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**WORK SAT? ACTION ISSUES AMONG
PRIOR UNITED STATES AIR FORCE
CERTIFIED REGISTERED NURSE ANESTHETISTS**

by

Donald Keith Martino

A project submitted to the
Faculty of the Graduate School of State
University of New York at Buffalo in partial
fulfillment of the requirements for the degree of
Master of Science

June 1990

- ABSTRACT -

↓
 The recruitment and retention of professional nurses is now recognized as a major problem in the United States (Gunn, 1988; Roberts, Minnick, Ginzberg and Curran, 1989). Over the last three years, the United States Air Force (USAF) has experienced increasing difficulty in retaining sufficient numbers of its' Certified Registered Nurse Anesthetists (CRNAs) to meet peace-time requirements (Prather, 1988).

The primary purpose of this research project was to identify the issues associated with the decision of many former USAF CRNAs to discontinue their military careers (prior to meeting retirement criteria) and opt for anesthesia nursing practice in a non-military setting. An additional goal is to compile this sample's recommendations for the Nurse Corps aimed at improving the work satisfaction of the CRNAs who are currently practicing in the United States Air Force. *SD*

An ex post facto descriptive survey design was used to gather the data. A voluntary, self-administered, partially open-ended questionnaire was mailed to the above population of CRNAs, who left the USAF during the fiscal years of 1982 through 1988. Confidentiality was assured.

Descriptive statistics and correlations were used to identify the relationships among the demographic data and to present the reasons given for leaving data and the sample's recommendations for USAF organizational changes. The calculation of the ranking of work satisfaction factors is based on Thurstone's Law of Comparative Judgements, as described by Edwards (1957), and identifies which factors of work satisfaction (Stamps and Piedmonte, 1986) are most important to the members of this sample.

The resultant data elicits the problems identified by this study's sample of former USAF CRNAs (N=58), which are associated with work satisfaction and the early attrition of CRNAs from military practice. The reason most frequently (90 percent of the sample) given for leaving the Air Force was the low pay, with 36 percent listing it as the most important reason for leaving. This study may be of benefit to the USAF Nurse Corps, as it attempts to resolve problems of CRNA retention by seeking to improve the work satisfaction of those CRNAs who currently practice in the United States Air Force.

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MASTER'S PROJECT/THESIS APPROVAL FORM
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SCHOOL OF NURSING

This is to certify that Donald Keith Martino, in the Graduate Program, School of Nursing, has successfully completed his research project entitled, WORK SATISFACTION ISSUES AMONG PRIOR UNITED STATES AIR FORCE CERTIFIED REGISTERED NURSE ANESTHETISTS in partial fulfillment of the requirements for the degree of Master of Science.

Signature of: *Linda M. Jarelli*
(Committee Chair)

Mary E. Jannick
(Committee Member)

June 1990

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Sincere thanks and appreciation are extended to my committee members: Dr. Linda M. Janelli and Dr. Mary Finnick for their continued patience and support. Additional thanks are offered to Michael Fallacaro, Dr. Donna M. Juenker, and Mrs. Donna Miller for their encouragement towards completion of this project.

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I would like to thank Dr. Paula L. Stamps for her permission to utilize the Stamps-Piedmonte Index of Work Satisfaction, developed by herself and Dr. Eugene B. Piedmonte (1986). Thanks are also extended to the Health Administration Press for their permission to reproduce the Stamps-Piedmonte Index of Work Satisfaction for use in this study.

Lastly, appreciation is extended to the Graduate Student Association of the State University of New York at Buffalo for their grant support which helped to defray the cost of this research project.

DEDICATION

I would like to dedicate this research project to my three sons; Daniel, Timothy and John Michael. May each of you develop a special love for knowledge that will fill your days with wonder and give you something new to accomplish each time that you have met your goals.

This project is also dedicated to my wife, Patrice, for giving me a wonderful family and for supporting my efforts towards personal and professional development. Thank you for always being there, for me and for our sons.

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CHAPTER I

INTRODUCTION

The issue of the attraction and retention of nursing professionals to an organization is now recognized as a major problem in the United States (Gunn, 1988; Roberts, Minnick, Ginzberg and Curran, 1989). It is particularly important in the field of nurse anesthesia where the nursing shortage, the decrease in the number of nurse anesthesia schools, and the trend towards master's level anesthesia programs have all contributed to the production of significant decreases in the number of nurses entering the field of anesthesia (Jordan and Maree, 1988). Due to a variety of reasons, many nurse anesthesia schools closed during the early to mid 1980's. In response, many of the remaining schools have expanded and the entire nurse anesthesia educational system has reached a new level of excellence (Martin-Sheridan, 1989). Program formats have improved, and in 1989, sixty percent of these nurse anesthesia schools were in a master's degree framework. While it is true that 1988 saw the lowest number of CRNAs graduating (574), graduating classes increased in 1989 (633) and 698 new graduates are expected in 1990 (Holtz, 1990).

Over the last three years, the United States Air Force (USAF) has recognized increasing difficulty in retaining

enough of its' Certified Registered Nurse Anesthetists (CRNAs) to meet the peace-time requirements (Prather, 1988). The high costs of the recruitment and education of CRNAs are not being balanced by long term commitments to military service. More and more CRNAs are leaving the military environment for civilian practice as soon as their initial commitment has been fulfilled.

The Air Force is looking for answers to the problems it is facing in retaining these highly educated nurse practitioners (Wildes, 1988). Unfortunately, a concerted effort has not been made to seek the reasons why these CRNAs have decided to leave active duty prior to retirement. The reasons that these practitioners have given as to why they left active duty may provide insight as to what problems need to be resolved.

Statement of the Purpose

The primary purpose of this research was to identify the major issues associated with the decision of active duty CRNAs in the U.S. Air Force to discontinue their military careers prior to meeting the requirements for retirement and opt for anesthesia nursing practice in a non-military setting. An additional goal was to seek this group's recommendations for the Nurse Corps aimed at improving the work satisfaction of the CRNAs who currently practice in the United States Air Force.

Research Questions

1. What are the major issues associated with the decision of the above population of CRNAs to leave active duty?
2. Which factors of work satisfaction are most important to this group of health professionals?
3. Are these individual practitioners more satisfied in their current work situation as compared to that which existed while in the USAF?
4. What recommendations can these CRNAs provide the USAF Nurse Corps to improve the work satisfaction of the CRNAs currently on active duty in the USAF?

Definition of Terms

Active Duty: full-time military status.

Certified Registered Nurse Anesthetist (CRNA): a Registered Nurse (usually with a BSN or a related degree), who has graduated from an accredited program of nurse anesthesia, and who has successfully passed the National Certification Examination. CRNAs must be recertified every two years by the Council on Recertification of Nurse Anesthetists, in addition to maintaining certification with their respective State Boards of Nursing.

Retirement Criteria: to be vested in the US military retirement program requires 20 years of satisfactory active duty service, with benefits available immediately upon retirement. Reserve duty can provide retirement status

after age 65. For the purposes of this study, the population included those CRNAs who left the USAF before retirement from active duty, during the fiscal (1 October to 30 September) years of 1982 through 1988.

Work Satisfaction: the multidimensional phenomenon that describes the overall pleasure or displeasure an individual feels concerning his work. For the purpose of this study the primary factors of work satisfaction (Stamps and Piedmonte, 1986) were:

a. Pay: dollar remuneration and fringe benefits received for work done.

b. Autonomy: amount of job-related independence, initiative, and freedom, either permitted or required in daily work activities.

c. Interaction: opportunities presented for both formal and informal social and professional contact during working hours.

d. Task Requirements: tasks or activities that must be done as a regular part of the job (these may be non-anesthesia related).

e. Professional Status: overall importance or significance felt about job status, both in the view of the individual and in the view of others.

f. Organizational Policies: management policies and procedures put forward by the employer.

Assumptions

In considering this research project, several assumptions were made. The first was that although work satisfaction may not be independent of other life satisfactions such as family relationships, health, and social status, it is possible to investigate certain job factors as areas affecting that satisfaction which comes from work (Hoppock, 1935). Another assumption was that it is possible to be satisfied with one aspect of work and be dissatisfied with other aspects. The composite attitude toward the work situation is computed internally, and is based on the relative importance of all the factors with which one is satisfied or dissatisfied and the intensity of the feelings associated with each factor.

It was also assumed for this study that work satisfaction and dissatisfaction lie at opposite ends of a continuum. It is realized that there are persons and situations in which the degree of satisfaction will vary from day to day, but it was assumed that in most cases, the range of the degree of satisfaction will be narrow and that the proportion of persons who view themselves as dissatisfied would not vary greatly on a daily basis.

A major assumption of this study was that the six factors of work satisfaction identified and validated by the research of Stamps and Piedmonte (1986) are in fact, the primary components of work satisfaction. This

assumption has been validated by hundreds of other studies in the literature, both within nursing and in other domains of research.

It was assumed that the CRNAs who elected to participate in this study would give thoughtful, honest reasons for their decision to leave active duty. The expression of negative feelings towards practice in the USAF Nurse Corps was expected, based on the population's decision to leave active duty. These same CRNAs were expected to have reasonable ability in recommending changes directed towards the resolution of the problems which they feel exist.

The most important assumption within this study and the point which defines the utility of this study was that the reasons given for leaving by this group of former USAF CRNAs would accurately reflect problems which currently exist and which currently have an impact on the retention decision of the CRNAs who now serve on active duty in the USAF. As an active duty CRNA, with fifteen years of military service, it is this author's assumption and assertion that this relationship does exist.

Preview of the Methodology

Information in this section is an abbreviated overview of the research method utilized. Detailed information on the research design and methodology utilized in this study are presented in Chapter III.

Research Design

The choice of an ex post facto descriptive survey design was made based on this study's primary purpose, which was to gather work satisfaction data concerning the reasons that former USAF CRNAs left active duty to practice in a civilian setting. Data about the current practice setting and which factors of work satisfaction are most important to this group of CRNAs was gathered in an attempt to describe the members of the group and to compare their current practice to that while on active duty.

Setting of the Study

This study was conducted as part of the requirements for a Master of Science degree from the School of Nursing and the Graduate School at the University of New York at Buffalo. The population for this study resided throughout the United States. The collection of data from the sample began on 21 November 1989, and the last questionnaire included in the data was received 15 February 1990.

The Study Sample

The population for this study was composed of all those CRNAs who had left active duty in the USAF for civilian nurse anesthesia practice without meeting retirement criteria (twenty years of active duty service). The sample used for this study consisted of those former USAF CRNAs who left active duty during the fiscal years (FY) of 1982 through and including FY 1988. The years prior to 1982 were used as exclusion criteria in order to provide a sample who had made a relatively recent decision to leave active duty. No CRNA who chose to leave active duty during fiscal year 1989 was included in the sample for this study. This decision was made in order to allow a minimum of one year of experience in a non-military setting for each individual included in the sample.

The intent of the study was to seek information from those CRNAs who had left military nurse anesthesia practice, not from nurses who had left the practice of anesthesia. Only CRNAs practicing in an anesthesia related capacity, in any setting other than active duty military, were included in the sample.

The cross-sectional convenience sample of the population described above consisted of all those CRNAs who met the inclusion criteria for the study, and whose names were provided by the Air Force and who had current addresses listed with the American Association of Nurse

Anesthetists. It is likely that several CRNAs who should have been included in the sample were not, secondary to incomplete records maintained by these agencies.

Instrumentation

The data collection method chosen for this study consisted of a self-administered questionnaire (Appendix A), which was mailed to the home addresses of the sample described above. The questionnaire consisted of an introductory cover letter and a four-part survey. The first part of the questionnaire consisted of a 23-item demographics section, which included questions about the participants' current practice. The format of the demographic section was composed of multiple choice and fill-in-the-blanks questions. The second section required the participants to make 15 paired comparison choices concerning which of the factors of work satisfaction identified by Stamps and Piedmonte (1986), are the most important to their personal satisfaction with work in general. This paired comparisons section was reproduced from the work of Stamps and Piedmonte (1986) without changes, and was used with the permission of the authors (Appendix B) and the publishing company (Appendix C). The third section of the questionnaire requested information concerning the participants' reasons for leaving active duty and the last section asked for recommendations which

might help resolve the problems they feel exist or improve work satisfaction for active duty CRNAs. These last two sections were composed of open-ended questions in an attempt to identify as many factors and issues as possible. There were also three other open-ended questions contained in the questionnaire. The six factors of work satisfaction identified by Stamps and Piedmonte (1986) were used in the recommendations section of the survey in order to provide direction for the thought processes of those questioned and categorical headings for their answers.

Research Procedures

Approval was obtained from the Human Subjects Review Committee of the sponsoring university (Appendix D). The questionnaire was evaluated for content validity by three independent faculty members who had military experience as CRNAs. The feedback suggestions from these content specialists concerning changes in wording and format were incorporated into the final version of the questionnaire. Prior to initiation of the data collection for this research project, a pilot study was completed in October of 1989 in order to identify difficulties with the questionnaire or the collection design. The pilot study sample consisted of five randomly selected members of the sample frame. All five participants returned their completed questionnaires, with no missing data. No changes

were deemed necessary upon review of the pilot study questionnaires. The data from the pilot study was excluded from the remainder of the study.

The questionnaire was mailed to the accessible population and incorporated a stamped, return-addressed envelope. Those CRNAs who did not wish to participate and who did not wish to receive repeat mailings, were directed to return the unanswered questionnaire in order to be removed from the repeat mailing list.

The cover letter clearly stated that return of the survey material constituted agreement to participate and the assurance of confidentiality was emphasized in the cover letter. The names of those CRNAs who returned questionnaires were separated from the surveys as soon as they were received. This was done as an additional step to protect the confidentiality of the participants.

Data Analysis

The coding of all the data obtained from the open-ended questions was accomplished by this author. Each new answer to a question was assigned a one or two-digit code. There were 43 different reasons given for leaving and 46 different recommendations. The complete list of the coded reasons for leaving and the coded recommendations are presented in Appendices F and G, respectively. All the data was computerized, reviewed and verified to ensure

accuracy. All statistical analyses were conducted using the Statistical Package for the Social Sciences (SPSSX, version 3.0, 1988).

The initial analysis consisted of obtaining frequencies and descriptive statistics for the 58 participants included in the data set. Correlations were obtained on specific variables within the demographic data in order to identify relationships that would help describe the sample.

A simple binary index (yes/no) system was used to quantify the frequency that each coded reason for leaving or recommendation was identified by the sample. The percentage of the sample who identified each specific reason for leaving or recommendation was established. A repetition of this procedure established the frequencies for the ranked (number 2 to 4) reasons for leaving, and the non-ranked (other reasons given for leaving) subsets.

The ranking of the importance of the six factors of work satisfaction was computed using the methods outlined by Stamps and Piedmonte (1986) which is based theoretically on Thurstone's Law of Comparative Judgements, as described by Edwards (1957). The results of the SPSSX computer program method were the same as the hand calculations method, both of which are presented by Stamps and Piedmonte (1986).

Scope and Limitations

One obvious limitation of this research is that there are only six work satisfaction factors defined on the questionnaire. Although these factors have been considered the most relevant to other health professionals (Stamps and Piedmonte, 1986), other factors may also be important to the work satisfaction of nurse anesthetists. An attempt to recognize these other possible factors was made on the questionnaire by reserving space for "other" reasons for leaving and "other" recommendations.

