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MENTORING AND LEADERSHIP DEVELOPMENT IN THE OFFICER CORPS OF THE UNITED STATES AIR FORCE

THESIS

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AFIT/GSM/LSY/84S-30

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THESIS

Presented to the Faculty of the School of Systems and Logistics
of the Air Force Institute of Technology
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Michael E. Uecker

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Abstract

Mentoring is a relatively long-term relationship between an older and a younger adult where the senior member of the relationship plays a major role in shaping and molding the younger member in his or her professional career. Previous research in the private sector indicated that a majority of the senior executives of major United States corporations had mentors who helped them in their careers. This research surveyed the students at Air War College and Air Command and Staff College to determine the prevalence of mentoring among high potential officers in the Air Force and to determine the effects of mentoring on them.

This investigation found that approximately half of the respondents had experienced the mentoring phenomenon and that those who had mentors were, on average, slightly better educated than their unmentored counterparts. Mentored officers were also more likely to be promoted ahead of their contemporaries, were more highly satisfied with their career progress, and were more satisfied with their jobs. Significantly, mentoring appears to be an informal leadership development tool which is prevalent to the same degree in every major command.

The most important roles played by the mentor, in the eyes of the protege, are those of role model and teacher. On the other hand, a significant percentage of the survey respondents who did not have mentors perceived mentoring as a being primarily a vehicle by which an officer receives a "free ride" to the top, sponsored and protected by the mentor.

In sum, the current informal mentoring system appears to work in the Air Force in much the same way mentoring works in the private organization. It is a way in which senior officers can train and motivate younger, high potential officers for senior leadership positions through close, one-on-one relationships.

MENTORING AS A TOOL FOR LEADERSHIP DEVELOPMENT IN THE OFFICER CORPS OF THE UNITED STATES AIR FORCE

I. Introduction

One of the major concerns facing the United States Air Force today is ensuring that the quality of its leadership can "preserve the United States as a free nation with its fundamental institutions and values intact" (6:1-1). Secrist (24:12-13) claims that recent trends in the attitudes of career officers in the services have resulted in a decline in the quality of leadership that "has been largely responsible for the potentially catastrophic trends toward military and scientific-technological inferiority." Baucom (3:50) indicates that his research has discovered evidence of a "weakness in the unity and sense of purpose in the officer corps." Both authors indicate that the rhetoric by senior leadership encouraging innovation and professional growth for young officers is not matched by the reality of service life as perceived by the majority of those young officers (3:53, 24:16).

If authors such as Baucom, Secrist and others are correct, a serious problem faces the Air Force today. How can the Air Force give its bright, talented young officers the proper combination of knowledge, motivation and experience to mature into leaders who can be depended on to keep the nation secure? If, as these critics suggest, the formal leadership development system fails for the majority of officers, perhaps there are some "informal" mechanisms at work that overcome such organizational deficiencies.

Mentoring is one mechanism that has been used in a wide variety of organizations, both public and private, to train future leaders. Once primarily an informal process often thought of in negative terms, mentoring is becoming a formal management training device not only in the private business sector but also in several agencies of the U.S. government (14:490, 15:1). It is quite possible that the very small percentage of Air Force officers who rise to the rank of general have taken advantage of an informal mentoring system during their career in order to fulfill some deficiency in their own perceived professional growth needs. Should this be true, then the problems alluded to by the critics may have been avoided by a select group who found mentors at some point in their professional life.

Before going further, it is first necessary to define the meaning of the term "mentoring" as it will be used in this effort. Prior to departing for the Trojan Wars, Homer's Oddyseus asked his trusted friend Mentor to be the tutor of Oddyseus' son Telemachus until Oddyseus returned. Mentor accepted and was given total responsibility for ensuring that Telemachus received all the education and guidance required to assume the head of the household in case Odysseus failed to return from Troy (11:27). Hence, mentoring has come to mean a relationship between a senior person and a young adult where the senior member of the relationship plays a major role in shaping and molding the younger member in his professional career (14:489). It is the most intense and "paternalistic" of the types of one-to-one training rela-

tionships in the organization and is potentially the most influential in the career development of future leaders of the organization (25:55).

The purpose of this project was to determine the existence and prevalence of mentoring in the Air Force and to examine how it has affected the careers of officers who have mentors. In order to accomplish this task, a sample of high potential officers currently on active duty was surveyed to find out whether they had mentors and, if they did, what roles those mentors assumed in the relationship. Assuming that the incidence of mentoring within the Air Force parallels that of private industry, the survey also attempted to define the impact of mentoring as it was perceived by the surveyed group and the effects of mentoring not only on proteges but also on the Air Force as a whole. The survey instrument used was an adaptation of one used to answer similar questions for private industry. That particular survey was conducted in 1978 by Gerald R. Roche, and the results were published in an article entitled "Much Ado About Mentors" in the January-February 1979 issue of The Harvard Business Review.

II. Literature Review

Before proceeding further, an examination of Roche's "Much Ado About Mentors" is required to reveal the current status of mentoring in private organizations. This review will then be followed by an examination of other current literature to determine the roles that mentors play in the careers of private sector proteges and the effects of mentoring on proteges, mentors, and the organization. From this review, a set of hypotheses will be derived which the survey instrument will test.

Mentoring in the Private Organization

In his 1978 survey of the 3976 executives mentioned in the previous year's "Who's News" columns of the Wall Street Journal, Roche found that "nearly two-thirds of the respondents reported having had a mentor or sponsor, and one-third of them had two or more mentors" (22:14). He also found that one-third of the proteges had presidents and chief executive officers act as mentors for them (22:20). From this and from the fact that many of the survey respondents were chief executive officers themselves, Roche (22:20) concluded that a significant percentage of executives felt that the development of their own successors was a task that could not be delegated and was important enough to be worth a significant investment of an executive's time. He also found that there was a direct relationship between the degree of influence of an executive's mentor on his own career and the likelihood that the protege himself would later choose to be a mentor.

This led to Roche's second major finding which was that "mentor relationships seem to have become more prevalent during the last twenty years" (22:15). This conclusion was based on survey results which showed that the probability of an executive having had a mentor varied inversely with age. Those executives younger than forty years were fifty percent more likely to have had a mentor than those over the age of fifty-five (22:24). Roche also found that the average respondent had two mentors but was sponsoring 3.3 proteges. Roche suggested that the above findings represented a trend towards an increasing use of mentoring (22:28). Roche postulated that this trend was caused by many executives concluding that the increasingly fast pace of the modern business world had created a situation in which a young manager must learn as much as he can as fast as he can to insure his own success and that of his organization (22:24).

Roche's third major conclusion was that "executives who have had a mentor earn more money at a younger age, are better educated, (and) are more likely to follow a career plan" (22:14). Although executives who had mentors reported that they considered teaching to be the primary role of their particular mentor, they reported that they felt the role of <u>other</u> individuals' mentors was more substantial and direct in the areas of salary and promotion. Roche, seeing a possible contradiction, compared the salaries of all the executives surveyed and discovered that those executives who had mentors earned an average of four percent more money than their unmentored counterparts in the same corporate position despite being an average of two years younger (22:28). From this he concluded that those executives with mentors tended to under-

estimate the benefits of the mentoring phenomenon on their own careers and that, indeed, a mentor tended to have a more substantial and direct role in the protege's career than simply that of teacher (22:24). In education, mentored executives were almost 25 percent more likely to have an advanced degree than their unmentored counterparts and more than twice as likely to have an MBA. In addition, Roche found that executives with mentors were more likely to have a career plan which Roche assumed was encouraged and fostered by the mentor (22:28).

Finally, Roche (22:28) concluded from his research that mentored executives were more satisfied with their own careers than were their unmentored counterparts. The proteges were significantly less interested in moving to a new firm and they were twenty-five percent more likely to be "very highly satisfied" with their career progress. Roche (22:28) even found evidence to say that having a mentor meant that an executive was likely to feel more satisfied with the work itself than his unmentored counterpart.

The Roles of the Mentor

Bushardt claims that mentors definitely have a place in the life of the "aspiring executive" (4:51) and Donald S. Perkins of Jewel Tea Company flatly states that "everyone who succeeds has had a mentor or mentors" (5:100). Given such strong support, what roles do mentors play that are so vital in determining the success of a protege's career?

Lea and Leibowitz defined the major roles of the mentor in their theoretical work on the subject and then used those roles to derive an operational definition of mentoring. Their list of legitimate functions of the mentor includes teaching, guiding, advising, counseling, spon-

soring, validating, motivating, protecting, communicating, and acting as a role model for the protege (16:33-34). They are unique in their use of the term "validating"; however, they explain the term in such a way that it is operationally analogous to such terms as "endorsing" and "cheerleading" used by other researchers. They assert that the sum of these behaviors constitute a generally accepted definition of the mentoring process (16:33).

Shapiro, Haseltine and Rowe (25:55-56) define mentoring in almost paternalistic terms implying trust and even affection. Although the basic thrust of this article was to study the process of promotions in management for women, these authors focus on "patron relationships" which they define as a spectrum with mentors on one extreme and "peer pals" on the other -- "peer pals" being contemporaries of the protege with the experience required to familiarize the protege with the organization. Their concept of mentor encompasses most of the roles defined by Lea and Leibowitz including the role of providing the protege opportunities for professional growth through quick promotion and protection from harm.

Klauss' (14:492) case studies of the mentoring process in the public sector define five general areas into which the roles and responsibilities of mentors fall. The first is the career strategy advisory role in which the mentor informs the protege on the career opportunities available and then provides advice to the protege as to the background qualifications necessary for those opportunities that interest the protege. The second is the individual development plan counseling area in which the mentor and protege jointly determine a

program to satisfy the short term needs of the protege. While the first two roles are similar to the roles described by Lea and Leibowitz, the third major role of the mentor described by Klauss combines the roles of sponsor and mediator into one wherein the mentor is directly involved in securing the job positions felt to be the most helpful to the protege. While this task does not mean securing promotion for the protege, it does provide the protege the advantage over his peers in competing for those assignments with high future potential. Klauss (14:490) feels that this is an especially important function for mentors of women. The fourth major role is that of monitoring and providing feedback on the protege's progress independently of his supervisor. This fourth role has no direct corollary to the roles mentioned by Lea and Leibowitz but it a subset of the communicating role. The last area in which the mentor's duties fall is that of being a role model for the protege to emulate. This area expands on the role model defined by Lea and Leibowitz and includes counseling on aspects of leadership and management with the intention that the protege learn the subtleties of high command.

While Lea and Leibowitz, Shapiro et al., and Klauss defined the roles of the mentor as broadly as possible, other researchers looked more deeply at individual roles to determine the relative impact of each role on the proteges' careers. From this emerged a general agreement in the literature that one of the primary roles of the mentor is to teach the protege the skills necessary for success. Hunt and Michael (13:483) concluded that, indeed, the greatest value of the mentor is in the role of teacher. Their literature review of the mentoring phenome-

non presented a framework for research on the mentor-protege relationship and concluded that mentoring is critical for on-the-job training for career success for both men and women. Phillips-Jones agreed that one of the main purposes of mentoring is to teach but indicated that the primary subject for the student to learn is the "inner workings" of the organization in order to reduce the "entry shock" of new employees to the organization (21:38). Although in a similar vein, Deutsch (7:12) goes even further than Phillips-Jones to include the nuances of command -- behaviors appropriate to those in positions of authority -- as a subject which could be learned most effectively from a mentor. Roche (22:24) agrees and adds that in addition to teaching the inner workings of the organization, the mentor is of great value in teaching his protege the knowledge of the use of power.

Although most authors on the subject of mentoring discuss the importance of the teaching role to the growth of the protege, several conclude that the motivation role is equal in importance to that of teacher. Zaleznik (28:76) pointed out that Dwight D. Eisenhower's mentor, General Fox Connor, played the two roles of teacher and motivator so well that he turned a mediocre graduate of West Point into the top graduate of his class at the Army Command and General Staff College. Deutsch (7:12) also concluded that the motivating role is one of great importance, especially for the female protege. Deutsch interviewed successful executives, both male and female, to support her point that, as a motivator, the mentor can instill confidence in his protege and that this confidence can lead to higher achievement than would otherwise be thought possible by the protege himself. Fitt and

Newton (9:56) totally agree with Deutsch regarding the importance of motivating and encouraging the female protege although they feel that the need for this encouragement is greatest in the earlier career stages where women typically tend to avoid risk-taking more so than men.

On the other hand, the top management of the Jewel Tea Company espouse the philosophy of the boss as the "first assistant" to the young proteges in order to provide them with all that is necessary for them to grow (5:93). Franklin J. Lunding, former president and chief executive officer of the Jewel Tea Company, states that this philosophy requires the executive to actively assist the subordinates in becoming successful (5:90). Jewel Tea long ago installed a formal mentoring program for their new MBA's to insure that they get the right experiences and to let them make the mistakes inevitable to the inexperienced (5:94, 96-99). The mentor, while not the protege's supervisor, is high enough in the organization to move the proteges that prove successful wherever that protege can learn the most the fastest (5:94). Thus, the mentor actively manages the protege's career both through directly advising his protege and by assigning him to various jobs throughout the company so that the protege can fully develop his potential and best learn the company. The success of this program for Jewel Tea is indicated by the fact that its company presidents have been young men when assigned to the position and have remained in the top position for at least nine years, providing a style of leadership that mixes the vigor of youth with the stability of long tenure in office (5:89, 92).

The Effects of Mentoring on Proteges

Of all the effects a mentor can have on one's career, the one that is the most talked about is the effect of the mentor on the promotability of the protege. There seems to be a general agreement that those individuals who have a mentor or sponsor within the organization also seem to have a more upwardly mobile career than those who do not. The fact that the last three presidents of Jewel Tea all had mentors and were no older than 41 when they assumed the top spot provides a graphic example of this proposition (5:89). Furthermore, the fact that the mentored executives of the Roche survey took an average of two fewer years to reach their high managerial posts than their non-mentored counterparts also supports the notion that having a mentor has a positive effect on one's promotability (22:28).

