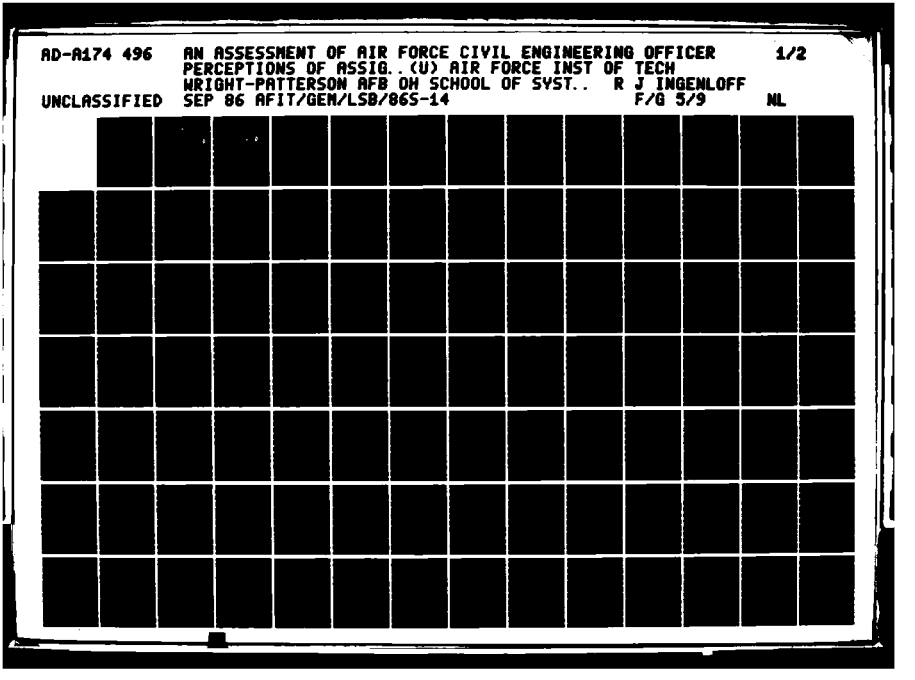
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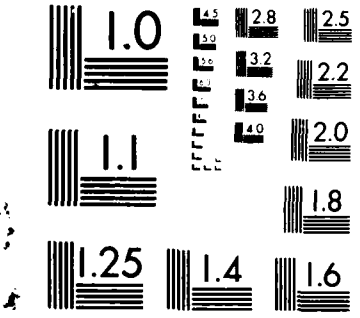

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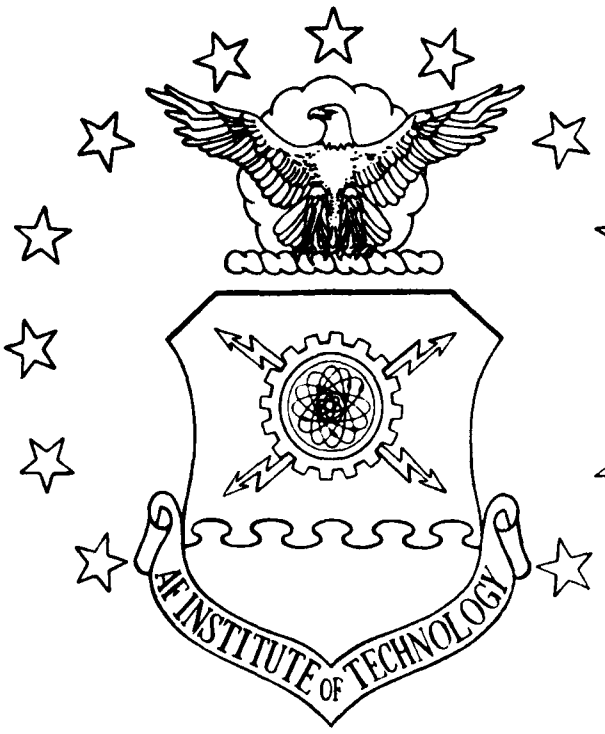

AN ASSESSMENT OF AIR FORCE CIVIL ENGINEERING OFFICER PERCEPTIONS OF ASSIGNMENTS TO CAREER BROADENING POSITIONS

THESIS

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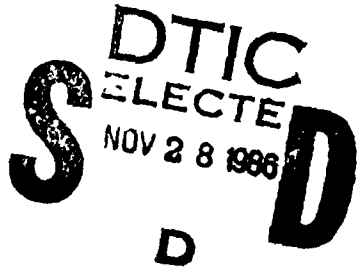

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The contents of the document are technically accurate, and no sensitive items, detrimental ideas, or deleterious information is contained therein. Furthermore, the views expressed in the document are those of the author and do not necessarily reflect the views of the School of Systems and Logistics, the Air University, the United States Air Force, or the Department of Defense.

AFIT/GEM/LSB/86S-14

AN ASSESSMENT OF AIR FORCE CIVIL ENGINEERING OFFICER PERCEPTIONS OF ASSIGNMENTS TO CAREER BROADENING POSITIONS

THESIS

Presented to the Faculty of the School of Systems and Logistics
of the Air Force Institute of Technology
Air University
In Partial Fulfillment of the
Requirements for the Degree of
Master of Science in Engineering Management

Richard J. Ingenloff, B.S.
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September 1986

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Richard J. Ingenloff

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Abstract

This study assessed Air Force civil engineering officer perceptions of assignments to career broadening positions, both within and outside the civil engineering career field. Eleven career broadening positions to which civil engineering officers could possibly be assigned were evaluated. Data collection was accomplished by a mail survey of civil engineering officers in the ranks second lieutenant through major with AFSC 55XX, excluding rated supplements.

The results focused on officer perceptions and attitudes of assignments to career broadening positions for five groups defined by rank and commissioned service time. The groups were second lieutenant, first lieutenant, junior captain, senior captain, and major. Comparisons between the five groups were also assessed. When the results of the five groups are combined, the six most preferred career broadening positions were: AFIT Civil Engineering School Instructor, Air Force Academy Instructor, Reserve Officer Training Corps Instructor, Services Squadron Commander, Squadron Officer School Instructor, and Officer Training School Flight Commander. The five least preferred positions were: Basic Military Training School Deputy Squadron Commander, Services Operations Officer, Recruiting Service Officer, Missile Combat Crew Member, and Basic Military Training School Squadron Commander.

AN ASSESSMENT OF AIR FORCE CIVIL ENGINEERING OFFICER PERCEPTIONS OF ASSIGNMENTS TO CAREER BROADENING POSITIONS

I. Introduction

This chapter introduces research on Air Force civil engineering officer perceptions of assignments to career broadening positions, both within and outside the civil engineering career field. The following sections provide a discussion of the background and justification of the research, problem statement, definition of terms, and research questions.

Background and Justification

Career progression is important to the Air Force and the individual officer. Since there is no specific career plan an officer must follow to successfully compete for promotion, it is important for Air Force management to provide opportunities for career development and personal growth. Each officer's initiative to develop a plan tailored around these opportunities will determine career success (7:9).

Air Force Regulation (AFR) 36-23 states that the goals of the officer assignment system are to "fulfill present and projected authorizations, manage available personnel resources at the lowest cost, meet mission requirements, and provide full career progression opportunities" (7:11).

Career advisors at Palace Blueprint, located at the Air Force Military Personnel Center (AFMPC), are responsible for managing the civil engineering officer force towards these goals. Palace Blueprint constantly evaluates the officer resource, career development needs, and assignment actions required to support the Air Force mission.

According to Palace Blueprint, there has been an overage in civil engineering officer manning for the past three years. The FY 86 projection is approximately 105 percent. This refers to the total number of officers assigned versus total authorized in the ranks second lieutenant through lieutenant colonel. Although over in total number of officers, the civil engineering career field is short in terms of experience. Overall manning for ranks captain through lieutenant colonel averaged below 80 percent, while lieutenants exceeded 200 percent (11).

While the civil engineering officer career field is currently overmanned, some functional areas continue to fall short. For example, manning in the services career field averaged 93 percent over the past three years (20). Other functional areas depend totally on career broadening assignments to fill quotas. AFMPC operates in terms of total officers, and must keep authorizations and assignments balanced. Major General Clifton D. Wright, former Director of Engineering and Services, states,

> A three-pronged program is being initiated to bring all engineering career fields, including Civil Engineering, closer to a 100% manning vs authorizations situation

> and, concurrently, to alleviate the shortages in other career fields. The program involves diverting accessions, adjusting accession programs, and temporary crossflow of people out of overmanned career fields into those which are now undermanned. It is this latter means of achieving balance that most concerns many of us and which, if improperly handled, could be counter-productive [30:1].

Palace Blueprint projects that 35 civil engineering officers will be assigned to career broadening positions for one tour during FY 86. Upon completion of their tour, the officers will return to the civil engineering career field (10:2).