This study has presented the major issues associated with this sample's decision to leave active duty in the USAF. These issues and the recommendations which accompany these issues may not provide answers which are acceptable to the USAF. It is also quite possible that the feasibility of implementing their recommendations may prove impossible.

Individual CRNAs may have refused to participate in this study for any number of reasons, including the feeling that no one will ever use the information and thus, that participation would just have been a waste of their time. The open-ended questions format may have caused some individuals to avoid participating, since this format is more difficult to answer and takes more time than multiple choice or closed-ended questions. However, some of the participants stated that they appreciated the opportunity

to express their views and recommendations.

The results of this study reflect problems which exist for CRNAs in the Air Force. Current research involving CRNAs suggest that most of the major problem issues are common to the three service branches. However, results from this study may not be generalizable to the other military services. There are many differences between the military services, which this study did not presume to investigate, and thus results from this study should only be used to compare and reflect nurse anesthesia practice and work satisfaction issues associated with the United States Air Force.

CHAPTER II

REVIEW OF THE LITERATURE

Early Work Satisfaction Studies

The intent of work satisfaction studies have changed greatly since the early experiments of Frank Taylor (1911) who presented research linking job satisfaction with a variety of both individual and organizational variables. He assumed that individuals would be motivated to do their work well if rewards were directly related to their performance of carefully planned tasks. Workers at that time were regarded as part of the machinery to be managed in the most efficient way possible. Managers often fragmented Taylor's concepts and inappropriately used them for productivity purposes rather than worker satisfaction. Industrial studies that considered the worker as a human being with complex needs and feelings first appeared in the 1930's. Hoppock (1935) interviewed a cross-section of workers and concluded that work satisfaction was only a small part of general satisfaction with life and was related to the individual's ability to adapt to situations. The ability to relate to others, relative status in the socioeconomic group with which one is identified, and the nature of the work in relation to abilities, interests, and preparation for the job were other factors that Hoppock found related to work satisfaction.

Elton Mayo's studies in the 1930s resulted in the development of the human relations movement with its concern for worker satisfaction and emphasis on leadership and personal relations (Vroom, 1964). Mayo (1945), experimenting on the working conditions of a chosen group of factory employees (the Hawthorne Studies), concluded that the most important determinant of job satisfaction was group interaction. Morale increased within the experimental group with every change in work conditions, whether they were better or worse. Although Mayo's findings stressed the importance of group interaction over any of the other needs being met by the work situation (security, esteem, affiliation, intrinsic interest in the job, or achievement), his was the first industrial study to consider the worker from a psychological perspective. This approach provided the basis for later job satisfaction studies.

Humanistic Approaches to Work Satisfaction

The theories of motivation developed by the humanistic psychologists have had an important influence on job satisfaction studies. In 1943, Maslow (1954) developed an influential and useful hierarchy of human needs, placing at the lower end needs which are vital to survival, but which can be obtained and satisfied, and at the upper end needs which allow a person to develop his potential and whose

partial attainment spur greater need. Maslow's needs hierarchy from lowest to highest includes physiologic needs, safety, affiliation, esteem, of oneself and by others, and self-actualization (realization of one's potential). These needs have been the basis of job satisfaction studies either used alone or in combination with expectancy theory. Expectancy theory relates motivation to the expectations of achieving a reward, the value of the reward, and the effort required to achieve it (Lawler, 1973). Maslow's work forms the basis of several models which are collectively known as need fulfillment theory.

Herzberg, Mauser, and Snyderman (1959) developed a theory of job satisfaction based on Maslow's hierarchy, but they concluded that not all factors increase satisfaction. Certain factors, corresponding roughly to Maslow's lower-level needs, add to dissatisfaction if not met, but cannot increase satisfaction, while other factors, the higher-level needs, add to satisfaction by their attainment. The dissatisfiers include company policy and administration, supervision, and working conditions. The satisfiers include achievement, recognition, the work itself, personal relations, factors in personal life, job security and status, with pay overlapping both categories. Herzberg's theory is also known as the two-factor theory and after thirty years of study his notion that

satisfaction and dissatisfaction are two separate dimensions is still widely debated.

Maslow's need hierarchy has been criticized as representing the value system of the upwardly mobile members of society, while not considering other groups whose values may deviate from this standard. Herzberg has been similarly criticized for presenting a division of needs which cannot possibly apply to all job situations (House and Wigdor, 1967). The critics of these theories concede that the work of Maslow and Herzberg have been valuable for the comprehensiveness of needs they include. They have also suggested that to motivate a worker successfully, the rewards offered must be those which are most desired and least attainable.

Vroom (1964) developed a variation of the need fulfillment theory, which hypothesizes that an individual's work satisfaction is a product of the relative importance of various work-related and personal needs. This approach makes the distinction that work satisfaction cannot be separated from personal contributors to satisfaction.

Social reference group theory states that work satisfaction is positively related to the characteristics of the job that meet the desires of those to which a worker looks for guidance in evaluating his own reality (Korman, 1971). Adams (1973) maintains that an individual computes work satisfaction by dividing what he receives from his job

by how much effort he puts into the job. Satisfaction is then based on a comparison of one's own work and rewards to others doing a similar job.

Work Satisfaction and Turnover

Most of the current research which deals with work satisfaction issues is based on one or more of the theoretical frameworks, described above as humanistic approaches. All of these theories have a similar productivity perspective. Attempts to measure work satisfaction are primarily a reflection of the productivity concerns of the organization.

The relationship between work satisfaction and turnover began to be presented in the early research of occupational sociology. Brayfield and Crockett (1955), Herzberg et al. (1957), and Vroom (1964) were some of the first to document a relationship between employee withdrawal and work satisfaction. Studies by more contemporary researchers, such as Porter and Lawler (1968), Ronin (1970), Kilgour (1975), Longest (1979), and Flanagan (1981) have all continued to note the relationship of diminished work satisfaction and high turnover. The findings of both early and more current studies have indicated that unmet expectations are important in the withdrawal decision.

There is a general consensus within the current literature that work satisfaction is a reliable and strong predictor of both employee organizational commitment and turnover (Cotton and Tuttle, 1986; Mottaz, 1987; Welsch and LaVan, 1981). Turnover, or voluntary separation from an organization has been measured directly through longitudinal studies (Price, 1981; Porter, Steers, Mowday and Boulian, 1974; Weisman, Alexander, and Chase, 1980) and indirectly through studies which include statements related to intent to stay or leave an organization (Bluedorn, 1982; Cotton and Tuttle, 1986; Dalessio, Silverman, and Schuck, 1986). These intent to leave or stay statements have been shown to be highly predictive with some decay as the time period between the statement and the actual time of anticipated departure lengthens.

The largest single group employed in the health-related occupations and the most commonly studied group is the 1.9 million men and women who make up the profession of nursing. Nursing represents one-half of the total workforce of the health-related occupations. The turnover of nursing personnel is an important problem for all health care organizations, if for no other reason than cost. While external rewards seem to attract nurses and other workers to a job, many times it is internal rewards that are most important in determining the decision to leave or remain with an organization. The problem of

turnover is now being viewed as a problem related to the organization and not to the personality characteristics of the individual nurse. There is general agreement that one-third to one-half of the hospital turnover rate is within the scope of control of administrators. This perspective enables the problems of work satisfaction and turnover to be resolved or at least lessened by modifications within the organization (Stamps and Piedmonte, 1986).

Factors of Work Satisfaction in Nursing

The first study of nurse satisfaction by Bullock (1953) started the trend toward identifying specific and separate factors that contribute to job satisfaction in nursing. Some of the themes identified in studies during the 1970's (Aldrich, 1978; Godfrey, 1978; McCloskey, 1974; Neumann, 1973; Pablo, 1976; Shapiro, 1978) were the values of autonomy, professional control, and the extent to which the work environment permitted nurses to use their full range of professional knowledge and skills. At that time, pay was not rated particularly high as a major source of dissatisfaction. By the early 1980's, women, and in turn nursing, had become increasingly aware of monetary inequities and pay came to be viewed as a viable incentive that increased both self-esteem and performance (Aiken, 1982; Hallas, 1980; Wandelt, Pearce, and Widdowson, 1981).

Throughout the 1970's, Stamps and Piedmonte conducted multiple studies involving the components of work satisfaction in an effort to develop a statistically valid and reliable measurement instrument that could become a standardized tool for the measurement of work satisfaction of nurses and other health professionals. They identified and validated six components or factors of work satisfaction. After a decade of work and multiple studies utilizing their instrument, they concluded that the most likely ranking of importance of these six components for hospital nursing staff were autonomy, pay, professional status, interaction, task requirements, and organizational policies. (The ranking of these components and their Z-scores is presented in Table 1, below.)

TABLE 1

**Stamps-Piedmonte (1986) Rankings Of Components
For Hospital Nursing Staff
(With associated Z-scores)**

<u>Rankings of Components</u>	<u>Z-score</u>
Autonomy	3.6
Pay	3.5
Professional Status	3.3
Interaction	3.0
Task Requirements	2.8
Organizational Policies	2.4

They found that the significance of any one of these factors varies both with the work setting and the discipline of the professional. For the studies that involved other than hospital settings or other health professionals, there was less unanimity of opinion, although autonomy has never been ranked less than third in importance. Organizational policies has usually been ranked sixth, but on occasion has been ranked fifth. In discussing the above instrument and studies with Dr. Stamps by telephone, this author was told that nurse anesthetists had been included in at least one unpublished study utilizing the Stamps-Piedmonte Index of Work Satisfaction, but that the results had not been made available to her.

Although pay is almost universally recognized as important, satisfaction with pay depends not so much on the absolute amount of money received but on the amount of money relative to what others receive. In their studies in the late 1970's, Stamps and Piedmonte found that pay was a major source of work dissatisfaction in nursing. The study by Wandelt et al. (1981) indicated that the problem of inadequate salaries was ranked first among the factors causing dissatisfaction for over 43 percent of the Texas nurses in that study. While pay is obviously important in predicting work dissatisfaction, other components of work are consistently pointed to as higher in importance to

nurses. White (1980) found that quality of patient care and the amount of bureaucratic interference with satisfactory work performance took precedence over pay. Probably the most important perspective about pay is its relationship to what others are receiving for similar work.

Autonomy is the amount of work-related independence, initiative, and freedom either permitted or required in daily work activities. The studies by Stamps and Piedmonte (1986) have consistently shown that autonomy is the most important aspect of work satisfaction for nurses. Nursing has continued to move towards increased levels of autonomous practice. Primary nursing improved the work satisfaction of professional nurses by encouraging nursing decisions that had direct impact on patient outcomes. The ever expanding number of specialty roles within nursing are also a direct result of the desire for autonomy.

Task requirements are those things that must be done as a regular part of the job. Registered nurses are often frustrated by the underutilization of their skills and education due to limitations placed on nursing within the medical bureaucracy. Stamps and Piedmonte (1986) found that task requirements are important determinants of satisfaction among nurses, with non-patient care activities often singled out as the greatest source of dissatisfaction.

Organizational policies and requirements are management decisions which affect work activities or control personnel actions. Lack of administrative support was ranked third as a source of dissatisfaction, in the 1981 study by Wandelt et al.

A positive relationship between the perception of professional status and work satisfaction has been reported throughout the literature. Professional status is the perceived importance of the job to the individual as well as the importance the individual perceives his job to be in the eyes of others, the organization, and the community. Nursing has major problems with professional status. While nursing defines itself as professional based on the level of expertise and education expected of nurses by society, limits to their autonomous practice confound the issue.

Interaction includes social and professional contact at work with other nurses and with physicians. Many studies which discuss the importance of more cooperation between physicians and nurses revolve around the issue of increasing autonomy for nurses. Most studies show a relationship between the level of interaction and work satisfaction.

Another major area of work satisfaction research in nursing concerns hospital staffing and shift work. Since the majority of health care settings require 24-hours-a-day staffing, shift work is a necessary evil. A whole range of

social, physical, and psychological problems are associated with rotating shift workers in nursing. Nurses who rotate shifts have also been shown to have significantly lower levels of satisfaction with their overall work schedules than nurses who worked on any one shift, including those who worked a straight night shift (Tasto, 1978). Hospitals have tried all sorts of staffing modifications in order to improve satisfaction with this component of the working environment. The short supply of nurses to fill an ever increasing demand has only made it more difficult to improve satisfaction with staffing and scheduling requirements.

Published Work Satisfaction Studies in Nurse Anesthesia

There are only two published studies that specifically analyzed work satisfaction among nurse anesthetists. Thompson (1981) surveyed 284 nurse anesthetists in various work settings, in order to determine current levels of job satisfaction in a sample of CRNAs in southwestern Pennsylvania. After identifying six components of work satisfaction from the literature, she developed a questionnaire by modifying and combining several survey tools, including an early version of the tool by Stamps, Piedmonte, Slavitt, and Haase (1978). Thompson's survey had three parts, the first of which was composed of demographics and questions on practice settings. The

second part utilized paired comparisons (Stamps et al., 1978) which established the rank order of those six work satisfaction factors (from most important to least relative importance) as pay, working conditions, autonomy, anesthesiologist support, the work itself, and interaction. (A comparison of the rankings and scores for each factor is presented below, in Table 2.)

Thompson used a "Likert-type" attitudinal scale in order to obtain data concerning current levels of satisfaction related to the respondents' current job. Satisfaction with each of the six job factors was assessed through a summation of the attitude statement scores relative to each job factor. (The order of the job factors from least satisfaction to most satisfaction and the percentage of anesthesiologists satisfied with each factor is presented in Table 3, which follows on the next page.)

TABLE 2

Thompson's CRNA Rankings Of Components
(With summation scores for each factor)
N=284

<u>Rankings of Components</u>	<u>Scores</u>
Pay	69
Working Conditions	56
Autonomy	45
Anesthesiologist Support	36
Work Itself	28
Interactions	22

TABLE 3

Thompson's CRNA Satisfaction With Each Component
 (With percents for each factor), N=284

<u>Rankings of Components</u>	<u>Percent</u>
Pay	37.7
Anesthesiologist Support	79.2
Autonomy	86.0
Interactions	90.0
Working Conditions	97.2
Work Itself	100.0

As can be seen in Tables 2 and 3 above, the pay component showed the highest degree of dissatisfaction, while being ranked as the most important component of work satisfaction for this sample of nurse anesthetists. Pay was also ranked higher than autonomy in Thompson's (1981) CRNA sample, representing a dichotomy from the standardized rankings of hospital nursing staff in Stamps and Piedmonte's (1986) studies. Of the 284 nurse anesthetists who completed Thompson's questionnaire, 56.6 percent indicated that they were satisfied with their present jobs, 11.5 percent were dissatisfied, and the remainder scored in an intermediate range. Thompson was not able to correlate any one factor with overall job satisfaction or dissatisfaction, but did find that satisfaction tends to increase with the number of years in the profession. Her data also suggested that nurse anesthetists employed by MDA/CRNA anesthesia groups were less satisfied than those otherwise employed.

The only other published study which directly deals with the work satisfaction of nurse anesthetists was done by Brown, Chase, and Freeborn (1987). The objectives of their study were related to how consumerism and CRNA practice in maternity services related to the work satisfaction of CRNAs, with the study population composed of all those CRNAs practicing in Oregon and Washington. The response rate for their study was 79 percent, with an N of 161. The first half of the questionnaire used in their study was devoted to items on the background and professional characteristics, as well as various dimensions of work satisfaction, of all the CRNAs in the study population. The factors of work satisfaction used to develop the measures of work satisfaction for their study were those identified by Stamps and Piedmonte (1986). The second half of the survey was restricted to CRNAs who spent part of their time working in maternity anesthesia care.

