest were found: 8.4% of the civilians did not complete high school as contrasted with 2.2% of the military personnel; 14.4% of the military members had a college degree as compared to 7.9% of the civilians; and 8.3% of the military members had earned a Master's degree, while only 1.9% of the civilians had. The conclusion was that military personnel were better educated than their civilian counterparts.

Career Personnel

The third purpose of this study was to investigate the variance

of responses between career military and career civilian personnel. Bachman and Blair (1975) studied military personnel and civilians (not Civil Service). One area of interest in Bachman and Blair's study was "beliefs concerning the military"; they found that "Career men displayed more homogeneity than their civilian counterparts..." (p.100). In other words, the responses of career military men varied less than the responses of nonmilitary men. The author investigated this "homogeneity" idea, making three changes. First, the two groups were military personnel and Civil Service -- not "civilians" as normally connoted. The second exception was that the responses of both men and women were examined. Third, the area of interest was Quality of Air Force Life.

The individuals who responded with A or B to the following question were identified as "career personnel".

28. Which one of the following best describes your feelings towards long term employment with the Air Force? (Civilian survey)

    A. Definitely intend to make a career of Air Force employment

    B. Most likely will make a career of Air Force employment

    C. Undecided

    D. Most likely will not make a career of Air Force employment

    E. Definitely do not intend to make a career of Air Force employment

28. Which one of the following best describes your attitude toward making the Air Force a career? (Military survey)

    A. Definitely intend to make the Air Force a career

    B. Most likely will make the Air Force a career

    C. Undecided

    D. Most likely will not make the Air Force a career

    E. Definitely do not intend to make the Air Force a career

Once the "career personnel" were identified, the following statistical test was performed:

H_o: $\sigma_{1i}^2 = \sigma_{2i}^2$

H_a: $\sigma_{1i}^2 < \sigma_{2i}^2$

Test Statistic: $F = \dfrac{S_{2i}^2}{S_{1i}^2}$

Rejection Region: $F > F_{\alpha}, n_2-1, n_1-1$

Where σ_{1i}^2 = True Variance of Population 1 for Variable i

σ_{2i}^2 = True Variance of Population 2 for Variable i

S_{1i}^2 = Estimated Variance of Population 1 for Variable i

S_{2i}^2 = Estimated Variance of Population 2 for Variable i

N_1 = Number of members of Population 1

N_2 = Number of members of Population 2

Population 1 = Career Military Personnel

Population 2 = Career Civilian Personnel

α = level of significance = .05

i = 15-19, 21-26, 28-40, 42-74

The test was performed on both subsamples. Subsample 1 consisted of 261 career military personnel and 361 career civilians; subsample 2 had 253 and 375 career military and civilian personnel, respectively. Table LVIII contains those variables which had a smaller variance of military response for at least one of the subsamples.

There were 57 variables included in this analysis, and 19 were found in Table LVIII. In other words, 33.3% of the variables studied had significantly less variance among the responses of career military personnel than among the responses of career civilians.

Table LVIII

Significant Career Variances

Variable (Number)	Sub-sample 1 α	Sub-sample 2 α
Do you want a job with greater responsibility? (22)	.924	.000
Recognition for a job well-done? (33)	.005	.553
For whom would you rather work? (35)	.073	.008
Dealing with people? (45)	.424	.003
NCO's supervisors or technicians? (47)	.000	.035
Quality of new airmen? (51)	.001	.005
Respect for NCO's? (52)	.000	.000
NCO's understand and can communicate with their peers. (53)	.000	.000
NCO prestige? (54).	.000	.000
Responsibility of NCO's? (55)	.000	.000
ECONOMIC STANDARD/IMPORTANCE QOAFLI (57)	.000	.000
ECONOMIC SECURITY/IMPORTANCE QOAFLI (58)	.000	.001
FREE TIME/IMPORTANCE QOAFLI (59)	.004	.037
WORK/IMPORTANCE QOAFLI (60)	.000	.074
LEADERSHIP/SUPERVISION/IMPORTANCE QOAFLI (61)	.000	.009
EQUITY/IMPORTANCE QOAFLI (62)	.013	.000
PERSONAL GROWTH/IMPORTANCE QOAFLI (63)	.000	.000
PERSONAL STANDING/IMPORTANCE QOAFLI (64)	.001	.000
HEALTH/IMPORTANCE QOAFLI (65)	.000	.000

Three of the 19 variables ("Job with greater responsibility", "Recognition for a job well-done", and "Dealing with people") rejected the null hypothesis in one subsample, but they were well outside the rejection region in the other subsample. But were the variances of career military members smaller? It depends on the subsample the reader prefers to choose. One subsample tends to support the alternate hypothesis, but the other subsample maintains the null hypothesis was true. At that point, it was not clear whether the null hypothesis was really true or not.

Two variables ("For whom would you rather work?" and WORK/IMPORTANCE) rejected the null hypothesis in one subsample and were very close to rejecting it in the other subsample. For these two variables, the two subsample estimates were combined, and the test was reaccomplished. With the pooled estimates, the null hypothesis was rejected for both variables; that is, the variances of responses of career military personnel were less than those of career civilians for these two questions.

From Table LVIII, it can be seen that Variable 47 and Variables 51 through 55 rejected the null hypothesis for both subsamples. It will be recalled from the LEADERSHIP subsection that the five NCO variables allowed the response, "I don't know a senior NCO." for civilians. Variable 51 -- "Quality of new airmen?" -- had the possible response "I don't know". In this subsection, those surveys which contained the responses "I don't know" or "I don't know an NCO" were not eliminated as they were in the LEADERSHIP subsection. It was expected, therefore, that the variances would differ on these variables.

The other nine variables in Table LVIII were quite interesting; all nine were the IMPORTANCE QOAFLI's. There was less variability on

all of these variables for career military personnel. At that point, the author went a step further and examined the mean responses of AF career personnel to the IMPORTANCE QOAFLI's. The mean responses of career military personnel were greater than the mean responses of career civilians for all nine variables in both subsamples, with one exception; the mean responses to PERSONAL STANDING were equal in subsample 1, but not in subsample 2. Alternatively stated, AFMIG began by identifying nine broad areas that reflect the Quality of Air Force Life; these nine areas were more important to career military people than to career civilians. Examining this area would be very extensive, and the author suggests that this area be studied further by a future thesis student.

The comparison of career AF personnel to non-career AF personnel was beyond the scope of this study, and the author did not attempt to do so here. However, in a very brief examination of the data, two variables were readily discovered that provided some interesting insight into the Quality of Air Force Life. Those two variables were Variable 35, "For whom would you rather work?" and Variable 56, Combined Job Satisfaction Score. The mean responses to these variables follow:

35. Would you rather work for (i.e., be rated by) a military or civilian supervisor?

A ——— B ——— C ——— D ——— E

Definitely Military — Undecided — Definitely Civilian

Career Military	Non-Career Military	Career Civilian	Non-Career Civilian
1.96	2.45	3.52	3.13

Fig. 108. Mean Responses -- Career Personnel -- Variable 35

The two civilian mean responses were statistically different; the career military mean response was significantly less than the non-career military mean response. Whether an individual was career or non-career made a difference in his preference for a military or civilian supervisor. Career military members were even more adamant about who wrote their OER's (i.e., whether their supervisor was military or civilian) than non-career military members; likewise, career civilians more strongly preferred a civilian supervisor than did non-career civilians.

56. COMBINED JOB SATISFACTION SCORE

As recalled from Chapter III, there were 24 possible scores, ranging from a minimum of 4 to a maximum of 28. Only the relevant range is depicted in Fig. 109.

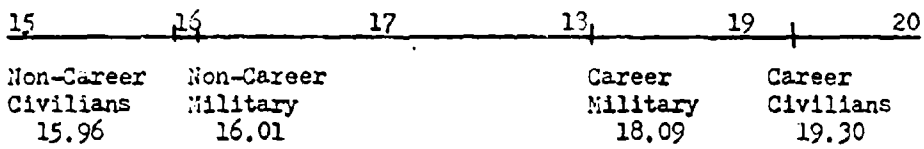


Fig. 109. Mean Responses -- Career Personnel -- JOB SATISFACTION

On the basis of this very abbreviated analysis, JOB SATISFACTION would seem to affect a civilian's decision about continuing employment with the Air Force; similarly, JOB SATISFACTION may be a significant factor in a military member's decision to depart active duty service.

V. Conclusions and Recommendations

Conclusions on Military/Civilian Differences

The primary purpose of this study was to "... analyze all common areas of both surveys to determine all differences between military and civilian personnel pertaining to their perceptions of their Quality of Life." To accomplish this, the variables were divided into QOAFLI's, JOB, LEADERSHIP, FINANCE, AND PEOPLE related areas.

QOAFLI's. FREE TIME was more important to military members than to civilians, yet civilians were more satisfied with the FREE TIME aspects of their lives. FREE TIME was defined as

> Amount, use, and scheduling of free time alone, or in voluntary associations with others; variety of activities engaged in.

There are two possible reasons why military personnel were less satisfied with the FREE TIME aspects of their lives than civilians. First, military personnel might be lazy and have expected to work less than their civilian counterparts. However, the author knows of no responsible individual who has evidence or data which supports this view. Therefore, the first alternative is not only unacceptable, it is also unbelievable. The second reason why FREE TIME was less satisfying to military personnel was that military personnel simply had less TIME FREE. It was pointed out in Chapter II that it costs the AF money whenever a civilian is required to work outside normal duty hours; on the other hand, overtime does not exist for the military individual. Since most commanders must get maximum output from their subordinates and stay within a set budget, it seems logical to expect that, over a period of time, someone must work some overtime or holidays.

Who will that someone be? Little organizational motivation exists to encourage AF managers to distribute the overtime work load in an equitable manner when military work along side civilian employees; rather, the motivation is to obtain a certain level of performance and stay within a budget. The surveys did not directly question the amount of overtime worked, but FREE TIME is considered to have addressed this problem. The problem of working on holidays was questioned, and the results clearly show that military members worked on holidays much more than civilians. The facts were clear: military personnel had less FREE TIME than civilians.

Another facet of FREE TIME had to do with "... voluntary associations with others; variety of activities engaged in." The surveys asked if personnel were required to participate in activities that were not job related; military responses indicated that they were required to participate in more such activities than civilians. "Activities" was undefined, so a problem in interpretation existed. To one individual, it might have meant social functions, i.e., dining-in's, receptions, or joining the Officers' Club. To another person, "Activities" may have been interpreted to include barrack inspections, the support of charity drives such as the Combined Federal Campaign or the Air Force Aid Society; or "Activities" might have been construed to be aerobics. The point is that whatever "Activities"meant, if <u>any</u> activities are really necessary for mission accomplishment, then a concerted effort should be made to convey their relevance to the work force.

The author found no statistical evidence to indicate why military personnel valued their FREE TIME more than civilians did. Perhaps the

following adage sums it up: "You don't know what you have until you lose it." In other words, the fact that military personnel had less FREE TIME than civilians made FREE TIME more important to the military.

HEALTH was another QOAFLI where differences existed. The HEALTH aspects of their lives were more important and less satisfying to military people than to civilians. HEALTH was defined as:

> Physical and mental well-being of self and dependents; having illnesses and ailments detected, diagnosed, treated, and cured; quantity and quality of health care and services provided.

In Chapter II, it was pointed out that medical care is provided virtually free to military members, while civilians must pay for their medical care. Soaring costs have been commonly associated with proper medical care, and for that reason, medical care has been cited as an incentive for choosing a career as a professional soldier. The survey data confirms that military people definitely value HEALTH and medical care very highly; yet their civilian peers were more satisfied with the medical care provided through private medical facilities. To be sure, most civilians probably are covered by health insurance and pay only a portion of their total medical costs; however, whatever a civilian must pay is generally more than what his military co-worker pays. The author would like to reiterate this point: civilians, who must arrange for and finance their own medical care, were more satisfied with the HEALTH aspects of their lives than were military personnel, to whom medical care is provided practically free of charge.