On the other hand, Hunt and Michael conclude that the greatest value of the mentor was as a teacher and that the promotions assumed to go with mentoring might not be the result of mentoring so much as the result of the qualities that the individual possessed in the first place (13:483). Indeed, they conclude that three major effects result from a proper mentor-protege relationship. First, mentoring allows a manager to train his own replacement thus facilitating future promotion for himself. Second, the mentor will develop an individual who can be relied on for support in the future. Third, mentoring is seen as a critical tool for training and promoting career success for the protege (13:478-481). As enlightening as their conclusions regarding mentoring as a whole might be, their propositions regarding selection as a protege require more research to determine the relationships between those

factors which cause one to acquire a mentor and those factors which relate to promotability itself. Hunt and Michael suggest that many of the factors normally associated with mobility per se, such as high visibility, good performance, and good organizational fit, also seem to determine the prospect that an aspiring young individual will acquire a mentor in the first place (13:478).

Stumpf and London's theoretical work on the promotion process also includes a study of the effect of the mentorship process on promotions. Their work postulates that those individuals who have sponsors or mentors involved in the promotion process are more likely to be considered for promotion and also to receive developmental experiences to make them ready for promotion (26:546). Mentors are expected to provide career advice to their proteges so that the protege will accumulate those developmental experiences that will best prepare them for future promotion. Thus, even without a direct hand in the promotion process, a mentor can "stack the deck" for his protege's future.

Shapiro, et al. (25:55-56) are far more direct in their assessment of the effects of mentoring on the promotion of women in the organization. They define mentoring as one of the three critical factors in the screening process that dictates the promotability to higher managerial positions within an organization with the other two factors being competence and compatibility. Their conclusions include the idea that all "patron relationship" programs ranging from "peer pals" to mentors can be major factors in bringing women into positions of authority and leadership (25:57).

One of the major effects of mentoring on the protege, as practiced in Jewel Tea Company, is the opportunity to innovate, learn one's limits and abilities, and otherwise mature in an environment that is somewhat free of risk (5:92). The mentoring policy at Jewel Tea is designed to allow the proteges to make the mistakes that are "inevitable" and learn from them how to be better managers without having their careers damaged. Lea and Leibowitz (16:34) endorse this practice and add that the protective role of the mentor allows the protege to fail without being defeated and to learn how to make decisions in the face of uncertainty.

On the other hand, having a mentor is not without risk for the protege. Several researchers mention the fact that if the mentor loses or fails, the protege can also have his career adversely affected (4:47, 7:14, 9:58). Furthermore, having the wrong mentor can also hurt rather help a career. Deutsch (7:14) indicated that some mentors tend to hold back otherwise promotable proteges. Bushardt (4:47) also emphasized the importance of picking the right mentor to avoid having one's promotion opportunities hurt rather than helped. Some proteges even hurt themselves by becoming overly dependent on their mentors, thus failing to mature as quickly as they would if left alone (10:28, 14:491).

One other area that can be detrimental to the protege is that of interpersonal relations with others in the workplace as a result of having a mentor. Klauss (14:491) indicated that the knowledge that an individual has a mentor can cause jealousy that will render the protege ineffective in the organization. In the case of cross-gender mentoring,

even the perception of sexual entanglement can cause detrimental results ranging from gossip and increased tension in the organization to a breakdown in the protege's ability to manage those who perceive that the protege has no talent other than the ability to seduce the mentor (9:58, 17:62).

In summary, while there are great things to be learned "at the knee" of the mentor, there are also very real risks that the protege must face — especially if the mentor and the protege are not of the same sex. While proteges have a unique opportunity to learn and grow quickly, they may also find that their careers could suffer setbacks for no other reason than that their mentor had failed.

The Effects of Mentoring on the Mentor

Mentoring can be either beneficial or detrimental for the mentor very much like it can be for the protege. This section explores both the good and bad aspects of mentoring as it affects the mentor himself.

Mentors report that the act of being a mentor is one of "the most personally fulfilling experiences of their careers" (16:35). They consider it one way to "put back into life what they took out of it" (9:58). Klauss (14:493) indicates that in addition to the personal satisfaction of helping individuals and the organization itself, the mentor also acquires another perspective on lower organizational levels which can enhance his own ability to manage. Deutsch (7:14) sees in the mentoring experience the opportunity for the mentor to see his successor in action and gives the mentor the satisfaction of providing direction and molding his young protege in an almost god-like way.

In a more practical vein, a protege can also be used to relieve the busy mentor of the excesses of administrative detail and can even increase the visibility of the mentor himself to top management (7:14, 21:38). The protege is often a loyal supporter who can be relied on in the future for support and trust (10:29).

On the other hand, the wrong protege can reflect unfavorably on his mentor. Just as a successful protege can help the status and career of the mentor, so can the failure of a protege reflect unfavorably on the both the protege and the mentor (17:63, 10:29). Moreover, in cases involving sexual innuendo, gossip and jealousy can render not only the protege ineffective but can also destroy the effectiveness of the mentor in the organization (10:27-28, 14:490). Even worse, the loyalty that the mentor thought was permanent could be gone once the protege feels that the mentor is no longer needed and the possibility exists that information of a sensitive nature shared with a protege could be used at a later time to blackmail the mentor (10:28-29).

As one can see, there is a similarity of risks and rewards for the mentor as well as the protege. However, most of the risks for the mentor can be associated with the character and the qualities of the protege and are not necessarily associated with the concept of mentoring itself.

Mentoring and the Organization

Having discussed the effects of mentoring on the protege and the mentor, one must look at the effects of the mentoring phenomenon on the organization as well before drawing any conclusions as to the advisability of supporting either an informal or a formal mentoring program in private or public organizations.

Overall, mentoring gets a favorable rating from those authors who addressed its effects on the organization. The Jewel Tea Company concludes that its formal mentoring system allows it to attract and keep talent which otherwise would not be interested in the retail food business (5:94). Once they attract the potential executive, the mentoring system exposes the young protege to all aspects of the business through frequent moves, allows many throughout the organization to get to know and evaluate the protege, and allows the organization to pass along its "philosophy" in a most direct manner (5:94-96). Phillips-Jones (21:38) agrees with the Jewel Tea philosophy in her conclusion that mentoring allows the organization to observe both the mentors and proteges more closely, to spot people who have a talent for grooming future leaders, and to watch that young talent being developed. Phillips-Jones also sees the additional advantages to the organization that accrue when people are singled out within the organization for either role. Phillips-Jones joins several other authors in concluding that the additional attention given both parties in the mentoring process greatly strengthens their feelings of loyalty to the organization (7:14, 5:92, 21:38, 15:1). These feelings of loyalty translate

directly into reduced turnover and greater job satisfaction (22:28, 15:1). Lean (17:63) even indicates that cross gender mentoring can help to break down discrimination in the organization.

The potential ill effects of mentoring on the organization revolve around two factors: favoritism and sexual involvement. Zaleznik (28:77) indicates that the establishment of a mentoring system within the organization can foster a feeling of elitism with potential ill effects on organization effectiveness. Lean (17:63-64) warns that an improperly implemented mentoring program can lower the morale of unmentored employees which can, in turn, become destructive to the organization. With regards to sexual involvement, Halatin (10:28) warns that the potential for damage to the organization's effectiveness is high in any mentoring situation where there is even a rumor of misconduct.

Summary

Although there seems to be general agreement that any definition of the roles of the mentor starts with that of teacher, the authors fail to agree on the operational limits of other roles that a mentor might assume. However, the weight of the evidence suggests that the mentor assumes many roles and helps his protege in many more ways than simply that of teacher. It is probably safe to say that all the roles enumerated by Lea and Leibowitz -- teacher, guide, advisor, counselor, cheerleader, communicator, motivator, protector, sponsor and role model -- are legitimate functions for the mentor to assume.

The sponsor role leads directly into the mentoring effect on promotions and promotability for the protege. The weight of the evidence presented in Roche's article strongly indicates that mentoring and promotion to executive position are related. On the other hand, the point made by Hunt and Michael regarding the fact that the same qualities that lead to finding a mentor also lead to promotion indicates that while they may be related, they are not necessarily causal. Shapiro, Haseltine and Rowe's argument that having a mentor is one of three factors critical to success falls somewhere between that of Roche and that of Hunt and Michael because it recognizes that having a mentor works only so long as the protege also has the qualities of competence and compatibility that would qualify the individual for promotion anyway. Further research is necessary to determine more precisely the relationship between the mentoring phenomenon and its effects on promotion in the organization.

In summary, mentoring appears to be a two-edged sword of great power. It is capable, on the one hand, of ensuring that the best and brightest young people are given the right experiences and training to succeed the proud mentor and to best guide the organization in pursuit of its goals. On the other hand, a poorly conceived or executed mentoring program can instill jealousy and hatred among those excluded from the "in-group" and can be a disruptive influence for everyone.

Research Hypotheses

The roles and effects of mentoring in other organizations provide a background and a basis for examining mentoring in the Air Force officer corps. Several of the questions asked by other researchers concerning mentoring in private organizations were rephrased to determine those roles mentoring has played in the careers of successful young officers who have been identified as the future leaders in one of the largest organizations in the country. In addition, questions were asked concerning the roles of the mentor based on those roles that were identified by Lea and Leibowitz (16:33-34).

In order to ensure clarity, each research hypothesis will be stated in the form appropriate for statistical testing. Thus, each question will be presented in the null hypothesis form and not necessarily in the form of the anticipated results.

The first purpose of this research was to determine whether the mentoring phenomenon exists within the officer corps. Thus, the first hypothesis tested this issue:

> H1 : The mentoring phenomenon, as defined in the introduction of this text, does not exist in the officer corps of the U.S. Air Force.

This hypothesis was the linchpin upon which the remainder of the thesis depended. However, indications from the informal organization within the Air Force suggested that there would be little difficulty rejecting this null hypothesis. A corollary to this first hypothesis tested whether mentoring is as prevalent in the Air Force as it is in private organizations as reported by Roche (22:15).

H2 : The mentoring phenomenon is as prevalent in the Air Force officer corps as it is in private industry (63.5%).

Proceeding on the assumption that the first hypothesis was rejected, the remaining hypotheses dealt with examining different aspects of mentoring in the Air Force. Each succeeding hypothesis was derived from similar research accomplished by Roche or on the theoretical work by Lea and Leibowitz. Areas examined include determining if there are any background factors which lead to acquiring a mentor, the effects of mentoring on those who have been proteges at one time in their career, differences in how the mentored and unmentored perceive mentoring as a leadership development tool for Air Force officers, and, finally, what roles the mentor played in the careers of the proteges surveyed.

The first of these differentiating hypotheses was concerned with determining whether an officer's precommissioning background or education has any effect on whether an officer is likely to have a mentor enter his life. Roche's (22:28) conclusions and his survey questionnaire provided the basis for this research question. The null hypothesis is

H3 : One's background prior to becoming an officer has no effect on the likelihood of being mentored during one's Air Force career.

The corresponding alternate hypothesis accepts the notion that some factor or factors in an officer's background correlates with finding a mentor. Additional educational factors that Roche explored and were pursued in this research include college attended, grades and extracurricular activities. Other background factors include nonmilitary employment, age when commissioned and father's occupation.

Having determined whether background factors outside the normal military career correlate with being mentored, the next hypothesis was almost obvious:

H4 : All officers, regardless of military background, are equally likely to have a mentor.

This area has a parallel in the Roche survey through its questions regarding employment history and geographic mobility. Since those questions do not directly correlate or are not applicable to the military (e.g. all military officers must be mobile), the factors examined that would be effected by this hypothesis include: whether the officer identified with a particular major command, the major command that the officer most clearly identified with, and whether the officer had formulated a career plan that he subsequently endeavored to follow. Since this study was exploratory in nature, these factors were selected based on the judgment that they were the most likely to be found to be differentiators between the mentored and unmentored officers.

Having examined those factors that predispose or correlate well with acquiring a mentor, the next area that was explored concerns the effects of mentoring on the career of the protege:

H5 : Mentors have no influence on the careers of their proteges in the Air Force.

H6 : Mentored officers are no more likely to be satisfied with their career progress than unmentored officers.

H7 : Mentored officers are no more likely to be promoted early than unmentored officers.

H8 : Officers who have been proteges are likely to be no more satisfied with their job than those who have not been proteges.

All of the above four hypotheses were taken or derived from the Roche survey (Questions 22, 14, 31, and 15, respectively). Hypothesis 7 parallels Roche's finding that mentored individuals tended to be promoted earlier in their lives. The number of hypotheses from the above group that are rejected will be used to determine the extent to which mentoring among Air Force Officers parallels mentoring in other organizations in its effects on the proteges themselves.

Since it is likely that those officers who have been mentored are also likely to know other officers who have mentors of their own, the next set of hypotheses examined their perception of mentoring as it affects others. Once again, Roche's research conclusions and questionnaire provided the basis for the next two hypotheses.

H9 : Mentored officers perceive that being mentored had no more impact on their own careers than mentoring has had on the careers of others.

H10 : Those who had mentors see no more value in mentoring than those who did not have a mentor.

From their responses conclusions were drawn regarding the perceived usefulness of mentoring as a tool for career development in the Air Force.

The last area examined dealt with the role of the mentor in the career development of the Air Force leader. The hypothesis was designed to determine the extent to which the mentors played each of the roles enumerated by Lea and Leibowitz (16: 33-34) -- teacher, guide, advisor, counselor, cheerleader, communicator, motivator, protector, sponsor and role model. The hypothesis chosen to test this question is

Hi1 : None of the roles of the mentor as enumerated by Lea and Leibowitz -- teacher, guide, advisor, counselor, cheerleader, communicator, motivator, protector, sponsor and role model -- are functions used by mentors in the Air Force.