Generally, these CRNAs reported satisfaction with most aspects of their work and careers. They were least satisfied with opportunities for career advancement and with future prospects of financial and job security. Brown et al. (1987) also found that as time spent working in obstetrical anesthesia increased, work satisfaction decreased. Given a choice, fifty percent of these CRNAs would not choose a job with OB practice. Male CRNAs tended to be more satisfied than females. Also, as age increased,

overall work satisfaction decreased, a finding which contrasts with other studies which have found that the level of work satisfaction increases with age. As expected, higher income was associated with greater satisfaction. Of those CRNAs who had some involvement in regional anesthesia administration, 77 percent indicated that their work satisfaction would decline if regional anesthesia were done exclusively by a physician; none reported that job satisfaction levels would increase. Regional anesthesia was carried out solely by physicians in only a small percentage of the cases.

AANA Statement on Retention Issues of Military CRNAs

On 6 April 1989, Peggy McFadden, representing the AANA before the Senate Appropriations Subcommittee on Defense, made recommendations for inclusion in a legislative package that would have the potential to recruit and retain CRNAs within the military services. The AANA provided the unpublished transcript of her statement to this author as background data for the study undertaken.

The AANA stated that the basic answer to the military shortages of CRNAs is centered in the "Pay-Promotion-Practice Triad." The pay of military CRNAs has fallen far behind that within the civilian sector; promotion potential for CRNAs, which affects both morale, pay, and status has seriously declined in the 1980's; and finally, unwarranted

practice restrictions, both perceived and real, have served to demean CRNAs, and adversely affect their morale and in some instances their clinical competency. The shortage of CRNAs in the general population, based on both a shortfall of graduates and increased demand, has served to increase civilian CRNA income significantly in the past three years to the point where military pay and fringe benefits are no longer comparable to the average employed civilian CRNA. This pay differential ranges from about \$10,000 to \$36,000 per year on the average, with younger officers showing a greater disparity in pay than more senior officers when compared with their civilian counterparts. (Tables 4 and 5 on the next page, illustrate the pay deficit.)

The AANA proposed that a professional pay or bonus be instituted immediately. These recommended pay supplements included continuation bonuses ranging from \$5000 to \$15,000 per year and payments of \$5000 per year for assignments to sole anesthetist slots (facility with only one CRNA assigned). A supplemental payment for CRNA faculty and Chief CRNAs in military medical centers in the amount of \$3000 to \$5000 per year was also recommended. For point of comparison, anesthesiologists (MDAs) get up to \$40,000 per year additional pay.

TABLE 4

**Mean Gross Annual Salary/Income
For CRNAs By Year, 1986-1989**
(Fringe Benefits not included.)

1986	\$46,000
1987	\$53,615
1988	\$58,287
1989	\$65,830 (Projected)

TABLE 5

**Deficit Between 1989 Projected Mean Gross Annual
Income For Civilian CRNAs And Military CRNAs
At Various Career Points In 1989**
(Fringe Benefits not included.)

Career Point	Annual Military Pay	Mean Annual Civilian Pay	Deficit Between Military and Civilian Pay
0-2			
3 yrs svc	\$30,613	\$65,830	\$35,217
0-3			
8 yrs svc	\$36,586	\$65,830	\$29,244
0-4			
14 yrs svc	\$43,966	\$65,830	\$21,864
0-5			
20 yrs svc	\$55,435	\$65,830	\$10,395*
0-6			
26 yrs svc	\$68,118	\$65,830	(+2288)*

* Since military CRNAs at this level most frequently fill supervisory jobs, these comparisons with the mean annual income of CRNAs do not reflect a valid comparison. Most CRNAs serving in Chief CRNA positions in major medical centers are drawing salaries in excess of \$70,000.

Data extrapolated from AANA Membership Annual Survey Data and 1989 Military Pay Data.
Military Pay includes basic pay plus quarters (with dependent rate) and subsistence annualized.

Promotion potential within the military not only represents pay increases, but it is most meaningful from the standpoint of military status. Good promotion potential is probably every bit as essential to a satisfying military career as is comparable pay with their civilian counterparts. The AANA recommended that the Nurse Corps be given the same type of exemption the Medical and Dental Corps have from the Department of Defense Officers Personnel Management Act (DOPMA). Such an exemption could enhance the promotion potential of all military nurses at least up to O-5 (Lt. Colonel or Commander) by permitting promotion with their peers on a fully qualified basis, instead of utilizing the quota system currently in use.

The AANA recommended the elimination of unwarranted restrictive practice policies placed on CRNA practice in the services over the past three to four years. They stated that the CRNA scope of practice defined by the AANA should serve as the basis for the delineation of clinical privileges of CRNAs, consistent with the individual's education and experience.

Education funds and scholarships for nurse anesthesia education as an inducement to serve on active duty or in the reserves was also one of the AANA recommendations. The last recommendation was for partnerships between military and civilian nurse anesthesia educational programs to be established which would permit students in civilian

programs the opportunity to affiliate with a military hospital for a portion of their clinical anesthesia training, in hopes that these opportunities would lead to increased recruitment of CRNAs into the military.

AANA Report of Survey of Military CRNAs:

Retention Incentives

On 24 May 1989, the AANA conducted an unpublished survey to acquire data to support legislative initiatives for selected career incentives having the potential for retaining CRNAs in the military services. Comments from the AANA on the initiatives proposed had to be delivered to the U.S. House of Representatives by 2 June 1989. The survey was sent to the Chief CRNA of the 112 military hospitals in the continental United States, and the response rate by 2 June 1989 was 79% (88/112). The findings of the survey are numbered one to five, and are presented with illustrating tables over the next several pages.

1. CRNA shortages on active duty are significantly greater than anesthesiologist shortages. USAF anesthesia personnel strength figures are presented in Table 6, which follows on the next page. There were 36 funded CRNA positions unfilled as of 31 December 1989. The MDAs were 104% manned on that date. Clearly, the Air Force and Congress must deal with the problem of CRNA retention.

TABLE 6

USAF Anesthesia Providers: Authorized/Assigned
 (By rank, as of 31 December 1989)

	Anesthesiologists			Nurse Anesthetists		
	Auth	Asgn	%	Auth	Asgn	%
Col	9	6		3	3	
L/C	19	3		16	18	
Maj	29	36		46	110	
Cpt	26	41		161	93	
1Lt	*	*		34	0	
2Lt	*	*		*	*	
Tot	83	86	104%	260	224	86%

* Physicians enter the military as Captains and CRNAs are given constructive credit towards rank for their education and experience.

This data was provided to this author by the USAF Military Personnel Center (AFMPC).

2. Of 362 CRNAs covered by the survey, 68 plan to leave (resignations/retirements) the military by 1 June 1990. One hundred and fifty-five others stated they were seriously considering leaving the military within the next two years. Generalizing these figures to all CRNAs in the military, there is a potential loss of 358 of the 579 CRNAs within the next two years, representing over 60 percent of those currently on active duty. These predictions appear high when compared to data available by 31 December 1989. (These figures are presented in Tables 7 and 8, on the next page.)

TABLE 7

Planned Military CRNA Attrition By 1 June 1990
(Resignations and Retirements)

	Army	Navy	USAF	Total
CRNAs in Each Service:	234	105	240	579
CRNAs Covered by Survey:	170	68	124	362
CRNAs Leaving Service:	30	12	26	68
Percent Attrition:	17.6	17.6	21.0	18.8
Predicted for All AD CRNAs:	41	18	50	109

Notes: 1. Based on Chief CRNAs' reporting of numbers of CRNAs on their staff that already have their papers in or plan to put their papers in for retirement or resignation.

2. Predicted numbers come from multiplying percent planned attrition rate within survey by number on active duty.

TABLE 8

Military CRNAs Seriously Considering Leaving The
Services Within The Next 24 Months (By 1 June 1991)

	Army	Navy	USAF	Total
CRNAs Seriously Considering Leaving Active Duty	72	27	56	155
Percent of Active Duty CRNAs Covered by Survey	42.4	39.7	45.2	42.8
CRNAs Predicted Seriously Considering Leaving the Service based AD Strength	99	42	108	249

Note: It should be noted that these figures could be even higher if it was not for the payback requirement for education, which probably affects as many as 150 CRNAs in the three services, making them ineligible to exit the services within the next two years.

AANA Findings continued:

3. The practice environment has deteriorated significantly in the last several years. Under such conditions, pay and promotion assume even greater importance as career incentives.

4. Most CRNAs cited that the current lack of promotion potential is a major disincentive to remaining in the military services.

5. The significant disparity in pay, between military and civilian CRNAs has become a major disincentive to remaining in the military.

The data presented in the tables above clearly indicate that the USAF was short thirty-six CRNAs by the end of 1989. Comparing the 26 CRNAs who indicated that they were leaving the Air Force by 1 June 1990 (see Table 7 above) and the then current strength of 240 CRNAs, with the CRNA strength (224) reported by the Air Force on 31 December 1989, the USAF had lost 16 of the indicated 26 in the first six months. It seems unlikely that the Air Force will lose the projected 50 CRNAs by 1 June 1990. In other data provided by the Air Force, the Nurse Corps was short sixteen nurse anesthetists by the end of 1987. This and even more data constructed from the sampling frame, show that the Air Force is not retaining CRNAs and that fewer of the losses over the last several years have been due to retirement.

The percentage of CRNAs assigned/authorized (86%) was much lower than the percentage of anesthesiologists assigned/authorized (104%). It is not clear to this author why the Air Force identifies the MDAs (physician anesthesiologists) as being critically undermanned. It is a clear fact that almost all MDAs leave the Air Force as soon as they have fulfilled their commitment for education and training.

The AANA survey and the above data confirm that pay, promotion potential, and practice disincentives were the driving force for CRNA disenchantment with the military services and which, if uncorrected, will produce an unprecedented exodus of these anesthesia providers from each of the military active duty forces. The recommendations for correcting these inequities were the same as those presented before the Senate Appropriations Subcommittee on Defense by Peggy McFadden, in April 1989.

Theoretical Framework of the Study

The purpose of this study was to collect work satisfaction data from the group of CRNAs who had recently decided to leave nurse anesthesia practice in the USAF. The author includes this section to serve as an explanation of his personal perspective on which theory best provides an appropriate framework to evaluate the work satisfaction of CRNAs. This author believes that the social reference group theory is the best theoretical framework to use in trying to understand the changes occurring within the specialty of nurse anesthesia, particularly within the military. Military CRNAs compare the rewards they receive for the effort demanded by their work situation against three different groups. These three groups are military MDAs (physician anesthesiologists), military staff nurses, and civilian CRNAs. The data received concerning the reasons that these CRNAs made the decision to separate from military practice confirm this author's opinion that social reference group theory was an appropriate choice of a theoretical framework for use in this study.

CHAPTER III

RESEARCH DESIGN AND METHODOLOGY

This chapter will discuss in depth the research design and methodology used in this study. It will be helpful for any replication or extension of this research.

Research Design

The choice of an ex post facto descriptive survey design was made based on this study's primary purpose, which was to gather work satisfaction data concerning the reasons that former USAF CRNAs left active duty to practice in a civilian setting. Data concerning current practice was sought in order to allow comparisons with other civilian CRNAs and with those in the Air Force. The data on which factors of work satisfaction are most important to the sample was gathered in an attempt to compare this sample's ranking of factors with those described in the literature.

Polit and Hungler (1989) state that descriptive research can frequently advance our understanding of what the world around us is like. This descriptive study will have served a purpose satisfactory to the author, if a better understanding of the work satisfaction issues concerning CRNAs in the Air Force has been established. Some of the participants used the survey to vent their

frustration, but many participated in order to help in the resolution of the work satisfaction issues plaguing those CRNAs on active duty.

As described in the review of the literature, there are only two published studies which deal directly with the issue of the work satisfaction of nurse anesthetists. Since nurse anesthetists are registered nurses before they train in their specialty, the research dealing with work satisfaction in nursing applies to them in general. However, it is important to remember that the work environment, education, level of responsibility, and characteristics of this specialty group set them apart from nurses in general.

This study is part of the beginning research dealing with the work satisfaction of nurse anesthetists. Its goals are to describe the work satisfaction issues of the one percent of this nation's 22,526 active CRNAs (Holtz, 1990) who were practicing in the Air Force in 1989. The CRNAs in this sample have been important sources of information which may prove to have been useful in helping to improve the work satisfaction of those CRNAs who serve in the Air Force. Once the issues are identified and validated by this study and others, then more experimental studies may be appropriate.

Research Methodology

Setting of the Study

This study was conducted as part of the requirements for a Master of Science degree from the School of Nursing and the Graduate School at the University of New York at Buffalo. The population for this study resided throughout the United States. The collection of data from the sample began on 21 November 1989, with a second mailing to non-respondents on 4 January 1990. The second mailing was delayed for three weeks longer than planned for in the research proposal. The rationale for this decision was that a better return might occur after the holiday season. The last questionnaire included in the data was received 15 February 1990.

The Study Sample

The population for this study was composed of all those CRNAs who had left active duty in the USAF for civilian nurse anesthesia practice without meeting retirement criteria (twenty years of active duty service). The sample used for this study consisted of those former USAF CRNAs who left active duty during the fiscal years (FY) of 1982 through and including FY 1988, in order to include enough CRNAs to have a reasonable sample size. The years prior to 1982 were used as exclusion criteria in

order to provide a sample who had made a relatively recent decision to leave active duty. No CRNA who chose to leave active duty during the 1989 fiscal year was included in the sample for this study. This decision was made in order to allow a minimum of one year of experience in a non-military setting for each individual included in the sample.

The names of all those CRNAs (N=208) who had left active duty (retirement, resignation, death, etc.) during FY 1982 to FY 1988 were obtained through official channels from the USAF Military Personnel Center at Randolph AFB in San Antonio, Texas. These names were grouped by the fiscal year in which the member left active duty. Their dates of entry to active duty as commissioned officers as well as their dates of leaving active duty were listed. No addresses were provided.

All members who had more than 20 years of active duty service (N=61), computed via their dates of entry and exit from active duty, were excluded from the population. This decision was based on the premise that CRNAs who left active duty prior to meeting retirement criteria might feel differently or more strongly about their work dissatisfaction than those who chose to remain on active duty until obtaining retirement benefits. While these two groups are very likely to feel similarly about the work satisfaction issues affecting all Air Force CRNAs, it was not the purpose of this study to compare the differences or

similarities of these two groups.

The loss of members from both of these groups represent significant, possibly different, types of loss to the Air Force. The loss of nurse anesthetists who have more than twenty years of active duty service (not necessarily twenty years as a CRNA) is more expected and even though the Air Force has received a certain amount of utility from these individuals, their retirement represents a great loss of anesthesia experience to the Air Force Nurse Corps. In terms of numbers of personnel lost, the loss of those CRNAs with less than twenty years service represents a much greater deficit in the number of personnel available than does the loss of those CRNAs eligible for retirement. Those nurse anesthetists who leave the service early represent a major loss of potential benefit to the military workforce.

For the purposes of this study, the delimitation to one group or the other was necessary to reduce the cost of the project. The group of CRNAs who chose to leave active duty without retirement benefits, four of whom had served between fifteen and seventeen years, intuitively seemed to represent those who would be most dissatisfied with Air Force practice, and was the main reason for their selection as the sample to study.