Differences between military and civilians were found to exist in PERSONAL GROWTH/IMPORTANCE and PERSONAL STANDING/IMPORTANCE. The definitions follow:

PERSONAL GROWTH: To be able to develop individual capacities; education/training; making full use of my abilities; the chance to further my potential.

PERSONAL STANDING: To be treated with respect; prestige; dignity; reputation; status.

While the PERSONAL GROWTH and PERSONAL STANDING aspects were more important to military personnel than to civilians, both civilian and military members expressed the same degree of satisfaction with these two QOAFLI's.

The other QOAFLI's where differences existed will be discussed in the appropriate subsections.

JOB. The JOB related area was very interesting and deserved more analysis than the author had time to accomplish. Suggestions for additional study will be discussed in the Recommendations.

Three powerful variables where differences occurred were "For whom, over whom, and with whom would you rather work?" It was found that civilians preferred to work for, over, and with other civilians; likewise, military personnel preferred other military personnel. Military members were very adamant about whom they desired to work for -- their preference for a military supervisor was stronger than the civilian preference for a civilian supervisor. When each group was divided according to whether its supervisor was military or civilian, civilians with civilian supervisors indicated a stronger preference for civilian supervisors than did those civilians with military supervisors. In other words, civilians supervised by military personnel still preferred civilian supervisors, but not as markedly as civilians with civilian supervisors. Regardless

of whether the supervisor was military or civilian, military members wanted to work for, over, and with military members. The author believes that this attitude on the part of military personnel might be partially explained by the military OER system. At the time of the surveys (spring, 1975), the "new" OER system was just beginning. Up until that time, the OER's had been victims of creeping inflation -- the scores were getting higher and higher. Many officers were afraid that if a civilian wrote their OER's, he would fail to "understand" the system and not properly inflate the OER. Hopefully, that problem has been corrected with the "new" OER.

Other interesting variables in the JOB related subset concerned JOB SATISFACTION. JOB SATISFACTION was determined by adding the responses of four questions together as explained in Chapter III. When the civilian and military responses to individual questions that determined JOB SATISFACTION were examined, the indication was that civilians felt satisfied with their jobs more often and liked their jobs better than military personnel. Civilians also responded that, in relation to other people, they liked their jobs more. Both military and civilian personnel responded the same to the fourth determinant of JOB SATISFACTION, which dealt with the desire to change jobs. In the first subsample, the mean military JOB SATISFACTION score was statistically less than the mean civilian JOB SATISFACTION score at a significance level of .117; in subsample 2, the military mean response was less at a significance level of .013. The logical conclusion was that civilians were more satisfied with their jobs than military personnel. In view of these findings on JOB SATISFACTION, it was not too surprising

that civilians viewed the AF as a more favorable place to work than military personnel. Consequently, civilians indicated a higher career intent than military members.

Further analysis of JCB related factors revealed that, in relation to the military responses, civilians considered the level of their grade too low for their work; they did not believe that their present jobs were preparing them to assume greater responsibility in the future; and they had more job freedom. In addition, civilians received less recognition for a job well done and less feedback about job performance.

In view of the findings on JCB SATISFACTION discussed above, one would be led to ask the question, "Does feedback or recognition, or a lack of either, affect JCB SATISFACTION?" An overwhelming majority of research reported in the literature holds that "recognition" is a major determinant of JCB SATISFACTION; however, the question of feedback affecting JCB SATISFACTION is not as well documented, nor was it explored in this research effort.

LEADERSHIP. LEADERSHIP/SUPERVISION was defined as:

> Has my interests and that of the Air Force at hear; keeps me informed; approachable and helpful rather than critical; good knowledge of the job.

Military personnel's responses implied that LEADERSHIP/SUPERVISION was more important to them than to civilians. When asked about the level of SATISFACTION, military and civilian personnel indicated the same degree of satisfaction. When they were queried about military leadership in the Air Force, military personnel perceived a lower quality of leadership than civilians. It should be noted that the mean response for military personnel was "near average". The author was not attempting to convey the idea that military personnel viewed their

leaders as "bad", but just not as favorably as civilians viewed the AF leaders.

There were five variables concerning NCO's, and an interesting revelation was that 25-30% of the civilians did not know a senior NCO well enough to answer the question. When civilians who knew senior NCO's were contrasted with military personnel, it was found that

(1) Both military personnel and civilians perceived that senior NCO's were more like supervisors than technicians; however, civilians did not express such strong feelings as the military.

(2) Military personnel had more respect for senior NCO's than civilians did.

(3) Both military and civilians agreed to the same degree that NCO's understand and are able to communicate with the people who work with them.

(4) Military members believed that NCO prestige had declined more than civilians did.

(5) Both military individuals and civilians thought that senior NCO's should be given greater responsibility, but civilians were not as adamant as the military.

FINANCE. One finding in this subset was that 73% of the surveyed civilians had never made a PCS move; however, those civilians who had were more adversely affected financially than military personnel making such moves. Several of the other variables in this subset dealt with personnel who held a second job and/or had working spouses. The results were confusing for two reasons. First, a significant number of people indicated that they did not hold a second job and/or their spouses did not work. Second, there was a higher percentage of civilian

women than military women, which led to a higher percentage of working spouses for the civilians. Without repeating the analysis of Chapter IV, it seems sufficient to say that the inference was, of those military and civilian personnel who held a second job and/or their spouses worked, civilians had more difficulty in "making ends meet".

PEOPLE. The results of this variable subset were limited, but still quite intriguing. Both military and civilian personnel indicated a preference for male supervisors, rather than female; however, military members did not seem so adamant. This was somewhat surprising, because it was expected that the degree of preference would have been reversed: that is, because there was a higher percentage of civilian women than military women, it was expected that the preference for women supervisors would have been stronger among civilians than among military members. Further, not a single respondent, military or civilian, indicated a strong preference for a woman supervisor. This could have been caused by an unrepresentative subsample; however, when all 28,000 surveys were examined, only .1% responded with a strong preference for a woman supervisor. In contrast, 10% or 100 times as many people, military and civilian, strongly preferred a man supervisor. It was also found that male military supervisors expected less from women workers, but more from men workers, than male civilian supervisors.

Another difference in this subset concerned whether or not civilians were "accepted and treated as members of the Air Force community." Both military and civilian members were "undecided", but not quite to the same degree. Military personnel accepted civilians as a part of the AF community more readily than civilians considered themselves to be accepted.

The last difference in the PEOPLE subset was the QOAFLI EQUITY. EQUITY was defined as

> Equal opportunity in the Air Force; a fair chance at promotion; an even break in my job/assignment selections.

EQUITY was more important to military personnel than to civilians.

Conclusions on Supervisors' Influence

The second purpose of this study was "... to investigate the influence of supervisors on perceptions of Quality of Air Force Life. That is, did civilians (military) with military supervisors have the same perceptions of their QOAFL as civilians (military) with civilian supervisors?" In the JOB related area, civilians with military supervisors had different perceptions of whom they would rather work for, over, and with. This was the only instance in which supervisors exerted an influence on members' perceptions of their QOAFL.

Conclusions on Variances

The third purpose of this research effort was "... to determine if the variance of responses of career military members was the same as the variance of responses of AF civil servants to their QOAFL." At a significance level of .05, military members had smaller variances, in at least one of the two subsamples, on 19 of 57 total variables. Five of the 19 variables were the questions concerning NCO's. More importantly, the responses of military personnel to all nine IMPORTANCE QOAFLI's had smaller variances than did the civilian responses. There was no pattern or relationship among the other variables where the variance of military responses was less. The relevance of the conclusions on variances in this: there were nine areas that comprised "the Quality of Air Force Life." In the IMPORTANCE measurement of

these nine areas, the variability of military responses was less than the variability of civilian responses.

Conclusions on Discriminant Analysis

Discriminant analysis is normally employed to enable the analyst to predict the future. In this study, however, discriminant analysis was used because it could identify and limit the variables that differentiate two populations; discriminant analysis proved to be a very effective tool for this purpose. An advantage of discriminant analysis is that during the application, certain statistics need to be calculated; the calculations may be used as a gauge to measure the effectiveness of the discriminant function. In this analysis, the author used Wilks lambda and an F-statistic that is a transformation of the Mahalanobis distance. Along with these statistics, a confusion matrix was generated which was extremely useful in interpreting the results.

In the application of discriminant analysis, Frank, Morrison, and Massey (1965) warn the analyst to beware of "search bias" and "sampling bias". To determine if search bias existed, two subsamples were drawn, and a discriminant function was formulated for each subsample. The variables of the two discriminant functions were then compared; search bias was nonexistent or irrelevant throughout the entire study.

To determine if sampling bias existed, the cross-validation procedure as described by Frank, Morrison, and Massey (1965) and in Chapter III was utilized. For the five basic analyses -- QOAFLI's, JOB, LEADERSHIP, FINANCE, and PEOPLE -- sampling bias was found to exist only in the LEADERSHIP related area, and it affected the overall percentage correctly classified by only 5%. In the study by Frank,

Morrison, and Massey (1965), their sample size was 100; it was demonstrated that, for that sample size, sampling bias affected the overall percentage correctly classified by as much as 50%. But as the size of the sample increases, the effect of sampling bias is decreased. The sample size of this study was 793, and sampling bias was practically nonexistent; therefore, the logical conclusion, based on this study, was that 793 was an adequate sample size to preclude the effects of sampling bias.

Recommendations

(1) The JOB related area was broad and involved many variables. The author had hoped to investigate this area more fully, but he simply did not have enough time. It is recommended that a study be made of military and civilian personnel differences in the JOB related area alone.

(2) The author recommends that a study be performed concerning male/female differences in the Quality of Air Force Life for each survey.

(3) The author recommends that a study be performed concerning race differences in the Quality of Air Force Life for each survey.

(4) The author recommends that a study be performed concerning the differences between career and non-career personnel in the Quality of Air Force Life for each survey.

(5) The AFMIG surveys included only the IMPORTANCE and SATISFACTION QOAFLI's in the HEALTH area, and no "follow-up" questions. In view of the findings on the HEALTH QOAFLI, the author advocates the inclusion of more questions concerning the HEALTH aspects of life and medical care

on any future surveys.

(6) A small-scale experiment should be conducted to investigate the effects of different sample sizes on sampling bias in discriminant analysis.

Concluding Remarks

AFP 40-5-4 states:

> Although the military personnel system and the Civil Service system operate very differently, both serve the same basic purpose -- to put the right person in the right job at the right time. While officers and enlisted personnel are assigned to a commander by higher authorities, the commander himself has the authority to select and hire locally the skilled civilian help he needs to complement his military strength in order to carry out his mission. Recognizing that the two systems complement each other in serving the needs of an organization as huge and complex as the Department of Defense, even though they are different, will increase our understanding of today's personnel management requirements and help prevent inaccurate and misleading comparisons between the two systems. (Emphasis added.)

The author has not advocated that one system "has it better" than the other; rather, he has tried to be partial and fair in all the analyses. Every conclusion was based on classical statistical procedures and techniques; each time an important point was made, the author quoted and backed up his findings with the appropriate statistics. A sincere attempt was made to "... help prevent inaccurate and misleading comparisons between the two systems."

Bibliography

Note: The following abbreviations will be used in the Bibliography:

AFM-Air Force Manual
AFP-Air Force Pamphlet
AFR-Air Force Regulation

Aaker, David A. 1971. Multivariate Analysis in Marketing: Theory and Application. p. 127-130. Belmont, California: Wadsworth Publishing Co., Inc.

Adams, J.S. 1963. Towards an Understanding of Inequity. Journal of Abnormal and Social Psychology. 67:422-429.