Rejection of the null hypothesis for any role would indicate that that role was one played by a significant number of mentors of Air Force officers.

III. Methodology

Since currently no available data addresses the research questions presented in the last chapter, a survey of the Officer Corps of the United States Air Force was required to obtain sufficient data (both in quality and quantity) to justify the acceptance or rejection of the various hypotheses derived.

In order to determine whether or not mentoring in the Air Force is similar to mentoring in other organizations, one must have a comparative instrument which describes mentoring in those other organizations. Fortunately, the research accomplished by Roche in 1978 provides an accurate depiction of mentoring in the private organization. Roche gathered data via a survey questionnaire from the most successful and powerful in the business world. Those who Roche chose to survey were "...senior executives whose appointments were announced in the 'Who's News' column of the Wall Street Journal in 1977" (22:28). All executives surveyed were either chairmen, presidents, or comparably ranked individuals in firms or divisions which posted annual sales of $100 million or more (22:28).

Mr. Roche has given his permission to use the questionaire he developed for the purpose of examining mentoring in the military. In order to ensure that any comparisons between the population surveyed by Roche and the population surveyed in this research would be valid, it was originally intended that men and women of stature and position comparable to those questioned in 1978 would be selected from within the Air Force -- i.e., the approximately three hundred and forty active duty general officers (1:178). Unfortunately, Air Force policy pre-

cluded sending questionnaires to officers serving in the grade of brigadier general (O-7) and above. Instead, permission was granted to survey the officers attending Air War College (AWC) and Air Command and Staff College (ACSC) — the intermediate and senior professional military education courses of the Air Force. Since selection to attend these schools is done on the basis of potential for advancement, the 210 USAF officers at ACSC and the 160 Air Force colonels and lieutenant colonels at AWC have already been selected as having high potential for further advancement as they represent the top fifteen percent of the majors and five percent of the lieutenant colonels and colonels selected for promotion in their respective year-groups (23:45; 27).

The Experimental Design

In this section each hypothesis will be examined to determine how it can be measured and which decision rules and statistics are appropriate. The data were analyzed using the Statistical Package for the Social Sciences (SPSS) computer software in residence on the Air Force Institute of Technology Control Data Corporation CYBER Computer System. Detailed support for each test statistic and decision rule used in this research can be found in Meek and Turner's Statistical Analysis for Business Decisions (19) or in McNichols' Applied Multivariate Data Analysis (18).

The first two hypotheses put forward in the last chapter are

H1 : The mentoring phenomenon, as defined in the introduction of this text, does not exist in the Officer Corps of the U. S. Air Force.

H2 : The mentoring phenomenon is as prevalent in the Air Force Officer Corps as it is in private industry (63.5%).

Although both hypotheses appear to be answerable with but one question, it is important to ensure that the respondent is defining the "mentor" in terms that are similar to, or the same as, the researcher. Thus, "mentor" is defined in the cover letter that is to be sent with the questionnaire and is once again defined at the beginning of the survey. In addition, the pertinent question and answer is phrased

Q14 : At any stage of your career, have you had a mentor/protege relationship with a person who took personal interest in your career and who guided you or helped mold your career?

A : a. Yes
b. No

Even though this question, along with the definition of mentoring on the instruction sheet of the questionnaire, provided the respondent an operational definition to use to define the term, it was necessary to delve deeper into the relationship to determine whether it was truly a mentor/protege relationship or it was something less intense and personal. In order to further ensure that the respondent was defining "mentoring" properly, the following question/answer pair was presented:

Q18*: How much influence has your mentor(s) exerted over you?

A : a. Extraordinary influence
b. Substantial influence
c. Moderate influence
d. Little influence
e. No influence

(All questions in this section followed by an asterisk [*] have been taken directly from the Roche survey.) In order to be consistent with Roche, if the respondent answers less than "Moderate" influence, then it is assumed that the relationship was not of the intensity required

to be termed "mentor/ protege" (22:20). Further, to determine whether the relationship was long enough to qualify to be that of a mentor/ protege, a series of questions was asked to quantify that aspect of the relationship. Any respondent who reported a relationship which lasted less than two years had that relationship discounted unless he answered "Substantial" or "Extraordinary" to the question of influence (22:20).

Having determined which officers had mentors, one must then select the proper test statistic and decision rule for each hypothesis. The first hypothesis can be stated mathematically as:

h1n: $P(yes) = 0.0$ h1a: $P(yes) \neq 0.0$

where P(yes) is the probability that mentoring exists in the Air Force. (For the purpose of clarity, the investigative hypotheses will be stated using a small "h" prefix, a number corresponding to its related research hypothesis, and a letter suffix designating it as either the null [n] hypothesis or the alternate [a] hypothesis.) Since absolutes are rare in the social sciences, if any small percentage is indicated by the data, the null hypothesis will not be rejected by this study. Thus, for the purpose of this study it was assumed that if 10 percent or fewer of the surveyed officers have mentors, then the mentoring phenomenon does not exist in any meaningful way. By making this assumption, a normal approximation to the binomial distribution can be employed with the data (19:299-301). Thus, the new hypothesis set becomes

h1n: $P(yes) \leq 10\%$ h1a: $P(yes) > 10\%$

For this particular hypothesis, the null hypothesis is rejected if the

Z-Statistic computed is greater than Z-critical. Since the sample size is known, the decision rule could also be stated in terms of the number of respondents actually reporting have been a protege.

Assuming the first hypothesis would be rejected, another test, similar to the first, was accomplished on the data to determine whether the second hypothesis could be rejected. The second hypothesis was designed to compare the prevalence of mentoring in the Air Force to that of private industry. The null hypothesis is

H2 : The mentoring phenomenon is as prevalent in the Air Force Officer Corps as it is in private industry (63.5%).

One assumption made was that the respondents were representative of the entire population under consideration (all high potential Air Force officers). Assuming this to be true based on the selection criteria for the two schools, the requirement that there be a random sample was satisfied by intent rather than by actuality. Using the nominal data, classifying each observation into either "has been a Protege" or "has not been a Protege," and assuming sampling with replacement, another normal approximation to the binomial distribution was computed against the hypotheses

h2n: P(yes) = 63.5 % h2a: P(yes) $\neq$ 63.5 %

Since both this survey and the Roche survey are based on sampling data, the level of significance for rejection will be set at 0.01 to allow for the fact that the proportion identified by Roche is itself subject to a certain amount of error based on its being derived from a survey and not a census.

The remaining hypotheses are all predicated on rejection of the first hypothesis and acceptance of the hypothesis that mentoring exists to a significant extent in the Air Force. The third hypothesis states

> H3 : One's background prior to becoming an officer has no effect on the likelihood of being mentored during one's Air Force career.

In order to test this hypothesis, discriminant analysis was used to examine various background questions after having divided the respondents into two groups based on whether they were mentored (18:7-1 - 7-5). Questions 1, 2, 3*, 4*, 5*, 6, and 8* in the survey instrument (Appendix A) are the appropriate data sources for using discriminant analysis against this hypothesis. The responses were used to determine whether age, previous jobs, education, or the degree of participation in extracurricular activities made any significant difference with regard to the acquisition of a mentor later in one's career. The model derived was tested at a significance level of 0.05 to determine which of the selected factors related to the acquisition of a mentor.

Two of the background related questions (numbers 2 and 6*) relating to the third hypothesis required transformation before they could be tested. The purpose of question 2 was to determine whether attendance at a service academy was related to becoming someone else's protege. Therefore, the information was recoded to reflect whether or not they graduated from a service academy (given a value of 1 or 2), so that it could be tested with the other variables. Question six concerned the father's occupation and was coded in a similar fashion to question 2 based on whether or not the father was a career military

officer. Again, discriminant analysis was used to determine the likelihood that having a father who was a career military officer would influence or relate to being mentored.

Discriminant analysis is also appropriate in acceptance or rejection of the next hypothesis:

H4 : All officers, regardless of military background, are equally likely to have a mentor.

The purpose of question 7* was to determine whether the formulation of a career plan is related to being mentored. Question 11 was used to determine whether there is a relation between the mentoring phenomenon and any specific Air Force major command, or with the phenomenon of "command identity." This latter phenomenon results when an individual stays in one command throughout his career and, as a result, becomes well known within that major command's hierarchy.

Question 18 directly asked the respondent to indicate the degree of influence that the mentor exerted over the respondent. It relates directly to the fifth hypothesis which states

H5 : Mentors have no influence on the career of their proteges in the Air Force.

This hypothesis was tested in a manner similar to the first hypothesis using a normal approximation to the binomial after dividing the responses into two groups: the first group comprised of the first three responses and the alternative group containing the responses "little" or "no" influence. The new hypothesis set becomes

h5n: P(of influence) $\leq$ 0.05

h5a: P(of influence) > 0.05

The null hypothesis would be rejected if the computed Z-statistic is less than Z-Critical and computationally was similar to Hypothesis 1.

The pooled T-test was used to determine whether there was a difference between mentored and unmentored officers in their degree of satisfaction with career progress (19:366-372). This is the essence of the sixth hypothesis and was measured via a Likert scale answer to the following question:

Q12*. How would you rate your degree of satisfaction with your career progress?

The decision criteria was set at a significance level of 0.05. Since most officers at that level should be reasonably pleased with their career progress, large differences in degree of satisfaction are not expected.

The next hypothesis relates directly to one of the major conclusions of the Roche study. It is that

H7 : Mentored officers are no more likely to be promoted early than unmentored officers.

A determination of the number of "Below-the-Promotion-Zone" (BPZ) promotions for each officer (question 10) was used to calculate whether there was a statistically significant difference in promotion rates between the mentored and unmentored groups. This was accomplished using the pooled-T test. If the null hypothesis is rejected, then one can conclude that there is a difference in the promotion rates of mentored verses unmentored officers at least among this selected group of high potential officers.

The eighth hypothesis was also tested using the pooled T-test against Likert scale data taken from question 13*. The hypothesis tested states

H8 : Officers who have been proteges are likely to be no more satisfied with their job than those who have not have been proteges.

Data gathered from this question was grouped according to whether the respondent also had a mentor and then was analyzed for significance using the the pooled T-test at a 0.05 level of significance. If the null hypothesis is rejected, it can be concluded that there is a difference in the amount of job satisfaction based on whether or not one has a mentor.

Roche's work noted that executives felt that mentoring itself had less impact on their own careers than mentoring was having on the careers of other individuals whom they knew (22:20). A modification of the instrument used by Roche to answer this question was used in this research to examine the next hypothesis. Roche's survey questionnaire asked the respondents to rank order those characteristics which he felt might contribute to the success of the executives. The respondents to a trial questionnaire felt that rank ordering so many characteristics was unrealistic and this led to modifying the question so that the surveyed officers could respond to each characteristic separately. The null hypothesis examined is

H9 : Mentored officers perceive that being mentored had no more impact on their own careers than mentoring has had on the careers of others.

By asking the respondents to respond via a Likert scale to various characteristics of success both for themselves and their proteges, questions 48 through 65 provided the data to look at how mentored and unmentored officers view the impact of mentoring in the Air Force in the context of characteristics which lead to success in service careers. By examining only those officers who had mentors, it also allowed a direct answer to the above hypothesis through a paired T-test of the "self" verses "others" response to mentoring.

The tenth hypothesis also used the responses to questions 48 through 65; however, for this test the groups were divided between the mentored and the unmentored. The hypothesis tested is

H10 : Those who had mentors see no more value in mentoring than those who did not have a mentor.

Once again discriminant analysis was used to determine whether mentored individuals rank mentoring differently from unmentored individuals only as they regarded its impact on others. Further insight into the attitudes of mentored versus unmentored officers regarding the proper characteristics of a mentor could be investigated through the Likert scale responses to questions 32 through 47. Discriminant analysis was also used here to determine those factors which are significantly different between mentored and unmentored officers regarding those characteristics which they believe a mentor should possess.

The last hypothesis is concerned with the roles of the mentor in the training and development of high potential officers in the Air Force. The hypothesis states

H11 : None of the roles of the mentor as enumerated by Lea and Leibowitz — teacher, guide, advisor, counselor, cheerleader, communicator, motivator, protector, sponsor and role model — are functions used by mentors in the Air Force.

Questions 19 through 28 provide each mentored officer the opportunity to indicate the extent to which each role was observed by the protege himself. Each question was analyzed using the normal approximation to the binomial distribution after dividing the responses into two groups: the first group comprised of the first three responses and the alternative group comprised of the fourth response. Computationally, this hypothesis was examined in a manner identical to that used in the fifth hypothesis. Once again the hypothesis set becomes

h11n: P(role is played) $\leq$ 0.05

h11a: P(role is played) > 0.05

The null hypothesis would be rejected if the computed Z-statistic is less than Z-Critical and, since the number of respondents reporting a mentor is known, the decision rule can be stated in terms of the number of proteges actually reporting having observed each role.

Data Collection Plan

Since this particular survey instrument had never been used (albeit similar to one that was), a draft questionnaire was sent to a limited number of colonels for them to complete prior to sending it to the survey population. A follow-up interview was conducted to ascertain the clarity of the questions and to ensure that none of the terms would be misunderstood by the subject population. Minor changes were made to the questionnaire as a result for clarity and to further "tailor" the survey for Air Force officers.

A significant problem was highlighted while interviewing the sample respondents due to the negative connotations surrounding "sponsoring" in the Air Force. The perception that mentoring is bad or that publishing a report on it would affect morale among the majority of officers not being mentored was thought to be a major impediment influencing the responsiveness of those who would be surveyed. Therefore, the cover letter that accompanied the questionnaire included a paragraph on the positive aspects of mentoring and the fact that it is used in the majority of large private organizations. In addition, the cover letter itself was signed by the Dean of the School of Systems and Logistics, Col Larry L. Smith, as a further endorsement of the validity of the research.