All those CRNAs who responded to the questionnaire and who had more than twenty years of service were eliminated

(N=10) from the sample. This occurred as a function of incomplete information on the total amount of time calculated for retirement. The above listing of personnel only gave dates that represented time as officers. Some of these personnel had less than twenty years service as officers, but had also been enlisted members of the armed forces. Any combination of active service periods is used in calculating the twenty years required for retirement.

The next exclusion criteria used in defining this group was that of "practicing in any non-military setting." The intent of the study was to seek information from those CRNAs who left military anesthesia practice, not those CRNAs who had decided to leave the practice of nurse anesthesia. Only those CRNAs practicing in any anesthesia related capacity, in any setting other than active duty military, were included in the sample.

As stated previously, the Air Force could not provide addresses for the sample, since those records are not maintained for personnel once they leave active duty. In order to obtain addresses, the names and last duty location of the revised sample were sent to the American Association of Nurse Anesthetists (AANA). The AANA is the national professional organization for ninety plus percent of all CRNAs in the United States and is related to the certifying agency for all U. S. CRNAs. As such, it was the most likely source for current addresses. The AANA provided

addresses and professional status (active, inactive, recertified, etc.) for most of the population. Those CRNAs who were not currently practicing (N=7) were excluded. For those with no address provided, telephone calls to the last known duty location and to active duty CRNAs familiar with these individuals, increased the number of CRNAs included in the sample. Only one CRNA was known to be excluded due to a lack of current address.

All those CRNAs who answered the questionnaire and who were not currently practicing as anesthetists (even if recertified and capable of practice) were excluded (N=17) from the sample. This exclusion did reduce the sample size used for the study due to incomplete information provided by the AANA.

The cross-sectional convenience sample of the population described above consisted of all those CRNAs who met the inclusion criteria for the study, and whose names were provided by the Air Force and who had current addresses listed with the American Association of Nurse Anesthetists. It is likely that several CRNAs who should have been included in the sample were not, secondary to incomplete records maintained by these agencies.

Instrumentation

The data collection method chosen for this study consisted of a self-administered questionnaire (Appendix A),

which was mailed to the home addresses of the sample described above. The questionnaire consisted of an introductory cover letter and a four-part survey. Instructions were provided in the cover letter and specific instructions for completing each section were included at the beginning of each section.

The first part of the questionnaire consisted of a 23-item demographics section, which included questions about the participants' current practice. The format of the demographics section was composed of multiple choice and fill-in-the-blank questions. One question was open-ended which required coding later. The source of most of these practice questions was the annual AANA Membership Survey that is part of the annual dues statement, which the AANA provided to the author for the purpose of this study. It was this author's intent to compare the norms of the study sample to the national norms in the area of practice issues.

The second section required the participants to make 15 paired comparison choices concerning which of the factors of work satisfaction (Stamps and Piedmonte, 1986) are the most important to their personal satisfaction with work in general. This paired comparisons section was reproduced from the work of Stamps and Piedmonte (1986) without changes, and was used with the permission of the authors (Appendix B) and the publisher (Appendix C). The

intent was to compare the responses of this study's sample to those identified for hospital nurses (Stamps and Piedmonte, 1986) and to the CRNAs in Thompson's (1981) study.

The third section of the questionnaire requested information concerning the participants' reasons for leaving active duty. The first question asked for the most important reason for leaving, and was identified as their number 1 reason. The next question asked for the next three most important reasons for leaving, and were numbered 2, 3, and 4. Those reasons placed in one of these positions were referred to as "ranked" or "Next 3" reasons throughout this study. All other reasons that influenced the decision to leave active duty were asked to be identified in the third question (there was space on the questionnaire for six "other" reasons). No participant identified more than six reasons in this section. The last two questions in this section were also open-ended. One asked why the participants felt that they had made the right decision in leaving when they did and the other question asked about the participants most positive experience as an Air Force CRNA. One of the reasons for this question was to allow for both positive and negative statements about their experience in the Air Force.

The last section asked for recommendations which might help resolve the problems that they identified or which

would help to improve work satisfaction for active duty CRNAs. These last two sections were primarily composed of open-ended questions in an attempt to identify as many factors and issues as possible. The six factors of work satisfaction identified by Stamps and Piedmonte (1986) were used in the recommendation section of the survey in order to provide direction for the thought processes of those questioned and categorical headings for their answers.

Reliability and Validity

This study sought qualitative descriptive data that identified problem issues affecting the work satisfaction of Air Force CRNAs. The format of open-ended questions with short narrative answers used for this qualitative survey do not lend themselves to the same techniques of judging reliability and validity of quantitative measurement instruments.

Measurement instruments need to consistently and accurately quantify the attributes they were intended to measure. None of the three aspects of reliability that are typically of interest to researchers; stability, internal consistency, and equivalence, were able to be measured on this study's questionnaire. The demographic section and the ranking of the factors of work satisfaction are descriptive of the sample and were used to compare this sample to other groups. The sections asking for reasons

for leaving and recommendations do not measure work satisfaction, but conclusions were drawn about what the major issues were, based on the percentage of the sample who identified similar issues.

The second important criterion by which a measurement instrument's quality is evaluated is its validity. The questionnaire was evaluated for content validity by three independent CRNA faculty members who had military experience as CRNAs. The suggestions by these experts concerning changes in wording and format were incorporated into the pilot study and final version of the questionnaire.

One of the assumptions of this study was that the six factors of work satisfaction identified (based on hundreds of studies in the literature) and validated by the research of Stamps and Piedmonte (1986), are in fact the primary components of work satisfaction. The questionnaire developed for this study repeatedly utilized these factors to direct the participants' attention to the major components of work satisfaction. It is very likely that many of the reasons and recommendations which were obtained from the sample are a direct function of those factors being identified and defined on the questionnaire. This framework was provided for the participant's in order to gather as much data as possible concerning all the components of work satisfaction. The point of this

discussion is that the questionnaire used in this study has validity since the instrument was designed around an accepted and well founded construct of what work satisfaction is actually composed of.

Polit and Hungler (1989) identify the use of the principle of triangulation in assessing the reliability and validity of qualitative research. Triangulation refers to the use of multiple references to draw conclusions about how well an instrument provides data which is reflective of the truth about an issue being studied. None of the techniques of triangulation were appropriate for use in this study, based on the need for multiple methods or data sources for triangulation to be of any utility.

The author believes that the instrument developed for use in this study was a reliable and valid tool that met the needs and goals of this study. It was not designed to be used in other research settings, but could be used in replicating this study.

Research Procedures

Approval was obtained from the Human Subjects Review Committee of the sponsoring university (Appendix D). The questionnaire was evaluated for content validity as described in the section on instrumentation. Approval of the subject of this study and authority to use Air Force

data was obtained by telephone and then in writing from the Chief Nurse of the Air Force (Appendix E).

Prior to the initiation of the data collection for this research project, a pilot study was completed in October of 1989, in order to identify difficulties with the questionnaire or the collection design. The pilot study sample consisted of five randomly selected members (ID codes drawn from a hat) from the sample frame. All five participants returned their completed questionnaires, with no missing data. No changes to the questionnaire were deemed necessary upon review of the pilot study questionnaires. The data from the pilot study was excluded from the remainder of the study.

The questionnaire was mailed to the accessible population and incorporated a stamped, return-addressed envelope. Those CRNAs who did not wish to participate and who did not wish to receive repeat mailings (N=5), were directed to return the unanswered questionnaire in order to remove them from the repeat mailing list.

The cover letter clearly stated that return of the survey material constituted agreement to participate and the assurance of confidentiality was also emphasized in the cover letter. The address labels of those CRNAs who returned questionnaires were separated from the surveys as soon as they were received. This was done as an additional attempt to protect the confidentiality of the participants.

Data Analysis

The coding of all the data obtained from the open-ended questions was accomplished in the following manner. Each new answer to a question was assigned a one or two-digit code, based on the number of different answers received for that question. A total of 43 different reasons for leaving (Appendix F) and 46 different recommendations (Appendix G) were received. Answers which were worded in a different manner, but were probably identifying a similar theme, were also given a separate code, in an effort to reduce bias. The potential problem of bias by this author in interpreting the narrative answers to the open-ended questions was identified when the design for this study was initiated. A second reader was asked to verify the author's interpretation of any narrative comments which were not clearly stated. Each participant could only identify a coded reason for leaving or a coded recommendation one time. Thus, if someone had given "low pay" twice, only the first entry of "low pay" would be coded for that individual. Therefore, the maximum frequency for any coded answer was 58, the number of participants in the data set. The data was then computerized, reviewed and verified to ensure accuracy. All statistical analyses were conducted using the Statistical Package for the Social Sciences (SPSSX, version 3.0, 1988).

The initial analysis consisted of obtaining frequencies and descriptive statistics for the 58 participants included in the data set. Correlations were obtained on specific variables within the demographic data in order to identify relationships that would help describe the sample.

A simple binary index (yes/no) system was used to establish frequencies for each coded reason for leaving or recommendation. The percentage of the sample who identified each specific reason for leaving or recommendation was calculated, based on the N of 58. By repeating this procedure, frequencies were obtained for the reasons identified in the ranked (number 2 to 4) section, and the reasons identified in the non-ranked (other reasons for leaving) section subsets.

The ranking of the importance of the six factors of work satisfaction was computed using the methods outlined by Stamps and Piedmonte (1986) which is based theoretically on Thurstone's Law of Comparative Judgements, as described by Edwards (1957). The results of the SPSSX computer program method were the same as the hand calculations method, both of which are presented by Stamps and Piedmonte (1986).

CHAPTER IV

PRESENTATION AND ANALYSIS OF THE DATA

Introduction

This chapter presents the results of the data analysis. The first section provides a report of the response rate to the mailing of the survey, which is followed by a description of the sample. Finally, data related to the research questions is presented with an interpretation of these findings.

Restatement of the Purpose

The primary purpose of this research was to identify the major issues associated with the decision of many active duty CRNAs in the U.S. Air Force to discontinue their military careers prior to meeting the requirements for retirement and opt for anesthesia nursing practice in a non-military setting. An additional goal was to seek this group's recommendations for the Nurse Corps aimed at improving the work satisfaction of the CRNAs who currently practice in the United States Air Force. The description of the sample and their current practice was used to make comparisons between military and civilian practice of the sample. The ranking of the work satisfaction factors was used to compare the sample to other samples of CRNAs and hospital nurses in the literature.

Response Rate

The names of 208 former CRNAs were provided by the Air Force. These CRNAs had left active duty during the fiscal years between 1982 and 1988. Sixty-one of these names were obvious retirees, based on their dates of entry and exit from the military, and were not considered part of the sample for this study. One-hundred and forty-seven names were sent to the AANA in order to obtain addresses. Seven CRNAs were not practicing, three were deceased, and no address could be obtained on one CRNA (most likely due to a name change). Of the 136 CRNAs who had addresses listed with the AANA, five were used for the pilot study. A total of 131 questionnaires were included in the initial mailing. Ninety-two questionnaires were returned in response to the initial and repeat mailing, for a total response rate of 70.2 percent.

Fifty-eight of the returned questionnaires were used in the data analysis of this research project. One questionnaire was returned by the father of a deceased CRNA, 17 questionnaires were returned from CRNAs who were no longer practicing, one Air Force CRNA had transferred to the U.S. Army and was an active duty CRNA, 10 questionnaires were returned from CRNAs who had retired from the Air Force, and five questionnaires were returned by CRNAs who

preferred not to participate. The ten retired CRNAs (retired from the Air Force, but still active as civilian CRNAs) were sent questionnaires as a function of incomplete information, (only dates of commissioned service were provided by the Air Force). The 17 inactive CRNAs and one deceased CRNA were also sent questionnaires as a function of incomplete information (AANA). The CRNA who transferred to the Army was an anesthesia school classmate, but was remarried; inclusion of her name was inevitable. Thirty-four of the questionnaires that were returned were from individuals who did not meet the inclusion criteria of the sample desired. Based on the questionnaires that were returned and those which produced no response, 58 of the 102 CRNAs, whom the author must consider the assumed population, participated in this study. The response rate from those CRNAs the author intended to be included in the sample was 56.9 percent.

The 208 CRNAs, whose names were provided by the Air Force for this study, are categorized in Table 9 (which is presented on the following page) by the fiscal year in which they left the Air Force. The inclusion/exclusion criteria and other information obtained from this study are used to identify the different status categories of those CRNAs who left the Air Force during FY 1982 to FY 1988.

TABLE 9

**Sample Frame Showing Categories Of CRNAS
By Fiscal Year (FY). 1982 To 1988**

	FY	82	83	84	85	86	87	88	N	%
Retired AF		21	7	14	10	6	7	6	= 71	34.1%
Not practicing		4	1	4	4	6	3	2	= 24	11.5%
Deceased			2	1		1			= 4	1.9%
No Address		1							= 1	0.5%
Transfer Army						1			= 1	0.5%
Pilot (Practicing)					1	1	2	1	= 5	2.4%
Refused inclusion		1	1	1			1	1	= 5	2.4%
Included in data		6	5	7	6	7	9	18	= 58	27.9%
No Response		3	4	8	6	6	10	2	= 39	18.8%
Totals By FY:		36	20	35	27	28	32	30	= 208	100.0%

Thirty-four percent of those CRNAs who left the Air Force during the periods shown were retirees. Many of these CRNAs currently provide anesthesia in any number of civilian settings. Note the change in the numbers of CRNAs retiring in the most recent 3 years (20-22 percent per year for the FY 86 to FY 88 year groups), as compared to those in previous year groups (35-58 percent per year for the FY 82 to FY 85 year groups). This data clearly identifies an increase in the early (prior to meeting retirement criteria) loss of active duty CRNAs from the Air Force. This loss represents a savings to the Air Force in terms of retirement benefits, but that cost is overshadowed by the cost of recruiting and/or providing education for their replacements. This loss of experienced CRNAs is also very costly when considered in terms of mission capability. As previously mentioned, the Air Force had 36 authorized CRNA positions unfilled, as of 31 December 1989.

Description of the Sample

Descriptive information is provided on 24 different demographic variables. Data from 58 participants is presented. The total sample information is presented first, followed by gender-specific data.

The gender-specificity of the total sample was 16 (28 percent) women and 42 (72 percent) men, which is quite likely to be a reflection of the high percentage of men in nurse anesthesia in the Air Force (usually noted to be approximately 75 percent male). The mean age of all the respondents was 39.2 years, with an age range of 31 to 51. The average age of the men was 39.5 years, with a range of 32 to 51, while the mean age of the women was 38.3 years, with a range of 31 to 49. Of the total sample, 82.8 percent were married, 8.6 percent were single, and an equal percentage were either widowed, divorced, or separated. The men had a 95.2 percent marriage rate compared to a 50 percent rate for the women. None of the men were single, while 31 percent of the women were. Sixty-nine percent of the sample stated that they have children living at home. Thirty-one percent of the women and 83 percent of the men had children living at home. Only two people were widowed, divorced, or separated and had children living at home, and both of these were women. One other woman and two men were widowed, divorced, or separated. None of the single women stated having children living at home.

Twenty-three CRNAs (39.7 percent of the sample) had a BS in Nursing, and 13 more had Bachelor's degrees in fields other than nursing. (The education levels are presented in Table 10, which follows.)