AFLC Commander's Philosophy. 1972. Skywrighter. Vol. 13, No. 40:4. Wright-Patterson AFB, Ohio.

AFM 35-7. Service Requirements. p. 7-3. Washington: Department of the Air Force, October 1971.

AFM 50-5, Volume I. USAF FORMAL SCHOOLS CATALOG. p. 4-3. Washington: Department of the Air Force, September 1975.

AFM 168-4. Medical Administration--Administration of Medical Activities. p. 14-1. Washington: Department of the Air Force, November 1971.

AFM 177-373, Vol. III. Leave Policy and Procedures. p. 1-1, 1-9, 3-1. Washington: Department of the Air Force, May 1976. Change 2, October 1976.

AFP 40-5-4. Civilian Employees of the Armed Forces. p. 3, 9. Washington: Department of the Air Force, 1964.

AFP 40-19. Wage Surveys and Schedules for Wage Employees. Washington: Department of the Air Force, November 1970.

AFP 50-56. USAF Aerobics -- Physical Fitness Program (Male). p.2. Washington: Department of the Air Force, November 1969.

AFR 35-10. Dress and Personal Appearance of Air Force Personnel. p. 1-4. Washington: Department of the Air Force, February 1975. Interim Message Change 76-2, June 1976.

AFR 36-20. Officer Assignment Manual. p. 3-2. Washington: Department of the Air Force, June 1976.

AFR 39-29. Promotion of Airmen. p. 5. Washington: Department of the Air Force, August 1974.

AFR 40-303. Civilian Mobility. p. 1. Washington: Department of the Air Force, May 1972.

AFR 40-321. Details Within the Air Force. p. 1. Washington: Department of the Air Force, August 1968.

AFR 40-335. The Merit Promotion Program. p. 1. Washington: Department of the Air Force, January 1976.

AFR 40-410. Basic Authorities and Responsibilities for Civilian Employee Training and Development. p. 1, 2. Washington, Department of the Air Force, March 1972.

AFR 40-527. Step Increases. p. 2. Washington: Department of the Air Force, June 1969.

AFR 40-552. Overtime Work and Holiday Observance. p. 1. Washington: Department of the Air Force, September 1971.

AFR 40-630. Civilian Personnel Leave Administration. p. 3, 4. Washington: Department of the Air Force, September 1971.

AFR 40-735. Employee Responsibilities and Conduct. p. 3. Washington: Department of the Air Force, July 1971.

AFR 40-831. Civilian Personnel -- Retirement. p. 3. Washington: Department of the Air Force, December 1975.

AFR 50-39. Noncommissioned Officer Professional Military Education. p. 1. Washington: Department of the Air Force, October 1974.

AFR 50-49. USAF Physical Fitness and Weight Control Program. p. 3, 4. Washington: Department of the Air Force, July 1972.

AFR 53-8. USAF Officer Professional Military Education System. p. 1-2, 2-1. Washington: Department of the Air Force, April 1976.

AFR 123-11. How Complaints are Presented and Acted Upon. p.1. Washington: Department of the Air Force, June 1976.

AFR 147-14. Exchange Service -- Operating Policies. p. A-1, 3-4. Washington: Department of the Air Force, March 1974.

AFR 160-43. Medical Examination and Medical Standards. p. 1-1, 1-2. Washington: Department of the Air Force, June 1976.

AFR 168-6. Medical Administration -- Persons Authorized Medical Care. p. 16-17. Washington: Department of the Air Force, September 1974.

AFR 215-1, Vol 1. Morale, Welfare, and Recreation Programs and Activities. p. 2. Washington: Department of the Air Force, January 1975.

Albanese, Robert. 1975. Management: Toward Accountability for Performance, p. 264-266. Homewood, Ill.: Richard D. Irwin, Inc.

An Air Force Almanac. 1976. Air Force Magazine. Vol. 56, No. 3: 77-78.

Apple, Robert C., and Lutz, Robert M. 1973. An Analysis of the Management of Military and Civilian Service Personnel to Delineate Inherent Problems Which Degrade Logistics Management, p. 23-46. Unpublished Thesis. Wright-Patterson Air Force Base, Ohio: Air Force Institute of Technology.

Bachman, Jerald G., and Blair, John D. 1975. Soldiers, Sailors, and Civilians: The "Military Mind" and the All-Volunteer Force, p. 97-100. Ann Arbor: University of Michigan.

Borg, Marcus. 1971. Conflict and Social Change, p. 67. Minneapolis: Augsburg Publishing House.

Dunham, D.A. 1971. A Study of Environmental Factors Influencing Perceived Career Progression of Civil Service Employees, p. 33, 81-83. Unpublished thesis. Wright-Patterson AFB, Ohio: Air Force Institute of Technology.

Du Pre, Flint O. 1967. Civilians in the Air Force. The Airman. Vol XI, No. 1: 44-47.

Ellis, Paul and Nelch, Robert J. 1975. An Investigation and Analysis of Perceived Conflict between Military and Civilian Personnel in An Air Force Combined Work Group. p.2-4, 38-39, 80-84. Unpublished Thesis. Wright-Patterson AFB, Ohio: Air Force Institute of Technology.

Everybody Wears Blue to New Base Commander. Dayton Daily News. August 20, 1972: p. 15.

Federal Personnel Manual. 1969. p.630-6. Washington: Civil Service Commission, U.S. Government Printing Office.

Frank, Ronald E., et al. 1965. Bias in Multiple Discriminant Analysis. Journal of Marketing Research. 2: 250-258.

French, Wendel I. 1974. The Personnel Management Process (Third Edition), p. 100-102, 160. Boston: Houghton Mifflin.

Hunter, Robert W. 1973. Civilians in the Air Force. Air Force Magazine. Vol. 56, No. 3: 77-78.

Kast, Fremont E., and Rosenzweig, James E. 1974. Organization and Management: A Systems Approach (Second Edition), p. 6. New York: McGraw-Hill.

Kintner, William R. 1958. Forging A New Sword, p. 22. New York: Harper and Brothers.

Labovitz, Sanford. 1970. The Assignment of Numbers to Rank Order Categories. American Sociological Review. 35: 515-24.

Manley, T.R., et. al. 1975. Quality of Life in the U.S. Air Force. To be published in the Proceedings and presented at the 1975 Military Testing Association Conference, Indianapolis, Indiana.

Military versus Civilian Pay: Official Report. 1975. U.S. News & World Report. Vol. LXXIX No. 23: 79.

Mills, C. Wright. 1956. The Power Elite, p. 198-224. New York: Oxford University Press.

New NCO Plan: How to Earn Points. 1976. Air Force Times. Vol 37, No. 1: 3.

Nie, Norman H., et al. 1975. Statistical Package for the Social Sciences (Second Edition), p. 6, 434-467. New York: Mc Graw- Hill.

Nierstheimer, Paul H. 1964. Problems Associated with the Management of Military and Civilian Working Force, p. 36, 45. Thesis. Maxwell AFB, Alabama: Air War College.

Rao, C.R. 1973. Linear Statistical Inference and Its Applications (Second Edition), p. 564-572. New York: John Wiley and Sons.

Regular Military Compensation. 1976. Air Force Times. Vol 37, No. 15: 4.

Siegal, Sidney. 1956. Nonparametric Statistics for the Behavioral Sciences, p. 19-32. New York: McGraw-Hill.

Standard Form 105. Obligations, Benefits, and Privileges of Membership in the United States Civil Service Retirement System. p. 1. Washington: U.S. Government Printing Office, 1970.

Standard Form 2809-A. The Federal Employees Health Benefits Program. p. 4. Washington: U.S. Government Printing Office, 1969.

Stephenson, R.W., and Gantz, B.S. 1965. Conflicting Objectives in a Research and Development Organization. I.E.E.E. Transactions on Engineering Management. EM-12, No. 4: 127-28.

Wagner, R.K. 1971. An Investigation of Government Employee Perceptions of Thesis Organizational Climate, p. 16, 75, 105. Unpublished Thesis. Wright-Patterson AFB, Ohio: Air Force Institute of Technology.

Wilks, Samuel S. 1962. Mathematical Statistics, p. 573-76. New York: John Wiley and Sons.

APPENDIX A

Questions Common to the Military and Civilian Surveys

1. ARE YOU

A. ACTIVE DUTY AIR FORCE
B. AIR FORCE CIVIL SERVICE

2. WHAT IS YOUR PRESENT PAY SYSTEM?

A. GS (GENERAL SCHEDULE)
B. WS (WAGE SUPERVISOR)
C. WL (WAGE LEADER)
D. WG (WAGE GRADED)

QUESTION 2 WAS BLANK FOR AIR FORCE.

3. WHAT IS YOUR PRESENT GRADE LEVEL? (CIVILIAN SURVEY)

A. 1

B. 2
.
.
.
S. 19

3. WHAT IS YOUR PRESENT ACTIVE DUTY GRADE? (MILITARY SURVEY)

A. COLONEL
B. LIEUTENANT COLONEL
C. MAJOR
D. CAPTAIN
E. FIRST LIEUTENANT
F. SECOND LIEUTENANT
G. WARRANT OFFICER
H. CHIEF MASTER SERGEANT
I. SENIOR MASTER SERGEANT
J. MASTER SERGEANT
K. TECHNICAL SERGEANT
L. STAFF SERGEANT
M. SERGEANT
N. AIRMAN FIRST CLASS
O. AIRMAN
P. AIRMAN BASIC

4. WHAT IS YOUR COMMAND OF ASSIGNMENT (THE COMMAND THAT MAINTAINS YOUR PERSONNEL RECORDS)?

A. ALASKAN AIR COMMAND
B. US AIR FORCE ACADEMY
C. AEROSPACE DEFENSE COMMAND
D. US AIR FORCES IN EUROPE
E. AIR FORCE ACCOUNTING AND FINANCE CENTER
F. AIR FORCE LOGISTICS COMMAND
G. AIR FORCE SYSTEMS COMMAND
H. AIR RESERVE PERSONNEL CENTER
I. AIR TRAINING COMMAND
J. AIR UNIVERSITY
K. US AIR FORCES SOUTHERN COMMAND
L. HEADQUARTERS AIR FORCE RESERVE
M. HEADQUARTERS USAF
N. AIR FORCE DATA AUTOMATION AGENCY
O. HEADQUARTERS COMMAND

P. MILITARY AIRLIFT COMMAND
Q. PACIFIC AIR FORCES
R. STRATEGIC AIR COMMAND
S. TACTICAL AIR COMMAND
T. USAF SECURITY SERVICE
U. AIR FORCE MILITARY PERSONNEL CENTER
V. AIR FORCE INSPECTION AND SAFETY CENTER
W. AIR FORCE AUDIT AGENCY
X. AIR FORCE OFFICE OF SPECIAL INVESTIGATIONS
Y. USAF COMMUNICATIONS SERVICE (NOT ON MILITARY SURVEY)
Z. OTHER (RESPONSE Y ON MILITARY SURVEY)

5. HOW MUCH ACTIVE FEDERAL CIVILIAN SERVICE HAVE YOU COMPLETED?
MILITARY (for AF)

A. LESS THAN 1 YEAR
B. 1 YEAR BUT LESS THAN 2
C. 2 YEARS BUT LESS THAN 3
D. 3 YEARS BUT LESS THAN 4
E. 4 YEARS BUT LESS THAN 5
F. 5 YEARS BUT LESS THAN 6
G. 6 YEARS BUT LESS THAN 7
.
.
.
4. 30 YEARS BUT LESS THAN 31