As career advisors for civil engineering officers, Palace Blueprint is interested in implementing this career broadening program in the best interest of the officer and the Air Force. Presently, no systematic research has been conducted to investigate civil engineering officer perceptions and attitudes of assignments to career broadening positions.

Problem Statement

The objective of this study is to investigate civil engineering officer (second lieutenant through major) perceptions and attitudes of being assigned to career broadening positions, both within and outside the civil engineering career field. Palace Blueprint identified 11 career broadening positions to which civil engineering officers could possibly be assigned. These positions are:

- Air Force Academy Instructor
- Air Force Institute of Technology (AFIT) Civil Engineering School Instructor

- Basic Military Training School Squadron Commander
- Basic Military Training School Deputy Squadron Commander
- Missile Combat Crew Member
- Officer Training School Flight Commander
- Recruiting Service Officer
- Reserve Officer Training Corps Instructor
- Services Squadron Commander
- Services Operations Officer
- Squadron Officer School Instructor

The Air Force Academy Instructor and AFIT Civil Engineering School Instructor are career broadening positions within the career field. The other nine positions are outside the field.

Definition of Terms

The positions and Air Force Specialty Codes (AFSCs) used in this study are described below. AFR 36-1 defines AFSCs as numerical codes used to "identify different types of Air Force jobs and the qualifications of officers to fill these jobs" (8:1-1).

1. Air Force Academy Instructor (AFSC 55XX): The instructor is a member of the Air Force Academy faculty and is responsible to educate, counsel, and train Air Force cadets in a precommissioning environment (6:8-8).

2. AFIT Civil Engineering School Instructor (AFSC 55XX): The instructor is a member of the Air University faculty (6:8-5) and teaches various civil engineering short

courses at the AFIT School of Civil Engineering, Wright-Patterson AFB, Ohio.

3. Basic Military Training School Squadron Commander (AFSC A0940): The commander motivates and trains students to become Air Force airmen. This includes managing military, academic, and physical training courses to evaluate individual potential for the enlisted ranks (7:140). The Basic Military Training School is located at Lackland AFB, Texas, and is part of the Air Training Command.

4. Basic Military Training School Deputy Squadron Commander (AFSC 0940): The deputy squadron commander assists the commander in motivating and training students to become Air Force airmen. This includes managing military, academic, and physical training courses to evaluate individual potential for the enlisted ranks (7:140). The Basic Military Training School is located at Lackland AFB, Texas, and is part of the Air Training Command.

5. Civil Engineering Officer (AFSC 55XX): The officer has an undergraduate degree in architecture or engineering (civil, electrical, mechanical, or industrial). Civil engineering activities include "design and project preparation, drafting, surveying, planning, feasibility studies, construction surveillance, maintenance and repair, utilities operation, facility energy management, environmental control, land management, real estate and real property accounting, work measurement and analysis, and related installation support services" (8:A15-5).

6. Missile Combat Crew Member (AFSC 182X): A missile combat crew member plans, organizes, and directs missile launch activities. These include managing missile launch crews, monitoring alert status, and launching missiles (8:A8-65).

7. Officer Training School Flight Commander (AFSC 0950): The flight commander motivates and trains students to become Air Force officers. This includes conducting military, academic, and physical training courses to evaluate individual potential for the commissioned service (8:A4-13/14). Officer Training School is located at Lackland AFB, Texas, and is part of the Air Training Command.

8. Recruiting Service Officer (AFSC 0920): The recruiting service officer recruits officers to meet the needs of the Air Force, manages advertising and publicity programs, and maintains liaison with community officials and educators to enhance the officer corps image (8:A4-7).

9. Reserve Officer Training Corps Instructor (AFSC 0940): The instructor is assigned to a school with an Air Force Reserve Officer Training Corps Detachment and is responsible to "recruit, motivate, educate, counsel, and train Air Force cadets in a precommissioning environment" (6:8-6).

10. Services Squadron Commander (AFSC A6216): The services squadron commander manages services activities at the installation level. This includes food service, billeting, linen exchange, furnishings management, laundry

and dry cleaning, mortuary affairs, and wartime readiness. The commander also acts as the consumer liaison with the commissary and base exchange activities (8:A17-7/8,A17-9/10; 9:1).

11. Services Operations Officer (AFSC 622X): The services operations officer manages one or more services activities such as billeting, food service, linen exchange, mortuary affairs, and wartime readiness (8:A17-11/12; 9:1).

12. Squadron Officer School Instructor (AFSC 0940): The instructor is a member of the Air University faculty (6:8-5) and teaches the Squadron Officer School Course at Maxwell AFB, Alabama.

Research Questions

In support of the problem statement, the following research questions were developed:

1. How do civil engineering officers perceive the effects of career broadening in general? Perceived effects being measured include promotion opportunity, career progression within civil engineering, advancement to the senior officer ranks, retention, and officership.

2. What are civil engineering officer attitudes concerning specific career broadening assignments? Attitudes being measured are promotion opportunity, job satisfaction, career progression within civil engineering, retention, and motivation.

3. How do civil engineering officers rank order the 11 career broadening positions?

II. Literature Review

Introduction

As with any large organization, the Air Force is faced with a constant influx of new personnel. Associated with this influx comes the task of developing career management programs oriented toward the specialization of the individual. Equally important are individual attitudinal factors and retention. As discussed in the problem statement, this thesis investigates Air Force civil engineering officer perceptions and attitudes of being assigned to career broadening positions, both within and outside the civil engineering career field. Therefore, background information is needed on officer career development.

According to two AFIT theses (1:5; 4:3), in-depth research on officer career development and progression is limited. AFR 36-23 provides the basic guidelines for officer career development and contains suggested career progression guides. This literature review examines career development primarily for Air Force officers and is divided into three sections. The first section focuses on career development in general and on various career intent decision factors. The second section discusses civil engineering officer career progression as outlined in AFR 36-23 and related research studies. The final section provides a summary of the previous two sections.

Career Development

Researchers use different definitions of career development. Gutteridge and Otte state, "Although there is only limited consensus regarding the definition of career development and what tools/techniques it encompasses, there is a general expectation that such an approach offers the promise of matching individual needs and interests with organizational opportunities and requirements so that both can prosper" (13:22). They believe that the individual and the organization are responsible for employee career development. Using a model, they define career development as "outcomes emanating from a combination of individual career planning actions and organizational career management activities" (13:22). These authors also indicate that organizations start career development programs primarily due to top management and employee interest and a desire to promote individuals within the organization to fill vacant positions (13:23).

Burack states that organizational career development is a combination of two perspectives, career management and career perspective. Career management focuses on the characteristics and needs of the organization. While career development programs are sensitive to individual growth, priority is given to organizational requirements. The career perspective emphasizes employee career progression and is concerned with individual needs and experiences (3:52).

Sheppeck and Taylor believe that organizations use either a traditional/political approach or a job/behavioral approach to career development. The traditional/political approach uses past employee career progression patterns to plan future career avenues. Managers generally dictate career progression paths and claim little responsibility for employee career development. In addition, the rate of advancement is often based on tenure and who knows whom. The job/behavioral approach focuses on job similarities and differences. Similar jobs are combined into clusters, career progression paths and job descriptions are clearly defined, and rate of advancement is based on performance. Due to job similarities, career movement within clusters is easy. However, moving between clusters requires new knowledge and skill (24:46-47).

According to Brousseau (2:125-126), career development involves decisions of matching people to jobs and moving people to jobs over time. Important factors in career development include the types of jobs people encounter during a career, timing, and sequencing of assignments. Brousseau also states that much of the research on job-person interface focuses on the effects of job characteristics and individual difference factors of employee attitudes and behavior. He believes "that numerous questions will remain unanswered as long as the focus of research remains fixed on individuals' immediate jobs without reference to past experiences or expected, future experiences" (2:125).

Jean and John McEnery examined career development for professionals and believe that organizations do not fully understand the professional career as much as the managerial career. They explain that a professional is one who identifies with and commands expertise in a particular field based on formal education. As time passes and technical knowledge diminishes, the professional may steer toward a management role (21:72). Various attitudinal factors also characterize a professional. The McEnerys state, "A professional has a strong commitment to his field ... Determining how strongly a professional identifies with his organization and with his field reveals significant career goals and motivations" (21:72). Organizations must recognize the unique qualities of the professional and tailor career development programs accordingly. Job challenge, growth, and development must be addressed to motivate, satisfy, and retain professionals (21:74).