TABLE 10

Highest Education Level Completed
(Anesthesia Diploma Not Included), N=58

	Female	Male	%
Diploma in Nursing	6	6	
Associate Nursing	0	3	25.9
BS in Nursing	7	16	
BS/BA (other)	2	11	62.1
MS in Nursing	0	1	
MS/MA (other)	1	4	
Ph.D	0	1	12.0
	16	42	100.0

Of the 13 CRNAs with Bachelor's degrees outside nursing, two women and four men had BS degrees in Anesthesia, two men had BS degrees in Health Care Administration, and there was one BS degree each in Education, Biology, and Professional Studies. Two men had BA degrees, one in Human Resource Management and the other a Liberal Arts degree. Sixty-two percent of these CRNAs had a Bachelor's degree as their highest level of education. Six CRNAs had Master's degrees (10.3 percent of the sample): one woman had an MBA, and the other five Master's prepared CRNAs were men with their degrees in Education, Public Administration, Human Resource Management, Health Care Administration, and one

had a MS in Nursing. One CRNA had a Ph.D. in Health Care Administration. Combining this information produces 12 percent of the sample with a Master's degree or higher, 62 percent with a Bachelor's degree, and 25.9 percent who had less than a Bachelor's degree, in addition to their anesthesia education.

Of the total sample, 43.1 percent had received their anesthesia education in a military anesthesia program (25 percent of the women and 50 percent of the men), with another 8.6 percent obtaining their anesthesia education through military sponsorship in civilian anesthesia programs (12 percent of the men). The remaining 48.3 percent were educated in civilian programs without military sponsorship of their education.

Anesthesia practice is both an art and a science, and the amount of experience a CRNA has in the clinical setting is an important factor in considering the individual's clinical competence. The CRNAs of this sample possessed a wide range (5 to 21 years) of experience in anesthesia, with a mean of 10.67 years. The median score was 10.0 and the mode was 7.0 years of experience. Twelve percent had 16 or more years of experience.

Table 11 (shown on the next page) demonstrates that the sample had a wide range of experience (2 to 17.5 years), with a mean of 8.1 years, a median of 8.0 years. The mode was 3.0 years, demonstrating that many of the

CRNAs who entered the Air Force with anesthesia experience were very likely to leave after their initial commitment was fulfilled. Table 12 (below) shows that the majority of CRNAs who had left the USAF had done so before being promoted to Major. Eleven CRNAs (19 percent), who had more than 11 years of military service, left the USAF without being promoted to Major.

TABLE 11

Number Of Years In The USAF
(Years in categories), N=58

	Female	Male	%
2-4 yrs	9	8	29.3
5-8 yrs	4	9	22.4
9-12 yrs	1	14	25.9
13-17 yrs	2	11	22.4
	16	42	100.0

TABLE 12

Highest Rank Attained
N=58

	Female	Male	%
1 Lt	1	1	3.4
Capt	14	36	86.2
Maj	1	5	10.4
	16	42	100.0

Eighteen of those who left active duty (31 percent of the sample) had joined military reserve units, in order to complete the requirements for reserve retirement benefits. There was an equal percentage of women and men who joined reserve units (approximately 31 percent each).

Twenty-five of the CRNAs were assigned to very small hospitals as their last and possibly their only assignment in the Air Force. These 25 (43.1 percent) were assigned in an anesthesia department with a staff of two CRNAs (themselves and one other) and no anesthesiologist (MDA). It is not unusual for the CRNAs in these small departments

to find themselves practicing alone for weeks at a time, while their partner is on leave or on temporary duty elsewhere. The after-duty-hours call schedule is split between these two, and the minimal amount of clinical practice leads many to state that they tend to lose their clinical skills. Since these anesthesia practitioners spend minimal time providing anesthesia, there is a tendency for ranking officers to make an attempt to utilize the skills of these officers in other duties. Twenty-six CRNAs (44.8 percent) reported that their last duty assignment had one to three MDAs and three to six CRNAs on staff. These hospitals are considered regional hospitals and there is usually plenty of clinical practice. Seven CRNAs (12.1 percent) reported that their last department had four to nine MDAs and seven to thirteen CRNAs, in any combination. These departments were in Air Force Medical Centers with heavy case loads and more often than not, very long duty hours.

Forty-two (72.4 percent) of these CRNAs (50 percent of women, 81 percent of men) had arranged civilian employment before leaving active duty. Of the total sample 23 (39.7 percent) were moonlighting in the civilian sector while on active duty (18.8 percent of women, 47.6 percent of men). The number of years that these CRNAs have been in the civilian sector after leaving active duty ranged from one to eight years, with a median value of three years and with

a mean of four years. Thirty-seven (63.8 percent) of these CRNAs have had only one primary employer since leaving active duty, fourteen (24.1 percent) reported having had two primary employers, and seven (12.1 percent) reported three primary employers since leaving active duty. As expected, there was a significant correlation between the years since leaving active duty and the number of primary employers ($r=.37$, $p=.002$).

Sixty-nine percent had only one current employer, 17.2 percent worked for two different employers, and 13.8 percent worked for three different employers. There was a significant correlation between age and the number of jobs these CRNAs held, with younger CRNAs working in multiple settings more frequently ($r=-.25$, $p=.028$), but there was not a significant ($p<.05$) relationship between the number of employers and the total number of hours worked per week or the gross annual salary.

The mean gross annual salary for this sample was \$75,191, which is artificially high due to several CRNAs who reported very high salaries. Therefore, it is more appropriate to report the median salary of \$67,000 and the mode salary of \$70,000. The range of salaries was from \$40,000 to \$180,000. The highest salary reported by a woman was \$85,000, while 10 men (17.2 percent of the sample) reported salaries between \$95,000 and \$180,000. Of these ten, three were totally freelance and self-insured

and two were employed full-time in a CRNA only group and self-insured. Two additional CRNAs indicated they were CHAMPUS partners in military facilities; one was self-insured and the other had insurance provided by the employer. One CRNA stated that he was working two full-time positions; 48 hours in a hospital and 48 hours in a university setting, with his employers providing insurance coverage. The other two worked in various part-time settings which included freelance work, working 60 to 68 hours per week, with employer provided insurance. The mean annual salary of the other 48 CRNAs (82.8 percent of the sample) was \$68,752, and their reported annual incomes ranged from \$40,000 to \$88,000. There is no reason for this author to consider the 10 highest reported incomes as invalid, but some consideration should be made for the costs of those CRNAs who freelance and pay their own malpractice insurance.

Salaries were correlated to the number of in-house call hours per week ($r=.2470$, $p=.031$), the number of hours of call at home during the weekdays ($r=.2837$, $p=.015$), and the total hours worked per week ($r=.3385$, $p=.005$). Freelance anesthesia practice ($r=.4603$, $p=.000$) and self-insuring for malpractice ($r=.6239$, $p=.000$) also showed significant correlation to salary. There was a negative correlation between salary and anesthesia practice in a mixed MDA and CRNA group ($r=-.3790$, $p=.002$), where the

CRNAs are usually employed by a partnership group of MDAs. Significant correlation was shown between salary and those CRNAs who administer regional anesthesia on a routine basis in their practice ($r=.3531$, $p=.003$). There was also a correlation between salary and those who stated they were more satisfied with their current work situation, as compared to that while on active duty ($r=.2482$, $p=.030$).

Whenever a discussion of salaries is undertaken, the issue of how hard or how much work is required to earn a certain level of income is appropriate. Within this sample, no one reported working more than 50 hours per week (h/wk) in straight shifts. (Shown below, in Table 13) Two CRNAs reported that they never worked straight shifts; one was the CRNA who reported a salary of \$180,000 for an average of 50 h/wk of freelance anesthesia practice, and the other reported working 48 h/wk of in-house, after-hours call for a salary of \$60,000.

TABLE 13

Straight Shifts: Hours/Week
(Collapsed into categories)

	N	%
0 h/wk	2	3.4
16-26 h/wk	14	24.1
30-37 h/wk	12	20.7
40-42 h/wk	23	39.7
<u>45-50 h/wk</u>	<u>7</u>	<u>12.1</u>
	58	100.0

These straight shifts do not account for all of the salary earned by many of the CRNAs, but it does represent most of their actual in-house anesthesia practice. Only 14 CRNAs (24 percent) reported working any in-hospital call. (Shown below, in Table 14.) Three of these are employed primarily for the purpose of providing in-hospital after-hours coverage.

TABLE 14

In-Hospital Call: Hours/Week
(Collapsed into categories)

	N	%
0 h/wk	44	75.9
4-8 h/wk	4	6.9
16-20 h/wk	7	12.1
<u>44-48 h/wk</u>	<u>3</u>	<u>5.1</u>
	58	100.0

Call from home represents a major part of the total hours worked per week reported by some of these CRNAs. Twenty-three CRNAs (41.4 percent) provided call from home during the weeknights. Seventeen CRNAs covered 16 h/wk (one night) or less and 7 CRNAs provided call cover 28 to 48 h/wk from home. Twenty-six CRNAs (45 percent) provided weekend call cover. Fifteen worked 16 h/wk or less, eight work 18 to 24 h/wk, and three provided call cover for all 48 hours of the weekend each week. These three CRNAs worked minimal hours during the week. The total hours

worked per week was computed by adding all straight shifts and call responsibilities, as though they were equal in the amount of effort required. While this is obviously not true, call hours do represent limitations to personal time. The reported range of average total hours worked per week ranged from 35 to 96 hours. It must be remembered that no CRNA reported more than 50 h/wk in straight shifts. Those reporting total hours worked of 35 to 48 h/wk represented 53.5 percent of the sample. Another 25.9 percent reported working between 50 and 68 h/wk, and 20.7 percent worked more than 70 h/wk, including call.

CRNAs are employed in many different settings in the U.S. There are many regional differences which affect the opportunities CRNAs have for independent practice. This sample is drawn from all over the U.S. and therefore presents a variety of practice settings. As a group, the sample reported 18 percent of their total anesthesia practice in freelance arrangements. The majority of CRNAs in the U.S. are either hospital employees or are employed in a MDA/CRNA group. This sample reported that 65.2 percent of their practice was spent in those settings. One CRNA stated that his only employment was for a university (no mention was made about the position), while another CRNA stated that he held a full-time position with a university, in addition to working another full-time job as a hospital employee. Three CRNAs worked in "other"

settings; two of these were CHAMPUS partners and the other as the director of an anesthesia program (which was not university based). Table 15 (shown on the next page), presents the number of full, half, and part-time positions held in each employment setting by the sample, as a whole. The percentage quoted is the approximate percent of the sample who reported any practice in the specific setting. The exact percentages of practice reported were used to calculate the number of full positions, which was divided by the sample size of 58.

TABLE 15

Sample's Percentage Of Practice By Employment Setting, N=58
(Number of CRNAs With Full/Half/Part-Time Positions Shown)

	Full	Half	Part	% Sample
Freelance	8	2	8	18.0
CRNA only group	3			5.2
MDA/CRNA group	16	1	1	28.4
Hospital employee	18	5	1	36.8
University	1	1		2.6
Surgicenter/clinic	2		3	3.5
<u>Other settings</u>	<u>3</u>		<u>5</u>	<u>5.5</u>
	51	9	18	100.0

All of the CRNAs in the sample reported being covered by malpractice insurance. Forty-six stated that their employer provided their insurance coverage. Ten provided their own insurance and two stated that their insurance coverage was paid by both their employer and themselves. This would usually occur when a CRNA worked part-time as an

employee and freelanced part-time, requiring separate insurance coverage for each part of his practice.

Brown et al. (1987) found that providing regional anesthesia was related to the work satisfaction of the CRNAs in their study. Military CRNAs generally have a high degree of independence and provide a great deal of regional anesthesia as part of their practice, at least while on active duty. The fact that some civilian CRNAs, who are trained and capable of providing regional anesthesia, are restricted from doing so, is of concern to CRNAs on the national level. Twelve CRNAs (6 men and 6 women) stated that providing regional anesthesia was not a routine part of their practice (20.7 percent). These 12 CRNAs were asked to provide two reasons why they did not routinely do regional anesthesia. Eight responded that their MDAs would not allow CRNAs to do any regional anesthesia. Four stated that there were restrictions in the malpractice insurance policies that covered their practice. One quoted that it was against the local standards of practice, one stated that she was not trained in regional techniques, and another stated that hospital policy precluded CRNAs from providing regional anesthesia in their practice.

Answers to the Research Questions

Are these individual practitioners more satisfied in their current work situation as compared to that which existed while in the USAF?

Forty-nine (84.5 percent) of the CRNAs in the sample stated that they were more satisfied in their present work situation as compared to when they were on active duty. Of the nine who were not as satisfied, four were women (25 percent of the women) and five were men (11.9 percent of the men). There was a significant correlation between being satisfied and doing regional anesthesia ($r=.4864$, $p=.000$). Of the nine who stated less satisfaction overall as compared to when they were on active duty, six were not allowed to provide regional anesthesia as part of their practice. This supports the results in the 1987 study by Brown et al. that work satisfaction would decrease if CRNAs were not allowed to perform regional anesthesia. As stated previously, satisfaction was significantly correlated with higher salaries and negatively correlated to working in an MDA/CRNA group.

All of the CRNAs in the sample felt that they had made the right decision in leaving active duty when they did, except for the two CRNAs who were involuntarily separated. When asked why they felt that they had made the right

decision , 31 CRNAs responded with one of the following four answers. Fifteen (26 percent) stated that they were now paid what they were worth, ten (17 percent) stated they now had control over their own lifestyle, five (9 percent) stated that they could no longer deal with their work situation, and one stated that it was the right decision because he had minimal time invested in the service when he left the Air Force.

The sample was also asked to relate the most positive aspect of their experience as a CRNA in the Air Force. Fifty-five responded with one of the ten answers shown in Table 16. It would appear that the sample had good peer relationships and that the educational opportunities in anesthesia and other areas were well thought of.

TABLE 16

Most Positive Experience As An Air Force CRNA		
(Percentages shown) N=58	N	%
The people worked with and friends made	20	35%
Military anesthesia training	9	16%
Autonomous practice	9	16%
Education and training opportunities	8	14%
Able to serve my country	2	
Travel opportunities	2	
Forced to learn to tolerate "jerks"	2	
Paid CEUs	1	
Met my spouse	1	
Respect by other professionals	1	
Missing	3	

Which factors of work satisfaction are most important to this group of health professionals?

In order to determine what this sample of CRNAs desire the most from their work experience, they were asked to rank order the six factors of work satisfaction identified by Stamps and Piedmonte (1986). The participants had to make comparisons between two of these factors at a time, and chose which one was most important to them. In order to pair each of the six factors with every other factor one time, fifteen paired comparisons were required. The hand scoring and SPSSX computer scoring procedures described by Stamps and Piedmonte (1986) provided the same results. The factors were ranked: pay, autonomy, professional status, tasks, interaction, and organizational policies. (These results, with their associated Z-scores, are presented in Table 17, which follows.)

TABLE 17

CRNA Ranking Of The Components Of Work Satisfaction
(Z-scores are presented) N=58

Pay	3.905
Autonomy	3.756
Professional Status	3.235
Tasks	2.681
Interaction	2.584
Organizational Policies	2.438

This ranking of the relative importance of the factors of work satisfaction identify what this sample desires most from their work experience as CRNAs. While autonomy and professional status are very important, the pay factor is the most important component in determining work satisfaction for these CRNAs. Pay being ranked as the most important factor by this group is directly related to the previously described data, which showed significant correlation between salary and whether the CRNAs were more satisfied in their current work situation. Note the relatively small difference in the lower three factors as compared to the differences in the top three factors.