IV. Findings

Approximately two-thirds of the students at Air Command and Staff College and Air War College responded to the questionnaire. Of the approximately 160 AWC students who were sent the questionnaire, a total of 103 responses were returned and, of the 210 Air Force officers attending ACSC, 149 responses were returned. A general profile of the respondents is given in Table I and a summary of the responses to each question in the survey is included as Appendix B. In addition, a complete summary of the results of the statistical tests for each hypothesis is contained in Appendix C. Since the questionnaires were segregated by school when they arrived from Air University, it was possible to evaluate each hypothesis using only the responses from each school as well as using the entire data base. As a result, Appendix C includes the conclusions obtained by evaluating data from each school separately as well as combined.

As was previously mentioned, the most important hypothesis was Hypothesis 1. Of the 252 responses, it was possible to classify 106 (42.2 percent) of them as having had mentors at one point in their career. Given this data, the probability that mentoring does not exist in the Air Force is infinitesimal. Thus, the null hypothesis is rejected and one can conclude that mentoring does exist in the Air Force at least for officers with high potential.

TABLE I

GENERAL POPULATION INFORMATION
(Combined ACSC and AWC Responses)

A. SOURCE OF COMMISSION (Question 2)

Service academy	15.1%
ROTC	48.8
OTS	32.1
Other	4.0

B. CURRENT RANK (Question 9)

Major (or Selectee)	54.8%
Lt Colonel (or Selectee)	22.6
Colonel (or Selectee)	22.6

C. HIGHEST EDUCATIONAL LEVEL ATTAINED (Question 3)

Undergraduate Degree	5.6%
Some Post-Graduate work	8.7
Advanced Degree	85.7

(continued)

TABLE I (continued)

D. MAJOR COMMAND IDENTITY (Question 11)

	Survey Results	% OF USAF
TAC	11.5%	18.6%
MAC	13.9	13.9
SAC	20.2	19.0
ADC	3.2	0.1
AFSC	6.0	4.9
AFLC	2.0	1.9
ATC	3.6	12.7
Other	13.1	28.9
More than 1	26.6	

E. BELOW-THE-PROMOTION-ZONE (BPZ) SELECTIONS (Question 10)

	ACSC Results	AWC Results	Combined Results
To Major	12.8%	23.3%	17.1%
To Lt. Colonel	3.4	17.5	9.1
To Colonel	0.0	9.7	4.0
More than 1 BTZ	2.7	22.3	10.7
None	81.2	27.2	59.1

Once it was shown that mentoring does exist in the Air Force, Hypothesis 2 attempted to determine whether mentoring is as prevalent in the Air Force as it is in civilian organizations. Accomplishing a comparison test of the 63.5 percent figure from Roche's survey against the 42.2 percent reported mentoring rate from the respondents revealed that one could reject this null hypothesis, at a 0.01 level of significance, and conclude that mentoring among ACSC and AWC students is not as prevalent as mentoring is at the highest levels of private industry.

Hypothesis 3 was the first of two hypotheses which examined the background characteristics which might distinguish the mentored from the unmentored officer. Seven pre-commissioning variables were analyzed -- age at commissioning, commissioning source, highest educational level achieved, undergraduate grades, undergraduate extracurricular activities, father's occupation, and the number of employers excluding the Air Force. Of the seven variables used in the analysis, "age at commissioning" and "highest education level attained" were determined to be discriminators at the 0.05 significance level between the mentored and unmentored members of the response group. The officers who had acquired mentors were, on average, eight months younger than their unmentored counterparts when they received their commissions. Even though over eighty-five percent of all respondents had an advanced degree, there was also a statistically significant difference in the amount of education that the mentored officers had acquired. In fact, only thirty-three percent of the 36 officers without advanced degrees had mentors while forty-four percent of the 216 officers with advanced degrees had mentors.

While Hypothesis 3 examined those factors which occurred prior to commissioning which might predispose one towards acquiring a mentor, Hypothesis 4 examined two career factors which might be thought to predispose one towards acquiring a mentor. The first career factor was whether the individual had formulated a career plan which he had then attempted to follow throughout his career. The second career factor concerned the possibility that "command identity" might play a part in determining whether or not one acquired a mentor. Based on a significance level of 0.05, the null hypothesis was rejected and it was concluded that mentored officers were more likely to have formulated a career plan than their unmentored counterparts. In regard to "command identity," statistical analysis showed not only that "command identity" is unimportant, but that no single command participated in mentoring more than any other.

Turning from factors relating to the acquisition of a mentor, the next set of hypotheses attempted to determine the effects of mentoring on the career of an officer. The response to Hypothesis 5 regarding the influence of a mentor on the career of the protege was striking in its support of the mentor as a career influence. The hypothesis that mentors have no influence on the careers of their proteges was rejected the 0.05 level of significance. In fact, over ninety-five percent of the mentored officers reported "moderate" or greater influence exerted on them by their mentors.

Hypothesis 6 dealt with the probability that mentored officers are no more likely to be satisfied with their career progress than their unmentored counterparts. The T-test for this hypothesis yielded a value

of -3.67 ($p < .001$). Thus, the null hypothesis was strongly rejected and it was concluded that mentored officers, just as the executives in Roche's survey (22:28), are more highly satisfied with their career progress than their unmentored counterparts.

Hypothesis 7 examined whether mentored officers were more likely to receive "below-the-promotion-zone" (BPZ) promotions than their unmentored counterparts. At a significance level of 0.05, the null hypothesis could be rejected (T-value = 2.32; $p < .01$) and the conclusion was reached that mentored officers enjoy a significantly greater likelihood of promotion ahead of their contemporaries. As a matter of fact, eighty percent of the mentored officers at Air War College had at least one early promotion whereas their unmentored counterparts were promoted BPZ at a reduced rate of sixty-seven percent.

Given that mentored officers were likely to be promoted more quickly and were also more highly satisfied with their career progress, it would not be surprising to find that the mentored officers were more satisfied with their jobs. Hypothesis 8 examined this question via a T-test of the responses to survey question 13; the result is that one can reject the null hypothesis and conclude that the mentored officer is significantly more satisfied with his job than his unmentored counterpart (T-value = -2.32; $p < .01$).

Hypothesis 9 measured the perception of the importance of mentoring on the respondent's career relative to the importance of mentoring on the careers of other mentored officers with whom the respondent is familiar. This test was limited to responses of the mentored officers only and used a paired T-test to achieve the proper comparison. This

test indicated that the null hypothesis could be rejected at the 0.05 level of significance (T-value = 1.78; $p < .05$). The average response to Question 55 for "self" versus "others" indicates that mentored officers perceive that being mentored had less impact on their own careers than mentoring has had on the careers of others. Therefore, one can conclude that there is a significant difference in the impact of mentoring on careers between "self" and "others" in the minds of the mentored officers responding.

Hypothesis 10 uses the "others" response column from question 55 to determine whether or not those who had mentors placed more value on mentoring as a leadership development tool than those who had never experienced having a mentor. The discriminant analysis concluded that, of the sixteen characteristics listed as being associated with a successful military career, six responses separated the mentored from the unmentored at the 0.05 level of significance -- the ability to lead others, a mentor, Air Force sponsored development programs, education level, luck, and the ability to complete assignments. In addition to the ability to lead others and having a mentor, the mentored group perceived that being able to complete assignments was more important for success than the unmentored group thought it to be. On the other hand, the mentored group felt that Air Force development programs, education level attained, and luck were less important characteristics of a successful military officer than their unmentored counterparts thought them to be.

The purpose of the last hypothesis was to compare the roles of the mentor in the Air Force to the roles of the mentor in the private sector of the economy. The normal approximation to the binomial distribution computations used against the responses to Questions 19 through 28 revealed that one could reject the null hypothesis for each one and conclude that all of the roles as defined by Lea and Liebowitz (17:33-34) were roles played by the Air Force officer's mentor. In fact, all roles, except the role of "protector", were identified as being primary, major, or secondary roles by at least two-thirds of the respondents. Although the role of "protector" was not identified to the extent of the other nine roles -- teacher, guide, advisor, counselor, sponsor, supporter, motivator, communicator, and role model -- it still enjoyed the secondary or higher role for over fifty percent of the respondents as depicted in Table II.

TABLE II

THE ROLES OF THE MENTOR

ROLE	MAJOR OR PRIMARY ROLE	SECONDARY ROLE OR BETTER
TEACHER	51.4%	76.1%
GUIDE	52.8	82.4
ADVISOR	68.8	96.3
COUNSELOR	54.1	86.2
SPONSOR	50.0	77.8
SUPPORTER	56.9	87.2
MOTIVATOR	68.8	87.2
PROTECTOR	30.6	59.3
COMMUNICATOR	57.8	82.6
ROLE MODEL	67.9	90.8

This table depicts the percentage of responses for each role in each category. For instance, 51.4% of the respondents said that the major or primary role of their mentor was that of teacher.

V. Analysis

This chapter will discuss the implications of the statistical results as they apply to mentoring in the Air Force. Since this research is based on the previous empirical effort of Roche and on the theoretical work of Lea and Leibowitz, the results of this study will be compared to those previous efforts in order to compare mentoring in the U.S. Air Force to mentoring in the private sector. Since the existence of mentoring has been statistically demonstrated, further discussion of Hypothesis 1 is unnecessary.

The Prevalence of Mentoring in the Air Force

Although the statistical test of Hypothesis 2 indicated that mentoring in the Air Force was not as prevalent as mentoring in the private organization (42.2 percent versus 63.5 percent), the group surveyed by Roche (22:28) differed markedly from the group surveyed for this report. The group surveyed by Roche was at the height of their careers whereas the ACSC and AWC groups were still climbing the career ladder. This would imply that a further selection process was to take place in the lives of the Air Force officers to determine who would reach the career positions comparable to the corporate executive surveyed by Roche. Furthermore, the percentage of ACSC students having a mentor (38.5 percent) versus the percentage of AWC students having a mentor (47.6 percent) supports the idea that, as the officers attain higher positions in the organization, the role of the mentor becomes more decisive in furthering one's career. If one accepts the theory

that the difference in prevalence between the Roche survey and this one is based on the differing career points of the two groups surveyed, then there really should be little difference in the prevalence of mentoring, assuming comparable groups are surveyed. Further research involving general officers would have to be accomplished for a direct comparison.

There is one meaningful difference in the responses relating to the existence and prevalence of mentoring that merits comment. Roche (22:14) noted that, of his executives reporting at least one mentor, half reported having had two or more. Along the same line, of the Air War College (AWC) students reporting at least one mentor, close to two-thirds (64.2 percent) had more than one mentor. This use of multiple mentors at an even greater rate for Air Force officers than their civilian counterparts would appear to be consistent with the increased mobility of both the mentors and the proteges in the Air Force. Further research is necessary to determine the true cause of this phenomenon.

Acquiring a Mentor

While the first two hypotheses dealt with the presence and prevalence of mentoring in the Air Force, Hypotheses 3 and 4 dealt with factors which might influence or correlate with the acquisition of a mentor by the officer. Although age at commissioning was found to be a significant discriminator for the combined ACSC and AWC group, an analysis of each group separately revealed distinct differences. Age at commissioning was not a significant discriminator for the AWC group but did seem to support a trend in that direction; officers who were younger were more likely to acquire a mentor. In contrast, the ACSC

students who had acquired a mentor averaged somewhat (more than a month) older than their unmentored counterparts. There appears to be no explanation for this inconsistency at this time. Further investigation is required to resolve this conundrum.

While age at commissioning has no direct link to the Roche study, the relationship of education to mentoring not only relates to the Roche study (22:15) but the findings are consistent between the two sub-samples. Roche indicates that mentored individuals in his study tend to be better educated than their unmentored counterparts. Likewise, the combined data from this study also finds that the mentored group is significantly better educated than the unmentored group. For the Air Force, this meant that ninety-four percent of the officers who had a mentor also had at least a master's degree whereas only eighty-five percent of the unmentored officers had their master's degrees.

A third precommissioning factor identified both in the combined and the AWC responses as indicating a possible trend, occupation of the officer's father, has no parallel support either in the ACSC data or in the Roche survey. While seven of the nine AWC officers whose fathers were career military officers had mentors, only six of sixteen ACSC officers whose fathers were officers had mentors. At the same time, Roche makes no mention of there being a relationship between father's occupation and the likelihood of acquiring a mentor despite having a question in his survey to determine that aspect of the protege's background. The conclusion here is that, since the number of officers involved whose fathers were career military officers was relatively small, the statistical conclusion will be disregarded pending addi-

tional study with a larger sample of officers whose fathers had also made a career of the military.

Before proceeding to an analysis of Hypothesis 4, it is worth mentioning that the other four factors associated with an officer's life prior to commissioning were not related to acquiring a mentor. For instance, while fifteen percent of the officers were service academy graduates, there was no statistically significant difference in the rate at which they acquired mentors. This seems to contradict the widespread feeling that service academy graduates have a distinct career-long advantage over their peers. In fact, the percentage of service academy graduates attending AWC is not very different than their share of total officers in their year group (8:40, 2:256). Not as surprising but equally important is the fact that participation in undergraduate school activities, undergraduate grade point average, and the number of non-USAF employers seemed to have no effect on whether an officer acquired a mentor.