As managers continually seek ways to improve employee retention, there has been an increased effort to study the important variable of organizational commitment. Steers developed and tested a model concerning employee commitment to organizations on 382 hospital personnel and 119 scientists and engineers (27:46). He defines organizational commitment as "the relative strength of an individual's identification with and involvement in a particular organization" (27:46). Steer's model consists of antecedents and outcomes of commitment. The antecedent component is grouped according to

personal characteristics, job characteristics, and work experiences. Personal characteristics contain variables that define the individual such as age, education, and achievement opportunities. Various job characteristics that may influence commitment are task identity, job challenge, social interaction, and feedback. Lastly, work experiences include group attitudes, organizational dependability, and perceptions of personal importance and investment to an organization. The model's second component hypothesizes that commitment leads to several behavioral outcomes such as desire and intent to remain, attendance, retention, and job performance. For both samples, Steers concludes that all three antecedent groups influenced commitment. Also, commitment was strongly related to the outcomes of intent and desire to remain and unrelated to performance. Steers explains that individuals expect to work in an environment where they can use their skills and satisfy personal needs and desires. Employee commitment is enhanced in organizations that satisfy these requirements. He also found that highly educated individuals were more committed to a profession than to an organization (27:46-56).

According to Martin (18:313-317; 19:81-83), the literature on intent to leave identifies numerous variables relating to an individual's intent to leave an organization. From nis contextual model of employee turnover intentions, Martin found that as age, job satisfaction, and upward mobility increase, employee intent to leave the organization

decreases. On the other hand, as education increases, intent to leave increases (18:321). In another study, he states that young, aggressive, and well educated employees with strong performance records and high salary expectations tend to leave quickly. Also, employees that were treated unfairly, have weak overall job satisfaction, and had little job decision opportunity may possess strong intentions of leaving the organization (19:81-83).

Clayton and Mercer examined factors influencing career intent decisions among Air Force and Navy junior civil engineering officers. The officers surveyed had five years or less active duty commissioned service. The results of their research identifies personal life, policy and administration, salary, work itself, and working conditions as the most influential motivational factors of career intent decisions (5:36-42,58). Policy and administration includes the "presence or lack of consistent and fair policies involving assignment preferences, proper utilization of abilities and placement on job related to interests, background, and training" (5:24). Work itself is actually performing the job or task and encompasses "work that is interesting, varied, challenging, adventurous, or exciting; entails work that is important or meaningful to the individual, work that corresponds to one's ability and background" (5:23-24).

Mowday developed several strategies organizations can use to adapt to high employee turnover. One such strategy

involves cross-training employees within or across levels of an organization and assigning them to positions where they are required most. This increases management flexibility and trains employees to assume greater responsibilities to better perpare them for higher level positions (22:372). Tenzer, Gerson, and Lacey state that functional expertise alone is not sufficient for advancing to the executive levels, and organizations are now creating "cross-functional and cross-divisional rotational assignments" (28:41).

Air Force Officer Career Development

The Air Force officer career development program is outlined in AFR 36-23. This program seeks to produce professional and versatile officers capable of assuming increased responsibilities. Career development responsibilities are assigned to all echelons of command and to the individual. Each officer is expected to progress through assignment and training opportunities. The Air Force Military Personnel Center manages the officer resources and provides the career progression opportunities. Although the career development program emphasizes individual aspirations and growth, the requirements of the Air Force have top priority (7:9-11).

AFR 36-23 also contains career progression guides for specific officer utilization fields. These guides are divided into five progression phases relating to years of commissioned service, and apply to all officers in the grades

lieutenant through colonel. Each phase outlines the level of assignments, military training, formal education, and professional military education thought to be necessary for a successful Air Force career (7:41).

The career progression guide for civil engineering officers (AFSC 55XX) is divided into five phases. In the initial phase (0-3 years), the officer should be assigned at a base level civil engineering squadron and is encouraged to obtain professional registration. In the intermediate development phase (4-11 years), Squadron Officer School should be completed in residence or by correspondence. The officer should consider applying for the AFIT graduate program, rotating through many positions at base level civil engineering, getting a staff assignment, and completing intermediate service school such as Air Command and Staff College. Some officers will have the opportunity to gain experience in other career fields. These career broadening positions should be no more than four years and occur during the 6-14 year points. In the advanced development phase (12-17 years), the officer should rotate into different echelons of command to obtain management experience, and complete intermediate service school. The officer is also advised to complete senior service school, such as Air War College. During the staff phase (18-22 years), the officer will be assigned to positions of increased managerial responsibility. These assignments include base civil engineer and staff officer at a major command or Headquarters

USAF. Lastly, the executive or leader phase (23+ years) involves senior managerial positions at all command levels (7:118-122).

Most sources agree that AFR 36-23 is only a suggested guide for career planning (1:1-2; 4:2-3; 15:4; 17:4-5). According to Haynes and Herbert, AFR 36-23 "is general and allows individual interpretation of what constitutes the mix necessary for a successful career" (15:4). Cady states, "Air Force civil engineering officers do not have a validated and proven guide that will ensure success of their career goals" (4:3).

In his AFIT thesis, Cady identifies some career profiles of successful civil engineering officers. He defines career success as an officer who attains the rank of colonel and above. Cady compared career profiles of civil engineering colonels and higher to civil engineering lieutenant colonels not selected twice for promotion to colonel. He found that the successful officer has a master's degree or higher, and completed Squadron Officer School, Air Command and Staff College, and Industrial College of the Armed Forces. The successful officer changes duty location once every other year and has some command level experience (major command staff or higher). Cady also found that the successful officer has about 14 years of civil engineering experience, which indicates some career broadening (4:63-65).

Beisbke and Lipsey contend that AFR 36-23 provide guidelines only through the rank of colonel, and state "a

different type of planning is necessary to become a general officer" (1:2). In their thesis, they analyze Air Force officer career progression to the rank of brigadier general. The study involves a census of 171 brigadier generals excluding the legal, medical, and health services career fields. Beishke and Lipsey conclude that the typical Air Force brigadier general is a pilot with a high level of command experience. This command experience includes a mixture of assignments in both the rated and non-rated career fields (such as maintenance, research and development, and civil engineering). In addition, these assignments were interspersed with advance degree and professional military education school assignments (1:83-87).

In his book The Professional Soldier, Morris Janowitz explains that successful leaders have the ability to easily shift from one role to another. He believes there is no single type of experience or prescribed plan that will guarantee career success. He found that general officers have adaptive and innovative careers with varied assignments that broaden professional and managerial skills (16:166-170).

Summary

Career development deals primarily with matching employee needs with organizational requirements so that both can benefit. The responsibility of employee career development lies with the individual and the organization. However, the organization should consider development

programs that foster job challenge and are geared to motivate, satisfy, and retain the employee. AFR 36-23 provides only basic guidelines for Air Force officer career development and contains career progression guides for specific utilization fields. Although there is no prescribed roadmap that guarantees career success, studies indicate that career broadening is a key ingredient for advancing to the senior ranks.

III. Method

Introduction

This research focuses on Air Force civil engineering officer perceptions of assignments to career broadening positions. Data collection was accomplished by a mail survey of civil engineering officers in the ranks second lieutenant through major. The results of the survey were analyzed to determine officer perceptions and attitudes of being assigned to career broadening positions by rank. This chapter explains the research method and contains five sections: population and sample, survey instrument, survey administration, statistical approach, and data analyses.

Population and Sample

The population for this study consists of active duty Air Force civil engineering officers in the ranks second lieutenant through major with AFSC 55XX, excluding rated supplements. The ATLAS Database identified 2,115 officers who met these criteria. Due to the size of the population, a census was taken. For analysis purposes, the population was divided by military rank into the following five groups:

- Second Lieutenant
- First Lieutenant
- Junior Captain (less than eight years commissioned service)
- Senior Captain (eight years or more of commissioned service)
- Major

Survey Instrument

The survey instrument (Appendix A) developed for this research was constructed by the author. The survey was divided into six sections and contained 99 items. The first section dealt with various background information questions. The remaining five sections inquired about feelings on career broadening in general, specific career broadening positions, and present job and career statements. Respondents answered each item by filling in the appropriate spaces on a machine scored response form (AFIT Form 11D) provided with the survey. A "Definition of Key Terms" was also included to provide respondents with a short description of each career broadening position used.

Section I (items 1-8) contained eight multiple choice questions requesting background information on the following:

- Current rank
- Amount of prior enlisted service
- Sex
- Area of specialization (civil, mechanical, electrical, industrial, architect)
- Present duty assignment
- Regular commission status
- Perceived effect of a career broadening assignment on obtaining professional registration
- Time frame to take a career broadening assignment

Section II (items 9-14) contained six general statements on career broadening regarding perceived impact on the following:

- Promotion opportunity in the Air Force
- Career progression within the civil engineering career field
- Advancement to the senior officer ranks
- Volunteer status for such an assignment
- Intent to remain in the Air Force
- Officership (i.e., "Career broadening makes for a better officer")

A seven-point Likert-like scale ranging from "Strongly Disagree" to "Strongly Agree" was used as shown below.