What are the major issues associated with the decision of the above population of CRNAs to leave active duty?

The questionnaire asked the participants to identify their reasons for leaving active duty in a rank ordered fashion. Frequencies for each coded reason given by the sample were obtained in order to identify which issues were most important to the sample as a whole. Table 18 (shown on the following page) lists the reasons given most frequently for leaving the Air Force (calculated without regard for rank order).

TABLE 18

Top 10 Reasons Given for Leaving By Frequency
 (Number in each section provided), N=58

#1	N3	O	T	Reasons Given:
21	30	1	=52	Low Pay
6	16	0	=22	Poor opportunity for promotion of CRNAs
1	7	11	=19	Lack of respect for CRNAs by Hosp Commander, Chief Nurse, Nursing Department, and MDAs
4	8	6	=18	Advancement/security based OIC liking you
5	5	7	=17	No one cared or appreciated efforts
3	11	6	=14	Overworked
	7	6	=13	Extra duties/committees as a chair filler
2	2	8	=12	No control of who you work for
2	6	3	=11	Location of assignments, both Conus/Overseas
3	4	3	=10	Fear of family separation by assignment and/or lack of confidence in the Joint Spouse Assignment program

Note: #1 means the response was the most important reason
 N3 means the response was in a ranked position (2-4)
 O means the response was in a non-ranked position
 T means the total number times a response was given
 (T = #1 plus N3 plus O)

The first issue that should be discussed, based on the most desired factors and the financial discrepancies outlined in the literature and obvious differences identified in the demographic data is pay. The reason most frequently given for leaving active duty was the low pay. Ninety percent of the sample identified this reason, with 21 CRNAs listing it as their most important reason. Another reason given, related to pay and professional status, was that MDAs got professional pay bonuses, while CRNAs received no such bonuses. Seven CRNAs mentioned this reason, with one giving it as most important, three others identified it in the ranked section, and three more CRNAs

listed it in the non-ranked section. The financial burden of frequent moving was mentioned by three CRNAs and the erosion of military benefits and the military retirement plan was identified by two CRNAs.

An issue directly related to pay, but also to professional status in the military is promotion potential. Thirty-eight percent identified the poor opportunity for future promotion as a significant reason why they decided to leave the Air Force. Six CRNAs stated it was their most important reason. Part of the issue of promotion potential is the system of promotion within the Air Force. Eighteen CRNAs (31 percent) stated that a major reason they left the Air Force was that their advancement and future job security was based on the individual's immediate supervisor liking them personally or professionally. Four of the eighteen named it as their most important reason and eight more listed it in the ranked section as a reason to leave the Air Force. A similar response (6 CRNAs) was that a supervisor could destroy your career with a mediocre evaluation report. One person gave this reason as their number one reason for leaving, and three more listed it in the ranked section. Another similar response (12 CRNAs) was that the military member has no control of who they work for. This fact makes sense from a military point of view, but can be extremely frustrating when personality conflicts arise. The military supervisor can have a

significant impact on an individual's future career. Two CRNAs stated this was the number one reason they left, and two more CRNAs gave this reason in the ranked section. Four CRNAs stated that they left the Air Force because they were passed over for promotion and/or were involuntarily separated. Four CRNAs stated that a reason they left the Air Force was that CRNAs were not given the opportunities to attend special schools and in-residence Professional Military Education courses that other nurses and other officers were offered. These courses are career broadening experiences and attendance is generally regarded as having a positive effect on promotion potential. Many CRNAs become very frustrated because their duty sections can not spare them for the time these courses last, resulting in the feeling that they are not even allowed to do what is necessary to compete with other nurses for promotion.

The issue of what the Air Force expects the duties of a nurse officer and a CRNA to be is one that has great impact on the decision to leave the Air Force. Fourteen CRNAs (24 percent) stated that one of the reasons they left was that they were overworked. Three CRNAs gave it as their number one reason, and eleven more listed it in the ranked section. Other related reasons were extra duties and committees, PME and other training on off-duty time, temporary duty assignments for staffing assistance at other hospitals, and difficulty getting leave. Nine CRNAs stated

that the military attitude that you belong to the duty section 24 hours a day, was a reason to leave the Air Force. One CRNA stated that this was their number one reason and seven more placed it in the ranked section as a reason to leave. A similar reason for leaving expressed by three CRNAs was that they were not allowed to moonlight on their off-duty time. One CRNA gave it as the number one reason and the other two placed it in the ranked reasons for leaving. This restriction of off-duty employment is directly related to the concept that the individual belongs to the Air Force and that the individual is forced to live their personal life according to decisions made by Air Force supervisors. Seven CRNAs stated that they were forced into dangerous anesthesia practice by not being allowed safety rest after call, and that not having recovery room nurses just increased the amount of time they were in the duty section. Seven CRNAs stated that a reason to leave the Air Force was that they could never get reimbursement for the long hours they worked in the duty section or on call. Four CRNAs stated that a reason they left the Air Force was that while they were overworked, the MDAs were not doing their share of the workload or the after-duty hours call. Combined with this feeling that the MDAs weren't doing their share of the "real" work because of duty hours supervision, was the lack of that same supervision after-duty hours.

The professional status of the military CRNA is another issue that is related to attrition. The above problems of being underpaid, overworked with anesthesia and extra duties, and having poor promotion potential, are compounded by the feeling that no one really cares. Promotion potential has a direct effect on the professional status of any military officer. The CRNA in the Air Force may or may not work with an MDA, depending on the size of the facility. The attitude that the MDA displays to the CRNAs and other health professionals about his perception of the CRNA's ability and worth has a great deal to do with the professional status of the CRNA. Nineteen (32.8 percent) CRNAs stated that the lack of respect shown them as CRNAs by the Hospital Commander, Chief Nurse and other nurses in the hospital, and the MDAs that they worked with was a reason to leave active duty. One listed it as number one, and seven more listed it as a ranked reason. Seventeen stated that a reason they left was that no one cared about them or appreciated their efforts. Five CRNAs gave this as their number one reason and five more placed it in a ranked position. A similar idea expressed by five CRNAs was that they never received the proper rewards for their efforts. Yet another related reason given for leaving is related to both professional status and interaction with the nursing department. Seven CRNAs stated that they had been forced to work on hospital wards

as staff nurses and/or that the Chief Nurse of the hospital interfered with them or the anesthesia department. One CRNA gave this as the number one reason and three others placed it in a ranked position as a reason to get out of the Air Force.

The military services expect devotion to duty from all their members and the services also ask a great deal from the families of those on active duty. Two CRNAs placed the stateside and overseas locations that they could be assigned as their number one reason to leave the Air Force. Six more listed this as a ranked reason and three others mentioned it. Ten CRNAs stated that a reason they left was the fear that their family would be separated by an assignment. Three gave this as number one, and four placed it in the ranked reasons. A portion of these responses were by CRNAs married to other military members and who expressed a lack of confidence in the Joint Spouse Assignment program. Eight CRNAs stated they got out in order to provide a more stable family location and to establish roots for their family. Six CRNAs felt they had little or no control over their assignments and gave this as a reason to leave. There were several other reasons given related to families and the Air Force lifestyle.

An issue that five CRNAs, who were assigned to small Air Force hospitals, gave as a reason to leave the Air Force is worthy of mentioning. The loss of anesthesia

skills associated with an assignment to such a small facility that the CRNA is not challenged by the case load is an important issue for many Air Force CRNAs. The Air Force has a considerable proportion of the military's small hospitals, based on the Air Force mission and how the Medical Services are designed to help meet that mission. This establishes approximately 22 Air Force hospitals that are too small to require an anesthesiologist on staff. These hospitals function with two CRNAs in many instances, and the loss of skills over a three to four year tour is a very real concern for these CRNAs.

The factor of autonomy, which is very prominent in the literature, is one of the most important determinants of work satisfaction. Many of the CRNAs in the sample attested to their satisfaction with the autonomous anesthesia practice they had experienced in the Air Force. They also felt that any attempts to restrict that autonomous practice by MDAs or other groups should be fought. An important part of the medical readiness of the military depends on having experienced CRNAs who can think and act independently in all types of medical emergencies.

What recommendations can these CRNAs provide the USAF Nurse Corps to improve the work satisfaction of the CRNAs currently on active duty in the USAF?

The complete list of recommendations with frequencies and percentages are included in Appendix G. The recommendations related to the pay and promotions of active duty CRNAs are shown in Table 19, below. The number of CRNAs and the percentage of the total sample that made each recommendation are also described.

TABLE 19

Pay And Promotion Recommendations

(Number and percentage of CRNAs are indicated, N=58)

N	%	Recommendation:
48	83%	Professional Staff bonus: similar amount as MDAs
47	81%	Must pay CRNAs as providers, not staff nurses
33	57%	Promote and pay based on fully qualified professional status, not on OPR system
15	26%	Improve the promotions of CRNAs
11	19%	Separate promotion board for CRNAs
5	8.6%	Initiate weekend and night call pay
4	6.9%	CRNAs must be allowed to moonlight on personal time without asking anyone's permission (the USAF needs to realize it can't demand 24 hours a day during peacetime)
3	5.2%	Provide bonus for less desirable assignments

As can be seen from the above data, not only is a Professional Pay bonus seen as a high priority, but a bonus in a similar amount as that provided MDAs is recommended. The CRNA Incentive Special Pay (ISP) provided for in the

FY90-91 Defense Authorization Act is similar to one bonus currently paid to MDAs. It should be noted that ISP is not Professional Pay. It was designed as a retention incentive, which would only last as long as the problem existed. This \$6,000 CRNA bonus and the \$10,000 MDA bonus (\$16,000 if the MDA has six years experience) is basically a contract to remain on active duty for one additional year. The \$16,000 MDA bonus (now given to MDAs with six years experience) is projected to soon be authorized for all MDAs upon completion of their residency. The MDA ISP is paid in addition to the other two pay bonuses authorized for all physicians. The MD Variable Pay starts at \$5,000 for those physicians in training (residency) and for those with less than two years experience post-residency. This increases to \$12,000 when the physician has gained two years of experience. The other physician bonus (\$15,000) is paid to all those physicians who have completed their training. Thus, an anesthesiologist just out of his residency (usually a Captain) is paid an additional \$30,000 over the salary he earns for his rank and longevity in the Air Force. After two years experience, this amount increases another \$7,000. MDA promotion to Major usually occurs two to three years after completing their residency and many have or will soon be taking their specialty Boards. Physician Board Certification Pay is \$2,500 per year. While all CRNAs must be nationally board certified

in order to practice, no physician has such a requirement. There is no CRNA Board Certification Pay. The promotion of physicians to Major is based on a fully qualified basis and is considered fairly automatic.

CRNAs are usually Captains when finishing their residency (if in a military anesthesia program), but their promotion is based on a competitive system which considers the "whole man" and his preparation to assume more responsibility as an officer (CRNAs compete with all other nurse and non-line officers). Note the recommendation by 57 percent of the sample which states that CRNAs should be promoted by a system similar to the one for physicians and dentists. This would require similar Congressional exemption from the constraints of DOPMA for CRNAs.

As one might expect, the CRNA ISP has been well received. While the dollar amount was lower than recommended by the Air Force and the AANA, most active duty CRNAs perceive it as one step in the right direction. As of 6 March 1990, 139 active duty Air Force CRNAs had accepted the two year contract option making them available until, at least, November 1991. Another 50 CRNAs had accepted one year contracts, making them available until November 1990. Five CRNAs (including the author) were not eligible based on a graduate school assignment. Six CRNAs were clinically inactive because of collateral assignment (three) or their own preference. One CRNA failed the

national board certification examination. Four CRNAs had refused the bonus, clearly indicating that they were leaving the service this year. Nineteen CRNAs had not responded as of that date. These figures (AFMPC) indicate that a loss of close to 23 CRNAs this calendar year might be a possibility.

Active duty CRNAs compare themselves to other nurses, as well as to MDAs. This sentiment can be seen in the recommendation by 81 percent of the survey participants, when they stated that CRNAs should be paid differently than staff duty nurses in the Air Force. Nineteen percent recommended a CRNA promotion board separate from other nurses. Except for the CRNA ISP (February 1990), all nurses are paid the same salary as other nurses and other officers of the same rank and longevity in the Air Force, regardless of position filled, duty location, or level of responsibility. If one assumes that all nurses of equal rank have equally demanding jobs, requiring like responsibilities, then this system may be appropriate. Most CRNAs and other nurses who fulfill specialty roles, feel that they should not be paid the same as the general duty nurse. Additionally, most CRNAs feel that their opportunities for promotion within the Nurse Corps are decreased due to the fact that they are no longer "regular" nurses.

The recommendation on moonlighting relates not only

pay, but also to the issue of how much dedication can the Air Force realistically expect from underpaid, overworked CRNAs, who feel that they are not respected as professionals. Moonlighting is not possible in many duty locations, due to a variety of factors, but most often the biggest factor is the duty requirements of the Air Force. The opportunity to moonlight might decrease the pay deficit active duty CRNAs feel when they compare their salaries to those available locally in the civilian sector.

While only three CRNAs made the recommendation that bonuses should be paid for accepting assignments which are hard to fill, it might have merit. The possibility of decreasing the discontent associated with an undesirable duty location by paying bonuses to those who would volunteer, might make a significant difference in how those assignments are viewed. Many of the CRNAs who have left the Air Force the last several years have done so because of the discontent associated with duty at very small hospitals with two man anesthesia departments.

Tables 20 and 21 are presented on the next page, and include the number of CRNAs making the recommendation and the percentage of the total sample represented. Most of these recommendations are self explanatory. Several interesting recommendations which were provided with low frequency are not identified here, but are included with the complete list of recommendations shown in Appendix G.

TABLE 20

Tasks / Workload Recommendations

(Number and percentage of CRNAs are indicated. N=58)

N	%	Recommendation:
22	38%	Stop assigning CRNAs extra Duties
11	19%	Standardize departmental regulations/OIs/policies AF wide; stop useless paperwork and pencil-whipping prior to inspections
9	16%	CRNAs must define what extra tasks (IVs, teaching in-services, committees) they will do and when
8	14%	MDAs must be made to work and pull call duties
6	10%	Compensation for long hours and call
6	10%	Establish PAR nurses and techs under anesthesia
6	10%	Stop stupid war games: learning nothing, just wasting more personal and family time
4	6.9	Patient care should be fostered as most important
2	3.4	Contract more civilian CRNAs to reduce workload

TABLE 21

Professional Status And Interaction Recommendations

(Number and percentage of CRNAs are indicated. N=58)

N	%	Recommendation:
47	81%	Must pay CRNAs as autonomous providers, not staff nurses
21	36%	Afford CRNAs professional status of specialists
16	28%	CRNAs should be under Professional Services
10	17%	Nursing (especially Chief Nurses) must stop shunning and/or interfering with CRNAs
7	12%	Establish CRNAs in a separate Corps
6	10%	Evaluations done by anesthesia providers
6	10%	Make attempt to talk with CRNAs who are leaving
6	10%	Increase funded opportunities for CRNA CEUs
5	8.6%	People must be allowed to rock-the-boat without fearing promotion damage; needed changes don't occur, due to OER fear
5	8.6%	Help CRNAs get assigned where they want to be
5	8.6%	Assign CRNA consultants with actual POWER (AF LEVEL) to deal with problems CRNAs face
5	8.5%	Stop illegally restricting CRNA practice because some MDA espousing ASA dogma writes a letter
4	6.9%	CRNAs must be included in structuring department policies, instead of being told that the MDA makes the rules because he's the doctor
3	5.2%	Never expect CRNAs to work wards as staff nurse
2	3.4%	Allow CRNAs to choose a clinical career path (no administrative responsibilities)

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Restatement of the Purpose

The primary purpose of this research was to identify the major issues associated with the decision of many active duty CRNAs in the U.S. Air Force to discontinue their military careers prior to meeting the requirements for retirement and opt for anesthesia nursing practice in a non-military setting. An additional goal was to seek this group's recommendations for the Nurse Corps aimed at improving the work satisfaction of the CRNAs who currently practice in the United States Air Force.