6. WHAT IS YOUR HIGHEST LEVEL OF EDUCATION NOW (INCLUDE ACCEPTED GED CREDITS)?

A. GRAMMAR SCHOOL (DID NOT GRADUATE)
B. GRAMMAR SCHOOL GRADUATE (NO HIGH SCHOOL)
C. HIGH SCHOOL (DID NOT GRADUATE)
D. HIGH SCHOOL GRADUATE (NO COLLEGE)
E. TRADE OR TECHNICAL SCHOOL (NO COLLEGE)
F. SOME COLLEGE, BUT LESS THAN ONE YEAR
G. ONE YEAR COLLEGE, BUT LESS THAN TWO
H. TWO YEARS COLLEGE, BUT LESS THAN THREE
I. THREE YEARS OR MORE COLLEGE, NO DEGREE
J. REGISTERED NURSE DIPLOMA PROGRAM
K. COLLEGE DEGREE (BS, BA, OR EQUIVALENT, EXCEPT LL.B)
L. GRADUATE WORK BEYOND BACHELOR DEGREE (NO MASTER'S DEGREE)
M. MASTER's DEGREE
N. POSTGRADUATE WORK BEYOND MASTER'S DEGREE
O. DOCTORATE DEGREE (INCLUDES LL.B, J.D.,D.D.S.,M.D., AND D.V.M)

7. WHAT IS YOUR MARITAL STATUS?

A. MARRIED
B. NEVER BEEN MARRIED
C. DIVORCED AND NOT REMARRIED
D. LEGALLY SEPARATED
E. WIDOWER/WIDOW

8. HOW MANY DEPENDENTS DO YOU HAVE? DO NOT INCLUDE YOURSELF.

A. NONE
B. ONE
C. TWO
D. THREE
E. FOUR
F. FIVE
G. SIX
H. SEVEN
I. EIGHT OR MORE

9. WHICH ONE OF THE FOLLOWING DO YOU CONSIDER YOURSELF?

A. BLACK
B. SPANISH OR MEXICAN AMERICAN
C. AMERICAN INDIAN
D. ORIENTAL
E. OTHER THAN A THROUGH D (CIVILIAN SURVEY)
E. WHITE (OTHER THAN SPANISH OR MEXICAN AMERICAN) (MILITARY SURVEY)
F. OTHER (MILITARY SURVEY)

10. WHAT IS YOUR SEX?

A. MALE
B. FEMALE

11. IS THE PERSON WHO PREPARES YOUR PERFORMANCE REPORT MILITARY OR CIVILIAN?

A. MILITARY
B. CIVILIAN

12. FOR WHICH OF THE FOLLOWING DO YOU PREPARE PERFORMANCE REPORTS/ RATINGS?

A. NONE
B. AIRMEN
C. CIVILIANS
D. AIRMEN AND CIVILIANS
E. OFFICERS
F. OFFICERS AND AIRMEN
G. OFFICERS AND CIVILIANS
H. OFFICERS, AIRMEN, AND CIVILIANS

13. INDICATE THE PRIMARY FUNCTION IN WHICH YOU ARE CURRENTLY EMPLOYED. (CIVILIAN SURVEY)

A. MAINTENANCE
B. LOGISTICS MANAGEMENT
C. SUPPLY
D. PROCUREMENT
E. COMPTROLLER

F. TRANSPORTATION
G. PERSONNEL
H. CIVIL ENGINEERING
I. SECURITY
J. INVESTIGATIONS
K. MEDICAL
L. RESEARCH AND DEVELOPMENT
M. OPERATIONS
N. COMMUNICATIONS
O. SERVICES
P. ADMINISTRATION
Q. OTHER

13. ENTER THE CODE FOR THE FIRST DIGIT OF YOUR DUTY AIR FORCE SPECIALTY CODE (AFSC) OPPOSITE ITEM 13 ON YOUR ANSWER SHEET. (MILITARY SURVEY)

A. 0
B. 1
C. 2
D. 3
E. 4
F. 5
G. 6
H. 7
I. 8
J. 9

14. BLANK FOR THE CIVILIAN SURVEY.

14. ENTER THE CODE FOR THE SECOND DIGIT OF YOUR DUTY AFSC OPPOSITE ITEM 14 ON YOUR ANSWER SHEET. (MILITARY SURVEY)

A. 0
B. 1
C. 2
D. 3
E. 4
F. 5
G. 6
H. 7
I. 8
J. 9

15. DURING THE PAST YEAR HOW MANY OF THESE NINE HOLIDAYS WERE YOU REQUIRED TO BE AT WORK IN A DUTY STATUS?

A. 0 DAYS
B. 1 DAY
C. 2 DAYS
D. 3 DAYS
E. 4 DAYS
F. 5 DAYS
G. 6 DAYS
H. 7 DAYS
I. 8 DAYS
J. 9 DAYS

16. DO YOU HOLD A SECOND JOB?

A. NO
B. YES, I WORK 1-5 HOURS PER WEEK
C. YES, I WORK 6-10 HOURS PER WEEK
D. YES, I WORK 11-20 HOURS PER WEEK

E. YES, I WORK 21-30 HOURS PER WEEK
F. YES, I WORK OVER 30 HOURS PER WEEK

17. EVEN THOUGH THE DOLLAR DOES NOT GO AS FAR AS IT USED TO, I AM HAVING NO PROBLEMS IN MAKING ENDS MEET.

A. STRONGLY DISAGREE
B. DISAGREE
C. UNDECIDED
D. AGREE
E. STRONGLY AGREE

18. THE MAIN REASON THAT I HAVE A SECOND JOB, AND/OR THAT MY SPOUSE WORKS IS THAT WE HAVE TO IN ORDER TO MAKE ENDS MEET.

A. NOT APPLICABLE
B. STRONGLY DISAGREE
C. DISAGREE
D. UNDECIDED
E. AGREE
F. STRONGLY AGREE

19. HOW WAS YOUR FINANCIAL SITUATION AFFECTED BY YOUR LAST PCS MOVE?

A. NOT APPLICABLE
B. 1-2 MONTHS TO RECOVER
C. 3-4 MONTHS TO RECOVER
D. 5-6 MONTHS TO RECOVER
E. 7-8 MONTHS TO RECOVER
F. 9-10 MONTHS TO RECOVER
G. 11-12 MONTHS TO RECOVER
H. MORE THAN 12 MONTHS TO RECOVER
I. I DON'T KNOW

20. HOW DO YOU EVALUATE YOUR PRESENT AIR FORCE JOB?

I WANT A CHALLENGING JOB, AND MY PRESENT JOB IS
A. BORING
B. NOT CHALLENGING
C. SOMEWHAT CHALLENGING
D. CHALLENGING
E. VERY CHALLENGING

I DON'T WANT A CHALLENGING JOB, AND MY PRESENT JOB IS
F. BORING
G. NOT CHALLENGING
H. SOMEWHAT CHALLENGING
I. CHALLENGING
J. VERY CHALLENGING

21. DO YOU THINK YOUR PRESENT JOB IS PREPARING YOU TO ASSUME FUTURE POSITIONS OF GREATER RESPONSIBILITY?

A. DEFINITELY NO
B. PROBABLY NO
C. UNDECIDED
D. PROBABLY YES
E. DEFINITELY YES

22. DO YOU WANT A JOB WHICH HAS GREATER RESPONSIBILITY THAN YOUR CURRENT JOB?

A. DEFINITELY NO
B. PROBABLY NO
C. UNDECIDED
D. PROBABLY YES
E. DEFINITELY YES

23. WHICH ONE OF THE FOLLOWING SHOWS HOW MUCH OF THE TIME YOU FEEL SATISFIED WITH YOUR JOB?

A. ALL THE TIME
B. MOST OF THE TIME
C. A GOOD DEAL OF THE TIME
D. ABOUT HALF OF THE TIME
E. OCCASIONALLY
F. SELDOM
G. NEVER

24. CHOOSE THE ONE OF THE FOLLOWING STATEMENTS WHICH BEST TELLS HOW WELL YOU LIKE YOUR JOB.

A. I HATE IT
B. I DISLIKE IT
C. I DON'T LIKE IT
D. I AM INDIFFERENT TO IT
E. I LIKE IT
F. I AM ENTHUSIASTIC ABOUT IT
G. I LOVE IT

25. WHICH ONE OF THE FOLLOWING BEST TELLS HOW YOU FEEL ABOUT CHANGING YOUR JOB?

A. I WOULD QUIT THIS JOB AT ONCE IF I COULD
B. I WOULD TAKE ALMOST ANY OTHER JOB AT COMPARABLE PAY
C. I WOULD LIKE TO CHANGE BOTH MY JOB AND MY OCCUPATION
D. I WOULD LIKE TO EXCHANGE MY PRESENT JOB FOR ANOTHER ONE
E. I AM NOT EAGER BUT I WOULD CHANGE IF I COULD GET A BETTER JOB
F. I CANNOT THINK OF ANY JOBS FOR WHICH I WOULD EXCHANGE
G. I WOULD NOT EXCHANGE MY JOB FOR ANY OTHER

26. WHICH ONE OF THE FOLLOWING SHOWS HOW YOU THINK YOU COMPARE WITH OTHER PEOPLE?

A. NO ONE LIKES HIS JOB BETTER THAN I LIKE MINE
B. I LIKE MY JOB MUCH BETTER THAN MOST PEOPLE LIKE THEIRS
C. I LIKE MY JOB BETTER THAN MOST PEOPLE LIKE THEIRS
D. I LIKE MY JOB AS WELL AS MOST PEOPLE LIKE THEIRS
E. I DISLIKE MY JOB MORE THAN MOST PEOPLE DISLIKE THEIRS
F. I DISLIKE MY JOB MUCH MORE THAN MOST PEOPLE DISLIKE THEIRS
G. NO ONE DISLIKES HIS JOB MORE THAN I DISLIKE MINE

27. WHICH ONE OF THE FOLLOWING FACTORS DO YOU CONSIDER THE MOST ESSENTIAL FOR HAVING A SATISFYING JOB?

A. CHALLENGING WORK
B. RECOGNITION FOR MY WORK
C. SENSE OF ACHIEVEMENT
D. ENCOURAGEMENT TO USE INITIATIVE AND CREATIVITY
E. HAVING RESPONSIBILITY FOR A JOB
F. HAVING A GOOD SUPERVISOR
G. OTHER

28. WHICH ONE OF THE FOLLOWING BEST DESCRIBES YOUR FEELINGS TOWARDS LONG TERM EMPLOYMENT WITH THE AIR FORCE?

A. DEFINITELY INTEND TO MAKE A CAREER OF AIR FORCE EMPLOYMENT
B. MOST LIKELY WILL MAKE A CAREER OF AIR FORCE EMPLOYMENT
C. UNDECIDED
D. MOST LIKELY WILL NOT MAKE A CAREER OF AIR FORCE EMPLOYMENT
E. DEFINITELY DO NOT INTEND TO MAKE A CAREER OF AIR FORCE EMPLOYMET

29. THE AIR FORCE REQUIRES ME TO PARTICIPATE IN TOO MANY ACTIVITIES THAT ARE NOT RELATED TO MY JOB.

A. STRONGLY DISAGREE
B. DISAGREE
C. UNDECIDED
D. AGREE
E. STRONGLY AGREE

30. WHAT IS YOUR OPINION OF THE QUALITY OF MILITARY LEADERSHIP IN THE AIR FORCE?

A. EXCELLENT
B. ABOVE AVERAGE
C. AVERAGE
D. BELOW AVERAGE
E. POOR
F. NO OPINION

31. WHAT KIND OF INFLUENCE DOES YOUR IMMEDIATE SUPERVISOR HAVE ON YOUR ORGANIZATION?

A. VERY FAVORABLE
B. FAVORABLE
C. NEUTRAL

D. UNFAVORABLE
E. VERY UNFAVORABLE
F. DON'T KNOW

32. ARE YOU GIVEN THE FREEDOM YOU NEED TO DO YOUR JOB WELL?

A. NEVER
B. SELDOM
C. SOMETIMES
D. OFTEN
E. ALWAYS

33. DOES YOUR IMMEDIATE SUPERVISOR GIVE YOU RECOGNITION FOR A JOB WELL DONE?

A. NEVER
B. SELDOM
C. SOMETIMES
D. FREQUENTLY
E. VERY FREQUENTLY

34. DO YOU FEEL THAT THE WORK YOU ARE NOW DOING IS APPROPRIATE TO THE GRADE YOU HOLD?

A. MY GRADE IS MUCH TOO HIGH FOR THE WORK I AM DOING
B. MY GRADE IS SOMEWHAT TOO HIGH FOR THE WORK I AM DOING
C. MY GRADE IS ABOUT RIGHT FOR THE WORK I AM DOING
D. MY GRADE IS SOMEWHAT TOO LOW FOR THE WORK I AM DOING
E. MY GRADE IS MUCH TOO LOW FOR THE WORK I AM DOING
F. NO OPINION