Strongly Disagree	Disagree	Slightly Disagree	Neither Agree nor Disagree	Slightly Agree	Agree	Strongly Agree
A	B	C	D	E	F	G

Section III (items 15-69) covered feelings regarding 11 career broadening positions to which civil engineering officers could possibly be assigned. These positions as identified in Chapter I are:

- Air Force Academy Instructor
- AFIT Civil Engineering School Instructor
- Basic Military Training School Squadron Commander
- Basic Military Training School Deputy Squadron Commander
- Missile Combat Crew Member
- Officer Training School Flight Commander
- Recruiting Service Officer
- Reserve Officer Training Corps Instructor

- Services Squadron Commander
- Services Operations Officer
- Squadron Officer School Instructor

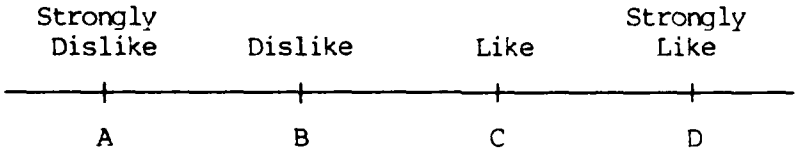
Each position was listed separately and followed by five attitude statements. The seven-point Likert-like scale ranging from "Strongly Disagree" to "Strongly Agree" was used to measure the perceived effects of an assignment on the following:

- Promotion opportunity in the Air Force
- Job satisfaction
- Career progression within the civil engineering career field
- Intent to remain in the Air Force
- Motivation to do the job

Section IV (items 70-80) dealt with the overall preference rating of the 11 career broadening positions. Respondents were asked to rank order the positions on a scale from "Most Preferred" to "Least Preferred" if they knew they had to take a career broadening position sometime in the future. The scale used is shown below. The letter responses were needed due to the format of the machine scored response form.

	(Most Preferred) ---------- (Least Preferred)										
Numerical Ranking	1	2	3	4	5	6	7	8	9	10	11
Letter Response	A	B	C	D	E	F	G	H	I	J	K

Section V (items 81-92) measured overall feelings about each of the 11 career broadening positions and the Civil Engineering Officer position. The Civil Engineering Officer position was included as a reference point to determine how officers' felt about each career broadening position in relation to their own career field. A four-point response scale (neutral response omitted) ranging from "Strongly Dislike" to "Strongly Like" was used as shown below.



Lastly, Section VI (items 93-99) inquired about the officers' attitude toward his or her present job, making the Air Force a career, and promotion and career progression opportunities for civil engineering officers. The seven-point Likert-like scale ranging from "Strongly Disagree" to "Strongly Agree" was used to measure the following:

- Intent on making the Air Force a career
- Promotion opportunities within the Air Force for civil engineering officers
- Satisfaction with present job
- Work effort at present job
- Desire to remain in present job
- Satisfaction of working in the civil engineering career field

- Career progression opportunities in the civil engineering career field

Survey Administration

The survey was pretested by 21 AFIT Graduate Engineering Management Students, Class 86S, on 10-13 February 1986. These individuals were included in the population of 2,115 civil engineering officers identified by the ATLAS Database. They were asked to complete the survey and comment on its contents. In addition, the survey package was sent to Palace Blueprint at HQ AFMPC for review. The results of the pretest indicated that the survey instrument was acceptable. The average time to complete the survey was 25 minutes. In their review, Palace Blueprint recommended minor changes to the cover letter in order to present a more accurate picture of the career broadening situation. Appropriate revisions were made and the final survey instrument was forwarded to HQ AFMPC/DPMYOS for approval. The survey was approved on 12 March 1986 and assigned Survey Control Number 86-36 with an expiration date of 1 July 1986.

2,094 survey packages were mailed to the population by 15 April 1986. Each survey package contained a survey, definition of key terms, machine scored response form, and return envelope. Participants were asked to complete the survey and return it within ten working days after receipt. The closing date for receipt of completed surveys was 13 June 1986 so that data analysis could begin.

Statistical Approach

A primary step in selecting appropriate statistical tests is to determine the nature of the data. The Likert-like scale was chosen to measure most items in the survey regarding respondent perceptions and attitudes. This data is at least ordinal since responses can be ranked or ordered from "strongly disagree" to "strongly agree". For data to be considered interval, the difference between the interval measures must be the same throughout the scale.

There are differing opinions among researchers in the behavorial sciences regarding the use of parametric statistics on ordinal measures (12:88-90; 14:27). Emory states, "The Likert scale is ordinal only ... With the Likert scale, we can report respondents more or less favorable to a topic, but we cannot tell how much more or less favorable they are" (12:258). According to this viewpoint, non-parametric tests "are the only technically correct tests to use with ordinal data, although parametric tests are sometimes employed in this case" (12:359). Hardyck and Petrinovich state,

> A statistic is completely independent of the numbers on which it operates and is totally unconcerned about the nature of the measurement scales to which the numbers are fitted ... There is definitive evidence that statistics calculated on ordinal measurements are just as reliable and meaningful as statistics calculated on interval or ratio scales of measurement [14:27].

Parametric statistics were selected in this study to analyze all data obtained from the surveys. A combination of statistical tests were performed using the Statistical

Package for the Social Sciences, Version X (25). These include frequency counts, reliability analysis, and one-way analysis of variance (ANOVA). Missing values and out-of-range responses were not included in the statistical calculations.

The frequency count is the actual number of times each response was selected for an item. Both the FREQUENCIES and CROSSTABS subroutines were used to determine the pattern of responses for the total sample and the five subgroups, and to check for any out-of-range answers (25:315-326,337-352).

A reliability analysis involves determining the internal consistency of items that presumably measure the same content (26). The reliability technique selected for this study was the ALPHA Model using the RELIABILITY subroutine. The subroutine performed an item analysis on components of additive scales by calculating an alpha coefficient (25:857-863). The following "rule of thumb" for reliability was applied with regards to coefficient alpha (26):

Alpha Value	Reliability
0.90 - 1.00	excellent
0.80 - 0.89	good
0.70 - 0.79	fair
less than 0.70	less than fair

One-way ANOVA is a statistical procedure to analyze a dependent variable by one independent variable. The ONEWAY subroutine was used to determine if there were significant differences in the average responses among groups for each

dependent variable (such as the attitude toward a specific career broadening position). The Scheffe range test compared all possible pairs of group means using a significance level of 0.05 (25:465-473). This test was selected because previous research indicates it can be applied to unequal sample sizes (23:477). The Scheffe test is also regarded as a conservative method which minimizes the probability of obtaining a statistically significant difference when in fact no real difference exists (29:201).

Data Analyses

The primary objective of the data analysis phase was to determine officer perceptions and attitudes of assignments to career broadening positions. Comparisons between the five groups defined by rank and commissioned service time were also assessed. The groups were second lieutenant, first lieutenant, junior captain, senior captain, and major. Various statistical analyses were applied to the responses collected from the survey. Data analysis was divided into four parts:

- Background and general information
- Research Question 1: How do civil engineering officers perceive the effects of career broadening in general?
- Research Question 2: What are civil engineering officer attitudes concerning specific career broadening assignments?
- Research Question 3: How do civil engineering officers rank order the 11 career broadening positions?

Background and general information included data from Section I (items 1-6) and Section VI of the survey. Section I provided demographic information and Section VI inquired about the officers' feelings regarding his or her present job and the civil engineering career field. A frequency count was conducted for each group on the items in Section I. Reliability analysis and one-way ANOVA were performed on the responses to the seven items in Section VI. The reliability analysis was used to check the internal consistency of each item. If the responses were fairly consistent (alpha coefficient greater than 0.70), then the item scores were summed and an ANOVA performed for the combined scale by group. The ANOVA determined if there were significant differences among the five groups in their feelings towards their present job and the civil engineering career field. The Scheffe range test compared all possible pairs of group means using a significance level of 0.05.

Research Question 1 was answered using data from Section I (items 7-8) and Section II. Both sections measured feelings about career broadening in general. A frequency count determined the pattern of response for each group on the two items in Section I. This provided information on the perceived effects of a career broadening assignment on obtaining professional registration and the preferred time frame to take such an assignment. Reliability analysis and one-way ANOVA were used to analyze the data from the six items in Section II. The reliability result determined if

item scores could be combined into a single scale for analysis. The ANOVA indicated if differences existed among the groups in their attitudes towards career broadening.

Research Question 2 concerned feelings regarding 11 career broadening positions to which civil engineering officers could possibly be assigned. The data from Section III answered this question and were evaluated using reliability analysis and one-way ANOVA. Each position contained five items and was analyzed separately. A reliability analysis checked if item scores for each position could be combined into a single scale. The ANOVA determined if there were differing attitudes towards each career broadening position among the five groups.