As far as in-service background is concerned, the statistical conclusions here agree with Roche regarding career planning but disagree with the belief, widely held in the Air Force, concerning "command identity". Roche (22:15) concluded that mentored executives are significantly more likely to have formulated and followed a career plan than their unmentored counterparts. This survey also indicates that Air Force officers are significantly more likely to have formulated a career plan if they had a mentor. However, when the AWC group is tested by itself, this is not the case. The AWC group was found to be equally likely to have formulated a career plan regardless of whether they had

a mentor. Further study is required to determine whether or not formulation of a career plan, for more senior officers, is truly independent of mentoring. At the same time, the widespread Air Force belief that "command identity" was required for promotion (with its implication of gaining a mentor) is not supported by the results. In addition to the discriminant analysis to determine if any one command seemed to produce more mentor-protege relationships, a T-test was accomplished to determine whether "command identity" was related to mentoring. In both cases, it was determined that there was no difference between the mentored and unmentored groups. In fact, the mentoring phenomenon appears to be spread throughout the Air Force in an homogeneous fashion.

The Effects of Mentoring on the Individual

Where Hypotheses 3 and 4 dealt with factors that determine whether one was likely to acquire a mentor in the Air Force, Hypotheses 5 through 8 dealt with the effects of mentoring on the career of the surveyed officer. The results of each will be analyzed in turn, and compared to the Roche study in order to better understand the similarities and differences between the effects of mentoring in Air Force and mentoring in the private organization.

The degree of influence a mentor has on the Air Force officer protege, as determined through Hypothesis 5, is not only substantial but remarkably similar to the degree of influence a private organization mentor has on his protege (22:20). Unfortunately, the differences in the two survey questionnaires makes direct comparison difficult. Roche asked his respondents to reply to the question on mentoring for

each of up to three mentors whereas this survey asked for responses regarding the most influential mentor only. Thus, Roche's report of influence on the respondent, expressed in percentages, exceeds 100 percent because of multiple responses (22:20). Even so, the percentages at the extremes are quite similar with Roche reporting 14 percent of his respondents having experienced extraordinary influence compared to this study's 9.8 percent, and 6.8 percent reporting little or no influence in Roche's study compared to 4.5 percent in this study (22:20). Moreover, even though the percentages are different, both studies indicate that more respondents claimed that their mentor had "substantial" than "average" influence on the protege. In sum, it appears that the degree of influence a mentor has on his protege is virtually the same for the Air Force and for private organizations.

Roche (22:15) claimed that mentored individuals are "happier with their career progress" than their unmentored counterparts. Although both the ACSC and the combined data conclude that mentoring in the Air Force is similar to mentoring in the private organization in this respect, the AWC respondents present a different picture. Both the mentored and unmentored Air Force officers attending AWC were highly satisfied with their career progress. Thus, the AWC data seems to refute the assertion that mentored individuals in the Air Force are happier with their career progress. Further research is necessary to determine which data is representative of the Air Force as a whole.

Of course, one reason that the mentored and unmentored groups differ on their degree of satisfaction with career progress might be that the mentored officers are promoted more quickly than their unmen-

tored counterparts. The results of this study support that conclusion at the 0.05 level of significance; the Air Force officer who has acquired a mentor has a significantly greater probability of an early (BPZ) promotion. The Roche study (22:15) found that mentored executives were younger than their unmentored counterparts. Since these men and women had recently been promoted to chief executive officer, Roche is actually looking at the opposite side of the same coin. Once again, the similarities between mentoring in the Air Force and in the private organization are evident.

Job satisfaction is the last area examined in this study concerning the effects of mentoring on the protege. This study indicated that that mentored officers did, indeed, enjoy their jobs more than their unmentored counterparts. By the same token, Roche (22:15) indicated that his mentored subjects derived "somewhat greater pleasure from their work." These two conclusions may be different in degree but certainly not in principle. Further study may be required to determine those factors in the careers of mentored officers in the Air Force which cause them to be so much more satisfied with their jobs than their unmentored counterparts and so different from Roche's results.

The Perceptions of Mentoring in the Air Force

While the previous four hypotheses dealt with the actual effects of mentoring on the careers of Air Force officers, the next three hypotheses deal with the perceptions of how mentoring is used and effects officers in the Air Force. This analysis will determine whether the actuality of mentoring as described above is perceived as such by both the mentored and unmentored.

The basis for Hypothesis 9 was Roche's (22:20-24) finding that mentored executives thought that their own mentoring experience was unique compared to the normal mentoring relationship. While they felt that the mentor played an important role in their careers, they felt that luck was a more important factor in their own success. At the same time, the mentored executives felt that mentoring was more important than luck for the success of other mentored individuals. In the case of the surveyed officers, there was also a statistical difference between the mentors' feelings about themselves and others in regard to mentoring; however, there was no significant difference regarding the importance of luck. More research is needed to determine the basis for this finding; however, it may be that one's ego/self-esteem is the differentiator. While perceptions may differ, it appears likely that mentoring is relatively universal in its effects.

Hypothesis 10 is important in its finding that mentored officers view mentoring as being a more valuable tool for leadership development than unmentored officers view it. This would indicate that an understanding of the process leads to an appreciation of it. Further research is necessary to determine and quantify the differences themselves. Many of the responses contained additional comments, however, which indicate that certain misconceptions exist concerning the use of mentoring in the Air Force. If one accepts the fact that the respondents all answered as honestly as is befitting their office, it appears that mentored officers have an overall positive feeling about mentoring as a leadership development tool. On the other hand, the unmentored officers view mentoring in rather negative terms. Some of the unmen-

tored officers were even upset that the subject was deemed appropriate for research. It appeared that the unmentored officers saw the primary role of mentors as sponsors ensuring that their proteges received the "correct" jobs and the proteges as "ticket punchers" concerned only with their own careers.

Fortunately, neither the mentored nor the unmentored officers viewed mentoring as "extremely important" for career success. Overall, the average response of all the respondents rated ten of the sixteen characteristics listed in Questions 48 through 63 as more important for the career success of others than having a mentor. However, the mentored officers did rank having a mentor significantly higher in importance than the unmentored officers (eighth of sixteen for mentored versus thirteenth for unmentored). Overall, though, the most important ingredients for success were motivation, the ability to make decisions, the ability to complete assignments, and the ability to lead and motivate others. This would indicate that the overall feeling is that officers who are successful in their career are successful because they deserve to lead, and that the mentor can <u>help</u> an officer be successful but cannot <u>cause</u> an officer to be successful.

This leads directly to Hypothesis 11. This last hypothesis not only indicated that all the roles of the mentor, as theorized by Lea and Leibowitz, were in evidence in the informal mentoring system in the Air Force, but the results also indicate the relative importance of each role as perceived by the mentored officers themselves. Table III is an expansion of Table II from the previous chapter as it lists the responses by category. The table shows that more proteges listed "Role

Model" as the primary role than any other while the role of "Sponsor" is one of the lesser roles by comparison. Furthermore, the "Motivator", "Advisor," and "Counselor" roles are the next most frequently named primary roles. This would seem to indicate where some of the differences lie between the mentored and unmentored officers regarding how this leadership development tool is used in the Air Force. Further investigation is required to confirm this; however, the random comments solicited from the unmentored respondents indicate that they feel that the "Sponsor" and "Protector" roles play a much greater part in the mentoring phenomenon than that perceived by the proteges themselves.

Having analyzed each hypothesis separately, this chapter has determined that several of the statistical tests do not tell the entire story of what mentoring is and how it is used and perceived in the Air Force. Analysis also indicates where there are deep differences in perception between the mentored and unmentored officers who responded to this survey. In the next chapter, these differences will be examined once again to determine practical implications regarding mentoring as it effects the lives of all officers and the future of the Air Force itself. In addition, the next chapter will also look not only at what has been done in this research but will also look at some of the most significant questions that this study raised and that require follow-on work.

TABLE III

ROLES OF THE MENTOR BY RESPONSE

ROLE RESPONSE=>	PRIMARY	MAJOR	SECONDARY	NOT PLAYED
TEACHER	16.50	34.90	24.80	23.90
GUIDE	14.80	38.00	29.60	17.60
ADVISOR	20.20	48.60	27.50	3.70
COUNSELOR	19.30	34.90	32.10	13.80
SPONSOR	14.80	35.20	27.80	22.20
SUPPORTER	17.40	39.40	30.30	12.80
MOTIVATOR	23.90	45.00	18.30	12.80
PROTECTOR	6.50	24.10	28.70	40.70
COMMUNICATOR	10.10	47.70	24.80	17.40
ROLE MODEL	33.90	33.90	22.90	9.20

This table depicts the percentage of responses for each role in each category. For instance, 16.5% of the respondents said that the primary role of their mentor was that of teacher. Please note that the percentage of the Primary Role responses do not sum to 100 percent as some respondents had duplicate role responses.

VI. Conclusions and Recommendations

Mentoring is a fact of life in the Air Force just as it is in most large organizations. In fact, it appears to be uniformly prevalent as a leadership development tool throughout the major commands. The difference of 39 percent to 48 percent reporting mentors from Air Command and Staff College to Air War College gives some indication that the mentor becomes an increasingly important factor as one ascends the hierarchy in the organization. This seeming growth in the prevalence of mentoring also indicates that mentoring may be found at even higher percentages among the general officers, perhaps closer to the 63.5 percent found in private organizations.

The fact that this research did not include a survey of general officers limits the parallels that can be drawn between mentoring in the Air Force and mentoring in the private sector. While there are indications that mentoring is similar in both the organization studied and the private sector of Roche, the inability to accomplish parallel research limits the scope of the conclusions and makes impossible any analysis of the effects of mentoring on the mentor or the organization.

Three other factors limit the research. First, many of the questions asked in the survey required the respondent to state an opinion or perception rather than state a fact. Second, since the respondents were still relatively young officers, the questions could only address the issue of mentoring from the perspective of the protege. As such, the issue of the effects of mentoring on the mentor could not be addressed. Third, the time requirements limited this research to a cross-sectional study of the mentoring phenomenon. A longitudinal study

based on this class of AWC students would permit much to be learned concerning the long-term effects of mentoring on the individual. As was pointed out in the second chapter, mentoring is a two-edged sword. This is true not only in theory but also has been found to apply in the Air Force officer corps. While the proteges find that mentoring offers them opportunities for learning and growth, it appears that, even among the relatively senior and mature officers attending Air War College, some who do not have mentors perceive that mentoring is a vehicle by which a protege gets a "free ride" to the top. This feeling, that the mentor is primarily a sponsor and protector, is even mo: prevalent among the Air Command and Staff College students who responded. One ACSC student wrote that an informal discussion among his classmates concerning the survey questionnaire led to the conclusion that mentoring was nothing more than "organized brown-nosing."

To counter those misconceptions, it may behoove the Air Force to consider publicizing the reasons for the current informal mentoring system. Admitting that not everyone can be a general officer and that even those who have been identified as having the potential to compete and attain flag rank can be better prepared through the use of this system certainly should not come as a great shock to the majority of officers not destined for those senior positions. It may even assuage the egos of those who do not have mentors to know that they do not necessarily need one to get ahead. The fact that two-thirds of the unmentored officers at Air War College had received at least one "Below-The-Zone" promotion indicates that success does not depend on being the protege of a senior officer. In fact, it appears that while

having a mentor may play a role in career success, other characteristics such as motivation, leadership, and the willingness and ability to make decisions, complete assignments, and motivate others are far more important ones.

Further research is necessary in several areas to better define how mentoring is used in the Air Force and to determine conclusively whether mentoring is as prevalent among general officers as it is among the ranks of chief executive officers in private organizations. Since this is the first study of mentoring in the Air Force, much work is left to be done to determine such things as how proteges are selected and how the mentor perceives his relationship with the protege. If possible, research involving in-depth interviews of generals should be accomplished to determine whether they see mentoring as an important function of their own jobs to the same extent that their private organization counterparts do. In addition, research to determine whether the current mentors were once proteges themselves will tend to validate the usefulness of the mentoring process.

In conclusion, it appears that there are good reasons to support the current informal mentoring system. First, the protege can more efficiently learn that which is required to be a senior officer from those who are already there. Second, proteges tend to be better educated than average suggesting that they have more potential for future positions at the top of the organization. Third, the opportunities that proteges receive may not be as risk-free as is commonly perceived since half of those proteges surveyed don't think the mentor is a protector at all. Last, mentoring is not associated with any particular command,

does not require one to gain "command identity", and it is not even dependent on the prospective protege attending a service academy. In sum, mentoring in the Air Force follows the successful pattern of mentoring in the private organization in all areas studied here. It is hoped that further study finds that the successful aspects of mentoring extend to other areas not addressed here.

Appendix A: The Survey Questionnaire Used

A SURVEY TO DETERMINE THE USE OF MENTORING AS A TOOL FOR LEADERSHIP DEVELOPMENT IN THE AIR FORCE

USAF Survey Control Number 84-29

The purpose of this survey is to determine the prevalence of the mentoring phenomenon in the Air Force and how mentoring has effected the careers of officers currently attending either intermediate or senior service schools. As one of those officers, your responses to the questions will play an important part in assessing the effects of this management tool.

KEY WORDS

The following are definitions of key words that recur throughout the questionnaire:

1. MENTORING: A relatively long-term relationship (more than two years) between an older and a younger adult where the senior member of the relationship plays a major role in shaping and molding the younger member in his or her professional career.

2. MENTOR: The senior member of the mentoring relationship.

3. PROTEGE: The junior member of the mentoring relation-ship.

Your individual responses will be held in the strictest confidence and will not be provided to any person or organization. Only those individuals directly involved in this research will have access to your completed questionnaire: however, there will be no way to identify the persons by name who complete the questionnaire.

CONFIDENTIAL SURVEY OF HIGH POTENTIAL OFFICERS

Please feel free to use either pen or pencil when answering the questions. Also, several questions may have more than one answer; please mark all that apply to you.

1. At what age did you receive your commission?_____

2. Please indicate the source of your commission:

   a. Service academy
   b. ROTC
   c. OTS
   d. Other (Aviation Cadets, direct commission, etc.)