35. WOULD YOU RATHER WORK FOR (I.E., BE RATED BY) A MILITARY OR CIVILIAN SUPERVISOR?

A. DEFINITELY WOULD RATHER WORK FOR A MILITARY SUPERVISOR
B. PROBABLY WOULD RATHER WORK FORA MILITARY SUPERVISOR
C. HAVE NO PREFERENCE
D. PROBABLY WOULD RATHER WORK FOR A CIVILIAN SUPERVISOR
E. DEFINITELY WOULD RATHER WORK FOR A CIVILIAN SUPERVISOR

36. RACE RELATION TRAINING COURSES ARE EFFECTIVE IN GETTING PEOPLE TO TREAT EACH OTHER BETTER.

A. STRONGLY DISAGREE
B. DISAGREE
C. UNDECIDED
D. AGREE
E. STRONGLY AGREE

37. ARE CIVILIAN PERSONNEL ACCEPTED AND TREATED AS MEMBERS OF THE AIR FORCE COMMUNITY?

A. DEFINITELY NOT
B. PROBABLY NOT

C. UNDECIDED
D. PROBABLY YES
E. DEFINITELY YES

38. WOULD YOU RATHER SUPERVISE MILITARY OR CIVILIAN PERSONNEL?

A. DEFINITELY WOULD RATHER SUPERVISE CIVILIAN PERSONNEL
B. PROBABLY WOULD RATHER SUPERVISE CIVILIAN PERSONNEL
C. HAVE NO PREFERENCE
D. PROBABLY WOULD RATHER SUPERVISE MILITARY PERSONNEL
E. DEFINITELY WOULD RATHER SUPERVISE MILITARY PERSONNEL

39. WOULD YOU RATHER WORK WITH MILITARY OR CIVILIAN CO-WORKERS?

A. DEFINITELY WOULD RATHER WORK WITH CIVILIAN CO-WORKERS
B. PROBABLY WOULD RATHER WORK WITH CIVILIAN CO-WORKERS
C. HAVE NO PREFERENCE
D. PROBABLY WOULD RATHER WORK WITH MILITARY CO-WORKERS
E. DEFINITELY WOULD RATHER WORK WITH MILITARY CO-WORKERS

40. AN INDIVIDUAL CAN GET MORE OF AN EVEN BREAK IN PRIVATE SECTOR EMPLOYMENT THAN IN AIR FORCE EMPLOYMENT.

A. STRONGLY DISAGREE
B. DISAGREE
C. UNDECIDED
D. AGREE
E. STRONGLY AGREE

41. HOW DOES YOUR SUPERVISOR DEAL WITH YOUR WOMEN CO-WORKERS?

A. NOT APPLICABLE, THERE ARE NO WOMEN IN MY UNIT
MY SUPERVISOR IS A WOMAN AND
B. EXPECTS MORE FROM THE WOMEN WORKERS
C. TREATS MEN AND WOMEN WORKERS THE SAME
D. SHE GIVES WOMEN THE EASY JOBS
MY SUPERVISOR IS A MAN AND
E. EXPECTS MORE FROM WOMEN THAN MEN
F. TREATS MEN AND WOMEN WORKERS THE SAME
G. HE GIVES WOMEN THE EASY JOBS

42. IN WHAT CAREER FIELDS SHOULD MILITARY WOMEN WORK IN THE AIR FORCE?

A. WOMEN SHOULD WORK IN ALL CAREER FIELDS
B. WOMEN SHOULD WORK IN ALL FIELDS EXCEPT THOSE INVOLVING COMBAT
C. WOMEN SHOULD WORK ONLY IN FIELDS IN WHICH PHYSICALLY CAPABLE
D. WOMEN SHOULD WORK ONLY IN FIELDS TRADITIONALLY OCCUPIED BY WOMEN
E. WOMEN SHOULD NOT BE MEMBERS OF THE AIR FORCE

43. WOULD YOU RATHER WORK FOR A MAN OR A WOMAN SUPERVISOR?

A. STRONGLY PREFER A MAN SUPERVISOR
B. PREFER A MAN SUPERVISOR

C. HAVE NO PREFERENCE
D. PREFER A WOMAN SUPERVISOR
E. STRONGLY PREFER A WOMAN SUPERVISOR

44. THERE ARE MORE FAVORABLE FEATURES ABOUT THE AIR FORCE AS A PLACE TO WORK THAN UNFAVORABLE ONES.

A. YES
B. UNDECIDED
C. NO

45. TO WHAT EXTENT IS DEALING WITH PEOPLE A PART OF YOUR JOB?

A. VERY LITTLE
B. LITTLE
C. SOME MODERATE AMOUNT
D. MUCH
E. VERY MUCH

46. AIR FORCE TRAINING PROGRAMS DO NOT DO A VERY GOOD JOB OF PREPARING PEOPLE TO GET ALONG WITH OTHER PEOPLE.

A. STRONGLY DISAGREE
B. DISAGREE
C. UNDECIDED
D. AGREE
E. STRONGLY AGREE

47. MOST SENIOR NCO'S (MASTER, SENIOR, AND CHIEF MASTER SERGEANTS) ARE **PRIMARILY** SUPERVISORS RATHER THAN TECHNICIANS.

A. NOT APPLICABLE, I DON'T KNOW ANY SENIOR NCO'S
B. STRONGLY DISAGREE
C. DISAGREE
D. UNDECIDED
E. AGREE
F. STRONGLY AGREE

48. HOW OFTEN ARE YOU GIVEN FEEDBACK FROM YOUR SUPERVISOR ABOUT YOUR JOB PERFORMANCE?

A. NEVER
B. SELDOM
C. SOMETIMES
D. FREQUENTLY
E. VERY FREQUENTLY

49. HOW OFTEN DO YOU AND YOUR SUPERVISOR GET TOGETHER TO SET YOUR PERSONAL PERFORMANCE OBJECTIVES?

A. NEVER
B. SELDOM
C. SOMETIMES

D. FREQUENTLY
E. VERY FREQUENTLY

50. TECHNICAL SCHOOL TRAINING DOES NOT DO AN ADEQUATE JOB OF PREPARING AN AIRMAN FOR HIS FIRST DUTY ASSIGNMENT.

A. STRONGLY DISAGREE
B. DISAGREE
C. UNDECIDED
D. AGREE
E. STRONGLY AGREE
F. DON'T KNOW (CIVILIAN SURVEY)

51. HOW DOES THE QUALITY OF AIRMEN ENTERING THE AIR FORCE TODAY COMPARE WITH THE QUALITY OF THOSE WHO ENTERED IN PREVIOUS YEARS?

A. DECREASED
B. REMAINED ABOUT THE SAME
C. INCREASED
D. DON'T KNOW

52. I HAVE A LOT OF RESPECT FOR MOST OF THE SENIOR NCO'S (MASTER, SENIOR, AND CHIEF MASTER SERGEANTS) I KNOW.

A. NOT APPLICABLE, I DON'T KNOW ANY SENIOR NCO'S
B. STRONGLY DISAGREE
C. DISAGREE
D. UNDECIDED
E. AGREE
F. STRONGLY AGREE

53. MOST OF THE NCO'S UNDERSTAND AND ARE ABLE TO COMMUNICATE WITH THE PEOPLE WHO WORK WITH THEM.

A. NOT APPLICABLE, I DON'T KNOW ANY SENIOR NCO'S
B. STRONGLY DISAGREE
C. DISAGREE
D. UNDECIDED
E. AGREE
F. STRONGLY AGREE

54. NCO PRESTIGE HAS DECLINED OVER THE PAST SEVERAL YEARS.

A. NOT APPLICABLE
B. STRONGLY DISAGREE
C. DISAGREE
D. UNDECIDED
E. AGREE
F. STRONGLY AGREE

55. SENIOR NCO'S (MASTER, SENIOR, CHIEF MASTER SERGEANTS) ARE USUALLY GIVEN JOBS WITH LESS RESPONSIBILITY THAN THEY SHOULD HAVE.

A. NOT APPLICABLE, I HAVEN'T KNOWN ENOUGH NCO'S TO REALLY SAY
B. STRONGLY DISAGREE
C. DISAGREE
D. UNDECIDED
E. AGREE
F. STRONGLY AGREE

56. COMBINED JOB SATISFACTION SCORE

ECONOMIC STANDARD: Satisfaction of basic human needs such as food, shelter, clothing; the ability to maintain an acceptable standard of living. (57 and 66)

ECONOMIC SECURITY: Guaranteed employment; retirement benefits; insurance; protection for self and family. (58 and 67)

FREE TIME: Amount, use, and scheduling of free time alone, or in voluntary associations with others; variety of activities engaged in. (59 and 68)

WORK. Doing work that is personally meaningful and important; pride in your work, job satisfaction; recognition for my efforts and my accomplishments on the job. (60 and 69)

LEADERSHIP/SUPERVISION: Has my interests and that of the Air Force at heart; keeps me informed; approachable and helpful rather than critical; good knowledge of the job. (61 and 70)

EQUITY: Equal opportunity in the Air Force; a fair chance at promotion; an even break in my job/assignment selections. (62 and 71)

PERSONAL GROWTH: To be able to develop individual capacities; education/training; making full use of my abilities; the chance to further my potential. (63 and 72)

PERSONAL STANDING: To be treated with respect; prestige; dignity; reputation; status. (64 and 73)

HEALTH: Physical and mental well-being of self and dependents; having illnesses and ailments detected, diagnosed, treated and cured; quantity and quality of health care and services provided. (65 and 74)

57 thru 65. WHAT DEGREE OF IMPORTANCE DO YOU ATTACH TO THE ABOVE?

A.....B.....C.....D.....E.....F.....G

LOW IMPORTANCE	MEDIUM IMPORTANCE	HIGH IMPORTANCE

66 thru 74. TO WHAT DEGREE ARE YOU SATISFIED WITH_____ ASPECTS OF YOUR CURRENT LIFE?

A.....B.....C.....D.....E.....F.....G

HIGHLY DISSATISFIED	NEUTRAL	HIGHLY SATISFIED

APPENDIX B

T-Test Results For

Selected Variables

This appendix contains the results of t-tests of differences in mean responses for selected variables. The following hypotheses were tested:

$$H_o: \ u_{1i} = u_{2i}$$

$$Ha: \ u_{1i} \neq u_{2i}$$

where u_{1i} = mean response of Population 1 to Variable i

u_{2i} = mean response of Population 2 to Variable i

The populations in this appendix are as follows:

1. Mil/Civ: Population 1 was military personnel; Population 2 contained civilians.

2. Mil/Mil: Population 1 was military personnel with military supervisors; Population 2 contained military members with civilian bosses.

3. Civ/Civ: Civilians with military leaders were in Population 1, while those civilians with civilian supervisors comprised Population 2.

4. Like/Unlike: Population 1 contained military members with military supervisors and civilians with civilian supervisors; Population 2 consisted of military personnel with civilian supervisors and civilians with military supervisors.