Research Question 3 dealt with the overall preference rating of the 11 career broadening positions using data from Section IV of the survey. Frequency patterns and mean calculations were performed on each position by group. The 11 positions were rank ordered by mean values where the smallest mean was the "most preferred" and the largest being "least preferred." The data from Sections III and V were also used in the analysis. Positions were rank ordered by mean values and compared to Section IV results.

IV. Results

Introduction

This chapter presents an analysis of the data collected from the surveys. Data analyses focused on assessing civil engineering officer perceptions and attitudes of assignments to career broadening positions for groups defined by rank and commissioned service time. Comparisons between the five groups were also performed. The chapter is divided into four sections. Section one provides background and general information on the officers surveyed. The remaining sections answer the three research questions presented in Chapter I.

Background and General Information

This section describes data collection and evaluation, demographic characteristics, and respondents' attitudes towards their present job and the civil engineering career field.

Data Collection and Evaluation. The population consisted of 2,115 active duty civil engineering officers in the ranks second lieutenant through major. The survey was pretested by 21 AFIT Graduate Engineering Management Students and then mailed to the remaining 2,094 officers in the population. The pretest data was included in the overall analysis since items in the final approved survey (Appendix A) did not change. Of the survey packages mailed, 39 did not reach the addressee and were returned. These were not remailed due to the time constraint. 1,477 surveys were

completed out of a possible 2,076 for an overall response rate of 71.1 percent. The number of respondents by group are listed in Table 1.

TABLE 1

Number of Respondents by Group

Group	Number	Percent
2Lt	237	16.0
1Lt	448	30.3
Jr Capt*	397	26.9
Sr Capt**	195	13.2
Maj	200	13.5
Total	1477	100.0

* Less than 8 years commissioned service
** 8 years or more of commissioned service

During the data collection phase, it was discovered that the AFSC for the Air Force Academy Instructor and AFIT Civil Engineering School Instructor positions in the survey was incorrect. Both positions were identified with a 0940 AFSC (which classifies most instructor positions) instead of a 55XX AFSC (Civil Engineering Officer). However, the survey also states that the Air Force Academy Instructor and the AFIT Civil Engineering School Instructor are "career broadening positions within the career field." This statement alone should have removed any misunderstanding about the nature of the position that might result from an

incorrect AFSC. It is assumed that this oversight had minimal or no impact on the overall results.

To perform statistical calculations, letter responses on the machine scored response forms were transformed to numerical values. For example, letter response "A" was changed to "1," "B" to "2," and so forth. Missing values and out-of-range responses were not included in the statistical calculations. Items marked with more than one answer were treated as missing values. The survey results were evaluated using a combination of statistical tests which include frequency counts, reliability analysis, and one-way analysis of variance (ANOVA).

Demographics. Section I (items 2-6) covered demographic characteristics of the respondents. These include amount of prior enlisted time, sex, area of specialization, present duty assignment, and regular commission status. The results are presented in Tables 2 through 6 which show the frequency (and percentage) of each response by group.

As expected, most respondents (73.5 percent) had no prior enlisted service and almost all were male (94.3 percent). About half (48.9 percent) were of the civil engineer discipline. The majority of respondents (60.8 percent) were assigned at base level with lieutenants having the largest percentages. Almost half (47.2 percent) of the officers had a regular commission. One third of the lieutenants did not have a regular commission and were not sure they would accept one if offered.

TABLE 2

Amount of Prior Enlisted Service

Response	Frequencies (and %) by Group					
	2Lt	1Lt	Jr Capt	Sr Capt	Maj	All Groups
None	180 (75.9)	326 (72.8)	285 (71.8)	132 (67.7)	163 (81.5)	1086 (73.5)
Less than 2 years	17 (7.2)	58 (12.9)	11 (2.8)	10 (5.1)	6 (3.0)	102 (6.9)
2 years or more	40 (16.9)	64 (14.3)	101 (25.4)	53 (27.2)	31 (15.5)	289 (19.6)
Total	237	448	397	195	200	1477

TABLE 3

Sex of Respondents

Response	Frequencies (and %) by Group					
	2Lt	1Lt	Jr Capt	Sr Capt	Maj	All Groups
Male	206 (86.9)	421 (94.0)	375 (94.7)	191 (97.9)	199 (99.5)	1392 (94.3)
Female	31 (13.1)	27 (6.0)	21 (5.3)	4 (2.1)	1 (0.5)	84 (5.7)
Total	237	448	396	195	200	1476

TABLE 4

Area of Specialization

Response	Frequencies (and %) by Group					
	2Lt	1Lt	Jr Capt	Sr Capt	Maj	All Groups
Civil Engineer	99 (41.8)	233 (52.0)	196 (49.6)	98 (50.3)	95 (47.7)	721 (48.9)
Mechanical Engineer	44 (18.6)	56 (12.5)	62 (15.7)	27 (13.8)	17 (8.5)	206 (14.0)
Electrical Engineer	20 (8.4)	59 (13.2)	48 (12.2)	20 (10.3)	17 (8.5)	164 (11.1)
Industrial Engineer	33 (13.9)	52 (11.6)	42 (10.6)	16 (8.2)	31 (15.6)	174 (11.8)
Architect	38 (16.0)	41 (9.2)	39 (9.9)	27 (13.8)	19 (9.5)	164 (11.1)
Other	3 (1.3)	7 (1.6)	8 (2.0)	7 (3.6)	20 (10.1)	45 (3.1)
Total	237	448	395	195	199	1474

TABLE 5

Present Duty Assignment

Response	Frequencies (and %) by Group					
	2Lt	1Lt	Jr Capt	Sr Capt	Maj	All Groups
Base Level	210 (89.0)	373 (83.6)	169 (42.7)	69 (35.4)	75 (37.5)	896 (60.8)
Headquarters	12 (5.1)	31 (7.0)	129 (32.6)	87 (44.6)	87 (43.5)	346 (23.5)
RED HORSE	4 (1.7)	12 (2.7)	10 (2.5)	3 (1.5)	5 (2.5)	34 (2.3)
AFIT CE Instructor	0 (0.0)	2 (0.4)	9 (2.3)	10 (5.1)	6 (3.0)	27 (1.8)
AF Academy Instructor	0 (0.0)	0 (0.0)	4 (1.0)	5 (2.6)	3 (1.5)	12 (0.8)
Career Broadening*	1 (0.4)	1 (0.2)	6 (1.5)	1 (0.5)	3 (1.5)	12 (0.8)
Other	9 (3.8)	27 (6.1)	69 (17.4)	20 (10.3)	21 (10.5)	146 (9.9)
Total	236	446	396	195	200	1473

* Outside the civil engineering career field

TABLE 6

Regular Commission Status

Response	Frequencies (and %) by Group					
	2Lt	1Lt	Jr Capt	Sr Capt	Maj	All Groups
Yes	34 (14.4)	68 (15.2)	226 (57.2)	173 (88.7)	194 (97.0)	695 (47.2)
Offered; did not accept	0 (0.0)	6 (1.3)	6 (1.5)	4 (2.1)	1 (0.5)	17 (1.2)
No; but would accept	119 (50.4)	222 (49.6)	99 (25.1)	10 (5.1)	0 (0.0)	450 (30.5)
No; not sure would accept	71 (30.1)	132 (29.5)	52 (13.2)	6 (3.1)	1 (0.5)	262 (17.8)
No; would not accept	12 (5.1)	20 (4.5)	12 (3.0)	2 (1.0)	4 (2.0)	50 (3.4)
Total	236	448	395	195	200	1474

Attitude Towards Present Job and Civil Engineering. The officers' feelings regarding their present jobs and the civil engineering career field were measured in Section VI (items 93-99) of the survey. Frequency charts for each item are provided in Appendix B. A reliability analysis was performed to check internal consistency of the seven items. An alpha coefficient of 0.78 revealed that responses to the various items were fairly consistent; therefore, item scores were summed and a one-way ANOVA was performed for the combined scale by group. The ANOVA results are shown in Table 7. The

mean was based on seven items using a seven-point Likert-like scale where "1" was "Strongly Disagree" and "7" was "Strongly Agree." Thus, the combined scale scores could range from 7 to 49 with a midpoint (neutral attitude) of 28. All groups indicated a positive feeling (mean greater than 28) towards their present job and the civil engineering career field. The group means increased with rank and ranged from 33.70 for second lieutenants to 40.97 for majors. ANOVA of this scale was highly significant. In subsequent analysis, the conservative Scheffe range test compared all possible pairs of group means using a significance level of 0.05. This comparison showed significant differences in means between lieutenants and captains/majors. A difference also existed between junior captains and majors. In all, seven of ten possible comparisons were significant at the 0.05 level.