3. What is your highest educational attainment?

   a. High school graduate
   b. Attended college
   c. College graduate
   d. Some post-graduate work
   e. Advanced degree

4. What was your undergraduate grade average?

   a. 4.0/4.0(A)
   b. 3.0-3.9(B)
   c. 2.0-2.9(C)
   d. less than 2.0(D)

5. How would you rate your degree of involvement in extracurricular activities as an undergraduate student?

   a. Above average
   b. Average
   c. Below average

6. What was your father's occupation at the time you entered the labor force full time?

a. Military officer
b. Military non-commissioned officer
c. Corporate manager
d. Proprietor
e. White-collar worker
f. Blue-collar worker
g. Farmer
h. Other professional
i. None of the above

7. Have you formulated a career plan which you have endeavored to follow over the years?

a. Yes
b. No

8. How many full-time employers have you had (excluding military)?

_____

9. What is your current rank?

a. Major (or Major-Selectee)
b. Lt Colonel (or Lt Colonel-Selectee)
c. Colonel (or Colonel-Selectee)

10. Have you received any "Below-the-Zone" promotions?
a. Yes, to major
b. Yes, to lieutenant colonel
c. Yes, to colonel
d. No

11. With which major command(s) have you most closely identified throughout your career?

a. TAC
b. MAC
c. SAC
d. ADC
e. AFSC
f. AFLC
g. ATC
h. other (please specify)_____

12. How would you rate your degree of satisfaction with your career progress?

a. Very high
b. High
c. Average
d. Low
e. Very low

13. How would you rate your degree of satisfaction with your work in terms of the pleasure you derive from it?

a. Work and pleasure are one
b. Work affords above average pleasure
c. Work affords average pleasure
d. Work affords below average pleasure
e. Work and pleasure are separate and distinct

14. At any stage of your career, have you had a mentor/protege relationship with a person who took a personal interest in your career and who guided you or helped mold your career?

a. Yes
b. No

IF YOUR ANSWER TO QUESTION 14 WAS "NO" SKIP TO QUESTION 32

15. If yes, how many mentors did you have? _____

For questions 15 through 31, please base your answers on the mentor who had the most influence on your professional life.

16. When did your mentor first exhibit an interest in you?

a. during college/education
b. prior to military career
c. during first 5 years of career
d. during 6-10th years of career
e. during 11-20th years of career
f.__ Other (please specify)

17. What position did your mentor then hold in relation to you?

a. Professor/teacher
b. Friend
c. Relative
d. Immediate supervisor
e. Wing Commander (or equivalent) or below
f. General Officer
g. Other(please specify)_____

18. How much influence has your mentor exerted over you?

a. Extraordinary influence
b. Substantial influence
c. Moderate influence
d. Little influence
e. No influence

ROLES OF THE MENTOR

The following is a list of the some of the roles that a mentor can play in his relationship with a protege. Please indicate the extent to which your mentor has played each of the following roles.

1. The Most Important Role which my mentor played
2. A Major Role my mentor played
3. A Secondary Role my mentor played
4. Did <u>not</u> constitute a Role played by my mentor

19. ___ Teacher
20. ___ Guide to the "unwritten rules" of the organization
21. ___ Being available to provide advice
22. ___ Counselor
23. ___ Sponsor
24. ___ Provider of support to protege's plans/ideas
25. ___ Motivator
26. ___ Protector (to provide a buffer for the protege's risk taking)
27. ___ Provider of open lines of communication to/from the protege
28. ___ Role Model

29. Do you still have a relationship with your mentor?

a. Yes
b. No

30. If yes, how would you describe your current relationship?

a. Close
b. Friendly
c. Neutral
d. Not friendly
e. No contact

31. If no, how many years did the relationship last?

___

CHARACTERISTICS OF THE MENTOR

The following is a list of some characteristics associated with a mentor. Please indicate the importance you place on each characteristic by selecting the answer which best represents your attitude concerning the qualities and characteristics a mentor should possess.

1. Extremely important
2. Moderately important
3. Slightly important
4. Of little importance
5. Not important at all

32. ___ Knowledge of business in general
33. ___ Knowledge of the Air Force
34. ___ Knowledge of people in the organization
35. ___ Rank in the organization
36. ___ Time remaining within the Air Force
37. ___ Organizational power
38. ___ Respect from superiors in USAF/DOD
39. ___ Respect from peers in USAF/DOD
40. ___ Respect from subordinates in USAF/DOD
41. ___ Respect of peers outside USAF/DOD
42. ___ Understanding people in general
43. ___ Knowledge of the use of power
44. ___ Willingness to share knowledge and understanding
45. ___ Willingness to counsel subordinates
46. ___ Others (please specify)_____
47. ___ _____

CHARACTERISTICS ASSOCIATED WITH A SUCCESSFUL MILITARY CAREER

The following is a list of some characteristics associated with success in one's military career. Please indicate the importance of each characteristic in your career and the careers of other Air Force Officers by selecting the answer which best represents your views.

1. Extremely important
2. Moderately important
3. Slightly important
4. Of little importance
5. Not important at all

	Self	Others	
48.	___	___	School(s) attended
49.	___	___	Education level
50.	___	___	Grades achieved
51.	___	___	Energy level
52.	___	___	Functional background
53.	___	___	Motivation
54.	___	___	Luck
55.	___	___	A mentor
56.	___	___	Family background
57.	___	___	Ability to make decisions
58.	___	___	Ability to complete assignments
59.	___	___	Ability to lead others
60.	___	___	Ability to motivate others
61.	___	___	Willingness to work long hours
62.	___	___	Professional courses (including PME)
63.	___	___	Air Force sponsored development programs
64.	___	___	Others (please specify)_____
65.	___	___	_____

Thank you for your assistance. Be assured that all information will be treated in confidence.

Appendix B: Combined Response Summary Information

Q1 AGE AT COMMISSIONING

CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
20	1	.4	.4	.4
21	58	23.0	23.0	23.4
22	97	38.5	38.5	61.9
23	46	18.3	18.3	80.2
24	23	9.1	9.1	89.3
25	6	2.4	2.4	91.7
26	9	3.6	3.6	95.2
27	5	2.0	2.0	97.2
29	2	.8	.8	98.0
31	1	.4	.4	98.4
32	1	.4	.4	98.8
33	1	.4	.4	99.2
35	1	.4	.4	99.6
38	1	.4	.4	100.0
TOTAL	252	100.0	100.0	

VALID CASES 252 MISSING CASES 0

Q2 COMMISSIONING SOURCE

CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
1	38	15.1	15.1	15.1
2	123	48.8	48.8	63.9
3	81	32.1	32.1	96.0
4	10	4.0	4.0	100.0
TOTAL	252	100.0	100.0	

VALID CASES 252 MISSING CASES 0

Q3 HIGHEST EDUCATION ATTAINED

CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
3	14	5.6	5.6	5.6
4	22	8.7	8.7	14.3
5	216	85.7	85.7	100.0
TOTAL	252	100.0	100.0	

VALID CASES 252 MISSING CASES 0

Q4 UNDERGRADUATE GPA

CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
1	1	.4	.4	.4
2	128	50.8	50.8	51.2
3	119	47.2	47.2	98.4
4	4	1.6	1.6	100.0
TOTAL	252	100.0	100.0	

VALID CASES 252 MISSING CASES 0

Q5 EXTRACURRICULAR ACTIVITIES

CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
1	101	40.1	40.1	40.1
2	121	48.0	48.0	88.1
3	30	11.9	11.9	100.0
TOTAL	252	100.0	100.0	

VALID CASES 252 MISSING CASES 0

Q6 FATHER'S OCCUPATION

CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
1	25	9.9	11.0	11.0
2	8	3.2	3.5	14.5
3	22	8.7	9.7	24.2
4	23	9.1	10.1	34.4
5	58	23.0	25.6	59.9
6	49	19.4	21.6	81.5
7	16	6.3	7.0	88.5
8	26	10.3	11.5	100.0
0	25	9.9	MISSING	
TOTAL	252	100.0	100.0	

VALID CASES 227 MISSING CASES 25

Q7 CAREER PLAN

CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
1	190	75.4	75.7	75.7
2	61	24.2	24.3	100.0
0	1	.4	MISSING	
TOTAL	252	100.0	100.0	

VALID CASES 251 MISSING CASES 1

Q8 NUMBER OF EMPLOYERS

CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
1	51	20.2	20.3	20.3
2	45	17.9	17.9	38.2
3	25	9.9	10.0	48.2
4	9	3.6	3.6	51.8
5	3	1.2	1.2	53.0
6	1	.4	.4	53.4
7	2	.8	.8	54.2
0	115	45.6	45.8	100.0
BLANK	1	.4	MISSING	
TOTAL	252	100.0	100.0	

VALID CASES 136 MISSING CASES 116

Q9 CURRENT RANK

CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
1	138	54.8	54.8	54.8
2	57	22.6	22.6	77.4
3	57	22.6	22.6	100.0
TOTAL	252	100.0	100.0	

VALID CASES 252 MISSING CASES 0

Q10 BELOW-THE-PROMOTION-ZONE PROMOTIONS

CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
1	43	17.1	17.1	17.1
2	23	9.1	9.1	26.2
3	10	4.0	4.0	30.2
4	149	59.1	59.1	89.3
9	27	10.7	10.7	100.0
TOTAL	252	100.0	100.0	

VALID CASES 252 MISSING CASES 0

Q11 MAJOR COMMAND

CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
1	29	11.5	11.6	11.6
2	35	13.9	13.9	25.5
3	51	20.2	20.3	45.8
4	8	3.2	3.2	49.0
5	15	6.0	6.0	55.0
6	5	2.0	2.0	57.0
7	9	3.6	3.6	60.6
8	33	13.1	13.1	73.7
9	66	26.2	26.3	100.0
0	1	.4	MISSING	
TOTAL	252	100.0	100.0	

VALID CASES 251 MISSING CASES 1

Q12 CAREER PROGRESS SATISFACTION

CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
1	54	21.4	21.4	21.4
2	135	53.6	53.6	75.0
3	54	21.4	21.4	96.4
4	8	3.2	3.2	99.6
5	1	.4	.4	100.0
TOTAL	252	100.0	100.0	

VALID CASES 252 MISSING CASES 0

Q13 JOB SATISFACTION

CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
1	33	13.1	13.1	13.1
2	163	64.7	64.7	77.8
3	47	18.7	18.7	96.4
4	6	2.4	2.4	98.8
5	3	1.2	1.2	100.0
TOTAL	252	100.0	100.0	

VALID CASES 252 MISSING CASES 0

Q14 HAD MENTORS

CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
1	111	44.0	44.0	44.0
2	140	55.6	55.6	99.6
0	1	.4	.4	100.0
TOTAL	252	100.0	100.0	

VALID CASES 252 MISSING CASES 0

Q15 NUMBER OF MENTORS

CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
1	42	16.7	37.8	37.8
2	48	19.0	43.2	81.1
3	13	5.2	11.7	92.8
4	6	2.4	5.4	98.2
5	2	.8	1.8	100.0
BLANK	141	56.0	MISSING	
TOTAL	252	100.0	100.0	

VALID CASES 111 MISSING CASES 141

Q16 WHEN MENTOR ACQUIRED

CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
1	4	1.6	3.6	3.6
3	36	14.3	32.1	35.7
4	49	19.4	43.8	79.5
5	23	9.1	20.5	100.0
0	140	55.6	MISSING	
TOTAL	252	100.0	100.0	

VALID CASES 112 MISSING CASES 140

Q17 MENTOR POSITION

CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
1	2	.8	1.8	1.8
2	4	1.6	3.6	5.4
3	1	.4	.9	6.3
4	44	17.5	39.3	45.5
5	33	13.1	29.5	75.0
6	24	9.5	21.4	96.4
7	4	1.6	3.6	100.0
0	140	55.6	MISSING	
TOTAL	252	100.0	100.0	

VALID CASES 112 MISSING CASES 140

Q18 MENTOR INFLUENCE

CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
1	11	4.4	9.8	9.8
2	59	23.4	52.7	62.5
3	37	14.7	33.0	95.5
4	5	2.0	4.5	100.0
0	140	55.6	MISSING	
TOTAL	252	100.0	100.0	

VALID CASES 112 MISSING CASES 140

Q19 TEACHER

CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
1	18	7.1	16.5	16.5
2	38	15.1	34.9	51.4
3	27	10.7	24.8	76.1
4	26	10.3	23.9	100.0
BLANK	143	56.7	MISSING	
TOTAL	252	100.0	100.0	

VALID CASES 109 MISSING CASES 143

Q20 GUIDE

CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
1	16	6.3	14.8	14.8
2	41	16.3	38.0	52.8
3	32	12.7	29.6	82.4
4	19	7.5	17.6	100.0
BLANK	144	57.1	MISSING	
TOTAL	252	100.0	100.0	

VALID CASES 108 MISSING CASES 144

Q21 ADVISOR

CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
1	22	8.7	20.2	20.2
2	53	21.0	48.6	68.8
3	30	11.9	27.5	96.3
4	4	1.6	3.7	100.0
BLANK	143	56.7	MISSING	
TOTAL	252	100.0	100.0	

VALID CASES 109 MISSING CASES 143

Q22 COUNSELOR

CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
1	21	8.3	19.3	19.3
2	38	15.1	34.9	54.1
3	35	13.9	32.1	86.2
4	15	6.0	13.8	100.0
BLANK	143	56.7	MISSING	
TOTAL	252	100.0	100.0	

VALID CASES 109 MISSING CASES 143

Q23 SPONSOR

CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
1	16	6.3	14.8	14.8
2	38	15.1	35.2	50.0
3	30	11.9	27.8	77.8
4	24	9.5	22.2	100.0
BLANK	144	57.1	MISSING	
TOTAL	252	100.0	100.0	