Research Questions

1. What are the major issues associated with the decision of the above population of CRNAs to leave active duty?
2. Which factors of work satisfaction are most important to this group of health professionals?
3. Are these individual practitioners more satisfied in their current work situation as compared to that which existed while in the USAF?
4. What recommendations can these CRNAs provide the USAF Nurse Corps to improve the work satisfaction of the CRNAs currently on active duty in the USAF?

SUMMARY OF THE FINDINGS

This descriptive study was designed to help identify the work satisfaction issues associated with the CRNA retention problems that the USAF has experienced over the last few years. The Air Force has been unable to recruit and/or train enough new CRNAs to keep pace with the loss of these experienced CRNAs. Additionally, the percentage of those CRNAs lost, who have been eligible for military retirement, has significantly decreased since FY 1986. The early loss of CRNAs who have received their education through military sponsorship represents a direct decrease in the utility the Air Force obtains from those CRNAs it trains, and therefore higher education costs. This problem has developed to the point that resolution is required in order for the military services to maintain their ability to meet the peacetime, and certainly wartime, medical readiness mission.

The information source this study sought to utilize was those CRNAs who had recently made the decision to leave the Air Force for civilian anesthesia practice. Many of these CRNAs considered themselves career officers until their dissatisfaction with work situations and the military lifestyle, led them to consider leaving the Air Force and the investment they had made towards those careers. A mailed questionnaire was designed, evaluated, pilot tested,

and sent in order to gather the data presented in this study. The questions included the demographics of the participants and open-ended questions seeking narrative answers concerning both the issues which they saw as problems and recommendations for resolving those problems. A section of the survey was dedicated to the identification of the work satisfaction factors these CRNAs considered the most important in meeting their personal needs. The response rate for the survey was 70.2 percent, with 58 CRNAs providing the data used for this research project.

This sample of prior USAF CRNAs were all currently practicing as nurse anesthetists in a variety of work settings all over the United States. Most of the respondents stated that they were more satisfied with their current work situation, as compared to the one they left in the USAF. All stated that they had made the right decision in leaving; some of their reasons were that they were now paid what they were worth and that they had more control over their lifestyle. This sample also reported mean, median, and mode salaries well above the national mean salaries earned in 1988, and those projected for 1989, for CRNAs in the U.S. Most of the sample were males (72.4 percent), which is a reflection of the demographics of the CRNAs in the Air Force. Most of the sample were married and had children living at home. Seventy-four percent of the sample had at least a Baccalaureate Degree, in addition

to their anesthesia education. The mean number of years experience in anesthesia practice was 10.67 years, and the mean number of years in the Air Force was 8.1 years, with a range of 2.0 to 17.5 years. The vast majority had left the service as Captains and 31 percent stated they had joined reserve units. Most have worked for one employer since leaving the Air Force. None of the CRNAs reported working more than 50 hours per week in straight shifts, and less than half reported working call during weeknights or on weekends. Most of the sample reported that providing regional anesthesia (spinal and/or epidural) was a routine part of their practice. Of the nine CRNAs who reported that they were less satisfied now, six were not allowed to provide regional anesthesia as part of their practice. This supports the findings of Brown et al. (1987) who found that providing regional anesthesia was related to the work satisfaction of the CRNAs in their study.

This sample of CRNAs ranked the six factors of work satisfaction, identified by Stamps and Piedmonte (1986), and the results were very similar to nurses who work in hospitals and other health professionals working in a variety of settings. This sample's ranking of the factors (from most to least important) was pay, autonomy, professional status, tasks, interaction, and organizational policies. While most hospital nurses rank autonomy as most important to them, other health professionals place pay as

most important. The findings of this study thus support the findings described by Stamps and Piedmonte. The finding that pay was ranked as the most important factor by this sample also supports other data presented in this study. There was a significant correlation between the salary earned and whether the CRNAs were more satisfied in their current work situation. The reason most frequently (90 percent of the sample) given for leaving active duty was the low pay, with 36 percent listing it as the most important reason for leaving.

The major issues associated with the decision to leave active duty are all interrelated. Low pay, as compared to civilian CRNAs and to Air Force MDAs was the major issue. But, the comparison of pay is also extended to other Air Force nurses, who work as general duty nurses on wards or in administrative roles. This sample compared AF CRNAs to other AF nurses in the areas of level of responsibility, education, duty requirements, opportunities for career broadening experiences, and opportunities for promotion.

The problem of being overworked was identified by 24 percent of the sample. This problem has two components; either the CRNAs worked long hours providing anesthesia on a routine basis or they were assigned to such a small hospital that they experienced a loss of anesthesia skills. These CRNAs had to provide a tremendous amount of call coverage, and were utilized in a variety of ways by their

administrative supervisors. Most of these extra duties were extremely irritating to the CRNAs forced into these roles. In the larger facilities, the feeling that the MDAs did not do their fair share of the work was complicated by pay and supervision issues. These CRNAs compared the AF CRNA to the AF MDA in terms of work done, pay, promotions, and professional status.

The recommendations made by the sample were directed towards the problems that they identified. The majority were related to pay and promotion potential. Others were related to the professional status of CRNAs, workload and extra duties, and the interaction of CRNAs with other health professionals in the military environment.

CONCLUSIONS

This study attempted to identify problem issues related to the retention of USAF CRNAs now on active duty. The Air Force has recognized the retention problem and has become aware that the recruitment of civilian CRNAs can not begin to solve their manning shortfalls. Contracting for the services of civilian CRNAs as stopgap measures is also recognized as costly and detrimental to the self-image of Air Force CRNAs. While these contract CRNAs are meant to relieve overworked or undermanned departments, they also serve as an irritant due to the terms of the contracts.

Two CRNAs, who participated in this study, left the Air Force and made contracts as civilians to work in military hospitals. Their contracts called for 40 hour work weeks, with no call, for more than \$100,000 a year. Air Force CRNAs feel demeaned and demoralized for remaining on active duty when they compare themselves to these contract CRNAs.

Many of the CRNAs who participated in this study stated that no one had ever attempted to talk with them about their decision to leave or attempted to change their minds. This study can be considered to have served as an exit interview with some very disenchanting Air Force CRNAs.

The general feeling derived from this sample was that the Air Force does not recognize the worth of their CRNAs, while treating the MDA as the only anesthesia provider worthy of special incentives. The main issue within the comparisons of CRNAs to other nurses was that they did not feel CRNAs should be paid or promoted as every other nurse in the Air Force. These CRNAs saw themselves as autonomous providers filling a very special role in the Air Force, while feeling that they were treated as though they were worth less than a general duty nurse. The issues of pay and promotion potential were interrelated with the professional status and interaction factors that these CRNAs described as reasons for their decision to leave active duty.

There will always be issues that the Air Force can do little or nothing to improve. Many CRNAs will find that the military lifestyle is not right for them or their families. The attrition of these individuals is inevitable.

Many career Air Force CRNAs have become increasingly less tolerant of military life, when they have recognized that their opportunities for promotion and pay, as well as military and professional status, are no longer attainable. The efforts that were once made to advance within the military structure are often replaced by bitterness. This bitterness leads to the decision to separate, and was clearly visible in the narrative statements made by the sample. Congress and the Air Force can make substantive changes that will improve the way CRNAs are paid, promoted, and treated.

The Air Force must also take steps to insure that those career CRNAs still on active duty are aware of and understand the efforts that are being made to improve their opportunities. The CRNA Incentive Special Pay (\$6,000 bonus) was a good first step, but if active duty CRNAs perceive a lack of commitment by the Air Force to consider the needs of CRNAs seriously, the problem of CRNA retention will only get worse.

RECOMMENDATIONS

A study similar in design should be repeated with active duty Air Force CRNAs. All Air Force CRNAs worldwide should be included in the sample. While mailed questionnaires are less expensive, interviews by non-threatening CRNAs might help identify more problems.

Certainly, the CRNA ISP needs to be studied for its impact on CRNA retention. If Congress can buy quality CRNA providers for an extra \$6,000 a year, this author will be very surprised. If CRNA retention is not improved by this bonus, the possibility exists that Congress might decide to eliminate the bonus or redirect the funds to only those CRNAs without other commitments (such as education). Either of these decisions would be received very poorly by active duty CRNAs.

The Air Force and the DOD must convince Congress that in order to have a viable medical readiness capability, the military must have experienced CRNAs. In previous conflicts, it was the CRNA out in the trenches providing anesthesia to American soldiers, not anesthesiologists. If the United States is ever in another such conflict, it is extremely hard to imagine the military with enough physician anesthesia providers (paying back education sponsorship with active duty service commitments) to meet those demands. The military CRNA has historically been the

career military officer ready for such a call to duty. Unless Congress is convinced that it must act to insure that capability, there will not be enough CRNAs on active duty to meet peacetime requirements, let alone wartime capabilities. The longer Congress waits to make significant changes, the more obvious the problem of CRNA retention will become.

If and when active duty CRNAs are recognized with financial incentives and promotion opportunities, then the other problems of professional status, workload, and interaction with other health care providers will take care of themselves. Then, the problem of military CRNA retention will not exist.

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APPENDIX A
Introductory Letter and Questionnaire

Dear CRNA Colleague:

I am an active duty Air Force CRNA completing an AFIT sponsored graduate program at the State University of New York at Buffalo. I would like to engage your assistance in completing a research project dealing with job satisfaction of prior Air Force CRNAs. The population for this study is all those CRNAs who left active duty prior to retirement during the fiscal years of 1982 through 1988, and who are currently practicing as CRNAs in any civilian setting. The Air Force now recognizes that unless the work satisfaction needs of active duty CRNAs are addressed, the current shortage of CRNAs on active duty will critically impact the medical readiness mission. The purpose of this project is to identify the reasons that Air Force CRNAs have left active duty for the civilian sector. This research project has the approval of the Chief Nurse of the Air Force and any findings will be reported to her office.

If you decide to participate in this research, simply complete the enclosed questionnaire as directed, refold the questionnaire so that the stamped, return address shows, staple, and mail it. I request that you return the completed questionnaire within 7 days of receipt to facilitate timely data entry and analysis. Return of the completed survey materials constitutes your agreement to participate in this research. If you decide not to participate, please return your questionnaire, as directed above, so as to avoid subsequent mailings. Any questions concerning this project may be directed to me by mail or by telephone at (716)741-4246.

All responses to the questionnaire will be held completely confidential. Your name will be separated from the questionnaire when received by me and will only be used to reduce the duplication of follow-up mailings to non-respondents. Any information submitted will only be used to establish general categories for data analysis which will be reported statistically, and will in no way be connected to any name, individual or identifying location.

The potential benefit of this research is that it may provide data useful in the improvement of the work satisfaction of those CRNAs who currently serve in the USAF. The results of this research may also serve to provide a comparison of military and civilian practice.

I would like to take this opportunity to personally thank you for your time and effort in support of this research project.

Sincerely,

DONALD K. MARTINO, Maj, USAF NC
Graduate Nurse Anesthesia Student, SUNY/Buffalo

WORK SATISFACTION ISSUES AMONG PRIOR USAF CRNAs

SECTION I: DEMOGRAPHIC DATA

INSTRUCTIONS: Please circle the number corresponding to your answer or fill in the information requested. Ignore the numbers in parentheses. They are for coding purposes.

1. What is your current age in years? _____ (5-6)
2. What is your sex?

Female.....	1	
Male.....	2	(7)
3. What is your current marital status?

Single (never married).....	1	
Married.....	2	
Widowed, divorced or separated...3		(8)
4. Do you have children (minors) who are living with you?

No.....	1	
Yes.....	2	(9)
5. Highest educational level completed?

Diploma Nursing.....	1	
Associate Nursing.....	2	
Baccalaureate Nursing.....	3	
Masters Nursing.....	4	
Doctorate Nursing.....	5	
Other (indicate degree & major)...6		(10)
6. Where did you obtain your initial anesthesia education?

Civilian program.....	1	
Civilian, with military sponsor..2		
Military program (active duty)...3		(11)
7. How many years have you practiced as a CRNA? _____ (12-13)
8. Are you currently practicing as a CRNA?

No.....	1	
Yes.....	2	(14)
9. How many years (that counted towards retirement) did you have on active duty when you separated? _____ (15-16)
10. What was your pay grade/rank when you left active duty?

1 Lt.....	1	
Capt.....	2	
Maj.....	3	
L/Col.....	4	(17)
11. Have you joined any type of reserve unit in order to complete the requirements for military retirement benefits?

No.....	1	
Yes.....	2	(18)
12. Did you have a civilian job arranged before leaving active duty?

No.....	1	
Yes.....	2	(19)
13. Did you moonlight in the civilian sector during your last assignment?

No.....	1	
Yes.....	2	(20)

14. How was the anesthesia department staffed at your last assignment? (Please indicate number of personnel) MDA's..... (21)
CRNA's..... (22-23)
15. How many years have you practiced as a CRNA since leaving active duty?.....
(If less than 1 year, indicate number of months here)..... (24)
16. How many different full-time employers have you had since leaving active duty? (If you work in multiple part-time settings, count your main employers)..... (25-26)
17. How many employers (or job settings) do you currently have? (Full and part-time, call, moonlighting, etc)..... (27)
18. What was your gross annual salary/income from all civilian anesthesia related activities for the last year? (Please estimate for 12 months, if you have worked less than 1 year as a civilian).....\$..... (28-33)
19. During a typical week, how many hours do you work (calculate hours of call/week using 4 weeks/month)
a. straight shifts?.....
b. in-house call shifts?.....(non-weekend time).....
c. call periods from home?.....(non-weekend time).....
d. weekend call periods?.....
Average total hours worked per week (Total of above)..... (34-43)
20. What percentage of your professional time do you practice:
a. in a freelance (independent) practice?.....%
b. in a CRNA group?.....%
c. in a CRNA and MDA group?.....%
d. as an employee of a hospital?.....%
e. as an employee of a university?.....%
f. as an employee of an office, clinic or surgicenter?.....%
g. in other practice settings? (Please specify below).....% (44-57)
MUST ADD TO 100 %
21. In your current practice, do you administer regional anesthetics on a routine basis? (Actually perform the needle placement?) No.....1
Yes.....2 (58)
If not, what are two reasons?
a. (59)
b. (60)
22. Who provides payment for your liability insurance: you or your employer? Not insured...1
Employer.....2
Self.....3
Both.....4 (61)
23. Are you more satisfied with your present work situation as compared to when you were on active duty in the USAF? No.....1
Yes.....2 (62)

SECTION II: FACTORS OF SATISFACTION FROM WORK IN GENERAL

INSTRUCTIONS: Listed and briefly defined on this sheet of paper are six terms or factors that are involved in how people feel about their work situation. Each factor has something to do with work satisfaction. The purpose of this section is to determine which of these factors is most important to you in relation to the others, irrespective of any particular employment setting.