TABLE 7

Analysis of Variance of Attitude Towards
Present Job and Civil Engineering Career Field

F Ratio: 46.2660 F Probability: 0.0001

		Group Means Comparison				
Mean	Group	2Lt	1Lt	Jr Capt	Sr Capt	Maj
33.70	2Lt					
35.15	1Lt					
38.34	Jr Capt	*	*			
39.18	Sr Capt	*	*			
40.97	Maj	*	*	*		

* $p<0.05$; Scheffe range test of all possible group means

Research Question 1

Research Question 1 concerned how officers perceive the effects of career broadening in general. The data from Section I (items 7-8) and Section II (items 9-14) of the survey answered this question.

Section I (item 7) measured the perceived effects of a career broadening assignment on obtaining professional registration. The results, shown in Table 8, indicate that about ten percent of the respondents were registered. The percentage of registered officers increased with rank. Approximately one third of the lieutenants and captains felt they could still get their registration during or after a

career broadening assignment. However, almost half of the lieutenants believed a career broadening assignment would impact their efforts to obtain registration.

TABLE 8

Effect of a Career Broadening Assignment on Obtaining Professional Registration

	Frequencies (and %) by Group					
Response*	2Lt	1Lt	Jr Capt	Sr Capt	Maj	All Groups
A	1 (0.4)	14 (3.2)	39 (10.4)	36 (20.6)	48 (25.7)	138 (9.9)
B	1 (0.4)	3 (0.7)	1 (0.3)	2 (1.1)	9 (4.8)	16 (1.1)
C	36 (15.8)	68 (15.8)	74 (19.7)	45 (25.7)	38 (20.3)	261 (18.7)
D	12 (5.3)	19 (4.4)	25 (6.6)	14 (8.0)	43 (23.0)	113 (8.1)
E	63 (27.6)	126 (29.2)	146 (38.8)	45 (25.7)	34 (18.2)	414 (29.6)
F	115 (50.4)	201 (46.6)	91 (24.2)	33 (18.9)	15 (8.0)	455 (32.6)
Total	228	431	376	175	187	1397

* Key:
A - None; already registered
B - None; area of specialization does not have registration
C - Not sure if will get registered
D - None; don't plan on getting registered
E - None; can still get registered during or after the career broadening assignment
F - Will effect; presently working on getting registered

Section I (item 8) inquired about the officers' preferred time frame to take a career broadening assignment. Table 9 summarizes the responses. Sixty percent of the officers favored the junior captain career point.

TABLE 9

Time Frame to Take a Career Broadening Assignment

	Frequencies (and %) by Group					
Response	2Lt	1Lt	Jr Capt	Sr Capt	Maj	All Groups
First Assignment	1 (0.4)	1 (0.2)	2 (0.5)	0 (0.0)	1 (0.5)	5 (0.3)
First Lieutenant	23 (9.8)	32 (7.2)	16 (4.1)	10 (5.1)	13 (6.5)	94 (6.4)
Junior Captain	152 (64.7)	264 (59.1)	207 (53.2)	122 (62.6)	129 (64.8)	874 (59.7)
Senior Captain	43 (18.3)	99 (22.1)	101 (26.0)	34 (17.4)	43 (21.6)	320 (21.8)
Major	4 (1.7)	26 (5.8)	39 (10.0)	18 (9.2)	5 (2.5)	92 (6.3)
Anytime	12 (5.1)	25 (5.6)	24 (6.2)	11 (5.6)	8 (4.0)	80 (5.5)
Total	235	447	389	195	199	1465

Section II contained six items about the effects of career broadening in general. A reliability analysis produced an alpha coefficient of 0.86, indicating good internal consistency among items. Thus, item scores were

combined into a single scale. Table 10 presents the ANOVA results by group. The mean was based on six items using a seven-point Likert-like scale where "1" was "Strongly Disagree" and "7" was "Strongly Agree." The combined scale scores could range from 6 to 42 with a midpoint (neutral attitude) of 24. Group means decreased with increasing rank. Lieutenants and junior captains perceived career broadening in a positive sense (mean greater than 24) while senior captains and majors had a slightly negative feeling. The group means comparison indicated a significant difference between lieutenants and senior captains/majors. Differences also existed between second lieutenants and first lieutenants/junior captains.

TABLE 10

Analysis of Variance of General
Attitude Towards Career Broadening

F Ratio: 14.3575 F Probability: 0.0001

		Group Means Comparison				
Mean	Group	2Lt	1Lt	Jr Capt	Sr Capt	Maj
28.52	2Lt					
26.15	1Lt	*				
25.03	Jr Capt	*				
23.49	Sr Capt	*	*			
23.46	Maj	*	*			

* $p<0.05$; Scheffe range test of all possible group means

Research Question 2

Research Question 2 covered feelings regarding 11 specific career broadening positions to which civil engineering officers could possibly be assigned. The data from Section III (items 15-69) were used to answer this question. Each position was listed separately and followed by five attitude statements. Table 11 lists the reliability analysis results of attitudes toward each career broadening position. Due to the high alpha coefficients, one-way ANOVA tests were performed on the five-item combined scale for each position by group. Means were based on five items using a seven-point Likert-like scale where "1" was "Strongly Disagree" and "7" was "Strongly Agree." Thus, combined scale scores could range from 5 to 35 with a midpoint (neutral attitude) of 20.

TABLE 11

Reliability Analysis of Attitudes Toward Career Broadening Positions*

Position	Alpha
Air Force Academy Instructor	0.87
AFIT Civil Engineering School Instructor	0.88
Basic Military Training School Squadron Commander	0.88
Basic Military Training School Deputy Squadron Commander	0.89
Missile Combat Crew Member	0.88
Officer Training School Flight Commander	0.88
Recruiting Service Officer	0.82
Reserve Officer Training Corps Instructor	0.88
Services Squadron Commander	0.91
Services Operations Officer	0.90
Squadron Officer School Instructor	0.88

* All scales contained five items

Air Force Academy Instructor. Results for attitudes toward the Air Force Academy Instructor position are shown in Table 12. All groups had a positive feeling (mean greater than 20) toward this position with lieutenants having the highest means. ANOVA revealed a statistically significant difference among groups. The group means comparison showed a significant difference between first lieutenants and captains.

TABLE 12

Analysis of Variance of Attitude Towards
Air Force Academy Instructor Position

F Ratio: 4.4720 F Probability: 0.0014

		Group Means Comparison				
Mean	Group	2Lt	1Lt	Jr Capt	Sr Capt	Maj
27.13	2Lt					
27.39	1Lt					
26.03	Jr Capt		*			
25.60	Sr Capt		*			
26.41	Maj					

* $p<0.05$; Scheffe range test of all possible group means

AFIT Civil Engineering School Instructor. Results, shown in Table 13, indicated that all groups responded favorably (mean greater than 20) to the AFIT Civil Engineering School Instructor position. Group means generally decreased with increasing rank and ranged from 27.85 for first lieutenants to 25.80 for senior captains. ANOVA revealed a statistically significant difference among groups. The group means comparison identified a significant difference between first lieutenants and captains/majors.

TABLE 13

Analysis of Variance of Attitude Towards
AFIT Civil Engineering School Instructor Position

F Ratio: 5.7995 F Probability: 0.0001

		Group Means Comparison				
Mean	Group	2Lt	1Lt	Jr Capt	Sr Capt	Maj
27.19	2Lt					
27.85	1Lt					
26.56	Jr Capt		*			
25.80	Sr Capt		*			
26.13	Maj		*			

* $p<0.05$; Scheffe range test of all possible group means

Basic Military Training School Squadron Commander. Results of the attitude towards this position are summarized in Table 14. All groups tended toward a slightly negative attitude (mean less than 20) with senior captains having the lowest mean of 17.86. The ANOVA did reveal a statistically significant difference among groups; however, the conservative Scheffe range test did not indicate any significant differences in means between groups.

TABLE 14

Analysis of Variance of Attitude Towards
Basic Military Training School Squadron Commander Position

F Ratio: 2.7112 F Probability: 0.0288

		Group Means Comparison				
Mean	Group	2Lt	1Lt	Jr Capt	Sr Capt	Maj
19.92	2Lt					
19.56	1Lt	No significant differences between groups at $p<0.05$				
18.78	Jr Capt					
17.86	Sr Capt					
19.06	Maj					

Basic Military Training School Deputy Squadron Commander. Results of the attitude towards this position are shown in Table 15. All groups were on the negative side of the scale (mean less than 20); furthermore, as rank increased, the mean values decreased. Means ranged from 19.54 for second lieutenants to 16.08 for majors. ANOVA revealed a statistically significant difference among groups. A significant difference in means exisited between lieutenants and captains/majors.