VALID CASES 108 MISSING CASES 144

Q24 SUPPORTER

CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
1	19	7.5	17.4	17.4
2	43	17.1	39.4	56.9
3	33	13.1	30.3	87.2
4	14	5.6	12.8	100.0
BLANK	143	56.7	MISSING	
TOTAL	252	100.0	100.0	

VALID CASES 109 MISSING CASES 143

Q25 MOTIVATOR

CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
1	26	10.3	23.9	23.9
2	49	19.4	45.0	68.8
3	20	7.9	18.3	87.2
4	14	5.6	12.8	100.0
BLANK	143	56.7	MISSING	
TOTAL	252	100.0	100.0	

Q26 PROTECTOR

CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
1	7	2.8	6.5	6.5
2	26	10.3	24.1	30.6
3	31	12.3	28.7	59.3
4	44	17.5	40.7	100.0
BLANK	144	57.1	MISSING	
TOTAL	252	100.0	100.0	

VALID CASES 108 MISSING CASES 144

Q27 COMMUNICATOR

CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
1	11	4.4	10.1	10.1
2	52	20.6	47.7	57.8
3	27	10.7	24.8	82.6
4	19	7.5	17.4	100.0
BLANK	143	56.7	MISSING	
TOTAL	252	100.0	100.0	

VALID CASES 109 MISSING CASES 143

Q28 ROLE MODEL

CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
1	37	14.7	33.9	33.9
2	37	14.7	33.9	67.9
3	25	9.9	22.9	90.8
4	10	4.0	9.2	100.0
BLANK	143	56.7	MISSING	
TOTAL	252	100.0	100.0	

VALID CASES 109 MISSING CASES 143

Q29 CURRENT MENTOR STATUS

CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
1	80	31.7	72.7	72.7
2	30	11.9	27.3	100.0
0	142	56.3	MISSING	
TOTAL	252	100.0	100.0	

VALID CASES 110 MISSING CASES 142

Q30 CURRENT RELATION

CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
1	23	9.1	25.8	25.8
2	55	21.8	61.8	87.6
3	5	2.0	5.6	93.3
5	6	2.4	6.7	100.0
0	163	64.7	MISSING	
TOTAL	252	100.0	100.0	

VALID CASES 89 MISSING CASES 163

Q31 YEARS RELATION LASTED

CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
2	4	1.6	13.3	13.3
3	10	4.0	33.3	46.7
4	3	1.2	10.0	56.7
5	7	2.8	23.3	80.0
6	2	.8	6.7	86.7
7	2	.8	6.7	93.3
8	2	.8	6.7	100.0
BLANK	221	87.7	MISSING	
OUT OF RANGE	1	.4	MISSING	
TOTAL	252	100.0	100.0	

VALID CASES 30 MISSING CASES 222

Q32 KNOWLEDGE OF GENERAL BUSINESS

CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
1	91	36.1	37.0	37.0
2	91	36.1	37.0	74.0
3	39	15.5	15.9	89.8
4	22	8.7	8.9	98.8
5	3	1.2	1.2	100.0
0	1	.4	MISSING	
BLANK	5	2.0	MISSING	
TOTAL	252	100.0	100.0	

VALID CASES 246 MISSING CASES 6

Q33 KNOWLEDGE OF THE USAF

CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
1	185	73.4	74.9	74.9
2	47	18.7	19.0	93.9
3	14	5.6	5.7	99.6
4	1	.4	.4	100.0
0	1	.4	MISSING	
BLANK	4	1.6	MISSING	
TOTAL	252	100.0	100.0	

VALID CASES 247 MISSING CASES 5

Q34 KNOW PEOPLE IN ORGANIZATION

CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
1	152	60.3	61.8	61.8
2	73	29.0	29.7	91.5
3	19	7.5	7.7	99.2
4	2	.8	.8	100.0
0	1	.4	MISSING	
BLANK	5	2.0	MISSING	
TOTAL	252	100.0	100.0	

VALID CASES 246 MISSING CASES 6

Q35 RANK IN THE ORGANIZATION

CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
1	56	22.2	22.6	22.6
2	132	52.4	53.2	75.8
3	47	18.7	19.0	94.8
4	10	4.0	4.0	98.8
5	3	1.2	1.2	100.0
0	1	.4	MISSING	
BLANK	3	1.2	MISSING	
TOTAL	252	100.0	100.0	

VALID CASES 248 MISSING CASES 4

Q36 TIME TO GO IN USAF

CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
1	36	14.3	14.6	14.6
2	78	31.0	31.6	46.2
3	43	17.1	17.4	63.6
4	53	21.0	21.5	85.0
5	37	14.7	15.0	100.0
0	1	.4	MISSING	
BLANK	4	1.6	MISSING	
TOTAL	252	100.0	100.0	

VALID CASES 247 MISSING CASES 5

Q37 ORGANIZATIONAL POWER

CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
1	80	31.7	32.4	32.4
2	102	40.5	41.3	73.7
3	51	20.2	20.6	94.3
4	10	4.0	4.0	98.4
5	4	1.6	1.6	100.0
0	1	.4	MISSING	
BLANK	4	1.6	MISSING	
TOTAL	252	100.0	100.0	

VALID CASES 247 MISSING CASES 5

Q38 SUPERIORS RESPECT

CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
1	118	46.8	47.8	47.8
2	92	36.5	37.2	85.0
3	27	10.7	10.9	96.0
4	9	3.6	3.6	99.6
5	1	.4	.4	100.0
0	1	.4	MISSING	
BLANK	4	1.6	MISSING	
TOTAL	252	100.0	100.0	

VALID CASES 247 MISSING CASES 5

Q39 USAF PEERS RESPECT

CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
1	108	42.9	43.7	43.7
2	94	37.3	38.1	81.8
3	33	13.1	13.4	95.1
4	12	4.8	4.9	100.0
0	1	.4	MISSING	
BLANK	4	1.6	MISSING	
TOTAL	252	100.0	100.0	

VALID CASES 247 MISSING CASES 5

Q40 SUBORDINATES RESPECT

CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
1	84	33.3	34.0	34.0
2	86	34.1	34.8	68.8
3	54	21.4	21.9	90.7
4	18	7.1	7.3	98.0
5	5	2.0	2.0	100.0
0	1	.4	MISSING	
BLANK	4	1.6	MISSING	
TOTAL	252	100.0	100.0	

VALID CASES 247 MISSING CASES 5

Q41 OUTSIDE PEERS RESPECT

CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
1	32	12.7	13.0	13.0
2	72	28.6	29.1	42.1
3	73	29.0	29.6	71.7
4	52	20.6	21.1	92.7
5	18	7.1	7.3	100.0
0	1	.4	MISSING	
BLANK	4	1.6	MISSING	
TOTAL	252	100.0	100.0	

VALID CASES 247 MISSING CASES 5

Q42 KNOW PEOPLE IN GENERAL

CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
1	143	56.7	57.7	57.7
2	76	30.2	30.6	88.3
3	22	8.7	8.9	97.2
4	6	2.4	2.4	99.6
5	1	.4	.4	100.0
0	1	.4	MISSING	
BLANK	3	1.2	MISSING	
TOTAL	252	100.0	100.0	

VALID CASES 248 MISSING CASES 4

Q43 KNOW USE OF POWER

CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
1	137	54.4	55.5	55.5
2	81	32.1	32.8	88.3
3	21	8.3	8.5	96.8
4	8	3.2	3.2	100.0
0	1	.4	MISSING	
BLANK	4	1.6	MISSING	
TOTAL	252	100.0	100.0	

VALID CASES 247 MISSING CASES 5

Q44 WILLINGNESS TO SHARE KNOWLEDGE

CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
1	190	75.4	76.6	76.6
2	45	17.9	18.1	94.8
3	11	4.4	4.4	99.2
4	2	.8	.9	
0	1	.4	MISSING	
BLANK	3	1.2	MISSING	
TOTAL	252	100.0	100.0	

VALID CASES 248 MISSING CASES 4

Q45 WILLING TO COUNSEL

CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
1	162	64.3	65.6	65.6
2	59	23.4	23.9	89.5
3	20	7.9	8.1	97.6
4	3	1.2	1.2	98.8
5	3	1.2	1.2	100.0
0	1	.4	MISSING	
BLANK	4	1.6	MISSING	
TOTAL	252	100.0	100.0	

VALID CASES 247 MISSING CASES 5

Q48 SCHOOL ATTENDED

CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
1	46	18.3	20.3	20.3
2	83	32.9	36.6	56.8
3	53	21.0	23.3	80.2
4	37	14.7	16.3	96.5
5	8	3.2	3.5	100.0
BLANK	25	9.9	MISSING	
TOTAL	252	100.0	100.0	

VALID CASES 227 MISSING CASES 25

Q49 EDUCATION LEVEL

CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
1	59	23.4	25.8	25.8
2	107	42.5	46.7	72.5
3	46	18.3	20.1	92.6
4	15	6.0	6.6	99.1
5	2	.8	.9	100.0
BLANK	23	9.1	MISSING	
TOTAL	252	100.0	100.0	

VALID CASES 229 MISSING CASES 23

Q50 GRADES ACHIEVED

CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
1	8	3.2	3.5	3.5
2	36	14.3	15.8	19.3
3	73	29.0	32.0	51.3
4	81	32.1	35.5	86.8
5	30	11.9	13.2	100.0
BLANK	24	9.5	MISSING	
TOTAL	252	100.0	100.0	

VALID CASES 228 MISSING CASES 24

Q51 ENERGY LEVEL

CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
1	118	46.8	52.0	52.0
2	81	32.1	35.7	87.7
3	22	8.7	9.7	97.4
4	6	2.4	2.6	100.0
BLANK	25	9.9	MISSING	
TOTAL	252	100.0	100.0	

VALID CASES 227 MISSING CASES 25

Q52 FUNCTIONAL BACKGROUND

CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
1	60	23.8	26.2	26.2
2	110	43.7	48.0	74.2
3	45	17.9	19.7	93.9
4	11	4.4	4.8	98.7
5	3	1.2	1.3	100.0
BLANK	23	9.1	MISSING	
TOTAL	252	100.0	100.0	

VALID CASES 229 MISSING CASES 23

Q53 MOTIVATION

CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
1	181	71.8	79.0	79.0
2	42	16.7	18.3	97.4
3	6	2.4	2.6	100.0
BLANK	23	9.1	MISSING	
TOTAL	252	100.0	100.0	

VALID CASES 229 MISSING CASES 23

Q54 LUCK

CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
1	52	20.6	22.8	22.8
2	79	31.3	34.6	57.5
3	65	25.8	28.5	86.0
4	24	9.5	10.5	96.5
5	8	3.2	3.5	100.0
BLANK	24	9.5	MISSING	
TOTAL	252	100.0	100.0	

VALID CASES 228 MISSING CASES 24

Q55 MENTOR

CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
1	33	13.1	14.6	14.6
2	74	29.4	32.7	47.3
3	49	19.4	21.7	69.0
4	33	13.1	14.6	83.6
5	37	14.7	16.4	100.0
BLANK	26	10.3	MISSING	
TOTAL	252	100.0	100.0	

VALID CASES 226 MISSING CASES 26

Q56 FAMILY BACKGROUND

CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
1	7	2.8	3.1	3.1
2	21	8.3	9.2	12.3
3	38	15.1	16.7	28.9
4	75	29.8	32.9	61.8
5	87	34.5	38.2	100.0
BLANK	24	9.5	MISSING	
TOTAL	252	100.0	100.0	

VALID CASES 228 MISSING CASES 24

Q57 ABILITY TO DECIDE

CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
1	178	70.6	78.1	78.1
2	45	17.9	19.7	97.8
3	3	1.2	1.3	99.1
4	1	.4	.4	99.6
5	1	.4	.4	100.0
BLANK	24	9.5	MISSING	
TOTAL	252	100.0	100.0	

VALID CASES 228 MISSING CASES 24

Q58 ABLE TO COMPLETE JOB

CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
1	165	65.5	72.4	72.4
2	57	22.6	25.0	97.4
3	6	2.4	2.6	100.0
BLANK	24	9.5	MISSING	
TOTAL	252	100.0	100.0	

VALID CASES 228 MISSING CASES 24

Q59 ABLE TO LEAD

CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
1	152	60.3	66.7	66.7
2	60	23.8	26.3	93.0
3	12	4.8	5.3	98.2
4	4	1.6	1.8	100.0
BLANK	24	9.5	MISSING	
TOTAL	252	100.0	100.0	

VALID CASES 228 MISSING CASES 24

Q60 ABLE TO MOTIVATE

CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
1	156	61.9	68.1	[illegible]
2	58	23.0	25.3	[illegible]
3	12	4.8	5.2	98.7
4	3	1.2	1.3	100.0
BLANK	23	9.1	MISSING	
TOTAL	252	100.0	100.0	

VALID CASES 229 MISSING CASES 23

Q61 WORK LONG HOURS

CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
1	90	35.7	39.5	39.5
2	88	34.9	38.6	78.1
3	35	13.9	15.4	93.4
4	14	5.6	6.1	99.6
5	1	.4	.4	100.0
BLANK	24	9.5	MISSING	
TOTAL	252	100.0	100.0	

VALID CASES 228 MISSING CASES 24

Q62 PROFESSIONAL COURSES

CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
1	57	22.6	25.0	25.0
2	105	41.7	46.1	71.1
3	46	18.3	20.2	91.2
4	16	6.3	7.0	98.2
5	4	1.6	1.8	100.0
BLANK	24	9.5	MISSING	
TOTAL	252	100.0	100.0	

VALID CASES 228 MISSING CASES 24

Q63 USAF DEVELOPMENT PROGRAMS

CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
1	11	4.4	5.0	5.0
2	49	19.4	22.5	27.5
3	78	31.0	35.8	63.3
4	53	21.0	24.3	87.6
5	27	10.7	12.4	100.0
BLANK	34	13.5	MISSING	
TOTAL	252	100.0	100.0	