5. Mil/Civ(Career): Career military personnel comprised Population 1; Population 2 contained career civilian personnel.

The numbers following the questions are the levels of significance at which the t-test may be rejected. For example, the first selected variable was 5; for the populations Mil/Mil and subsample 1, the significance level was .457. **If .457 is greater than the desired α, the null hypothesis should not be rejected; if .457 is less than the desired α, the null hypothesis should be rejected.**

5. How much active Federal Civilian service (Military service) have you completed?

	Mil/Civ	Mil/Mil	Civ/Civ	Like/Unlike	Mil/Civ (Career)
Subsample 1	.000	.457	.432	.029	.013
Subsample 2	.000	.800	.090	.001	.007

6. What is your highest level of education now (include accepted GED credits)?

	Mil/Civ	Mil/Mil	Civ/Civ	Like/Unlike	Mil/Civ (Career)
Subsample 1	.000	.986	.071	.412	.000
Subsample 2	.000	.780	.437	.375	.000

15. During the past year how many of these nine holidays were you required to be at work in a duty status?

	Mil/Civ	Mil/Mil	Civ/Civ	Like/Unlike	Mil/Civ (Career)
Subsample 1	.000	.094	.713	.001	.000
Subsample 2	.000	.629	.221	.000	.000

16. Do you hold a second job?

	Mil/Civ	Mil/Mil	Civ/Civ	Like/Unlike	Mil/Civ (Career)
Subsample 1	.007	.947	.962	.330	.031
Subsample 2	.216	.032	.046	.023	.922

17. Even though the dollar does not go as far as it used to, I am having no problems in making ends meet.

	Mil/Civ	Mil/Mil	Civ/Civ	Like/Unlike	Mil/Civ (Career)
Subsample 1	.015	.125	.403	.680	.010
Subsample 2	.511	.224	.778	.397	.472

18. The main reason that I have a second job, and/or that my spouse works is that we have to in order to make ends meet.

	Mil/Civ	Mil/Mil	Civ/Civ	Like/Unlike	Mil/Civ (Career)
Subsample 1	.004	.902	.547	.782	.073
Subsample 2	.001	.211	.921	.192	.015

19. How was your financial situation affected by your last PCS move?

	Mil/Civ	Mil/Mil	Civ/Civ	Like/Unlike	Mil/Civ (Career)
Subsample 1	.000	.876	.058	.845	.000
Subsample 2	.000	.497	.017	.403	.000

21. Do you think your present job is preparing you to assume future positions of greater responsibility?

	Mil/Civ	Mil/Mil	Civ/Civ	Like/Unlike	Mil/Civ (Career)
Subsample 1	.005	.655	.377	.153	.005
Subsample 2	.000	.443	.136	.041	.000

22. Do you want a job which has greater responsibility than your current job?

	Mil/Civ	Mil/Mil	Civ/Civ	Like/Unlike	Mil/Civ (Career)
Subsample 1	.000	.373	.781	.427	.049
Subsample 2	.000	.625	.211	.041	.059

23. Which one of the following shows how much of the time you feel satisfied with your job?

	Mil/Civ	Mil/Mil	Civ/Civ	Like/Unlike	Mil/Civ (Career)
Subsample 1	.000	.373	.781	.427	.049
Subsample 2	.000	.623	.211	.041	.059

24. Choose the one of the following statements which best tells how well you like your job.

	Mil/Civ	Mil/Mil	Civ/Civ	Like/Unlike	Mil/Civ (Career)
Subsample 1	.016	.354	.333	.167	.155
Subsample 2	.029	.788	.012	.010	.609

25. Which one of the following best tells how you feel about changing your job?

	Mil/Civ	Mil/Mil	Civ/Civ	Like/Unlike	Mil/Civ (Career)
Subsample 1	.686	.104	.233	.314	.930
Subsample 2	.739	.404	.148	.083	.890

26. Which one of the following shows how you think you compare with other people?

	Mil/Civ	Mil/Mil	Civ/Civ	Like/Unlike	Mil/Civ (Career)
Subsample 1	.002	.787	.426	.142	.322
Subsample 2	.045	.092	.006	.034	.812

28. Which one of the following best describes your feelings towards long term employment with the AF?

	Mil/Civ	Mil/Mil	Civ/Civ	Like/Unlike	Mil/Civ (Career)
Subsample 1	.000	.501	.002	.300	.122
Subsample 2	.000	1.0	.040	.002	.517

29. The AF requires me to participate in too many activities that are not related to my job.

	Mil/Civ	Mil/Mil	Civ/Civ	Like/Unlike	Mil/Civ (Career)
Subsample 1	.000	.262	.815	.000	.000
Subsample 2	.000	.843	.537	.006	.000

30. What is your opinion of the quality of military leadership in the AF?

	Mil/Civ	Mil/Mil	Civ/Civ	Like/Unlike	Mil/Civ (Career)
Subsample 1	.002	.722	.732	.309	.641
Subsample 2	.010	.299	.852	.740	.829

31. What kind of influence does your immediate supervisor have on your organization?

	Mil/Civ	Mil/Mil	Civ/Civ	Like/Unlike	Mil/Civ (Career)
Subsample 1	.156	.073	.167	.527	.819
Subsample 2	.531	.026	.302	.931	.714

32. Are you given the freedom you need to do your job well?

	Mil/Civ	Mil/Mil	Civ/Civ	Like/Unlike	Mil/Civ (Career)
Subsample 1	.008	.238	.537	.308	.024
Subsample 2	.001	.581	.684	.604	.009

33. Does your immediate supervisor give you recognition for a job well done?

	Mil/Civ	Mil/Mil	Civ/Civ	Like/Unlike	Mil/Civ (Career)
Subsample 1	.000	.988	.075	.928	.000
Subsample 2	.004	.182	.679	.385	.001

34. Do you feel that the work you are now doing is appropriate to the grade you hold?

	Mil/Civ	Mil/Mil	Civ/Civ	Like/Unlike	Mil/Civ (Career)
Subsample 1	.000	.619	.017	.908	.000
Subsample 2	.000	.357	.414	.288	.000

35. Would you rather work for (I.E., be rated by) a military or civilian supervisor?

	Mil/Civ	Mil/Mil	Civ/Civ	Like/Unlike	Mil/Civ (Career)
Subsample 1	.000	.032	.003	.907	.000
Subsample 2	.000	.796	.000	.316	.000

36. Race relations training courses are effective in getting people to treat each other better.

	Mil/Civ	Mil/Mil	Civ/Civ	Like/Unlike	Mil/Civ (Career)
Subsample 1	.157	.290	.983	.360	.089
Subsample 2	.277	.339	.179	.683	.668

37. Are civilian personnel accepted and treated as members of the AF community?

	Mil/Civ	Mil/Mil	Civ/Civ	Like/Unlike	Mil/Civ (Career)
Subsample 1	.006	.600	.788	.327	.128
Subsample 2	.046	.034	.186	.014	.255

38. Would you rather supervise military or civilian personnel?

	Mil/Civ	Mil/Mil	Civ/Civ	Like/Unlike	Mil/Civ (Career)
Subsample 1	.000	.897	.031	.037	.000
Subsample 2	.000	.670	.078	.001	.000

39. Would you rather work with military or civilian co-workers?

	Mil/Civ	Mil/Mil	Civ/Civ	Like/Unlike	Mil/Civ (Career)
Subsample 1	.000	.105	.033	.038	.000
Subsample 2	.000	.971	.005	.185	.000

40. An individual can get more of an even break in private sector employment than in AF employment.

	Mil/Civ	Mil/Mil	Civ/Civ	Like/Unlike	Mil/Civ (Career)
Subsample 1	.006	.981	.732	.365	.898
Subsample 2	.260	.477	.559	.702	.065

42. In what career fields should military women work in the AF?

	Mil/Civ	Mil/Mil	Civ/Civ	Like/Unlike	Mil/Civ (Career)
Subsample 1	.194	.315	.331	.408	.223
Subsample 2	.140	.996	.974	.620	.026

43. Would you rather work for a man or a woman supervisor?

	Mil/Civ	Mil/Mil	Civ/Civ	Like/Unlike	Mil/Civ (Career)
Subsample 1	.046	.011	.7[illegible]	.795	.836
Subsample 2	.003	.327	.991	.758	.016

44. There are more favorable features about the AF as a place to work than unfavorable ones.

	Mil/Civ	Mil/Mil	Civ/Civ	Like/Unlike	Mil/Civ (Career)
Subsample 1	.000	.914	.339	.582	.231
Subsample 2	.000	.652	.749	.116	.134

45. To what extent is dealing with people a part of your job?

	Mil/Civ	Mil/Mil	Civ/Civ	Like/Unlike	Mil/Civ (Career)
Subsample 1	.365	.893	.426	.476	.014
Subsample 2	.027	.052	.118	.983	.000

46. AF training programs do not do a very good job of preparing people to get along with other people.

	Mil/Civ	Mil/Mil	Civ/Civ	Like/Unlike	Mil/Civ (Career)
Subsample 1	.240	.540	.011	.062	.965
Subsample 2	.187	.697	.258	.583	.660

47. Most senior NCO's (Master, Senior, and Chief Master Sergeants) are primarily supervisors rather than technicians.

	Mil/Civ	Mil/Mil	Civ/Civ	Like/Unlike	Mil/Civ (Career)
Subsample 1	.000	.240	.003	N.A.	.000
Subsample 2	.000	.192	.002	N.A.	.000

48. How often are you given feedback from your supervisor about your performance?

	Mil/Civ	Mil/Mil	Civ/Civ	Like/Unlike	Mil/Civ (Career)
Subsample 1	.000	.844	.713	.219	.000
Subsample 2	.069	.723	.443	.218	.145

49. How often do you and your supervisor get together to set your personal performance objectives?

	Mil/Civ	Mil/Mil	Civ/Civ	Like/Unlike	Mil/Civ (Career)
Subsample 1	.885	.116	.130	.048	.976
Subsample 2	.821	.709	.529	.829	.516

51. How does the quality of airmen entering the AF today compare with the quality of those who entered in previous years?

	Mil/Civ	Mil/Mil	Civ/Civ	Like/Unlike	Mil/Civ (Career)
Subsample 1	.573	.033	.946	.204	.015
Subsample 2	.184	.177	.008	.140	.005

52. I have a lot of respect for most of the senior NCO's (Master, Senior, and Chief Master Sergeants) I know.

	Mil/Civ	Mil/Mil	Civ/Civ	Like/Unlike	Mil/Civ (Career)
Subsample 1	.000	.214	.001	N.A.	.000
Subsample 2	.000	.558	.056	N.A.	.000

53. Most of the NCO's understand and are able to communicate with the people who work with them.

	Mil/Civ	Mil/Mil	Civ/Civ	Like/Unlike	Mil/Civ (Career)
Subsample 1	.000	.058	.001	N.A.	.000
Subsample 2	.000	.866	.001	N.A.	.000

54. NCO prestige has declined over the past several years.

	Mil/Civ	Mil/Mil	Civ/Civ	Like/Unlike	Mil/Civ (Career)
Subsample 1	.000	.052	.019	N.A.	.000
Subsample 2	.000	.430	.006	N.A.	.000

55. Senior NCO's (Master, Senior, Chief Master Sergeants) are usually given jobs with less responsibility than they should have.

	Mil/Civ	Mil/Mil	Civ/Civ	Like/Unlike	Mil/Civ (Career)
Subsample 1	.000	.531	.009	N.A.	.000
Subsample 2	.000	.438	.000	N.A.	.000

56. Combined JOB SATISFACTION SCORE

	Mil/Civ	Mil/Mil	Civ/Civ	Like/Unlike	Mil/Civ (Career)
Subsample 1	.117	.121	.718	.828	.297
Subsample 2	.018	.852	.256	.099	.426

ECONOMIC STANDARD: Satisfaction of basic human needs such as food, shelter, clothing; the ability to maintain an acceptable standard of living.