TABLE 15

Analysis of Variance of Attitude Towards
Basic Military Training School Deputy Squadron Commander Position

F Ratio: 10.5178 F Probability: 0.0001

		Group Means Comparison				
Mean	Group	2Lt	1Lt	Jr Capt	Sr Capt	Maj
19.54	2Lt					
18.75	1Lt					
17.53	Jr Capt	*				
16.20	Sr Capt	*	*			
16.08	Maj	*	*			

* $p<0.05$; Scheffe range test of all possible group means

Missile Combat Crew Member. Table 16 shows results for the attitude towards the Missile Combat Crew Member position. All groups regarded this position negatively (mean less than 20) with senior captains having the lowest mean of 16.99. ANOVA revealed no significant differences among groups.

TABLE 16

Analysis of Variance of Attitude Towards Missile Combat Crew Member Position

F Ratio: 1.0039 F Probability: 0.4043

		Group Means Comparison				
Mean	Group	2Lt	1Lt	Jr Capt	Sr Capt	Maj
18.42	2Lt					
17.95	1Lt	No significant differences between groups at $p<0.05$				
17.57	Jr Capt					
16.99	Sr Capt					
17.97	Maj					

Officer Training School Flight Commander. Table 17 summarizes results for the attitude towards this position. Lieutenants perceived this position in a positive sense (mean greater than 20) while captains and majors had a slightly negative feeling. Group means decreased with increasing rank and ranged from 21.33 for second lieutenants to 18.00 for majors. ANOVA revealed a statistically significant difference among groups. The group means comparison indicated a significant difference between lieutenants and captains/majors.

TABLE 17

Analysis of Variance of Attitude Towards
Officer Training School Flight Commander Position

F Ratio: 13.8414 F Probability: 0.0001

		Group Means Comparison				
Mean	Group	2Lt	1Lt	Jr Capt	Sr Capt	Maj
21.33	2Lt					
21.24	1Lt					
19.40	Jr Capt	*	*			
18.10	Sr Capt	*	*			
18.00	Maj	*	*			

* $p<0.05$; Scheffe range test of all possible group means

Recruiting Service Officer. Table 18 presents results for attitudes toward the Recruiting Service Officer position. All groups regarded this position negatively (mean less than 20) with senior captains having the lowest mean of 15.49. ANOVA revealed no significant differences among groups at the 0.05 level.

TABLE 18

Analysis of Variance of Attitude Towards Recruiting Service Officer Position

F Ratio: 1.8344 F Probability: 0.1197

		Group Means Comparison				
Mean	Group	2Lt	1Lt	Jr Capt	Sr Capt	Maj
16.62	2Lt					
17.00	1Lt	No significant differences between groups at p<0.05				
16.47	Jr Capt					
15.49	Sr Capt					
16.38	Maj					

Reserve Officer Training Corps Instructor. Results in Table 19 showed that all groups had a positive feeling (mean greater than 20) towards the position. Group means decreased with increasing rank and ranged from 23.34 for second lieutenants to 20.63 for senior captains/majors. The ANOVA did indicate a statistically significant difference among groups. The means comparison revealed significant differences between lieutenants and captains/majors.

TABLE 19

Analysis of Variance of Attitude Towards
Reserve Officer Training Corps Instructor Position

F Ratio: 8.3705 F Probability: 0.0001

		Group Means Comparison				
Mean	Group	2Lt	1Lt	Jr Capt	Sr Capt	Maj
23.34	2Lt					
22.81	1Lt					
21.36	Jr Capt	*				
20.63	Sr Capt	*	*			
20.63	Maj	*	*			

* $p<0.05$; Scheffe range test of all possible group means

Services Squadron Commander. Results in Table 20 indicated a differing attitude by groups towards the Services Squadron Commander position. While captains and majors rated this job slightly above the neutral point of 20, lieutenants were slightly below the neutral point. The mean response increased with rank and ranged from 18.44 for second lieutenants to 22.00 for majors. ANOVA revealed statistically significant differences among groups. Significant differences in group means existed between lieutenants and senior captains/majors.

TABLE 20

Analysis of Variance of Attitude Towards Services Squadron Commander Position

F Ratio: 6.8614 F Probability: 0.0001

		Group Means Comparison				
Mean	Group	2Lt	1Lt	Jr Capt	Sr Capt	Maj
18.44	2Lt					
19.69	1Lt					
20.40	Jr Capt					
21.25	Sr Capt	*				
22.00	Maj	*	*			

* $p<0.05$; Scheffe range test of all possible group means

Services Operations Officer. All groups expressed a negative feeling (mean less than 20) regarding the Services Operations Officer position as shown in Table 21. First lieutenants had the highest mean of 17.53 and majors had the lowest mean of 16.31. ANOVA found no significant differences among groups at the 0.05 level.

TABLE 21

Analysis of Variance of Attitude Towards Services Operations Officer Position

F Ratio: 0.9842 F Probability: 0.4150

		Group Means Comparison				
Mean	Group	2Lt	1Lt	Jr Capt	Sr Capt	Maj
17.31	2Lt					
17.53	1Lt	No significant differences between groups at $p<0.05$				
17.29	Jr Capt					
17.03	Sr Capt					
16.31	Maj					

Squadron Officer School Instructor. The results in Table 22 showed a varied attitude towards this position. Lieutenants and junior captains viewed this position positively (mean greater than 20) while senior captains and majors had a slightly less than neutral attitude. ANOVA indicated a statistically significant difference among groups. The group means comparison showed significant differences between lieutenants and captains/ majors.

TABLE 22

Analysis of Variance of Attitude Towards
Squadron Officer School Instructor Position

F Ratio: 13.1786 F Probability: 0.0001

		Group Means Comparison				
Mean	Group	2Lt	1Lt	Jr Capt	Sr Capt	Maj
22.47	2Lt					
22.39	1Lt					
20.74	Jr Capt		*			
19.16	Sr Capt	*	*			
19.32	Maj	*	*			

* $p<0.05$; Scheffe range test of all possible group means

Research Question 3

Research Question 3 dealt with rank ordering the 11 career broadening positions using data from Section IV (items 70-80) of the survey. The positions were rank ordered by mean preference rating for each group using a scale of "1" for "Most Preferred" and "11" for "Least Preferred." The results are summarized in Table 23. Most groups rank ordered the positions similarly. The largest variations in ranking between groups were observed for the Services Squadron Commander position. Second lieutenants ranked this position eighth while senior captains and majors ranked it third. When results for the five groups are combined, the six most preferred career broadening positions were: AFIT Civil Engineering School Instructor, Air Force Academy Instructor, Reserve Officer Training Corps Instructor, Services Squadron Commander, Squadron Officer School Instructor, and Officer Training School Flight Commander. The five least preferred positions were: Basic Military Training School Deputy Squadron Commander, Services Operations Officer, Recruiting Service Officer, Missile Combat Crew Member, and Basic Military Training School Squadron Commander.

For purposes of comparison, a rank ordering based on attitudes toward the 11 career broadening positions using data from Section III of the survey was performed. Each position was ranked by group according to scale means. The position with the largest mean was given a ranking of "1" and the smallest a ranking of "11." Results are presented in

Table 24. The top six positions for all groups were: AFIT Civil Engineering School Instructor, Air Force Academy Instructor, Reserve Officer Training Corps Instructor, Squadron Officer School Instructor, Services Squadron Commander, and Officer Training School Flight Commander. The bottom five positions were: Recruiting Service Officer, Services Operations Officer, Missile Combat Crew Member, Basic Military Training School Deputy Squadron Commander, and Basic Military Training School Squadron Commander. Although rank order varied somewhat, the top and bottom groups are the same as the rank ordering from Section IV.

Data from Section V (items 81-92) were also used to compare position rankings. Section V measured the overall feeling about each career broadening position and the Civil Engineering Officer position. A four-point response scale (neutral response omitted) was used where "1" was "Strongly Dislike" and "4" was "Strongly Like." Positions were rank ordered by group based on overall affective assessment. The position with the largest mean was ranked "1" and the smallest ranked "12." A mean rating above 2.5 indicates a positive feeling towards the position. Results are shown in Table 25. The Civil Engineering Officer position received the highest mean rating of 3.556 by all groups. The top six ranked career broadening positions for all groups were: AFIT Civil Engineering School Instructor, Air Force Academy Instructor, Reserve Officer Training Corps Instructor, Squadron Officer School Instructor, Services Squadron

Commander, and Officer Training School Flight Commander. The bottom five positions were: Basic Military Training School Deputy Squadron Commander, Missile Combat Crew Member, Services Operations Officer, Recruiting Service Officer, and Basic Military Training School Squadron Commander. Again, these groupings are identical to the first set of results from Section IV. Discussions and conclusions of the data analyses are presented in the next chapter.