VALID CASES 218 MISSING CASES 34

QP48 OTHERS SCHOOL

CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
1	45	17.9	21.3	21.3
2	96	38.1	45.5	66.8
3	43	17.1	20.4	87.2
4	20	7.9	9.5	96.7
5	7	2.8	3.3	100.0
BLANK	41	16.3	MISSING	
TOTAL	252	100.0	100.0	

VALID CASES 211 MISSING CASES 41

QP49 OTHERS EDUCATION

CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
1	48	19.0	22.6	22.6
2	118	46.8	55.7	78.3
3	35	13.9	16.5	94.8
4	10	4.0	4.7	99.5
5	1	.4	.5	100.0
BLANK	40	15.9	MISSING	
TOTAL	252	100.0	100.0	

VALID CASES 212 MISSING CASES 40

QP50 OTHERS GRADES

CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
1	9	3.6	4.2	4.2
2	40	15.9	18.9	23.1
3	64	25.4	30.2	53.3
4	73	29.0	34.4	87.7
5	26	10.3	12.3	100.0
BLANK	40	15.9	MISSING	
TOTAL	252	100.0	100.0	

VALID CASES 212 MISSING CASES 40

QP51 OTHERS ENERGY

CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
1	99	39.3	47.1	47.1
2	82	32.5	39.0	86.2
3	24	9.5	11.4	97.6
4	5	2.0	2.4	100.0
BLANK	42	16.7	MISSING	
TOTAL	252	100.0	100.0	

VALID CASES 210 MISSING CASES 42

QP52 OTHERS BACKGROUND

CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
1	52	20.6	24.5	24.5
2	104	41.3	49.1	73.6
3	43	17.1	20.3	93.9
4	12	4.8	5.7	99.5
5	1	.4	.5	100.0
BLANK	40	15.9	MISSING	
TOTAL	252	100.0	100.0	

VALID CASES 212 MISSING CASES 40

QP53 OTHERS MOTIVATION

CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
1	151	59.9	71.2	71.2
2	53	21.0	25.0	96.2
3	8	3.2	3.8	100.0
BLANK	40	15.9	MISSING	
TOTAL	252	100.0	100.0	

VALID CASES 212 MISSING CASES 40

QP54 OTHERS LUCK

CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
1	47	18.7	22.3	22.3
2	75	29.8	35.5	57.8
3	56	22.2	26.5	84.4
4	24	9.5	11.4	95.7
5	9	3.6	4.3	100.0
BLANK	41	16.3	MISSING	
TOTAL	252	100.0	100.0	

VALID CASES 211 MISSING CASES 41

QP55 OTHERS MENTOR

CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
1	49	19.4	23.6	23.6
2	79	31.3	38.0	61.5
3	59	23.4	28.4	89.9
4	15	6.0	7.2	97.1
5	6	2.4	2.9	100.0
BLANK	44	17.5	MISSING	
TOTAL	252	100.0	100.0	

VALID CASES 208 MISSING CASES 44

QP56 OTHERS FAMILY

CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
1	5	2.0	2.4	2.4
2	33	13.1	15.7	18.1
3	44	17.5	21.0	39.0
4	71	28.2	33.8	72.9
5	57	22.6	27.1	100.0
BLANK	42	16.7	MISSING	
TOTAL	252	100.0	100.0	

VALID CASES 210 MISSING CASES 42

QP57 OTHERS ABLE TO DECIDE

CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
1	142	56.3	67.6	67.6
2	57	22.6	27.1	94.8
3	8	3.2	3.8	98.6
4	2	.8	1.0	99.5
5	1	.4	.5	100.0
BLANK	42	16.7	MISSING	
TOTAL	252	100.0	100.0	

VALID CASES 210 MISSING CASES 42

QP58 OTHERS ABLE TO COMPLETE ASSIGNMENTS

CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
1	141	56.0	67.5	67.5
2	56	22.2	26.8	94.3
3	11	4.4	5.3	99.5
4	1	.4	.5	100.0
BLANK	43	17.1	MISSING	
TOTAL	252	100.0	100.0	

VALID CASES 209 MISSING CASES 43

QP59 OTHERS LEADERSHIP

CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
1	131	52.0	62.4	62.4
2	57	22.6	27.1	89.5
3	20	7.9	9.5	99.0
4	2	.8	1.0	100.0
BLANK	42	16.7	MISSING	
TOTAL	252	100.0	100.0	

VALID CASES 210 MISSING CASES 42

QP60 OTHERS ABLE TO MOTIVATE

CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
1	122	48.4	57.8	57.8
2	64	25.4	30.3	88.2
3	20	7.9	9.5	97.6
4	5	2.0	2.4	100.0
BLANK	41	16.3	MISSING	
TOTAL	252	100.0	100.0	

VALID CASES 211 MISSING CASES 41

QP61 OTHERS ABLE TO WORK LONG HOURS

CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
1	66	26.2	31.4	31.4
2	100	39.7	47.6	79.0
3	35	13.9	16.7	95.7
4	8	3.2	3.8	99.5
5	1	.4	.5	100.0
BLANK	42	16.7	MISSING	
TOTAL	252	100.0	100.0	

VALID CASES 210 MISSING CASES 42

QP62 OTHERS PME

CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
1	53	21.0	25.2	25.2
2	110	43.7	52.4	77.6
3	28	11.1	13.3	91.0
4	13	5.2	6.2	97.1
5	6	2.4	2.9	100.0
BLANK	42	16.7	MISSING	
TOTAL	252	100.0	100.0	

VALID CASES 210 MISSING CASES 42

QP63 OTHERS USAF DEVELOPMENT

CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
1	15	6.0	7.5	7.5
2	48	19.0	23.9	31.3
3	82	32.5	40.8	72.1
4	41	16.3	20.4	92.5
5	15	6.0	7.5	100.0
BLANK	51	20.2	MISSING	
TOTAL	252	100.0	100.0	

VALID CASES 201 MISSING CASES 51

Appendix C: Summary of Responses by Hypothesis

HYPOTHESIS 1

The mentoring phenomenon, as defined in the introduction of this text, does not exist in the officer corps of the U.S. Air Force.

RESULTS:

	Percentages Reporting Mentors
ACSC Respondents	38.5%
Air War College Respondents	47.6%
Combined Respondents	42.2%

Therefore: At a significance level of 0.05, reject the null hypothesis for all groups and conclude that mentoring does exist.

HYPOTHESIS 2

The mentoring phenomenon is as prevalent in the Air Force officer corps as it is in private industry (63.5%).

RESULTS:

	Percentages Reporting Mentors
ACSC Respondents	38.5%
Air War College Respondents	47.6%
Combined Respondents	42.2%

Therefore: At a significance level of 0.01, reject the null hypothesis for all groups and conclude that mentoring does not exist in the same proportions in the Air Force as it does in private industry.

HYPOTHESIS 3

One's background prior to becoming an officer has no effect on the likelihood of being mentored during one's Air Force career.

RESULTS:

For the AWC and ACSC data each considered separately, fail to reject the null hypothesis at the 0.05 level of significance and conclude that one's background prior to becoming an officer has no effect on the likelihood of being mentored during one's Air Force career. For AWC, age at commissioning and highest education level attained were marginally significant discriminators with a combined $p < .07$.

For the combined responses, reject the null hypothesis at the 0.05 level of significance and conclude that "age at commissioning" and "highest level of education attained" are discriminators between mentored and unmentored officers ($p = .044$).

HYPOTHESIS 4

All officers, regardless of military background, are equally likely to have a mentor.

RESULTS:

For the AWC and ACSC data each considered separately, fail to reject the null hypothesis at the 0.05 level of significance and conclude that all officers, regardless of military background, are equally likely to have a mentor. For ACSC, formulation of a career plan emerged as a marginally significant discriminator ($p < .06$).

For the combined responses, reject the null hypothesis at the 0.05 level of significance and conclude that the "formulation of a career plan" is related to acquiring a mentor ($p = .029$).

HYPOTHESIS 5

Mentors have no influence on the careers of their proteges in the Air Force.

RESULTS:

For the ACSC, AWC, and the combined responses, reject the null hypothesis at the 0.05 level of significance and conclude that mentors have a significant influence of the careers of their proteges ($p < .001$ for all responses).

HYPOTHESIS 6

Mentored officers are no more likely to be satisfied with their career progress than unmentored officers.

RESULTS:

For the ACSC and the combined response, reject the null hypothesis at the 0.05 level of significance and conclude that mentored officers are more highly satisfied with their career progress than their unmentored counterparts.

For the AWC response, fail to reject the null hypothesis and conclude that mentored officers are no more satisfied with their career progress than their unmentored counterparts.

	T-statistic	P-value
ACSC	-3.32	.001
AWC	-1.50	.069
Combined	-3.67	.000

HYPOTHESIS 7

Mentored officers are no more likely to promoted early than unmentored officers.

RESULTS:

For the ACSC and AWC responses, fail to reject the null hypothesis and conclude that mentored officers are no more likely to be promoted early than unmentored officers.

For the combined responses, reject the null hypothesis at the 0.05 level of significance and conclude that mentored officers are more likely to be promoted early than unmentored officers.

	T-statistic	P-value
ACSC	1.52	.065
AWC	-1.47	.072
Combined	2.32	.010

HYPOTHESIS 8

Officers who have been proteges are likely to be no more satisfied with their job than those who have not been proteges.

RESULTS:

For the ACSC response, fail to reject the null hypothesis and conclude that officers who have been proteges are likely to be no more satisfied with their job than those who have not been proteges.

For the AWC and combined responses, reject the null hypothesis at the 0.05 level of significance and conclude that officers who have been proteges are likely to be more satisfied with their job than those who have not been proteges.

	T-statistic	P-value
ACSC	-0.96	.169
AWC	-2.48	.008
Combined	-2.32	.010

HYPOTHESIS 9

Mentored officers perceive that being mentored had no more impact on their own careers than mentoring has had on the careers of others.

RESULTS:

For the ACSC and AWC responses, fail to reject the null hypothesis at the 0.05 level of significance and conclude that mentored officers perceive that being mentored had no more impact on their own careers than mentoring has had on the careers of others.

For the combined responses, reject the null hypothesis at the 0.05 level of significance and conclude that mentored officers perceive that being mentored had <u>less</u> impact on their own careers than mentoring has had on the careers of others.

	T-statistic	P-value
ACSC	1.36	.091
AWC	1.1[illegible]	.127
Combined	1.78	.039

HYPOTHESIS 10

Those who had mentors see no more value in mentoring than those who did not have a mentor.

RESULTS:

For ACSC, AWC and combined responses, reject the null hypothesis at the 0.05 level of significance and conclude that those who had mentors see more value in mentoring than those who did not have a mentor.

	P-value
ACSC	.001
AWC	.013
Combined	.001

HYPOTHESIS 11

None of the roles of the mentor as enumerated by Lea and Leibowitz — teacher, guide, advisor, counselor, cheerleader, communicator, motivator, protector, sponsor, and role model — are functions used by mentors in the Air Force.

RESULTS:

For ACSC, AWC, and combined responses, reject the null hypothesis at the 0.05 level of significance and conclude that all of the roles of the mentor as enumerated by Lea and Leibowitz — teacher, guide, advisor, counselor, cheerleader, communicator, motivator, protector, sponsor, and role model — are functions used by mentors in the Air Force ($p < .001$ for all groups and responses).

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VITA

Captain Michael E. Uecker was born on 25 August 1947 in Tulsa, Oklahoma. He graduated from high school in Montgomery, Ohio, in 1965 and attended the United States Air Force Academy from which he received the degree of Bachelor of Science in History in June 1971. Upon graduation and commissioning, he completed navigator training and received his wings in May 1972. After completing navigator bombardier training in November 1972, Capt Uecker served as an FB-111A radar navigator and instructor radar navigator in the 393rd Bomb Squadron, Pease AFB, New Hampshire, until 1975, and as an FB-111A instructor radar navigator at the 4007th Combat Crew Training Squadron at Plattsburgh AFB, New York.

In 1978, Capt Uecker resigned from active duty to be a design engineer and product program analyst with Ford Motor Company, Dearborn, Michigan. After two years with Ford, he was recalled to active duty as a B-52H radar navigator at Grand Forks AFB, North Dakota. In 1982, he was reassigned to the Strategic Systems System Program Office at Wright-Patterson AFB, Ohio, as a Program Manager for B-52 modernization programs. He served in that capacity until entering the School of Systems and Logistics, Air Force Institute of Technology, in May 1983.

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Thesis Advisor: Benjamin L. Dilla, Captain, USAF

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Mentoring is a relatively long-term relationship between an older and a younger adult where the senior member of the relationship plays a major role in shaping and molding the younger member in his or her professional career. Previous research in the private sector indicated that a majority of the senior executives of major United States corporations had mentors who helped them in their careers. This research surveyed the students at Air War College and Air Command and Staff College to determine the prevalence of mentoring among high potential officers in the Air Force and to determine the effects of mentoring on them.

This investigation found that approximately half of the respondents had experienced the mentoring phenomenon and that those who had mentors were, on average, slightly better educated than their unmentored counterparts. Mentored officers were also more likely to be promoted ahead of their contemporaries, were more highly satisfied with their career progress, and were more satisfied with their jobs. Significantly, mentoring appears to be an informal leadership development tool which is prevalent to the same degree in every major command.

The most important roles played by the mentor, in the eyes of the protege, are those of role model and teacher. On the other hand, a significant percentage of the survey respondents who did not have mentors perceived mentoring as a being primarily a vehicle by which an officer receives a "free ride" to the top, sponsored and protected by the mentor.

In sum, the current informal mentoring system appears to work in the Air Force in much the same way mentoring works in the private organization. It is a way in which senior officers can train and motivate younger, high potential officers for senior leadership positions through close, one-on-one relationships.