57. What degree of importance do you attach to the above?

	Mil/Civ	Mil/Mil	Civ/Civ	Like/Unlike	Mil/Civ (Career)
Subsample 1	.000	.558	.209	.049	.003
Subsample 2	.129	.840	.714	.577	.052

66. To what degree are you satisfied with the ECONOMIC STANDARD aspects of your current life?

	Mil/Civ	Mil/Mil	Civ/Civ	Like/Unlike	Mil/Civ (Career)
Subsample 1	.059	.223	.022	.311	.011
Subsample 2	.832	.352	.334	.616	.273

ECONOMIC SECURITY: Guaranteed employment; retirement benefits; insurance; protection for self and family.

58. What degree of importance do you attach to the above?

	Mil/Civ	Mil/Mil	Civ/Civ	Like/Unlike	Mil/Civ (Career)
Subsample 1	.051	.583	.095	.080	.055
Subsample 2	.315	.955	.506	.909	.342

67. To what degree are you satisfied with the ECONOMIC SECURITY aspects of your current life?

	Mil/Civ	Mil/Mil	Civ/Civ	Like/Unlike	Mil/Civ (Career)
Subsample 1	.395	.524	.743	.534	.222
Subsample 2	.378	.577	.837	.977	.926

FREE TIME: Amount, use, and scheduling of free time alone, or in voluntary associations with others; variety of activities engaged in.

59. What degree of importance do you attach to the above?

	Mil/Civ	Mil/Mil	Civ/Civ	Like/Unlike	Mil/Civ (Career)
Subsample 1	.000	.292	.863	.120	.000
Subsample 2	.000	.077	.446	.080	.000

68. To what degree are you satisfied with the FREE TIME aspects of your current life?

	Mil/Civ	Mil/Mil	Civ/Civ	Like/Unlike	Mil/Civ (Career)
Subsample 1	.002	.760	.173	.795	.011
Subsample 2	.000	.978	.891	.190	.001

WORK: Doing work that is personally meaningful and important; pride in your work, job satisfaction; recognition for my efforts and my accomplishments on the job.

60. What degree of importance do you attach to the above?

	Mil/Civ	Mil/Mil	Civ/Civ	Like/Unlike	Mil/Civ (Career)
Subsample 1	.017	.629	.051	.052	.001
Subsample 2	.052	.137	.749	.209	.034

69. To what degree are you satisfied with the WORK aspects of your current life?

	Mil/Civ	Mil/Mil	Civ/Civ	Like/Unlike	Mil/Civ (Career)
Subsample 1	.631	.275	.628	.692	.987
Subsample 2	.005	.501	.617	.314	.267

LEADERSHIP/SUPERVISION: Has my interests and that of the Air Force at heart; keeps me informed; approachable and helpful rather than critical; good knowledge of the job.

61. What degree of importance do you attach to the above?

	Mil/Civ	Mil/Mil	Civ/Civ	Like/Unlike	Mil/Civ (Career)
Subsample 1	.001	.611	.947	.623	.000
Subsample 2	.000	.021	.996	.078	.000

70. To what degree are you satisfied with the LEADERSHIP/SUPERVISION aspects of your current life?

	Mil/Civ	Mil/Mil	Civ/Civ	Like/Unlike	Mil/Civ (Career)
Subsample 1	.752	.794	.947	.587	.927
Subsample 2	.210	.292	.194	.259	.763

EQUITY: Equal opportunity in the Air Force; a fair chance at promotion; an even break in my job/assignment selections.

62. What degree of importance do you attach to the above?

	Mil/Civ	Mil/Mil	Civ/Civ	Like/Unlike	Mil/Civ (Career)
Subsample 1	.000	.551	.752	.355	.000
Subsample 2	.000	.260	.710	.331	.000

71. To what degree are you satisfied with the EQUITY aspects of your current life?

	Mil/Civ	Mil/Mil	Civ/Civ	Like/Unlike	Mil/Civ (Career)
Subsample 1	.066	.677	.513	.338	.015
Subsample 2	.626	.816	.708	.709	.047

PERSONAL GROWTH: To be able to develop individual capacities; education/training; making full use of my abilities; the chance to further my potential.

63. What degree of importance do you attach to the above?

	Mil/Civ	Mil/Mil	Civ/Civ	Like/Unlike	Mil/Civ (Career)
Subsample 1	.000	.751	.312	.112	.000
Subsample 2	.000	.910	.568	.123	.000

72. To what degree are you satisfied with the PERSONAL GROWTH aspects of your current life?

	Mil/Civ	Mil/Mil	Civ/Civ	Like/Unlike	Mil/Civ (Career)
Subsample 1	.096	.645	.194	.309	.002
Subsample 2	.949	.465	.453	.666	.062

PERSONAL STANDING: To be treated with respect; prestige; dignity; reputation; status.

64. What degree of importance do you attach to the above?

	Mil/Civ	Mil/Mil	Civ/Civ	Like/Unlike	Mil/Civ (Career)
Subsample 1	.024	.579	.260	.225	.147
Subsample 2	.035	.987	.812	.805	.011

73. To what degree are you satisfied with the PERSONAL STANDING aspects of your current life?

	Mil/Civ	Mil/Mil	Civ/Civ	Like/Unlike	Mil/Civ (Career)
Subsample 1	.188	.457	.186	.938	.918
Subsample 2	.028	.918	.640	.276	.908

HEALTH: Physical and mental well-being of self and dependents; having illnesses and ailments detected, diagnosed, treated and cured; quantity and quality of health care and services provided.

65. What degree of importance do you attach to the above?

	Mil/Civ	Mil/Mil	Civ/Civ	Like/Unlike	Mil/Civ (Career)
Subsample 1	.011	.711	.202	.202	.017
Subsample 2	.002	.802	.399	.983	.001

74. To what degree are you satisfied with the HEALTH aspects of your current life?

	Mil/Civ	Mil/Mil	Civ/Civ	Like/Unlike	Mil/Civ (Career)
Subsample 1	.000	.324	.038	.644	.000
Subsample 2	.000	.069	.659	.316	.000

APPENDIX C

Confusion Matrices For Selected Individual Variables

This appendix contains the confusion matrices of selected individual variables, i.e., when the variable was the only variable in the discriminant function. The following format will be used:

		Predicted: Military	Predicted: Civilian	
Actual	Military	A	B	
	Civilian	C	D	Q

where A=% of military individuals correctly classified

B=% of military individuals incorrectly classified

C=% of civilians correctly classified

D=% of civilians incorrectly classified

Q=overall percentage correctly classified

To determine if the discriminant function was effective, the test presented in Chapter III was used, and is presented again below.

H_o: $Q^* = P$

H_a: $Q^* > P$

Test Statistic: $t = \frac{Q - P}{S_p}$

Rejection Region: $t > t_\alpha$

where Q^* = true overall fraction correctly classified

$Q = \frac{n_1 + n_2}{N}$, estimate of Q^*

n_1 = number of military individuals correctly classified

n_2 = number of civilians correctly classified

N = total number of military and civilian personnel = 793

$P = n/N = 427/793 = .538$

n = total number of civilians = 427

$S_p = \frac{P(1-P)}{N}$

α = level of significance = .05

It can be shown that Q must be greater than .567 (56.7%) to be significant.

10. What is your sex?

		Predicted: Military	Predicted: Civilian	
Actual	Military	96.2%	3.8%	Q = 60.5% Significant
	Civilian	70.0%	30.0%	

6. What is your highest level of education now (include accepted GED Credits)?

		Predicted: Military	Predicted: Civilian	
Actual	Military	43.2%	56.8%	Q = 55.6% Insignificant
	Civilian	33.7%	66.3%	

15. During the past year how many of these nine holidays were you required to be at work in a duty status?

		Predicted: Military	Predicted: Civilian	
Actual	Military	48.9%	51.1%	Q = 70.5% Significant
	Civilian	11.0%	89.0%	

16. Do you hold a second job?

		Predicted: Military	Predicted: Civilian	
Actual	Military	13.4%	86.6%	Q = 54.4%
	Civilian	10.5%	89.5%	Insignificant

17. Even though the dollar does not go as far as it used to, I am having no problems in making ends meet.

		Predicted: Military	Predicted: Civilian	
Actual	Military	54.9%	45.1%	Q = 53.8%
	Civilian	47.1%	52.9%	Insignificant

18. The main reason that I have a second job, and/or that my spouse works is that we have to in order to make ends meet.

		Predicted: Military	Predicted: Civilian	
Actual	Military	70.5%	29.5%	Q = 53.0%
	Civilian	62.1%	37.9%	Insignificant

19. How was your financial situation affected by your last PCS move?

		Predicted: Military	Predicted: Civilian	
Actual	Military	49.7%	50.3%	Q = 66.1%
	Civilian	19.9%	80.1%	Significant

21. Do you think your present job is preparing you to assume future positions of greater responsibility?

		Predicted: Military	Predicted: Civilian
Actual	Military	55.5%	44.5%
	Civilian	49.2%	50.8%

Q = 53.0%
Insignificant

22. Do you want a job which has greater responsibility than your current job?

		Predicted: Military	Predicted: Civilian
Actual	Military	53.0%	47.0%
	Civilian	50.6%	49.4%

Q = 51.1%
Insignificant

23. Which one of the following shows how much of the time you feel satisfied with your job?

		Predicted: Military	Predicted: Civilian
Actual	Military	46.2%	53.8%
	Civilian	38.2%	61.8%

Q = 54.6%
Insignificant

24. Choose the one of the following statements which best tells how well you like your job.

		Predicted: Military	Predicted: Civilian
Actual	Military	35.2%	64.8%
	Civilian	25.5%	74.5%

Q = 56.4%
Insignificant

25. Which one of the following best tells how you feel about changing your job?

		Predicted: Military	Predicted: Civilian	
Actual	Military	39.3%	60.7%	Q = 56.1%
	Civilian	29.5%	70.5%	Insignificant

26. Which one of the following shows how you think you compare with other people?

		Predicted: Military	Predicted: Civilian	
Actual	Military	52.7%	47.3%	Q = 51.7%
	Civilian	49.2%	50.8%	Insignificant

28. Which one of the following best describes your feelings towards long term employment with the Air Force?

		Predicted: Military	Predicted: Civilian	
Actual	Military	42.9%	57.1%	Q = 54.5%
	Civilian	35.6%	64.4%	Insignificant

29. The Air Force requires me to participate in too many activities that are not related to my job.

		Predicted: Military	Predicted: Civilian	
Actual	Military	59.6%	40.4%	Q = 69.9%
	Civilian	21.3%	78.7%	Significant

30. What is your opinion of the quality of military leadership in the Air Force?

		Predicted: Military	Predicted: Civilian
Actual	Military	65.3%	34.7%
	Civilian	64.6%	35.4%

Q = 49.2%
Insignificant

31. What kind of influence does your immediate supervisor have on your organization?

		Predicted: Military	Predicted: Civilian
Actual	Military	42.9%	57.1%
	Civilian	40.5%	59.5%

Q = 51.8%
Insignificant

32. Are you given the freedom you need to do your job well?

		Predicted: Military	Predicted: Civilian
Actual	Military	40.4%	59.6%
	Civilian	34.2%	65.8%

Q = 54.1%
Insignificant

33. Does your immediate supervisor give you recognition for a job well done?

		Predicted: Military	Predicted: Civilian
Actual	Military	44.5%	55.5%
	Civilian	29.0%	71.0%

Q = 58.8%
Significant

34. Do you feel that the work you are now doing is appropriate to the grade you hold?

		Predicted: Military	Predicted: Civilian
Actual	Military	67.5%	32.5%
	Civilian	45.0%	55.0%