Please carefully read the definitions for each factor as given below:

PAY: dollar remuneration and fringe benefits received for work done

AUTONOMY: amount of job-related independence, initiative, and freedom, either permitted or required in daily work activities

INTERACTION: opportunities presented for both formal and informal social and professional contact during working hours

TASK REQUIREMENTS: tasks or activities that must be done as a regular part of the job

PROFESSIONAL STATUS: overall importance or significance felt about your job, both in your view and in the view of others

ORGANIZATIONAL POLICIES: management policies and procedures put forward by the employer

Scoring: These factors are presented in pairs on the questionnaire that you have been given. Only 15 pairs are presented: this is every set of combinations. No pair is repeated or reversed.

For each pair of terms, decide which one is more important for your job satisfaction or morale, in general. Please indicate your choice by a check on the line in front of it.

It will probably be difficult to make choices in some cases. However, please do try to select the factor which is most important to you. Please make an effort to answer every item; do not change any of your answers.

1. ___ PROFESSIONAL STATUS or ___ ORGANIZATIONAL POLICIES
2. ___ PAY or ___ TASK REQUIREMENTS
3. ___ ORGANIZATION POLICIES or ___ INTERACTION
4. ___ TASK REQUIREMENTS or ___ ORGANIZATIONAL POLICIES
5. ___ PROFESSIONAL STATUS or ___ TASK REQUIREMENTS
6. ___ PAY or ___ AUTONOMY
7. ___ PROFESSIONAL STATUS or ___ INTERACTION
8. ___ PROFESSIONAL STATUS or ___ AUTONOMY
9. ___ INTERACTION or ___ TASK REQUIREMENTS
10. ___ INTERACTION or ___ PAY
11. ___ AUTONOMY or ___ TASK REQUIREMENTS
12. ___ ORGANIZATION POLICIES or ___ AUTONOMY
13. ___ PAY or ___ PROFESSIONAL STATUS
14. ___ INTERACTION or ___ AUTONOMY
15. ___ ORGANIZATION POLICIES or ___ PAY

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SECTION IV: RECOMMENDATIONS

INSTRUCTIONS: Please write your recommendations for improving the work satisfaction of Air Force CRNAs. The above six factors are to be used in organizing your suggestions. The last category of OTHERS is provided for recommendations which don't seem to fit into these factors of work satisfaction. PLEASE WRITE LEGIBLY.

AUTONOMY:

ORGANIZATION POLICIES:

PROFESSIONAL STATUS:

SECTION IV: RECOMMENDATIONS CONTINUED

INTERACTION:

PAY:

TASK REQUIREMENTS:

OTHERS:

(45-72)

(Staple Here)

Don Martino, CRNA
8390 Clarence Center Road
Clarence Center, NY 14032

Stamp

Don Martino, CRNA
8390 Clarence Center Road
Clarence Center, NY 14032

(Refold questionnaire so return address shows. Thank You.)

Don Martino, CRNA
8390 Clarence Center Road
Clarence Center, NY 14032

Stamp

Address Lable

(Please Remove Staple Carefully)

APPENDIX B

Letter from Dr Paula Stamps
Granting Permission to Utilize the
Stamps-Piedmonte Index of Work Satisfaction



UNIVERSITY OF MASSACHUSETTS
AT AMHERST

School of Health Sciences
Division of Public Health

Arnold House — Morrill Science Center
Amherst, MA 01003

September 26, 1989

Donald K. Martino, CRNA, BSN
8390 Clarence Center Road
Clarence Center, NY 14032

Dear Mr. Martino:

I appreciate your request for more information and permission to utilize the Stamps-Piedmonte Index of Work Satisfaction in your research project. I am happy to give you my permission, as well as any assistance you may need. In addition, you will need to write a letter requesting permission to the publisher, since Health Administration Press holds the copyright itself. You should write to:

Daphne M. Grew
Director of Publications
Health Administration Press
1021 East Huron
Ann Arbor, Michigan 48104

As Health Administration Press is also eager to expedite researchers in utilizing the scale, they will quickly grant you formal permission. This will allow you to duplicate as many copies of the scale as you need in your research project.

If you need a copy of the book itself, you may obtain one from the Association of American Health Care Executives. They are located at 1951 Cornell Avenue; Melrose Park, Ill 60160 and their telephone number is 312-450-1101. The price of the book (Nurses and Work Satisfaction: An Index for Measurement by Stamps and Piedmonte) is \$28.00. The book contains the validated scale; scoring procedures, including computer programs; and statistical information from other administrations as well as a literature review of occupational satisfaction of nurses. The book is meant to provide you with all the information necessary for your research.

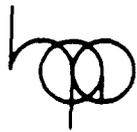
I appreciate your interest in this scale and I would be most interested in learning of the results of your study. Please see page 2 of this letter for the permission statement.

Sincerely yours,


Paula L. Stamps, Ph.D.
Professor

APPENDIX C

Letter from the Health Administration Press
Granting Permission to Use and Make Copies of
the Stamps-Piedmonte Index of Work Satisfaction



health
administration
press

621 East Huron
Ann Arbor, Michigan 48104
313 764-1380
FAX 313 763-1105

October 5, 1989

Donald K. Martino, DRNA, BSN
8390 Clarence Center Road
Clarence Center, NY 14032

Dear Mr. Martino:

Thank you for writing for permission to use the Index of Work Satisfaction in your graduate research. Health Administration Press grants you permission to make the copies of the Index you need, provided that the following credit line is included on the first page of all copies:

Used with permission from *Nurses and Work Satisfaction: An Index for Measurement* by Paula L. Stamps and Eugene B. Piedmonte (Ann Arbor, MI: Health Administration Press, 1986).

Permission is granted for one-time use only.

Permission does not extend to publication of material from the book. For example, if you should write an article and it is accepted for publication, you would need to write again for permission if you wanted to include a copy of the Index in your article.

We wish you a successful research project.

Sincerely,

Tracy Flynn
Publications Assistant



A Division of the
Foundation of the
American College of
Healthcare Executives

APPENDIX D

Letter of Approval from the
Human Subjects Review Committee



UNIVERSITY AT BUFFALO
STATE UNIVERSITY OF NEW YORK

School of Nursing
The Stockton Building Tower
Buffalo, New York 14261
716/432-2500

September 28, 1989

Mr. Donald K. Martino
8390 Clarence Center Road
Clarence Center, New York 14032

Dear Donald:

Your proposal entitled "Work Satisfaction Issues Among Prior USAF CRNAs" has been reviewed and approved. We are enclosing a copy of the human subjects clearance form with the required signatures for attachment to your "Application for Candidacy Form".

Please inform the Human Subjects Review Committee if any eventuality should arise with your research which raises additional issues with respect to risks to the subjects and/or confidentiality of the data.

Sincerely,

A handwritten signature in cursive script that reads "Gail P. Brown".

Gail P. Brown, RN, Ph.D.
Chairperson
Human Subjects Review Committee

GPB:fmg
Enc.
cc-Linda Janelli

APPENDIX E

Letter from the Chief Nurse of the Air Force
Granting Approval of the Study and Authority
to Access the Identities of the Sample from
United States Air Force Records



DEPARTMENT OF THE AIR FORCE
HEADQUARTERS UNITED STATES AIR FORCE
BOLLING AFB DC 20332-6188

DEC 21 1960

REPLY TO
ATTN OF SGN

SUBJECT Request by Major Martino for Written Approval of Research Study

TO AFIT/CIMI/Maj Martino

1. This is to confirm my approval of the subject matter and proposed thesis titled, "Work Satisfaction Issues Among Prior United States Air Force Certified Registered Nurse Anesthetists," as submitted to this office for review by Major Donald K. Martino, USAF, NC. Air Force Nurse Anesthesia is a career field with urgent recruiting requirements. Any information on how we can make the career field more attractive or satisfying to our military members is of great interest to Air Force Nursing.
2. Access to the identities and last known addresses of these former Air Force Nurse Anesthetists is authorized pursuant to 10 U.S.C. § 8013.
3. I wish you much success with your project and look forward to learning the results of your study.

Barbara A. Goodwin
BARBARA A. GOODWIN, Brig Gen, USAF, NC
Chief, Air Force Nurse Corps
Office of the Surgeon General

APPENDIX F

Coded Reasons Given For Leaving By Frequency

Coded Reasons Given for Leaving By Frequency:

#1 N3 O T Codes/Reasons:

21	30	1=52	3	Low Pay
6	16	=22	2	Poor opportunity for promotion of CRNAs
1	7	11=19	22	Lack of respect for CRNAs by the Hosp Commander, Chief Nurse, Nursing Department, and MDAs
4	8	6=18	5	Advancement and job security based on OIC liking you
5	5	7=17	4	No one cared about CRNAs or appreciated efforts
3	11	6=14	1	Overworked
	7	6=13	17	Extra duties and committees as a chair filler
2	2	8=12	14	No control of who you work for
2	6	3=11	21	Location of assignments, both Conus and Overseas
3	4	3=10	16	Fear of family separation by assignment and/or lack of confidence in the Joint Spouse Assignment program
1	7	1= 9	6	Time off not really your own
	3	6= 9	33	PME and other military training demands on personal time
1	3	4= 8	18	To provide a stable family location/establish roots
1	3	3= 7	8	Forced to work wards for nursing services and interference by the Chief Nurse with CRNAs and the anesthesia department
1	3	3= 7	12	MDAs got pro pay, but CRNAs did not
	4	3= 7	29	Dangerous anesthesia practice; no safety rest, old equipment and no Recovery Room nurse
	3	4= 7	13	No overtime reimbursement for long hours or call
1	3	2= 6	10	Supervisor can kill career with mediocre OER
	4	2= 6	35	Little or no control over assignments
	3	3= 6	15	Mobility Games/mandatory training where nothing learned
1	2	2= 5	20	Not challenged by case load (loss of skills)
	4	1= 5	41	Too much lip service and eye wash, no real concern for people, crisis management of long-term problems
	2	3= 5	11	CRNAs never got proper rewards for efforts
	1	4= 5	37	No funded TDYs for CEUs to decent places
1	2	1= 4	34	Fed up with "homosexuality" of Nurse Corps leaders
1	1	2= 4	28	Involuntary separation; passed over for promotion
	2	2= 4	31	CRNAs are not given opportunities for flight school, in-residence PME, etc., as compared to other nurses
	2	2= 4	40	MDAs didn't pull fair share of workload/call and supervision was required only when convenient for them (minimal at night/weekend) CRNAs become much more capable at night!
1	2	= 3	38	Not allowed or negative policies on moonlighting
	2	1= 3	23	The financial burden of frequent moving (selling homes and cars, damage to personal property and goods in transit)
		3= 3	26	USAF was difficult for wife and family emotionally
	2	= 2	30	Sent TDY multiple times without family for staffing assistance and then I couldn't get leave
	1	1= 2	24	Families are not really considered by Air Force
		2= 2	9	Erosion of military benefits and retirement plan
		2= 2	36	Difficulty in getting leave at all or when desired
1		= 1	42	AF decision to cut CRNAs even though short many CRNAs
1		= 1	27	Court marshalled for Chemical Dependency
	1	= 1	19	To be near family
	1	= 1	7	Incompetent surgeons
	1= 1		32	Religious needs not met on or near base
	1= 1		39	No input into anesthesia departmental functioning
	1= 1		25	Membership in the O'Club a criteria for good OERs, TDYs endorsements, recommendations for special schools, etc.
	1= 1		43	Required to live on base by hospital commander in order to provide emergency coverage (forced to live in substandard housing without considering my needs and desires)

Note: #1 means the response was the most important reason
 N3 means the response was given in a ranked position (#2,3, or 4)
 O means the response was given in a non-ranked position
 T means the total number of times the response was given
 T = #1 plus N3 plus O

APPENDIX G
Recommendations By Frequency

Recommendations by Frequency:

#/58	%	Codes/Recommendations:
48	83%	6 Professional Staff bonus (similar amount as MDAs)
47	81%	3 Must pay CRNAs as autonomous providers, not staff nurses
33	57%	17 Promote and pay based on fully qualified professional status, not on OER system
22	38%	12 Stop assigning CRNAs extra Duties
21	36%	14 Afford CRNAs the professional status of specialists
16	28%	9 CRNAs should be managed under Professional Services
15	26%	13 Improve the promotions of CRNAs
11	19%	4 Separate promotion board for CRNAs
11	19%	21 Standardize departmental regulations/OIs/policies AF wide; too much useless paperwork, stop pencil-whipping for inspections
10	17%	15 Nursing (especially Chief Nurses) must stop shunning and/or interfering with CRNAs
9	16%	37 CRNAs must define what extra tasks (IVs, teaching in-services, committees) they will be do and when
8	14%	2 MDAs must be made to work and pull first call duties
7	12%	40 Establish CRNAs in a separate Corps, outside Nursing
6	10%	5 Compensation for long hours and call
6	10%	8 Evaluations should be done by anesthesia providers
6	10%	25 Establish PAR nurses and techs under anesthesia
6	10%	27 Stop stupid war games: sitting in the basement, learning nothing, just wasting more personal and family time
6	10%	29 Make attempt to talk with CRNAs who are getting out
6	10%	31 Increase funded opportunities for CRNA CEUs
5	8.6	24 People must be allowed to rock-the-boat without fearing promotion damage; needed changes don't occur, due to OER fear
5		26 Initiate weekend and night call pay
5		28 Help CRNAs get assigned where they want to be
5		39 Assign CRNA consultants with actual POWER (AF LEVEL) to deal with and resolve the problems CRNAs face
5		42 Stop illegally restricting CRNA practice because some MDA espousing ASA dogma writes a letter
4	6.9	1 Patient care needs to be fostered as most important
4		30 Longer tours at each assignment
4		33 CRNAs must be allowed to moonlight on personal time without asking anyone's permission (the Air Force needs to realize it can't demand 24 hours a day during peacetime)
4		36 CRNAs must be included in structuring departmental policies, instead of being told that the MDA makes the rules
3	5.2	23 Never expect CRNAs to work wards as a staff nurse
3		38 Provide bonus for less desirable assignments
3		44 Staffing assistance must be made more available
2	3.4	7 Contract more civilian CRNAs to reduce workload
2		43 Allow CRNAs to choose a clinical career path (no admin)
1	1.7	10 Continue to offer courses at Med Centers (regional, etc)
1		11 Eliminate credentialing hassles when moving
1		16 Need to improve enlisted respect for nurse officers
1		18 Make surgeons schedule more efficiently to reduce workload (surgeons should cut when time is available, anesthesia should not have to be available any time surgeons decide to show up)
1		19 Rely on civilian community for care at small bases
1		20 Consolidate surgical/OB services needing anesthesia
1		22 Offer treatment for chemical dependency, treat these individuals as people with a disease, not as criminals
1		32 Increase reimbursement for PCS moves, TDYs, etc.
1		34 Create a separate service for medical services
1		35 Stop tolerating the homosexuality of nursing leaders
1		41 Encourage the Air Force Association of Nurse Anesthetists as a forum for communication
1		45 All facilities should have high quality equipment
1		46 CRNAs should be assigned as Chief of the Anesthesia Dept. when at base with junior MDAs (MDAs only expertise is in clinical, not administrative realms). The usual practice of brand new MDAs (0-3) running departments with senior CRNAs (0-4, 0-5) available is non-military and insulting. Time for change.