Q = 60.8%
Significant

35. Would you rather work for (I.E., be rated by) a military or civilian supervisor?

		Predicted: Military	Predicted: Civilian
Actual	Military	64.5%	35.5%
	Civilian	15.2%	84.8%

Q = 75.4%
Significant

36. Race relation training courses are effective in getting people to treat each other better.

		Predicted: Military	Predicted: Civilian
Actual	Military	57.9%	42.1%
	Civilian	47.1%	52.9%

Q = 55.2%
Insignificant

37. Are civilian personnel accepted and treated as members of the Air Force community?

		Predicted: Military	Predicted: Civilian
Actual	Military	50.3%	49.7%
	Civilian	44.5%	55.5%

Q = 53.1%
Insignificant

38. Would you rather supervise military or civilian personnel?

		Predicted: Military	Predicted: Civilian	
Actual	Military	49.2%	50.8%	Q = 73.8%
	Civilian	5.2%	94.8%	Significant

39. Would you rather work with military or civilian co-workers?

		Predicted: Military	Predicted: Civilian	
Actual	Military	39.6%	60.4%	Q = 69.5%
	Civilian	4.9%	95.1%	Significant

40. An individual can get more of an even break in private sector employment than in Air Force employment.

		Predicted: Military	Predicted: Civilian	
Actual	Military	53.8%	46.2%	Q = 54.1%
	Civilian	45.7%	54.3%	Insignificant

42. In what career fields should military women work in the Air Force?

		Predicted: Millitary	Predicted: Civilian	
Actual	Military	42.6%	57.4%	Q = 55.5%
	Civilian	33.5%	66.5%	Insignificant

43. Would you rather work for a man or woman supervisor?

		Predicted: Military	Predicted: Civilian
Actual	Military	46.2%	53.8%
	Civilian	37.5%	62.5%

Q = 55.0%
Insignificant

44. There are more favorable features about the Air Force as a place to work than unfavorable ones.

		Predicted: Military	Predicted: Civilian
Actual	Military	37.2%	62.8%
	Civilian	24.6%	75.4%

Q = 57.8%
Significant

45. To what extent is dealing with people a part of your job?

		Predicted: Military	Predicted: Civilian
Actual	Military	52.7%	47.3%
	Civilian	48.7%	51.3%

Q = 52.0%
Insignificant

46. Air Force training programs do not do a very good job of preparing people to get along with other people.

		Predicted: Military	Predicted: Civilian
Actual	Military	59.3%	40.7%
	Civilian	59.0%	41.0%

Q = 49.4%
Insignificant

47. Most Senior NCO's (Master, Senior, and Chief Master Sergeants) are primiarily supervisors rather than technicians.

		Predicted: Military	Predicted: Civilian	
Actual	Military	76.0%	24.0%	Q = 65.3%
	Civilians	43.8%	56.2%	Significant

48. How often are you given feedback from your supervisor about your job performance?

		Predicted: Military	Predicted: Civilian	
Actual	Military	63.1%	36.9%	Q = 55.4%
	Civilian	51.3%	48.7%	Insignificant

49. How often do you and your supervisor get together to set your personal performance objectives?

		Predicted: Military	Predicted: Civilian	
Actual	Military	40.7%	59.3%	Q = 50.7%
	Civilian	40.7%	59.3%	Insignificant

51. How does the quality of airmen entering the Air Force today compare with the quality of those who entered in previous years?

		Predicted: Military	Predicted: Civilian	
Actual	Military	51.1%	48.9%	Q = 51.6%
	Civilian	48.0%	52.0%	Insignificant

52. I have a lot of respect for most of the Senior NCO's (Master, Senior, and Chief Master Sergeants) I know.

		Predicted: Military	Predicted: Civilian	
Actual	Military	73.5%	26.5%	Q = 57.6%
	Civilian	56.0%	44.0%	Significant

53. Most of the NCO's understand and are able to communicate with the people who work with them.

		Predicted: Military	Predicted: Civilian	
Actual	Military	66.9%	36.1%	Q = 53.7%
	Civilian	55.0%	45.0%	Insignificant

54. NCO prestige has declined over the past several years.

		Predicted: Military	Predicted: Civilian	
Actual	Military	67.5%	32.5%	Q = 66.3%
	Civilian	34.7%	65.3%	Significant

55. Senior NCO's (Master, Senior, Chief Master Sergeants) are usually given jobs with ss responsibility than they should have.

		Predicted: Military	Predicted: Civilian	
Actual	Military	59.8%	40.2%	Q = 62.4%
	Civilian	35.4%	64.6%	Significant

56. COMBINED JOB SATISFACTION SCORE

		Predicted: Military	Predicted: Civilian
Actual: Military		45.4%	54.6%
Actual: Civilian		40.0%	60.0%

Q = 53.2%
Insignificant

ECONOMIC STANDARD: Satisfaction of basic human needs such as food, shelter, clothing; the ability to maintain an acceptable standard of living.

57. What degree of importance do you attach to the above?

		Predicted: Military	Predicted: Civilian
Actual: Military		64.2%	35.8%
Actual: Civilian		64.9%	35.1%

Q = 48.5%
Insignificant

66. To what degree are you satisfied with the ECONOMIC STANDARD aspects of your current life?

		Predicted: Military	Predicted: Civilian
Actual: Military		37.9%	42.1%
Actual: Civilian		48.7%	51.3%

Q = 54.4%
Insignificant

ECONOMIC SECURITY: Guaranteed employment; retirement benefits; insurance; protection for self and family.

58. What degree of importance do you attach to the above?

		Predicted: Military	Predicted: Civilian	
Actual: Military		36.9%	63.1%	Q = 53.0%
Actual: Civilian		33.3%	66.7%	Insignificant

67. To what degree are you satisfied with the ECONOMIC SECURITY aspects of your current life?

		Predicted: Military	Predicted: Civilian	
Actual: Military		42.9%	57.1%	Q = 53.5%
Actual: Civilian		37.5%	62.5%	Insignificant

FREE TIME: Amount, use, and scheduling of free time alone, or in voluntary associations with others; variety of activities engaged in.

59. What degree of importance do you attach to the above?

		Predicted: Military	Predicted: Civilian	
Actual: Military		65.6%	35.4%	Q = 61.0%
Actual: Civilian		42.9%	57.1%	Significant

68. To what degree are you satisfied with the FREE TIME aspects of your current life?

		Predicted: Military	Predicted: Civilian	
Actual: Military		48.9%	51.1%	Q = 53.8%
Actual: Civilian		41.9%	58.1%	Insignificant

WORK: Doing work that is personally meaningful and important; pride in your work, job satisfaction; recognition for my efforts and my accomplishments on the job.

60. What degree of importance do you attach to the above?

		Predicted: Military	Predicted: Civilian
Actual: Military		72.4%	27.6%
Actual: Civilian		66.0%	34.0%

Q = 51.7%
Insignificant

69. To what degree are you satisfied with the WORK aspects of your current life?

		Predicted: Military	Predicted: Civilian
Actual: Military		42.9%	57.1%
Actual: Civilian		41.5%	58.5%

Q = 51.3%
Insignificant

LEADERSHIP/SUPERVISION: Has my interests and that of the Air Force at heart; keeps me informed; approachable and helpful rather than critical; good knowledge of the job.

61. What degree of importance do you attach to the above?

		Predicted: Military	Predicted: Civilian
Actual: Military		72.7%	27.3%
Actual: Civilian		60.9%	39.1%

Q = 54.6%
Insignificant

70. To what degree are you satisfied with the LEADERSHIP/SUPERVISION aspects of your current life?

		Predicted: Military	Predicted: Civilian
Actual: Military		53.0%	47.0%
Actual: Civilian		52.9%	47.1%

Q = 49.8%
Insignificant

EQUITY: Equal opportunity in the Air Force; a fair chance at promotion; an even break in my job/assignment selections.

62. What degree of importance do you attach to the above?

		Predicted: Military	Predicted: Civilian
Actual: Military		71.9%	28.1%
Actual: Civilian		60.0%	40.0%

Q = 54.7%
Insignificant

71. To what degree are you satisfied with the EQUITY aspects of your current life?

		Predicted: Military	Predicted: Civilian
Actual: Military		54.4%	45.6%
Actual: Civilian		46.8%	53.2%

Q = 53.7%
Insignificant

PERSONAL GROWTH: To be able to develop individual capacities; education/training; making full use of my abilities; the chance to further my potential.

63. What degree of importance do you attach to the above?

		Predicted: Military	Predicted: Civilian	
Actual	Military	63.1%	36.9%	Q = 53.3% Insignificant
	Civilian	55.0%	45.0%	

72. To what degree are you satisfied with the PERSONAL GROWTH aspects of your current life?

		Predicted: Military	Predicted: Civilian	
Actual	Military	57.9%	42.1%	Q = 50.8% Insignificant
	Civilian	55.3%	44.7%	

PERSONAL STANDING: To be treated with respect; prestige; dignity; reputation; status.

64. What degree of importance do you attach to the above?

		Predicted: Military	Predicted: Civilian	
Actual	Military	53.0%	47.0%	Q = 49.8% Insignificant
	Civilian	52.9%	47.1%	

73. To what degree are you satisfied with the PERSONAL STANDING aspects of your current life?

		Predicted: Military	Predicted: Civilian
Actual	Military	36.6%	63.4%
	Civilian	34.4%	65.6%

Q = 52.2%
Insignificant

HEALTH: Physical and mental well-being of self and dependents; having illnesses and ailments detected, diagnosed, treated and cured; quantity and quality of health care and services provided.

65. What degree of importance do you attach to the above?

		Predicted: Military	Predicted: Civilian
Actual	Military	79.0%	21.0%
	Civilian	74.2%	25.8%

Q = 50.3%
Insignificant

74. To what degree are you satisfied with the HEALTH aspects of your current life?

		Predicted: Military	Predicted: Civilian
Actual	Military	39.3%	60.7%
	Civilian	29.0%	71.0%

Q = 56.4%
Insignificant

VITA

Wayne R. ("Ron") Mathis was born on 15 February 1944, in Tifton, Georgia. He grew up in the small farming town of Nashville, Georgia. He attended Valdosta State College and graduated in 1966, with a Bachelor of Science in Mathematics. He joined the Air Force in September of 1966, and received his commission via Officer Training School. He then attended Undergraduate Navigator Training and Navigator-Bombardier Training at Mather AFB, Sacramento, California. From there, he returned to Georgia, where he was a navigator-bombardier in B-52's at Robins AFB. While his family remained at Robins, he went TDY five times to Thailand and Guam to participate in the war in Southeast Asia. He entered the Air Force Institute of Technology in June of 1975, in the Systems Management Department.

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

Under the direction of the Chief of Staff of the Air Force, three surveys concerning the Quality of Air Force Life were administered to active duty Air Force members, Air Force Civil Service employees, and spouses of active duty Air Force members. This study analyzed the differences in Air Force members (military) and Civil Service employees (civilian), concerning replies 1 & 3 the Quality of Life surveys. Many differences, not related to the Quality of Life, were known to exist and were discussed. The two groups often do the

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same work, even side by side, yet the two groups do not always share the same rewards and benefits. Discriminant analysis techniques were used to analyze the data. Discriminant analysis is a very powerful analytical tool that allows the analyst to distinguish between two or more populations. After the data was examined, military individuals were found to value the Health and Free Time aspects of their lives more than civilians, but they were less satisfied with them. Members of each group preferred to be supervised by, supervise, and work with members of the same group. Civilians seemed to be more satisfied with their jobs than military members. In relation to military members, civilians considered their grade too low for their work; civilians did not believe that their jobs were preparing them to assume greater responsibility in the future; civilians had more job freedom; civilians received less recognition for a job well done and less feedback about job performance; and civilians had a higher opinion of military leadership. Both groups indicated a preference for male, rather than female, supervisors.