TABLE 23

Rank Ordering of Career Broadening Positions
Based on Overall Preference Rating*

	Ranking (and Mean Preference Rating) by Group					
Position	2Lt	1Lt	Jr Capt	Sr Capt	Maj	All Groups
AF Academy Instructor	1 (2.899)	2 (2.948)	2 (3.162)	2 (3.255)	1 (2.821)	2 (3.019)
AFIT CE Instructor	2 (3.083)	1 (2.840)	1 (3.005)	1 (2.989)	2 (3.147)	1 (2.985)
BMTS Commander	6 (6.527)	7 (6.800)	7 (6.581)	5 (6.044)	5 (5.610)	7 (6.436)
BMTS Deputy Commander	10 (7.522)	10 (7.970)	11 (8.099)	11 (7.962)	11 (8.200)	11 (7.963)
Missile Crew Member	7 (7.250)	9 (7.562)	8 (7.292)	8 (7.462)	8 (7.434)	8 (7.410)
OTS Flight Commander	5 (5.700)	5 (5.910)	6 (6.449)	7 (6.743)	7 (6.776)	6 (6.247)
Recruiting Service	9 (7.342)	8 (7.400)	9 (7.593)	10 (7.718)	9 (8.000)	9 (7.566)
ROTC Instructor	3 (4.300)	3 (4.368)	3 (4.730)	4 (4.847)	4 (5.170)	3 (4.624)
Services Commander	8 (7.278)	6 (6.410)	4 (5.558)	3 (4.832)	3 (4.299)	4 (5.819)
Services Ops Officer	11 (8.229)	11 (8.000)	10 (7.607)	9 (7.546)	10 (8.073)	10 (7.882)
SOS Instructor	4 (5.679)	4 (5.711)	5 (5.878)	6 (6.440)	6 (6.433)	5 (5.945)

* Section IV (items 70-80) of survey

TABLE 24

Rank Ordering Based on Attitudes Toward Specific Career Broadening Positions*

Position	Ranking (and Scale Means) by Group					
	2Lt	1Lt	Jr Capt	Sr Capt	Maj	All Groups
AF Academy Instructor	2 (27.13)	2 (27.39)	2 (26.03)	2 (25.60)	1 (26.41)	2 (26.61)
AFIT CE Instructor	1 (27.19)	1 (27.85)	1 (26.56)	1 (25.80)	2 (26.13)	1 (26.89)
BMTS Commander	6 (19.92)	7 (19.56)	7 (18.78)	7 (17.86)	6 (19.06)	7 (19.12)
BMTS Deputy Commander	7 (19.54)	8 (18.75)	9 (17.53)	10 (16.20)	11 (16.08)	8 (17.85)
Missile Crew Member	9 (18.42)	9 (17.95)	8 (17.57)	9 (16.99)	8 (17.97)	9 (17.80)
OTS Flight Commander	5 (21.33)	5 (21.24)	6 (19.40)	6 (18.10)	7 (18.00)	6 (19.91)
Recruiting Service	11 (16.62)	11 (17.00)	11 (16.47)	11 (15.49)	9 (16.38)	11 (16.51)
ROTC Instructor	3 (23.34)	3 (22.81)	3 (21.36)	4 (20.63)	4 (20.63)	3 (21.92)
Services Commander	8 (18.44)	6 (19.69)	5 (20.40)	3 (21.25)	3 (22.00)	5 (20.20)
Services Ops Officer	10 (17.31)	10 (17.53)	10 (17.29)	8 (17.03)	10 (16.31)	10 (17.20)
SOS Instructor	4 (22.47)	4 (22.39)	4 (20.74)	5 (19.16)	5 (19.32)	4 (21.12)

* Section III (items 15-69) of survey

TABLE 25

Rank Ordering Based on Overall Affective Assessment*

	Ranking (and Mean Rating) by Group					
Position	2Lt	1Lt	Jr Capt	Sr Capt	Maj	All Groups
AF Academy Instructor	2 (3.164)	3 (3.210)	3 (3.095)	2 (3.043)	2 (3.108)	3 (3.136)
AFIT CE Instructor	3 (3.159)	2 (3.302)	2 (3.171)	3 (3.032)	3 (3.026)	2 (3.171)
BMTS Commander	7 (2.210)	8 (2.171)	8 (2.184)	6 (2.196)	6 (2.244)	8 (2.194)
BMTS Deputy Commander	8 (2.103)	10 (1.982)	12 (1.881)	12 (1.785)	12 (1.720)	12 (1.913)
Missile Crew Member	10 (2.034)	11 (1.949)	11 (1.910)	11 (1.860)	11 (1.788)	11 (1.919)
OTS Flight Commander	6 (2.481)	6 (2.408)	7 (2.205)	8 (2.132)	8 (2.042)	7 (2.281)
Recruiting Service	11 (2.022)	9 (2.002)	10 (1.959)	10 (1.888)	9 (1.922)	9 (1.968)
ROTC Instructor	4 (2.884)	4 (2.834)	4 (2.704)	4 (2.604)	5 (2.557)	4 (2.740)
Services Commander	9 (2.065)	7 (2.191)	5 (2.394)	5 (2.541)	4 (2.639)	6 (2.332)
Services Ops Officer	12 (1.926)	12 (1.894)	9 (1.979)	9 (1.896)	10 (1.897)	10 (1.923)
SOS Instructor	5 (2.530)	5 (2.510)	6 (2.339)	7 (2.168)	7 (2.114)	5 (2.370)
Civil Engr Officer	1 (3.411)	1 (3.475)	1 (3.597)	1 (3.642)	1 (3.747)	1 (3.556)

* Section V (items 81-92) of survey

V. Discussion and Conclusions

Introduction

The objective of this study was to assess Air Force civil engineering officer perceptions and attitudes of assignments to career broadening positions, both within and outside the civil engineering career field. This chapter discusses the results and presents conclusions.

Present Job and Civil Engineering Career Field

Civil engineering officers (second lieutenant through major) had positive feelings toward their present job, the civil engineering career field, and making the Air Force a career. The degree of positive response increased with rank where majors and captains had significantly stronger feelings than lieutenants. There was also a significant difference in attitudes between majors and junior captains. These results are consistent with previous literature on organizational commitment (27:46-56). As factors such as age, job satisfaction, intent to remain, and achievement opportunities increase, employee commitment to the organization increases.

Career Broadening in General

There were differing perceptions among the groups regarding the effects of career broadening in general. The perceived effects measured were promotion opportunity, career progression within civil engineering, advancement to the senior officer ranks, retention, and officership. Overall,

positive perceptions of career broadening decreased with increasing rank. While lieutenants and junior captains viewed career broadening in a positive sense, senior captains and majors had a slightly negative feeling. Second lieutenants felt the strongest about career broadening and their perceptions differed significantly when compared to the other groups. Significant differences also existed between first lieutenants and senior captains/majors.

Research showed that professionals, such as engineers, tend to have a strong commitment to their field of specialty and expect to work in an environment where they can use their skills. As time passes and the technical knowledge diminishes, the professional may focus toward a management role (21:72). The literature also indicated that functional expertise alone was not sufficient for advancing to the senior ranks. In other words, career broadening was often essential (1:87; 4:64; 16:166-170; 22:372; 28:41). However, the results of this study showed that senior captains and majors perceived negative effects of career broadening with regards to promotion opportunity, career progression, advancement to the senior officer ranks, retention, and officership.

There were also some perceived effects of career broadening assignments on obtaining professional registration. About ten percent of the officers surveyed were registered and as expected, the percentage increased with rank. While one third of the lieutenants and captains

felt they could get registered during or after a career broadening assignment, almost half of the lieutenants believed such an assignment would impact their efforts. Most officers felt that the best time to take a career broadening assignment was during the junior captain career point. These results correspond to the guidelines in the civil engineering career progression guide in AFR 36-23 (7:119). This guide encourages officers to obtain their professional registration within the first three years of service and suggests a career broadening assignment during the 6-14 year points.

Specific Career Broadening Positions

Eleven career broadening positions to which civil engineering officers could possibly be assigned were rank ordered according to preference. The six preferred positions for the combined groups were: AFIT Civil Engineering School Instructor, Air Force Academy Instructor, Reserve Officer Training Corps Instructor, Services Squadron Commander, Squadron Officer School Instructor, and Officer Training School Flight Commander. The five least preferred career broadening positions were: Basic Military Training School Deputy Squadron Commander, Services Operations Officer, Recruiting Service Officer, Missile Combat Crew Member, and Basic Military Training School Squadron Commander. Although most groups rank ordered the positions similarly, some variations did exist. For instance, the Services Squadron Commander and Basic Military Training School Squadron

Commander positions were rated higher (more preferred) by senior captains and majors as compared to the other groups. On the other hand, lieutenants and junior captains gave higher ratings to the Reserve Officer Training Corps Instructor, Squadron Officer School Instructor, and Officer Training School Flight Commander positions.

Officer attitudes toward the specific career broadening positions were also assessed. The attitudes measured for each position were promotion opportunity, job satisfaction, career progression within civil engineering, retention, and motivation.

All groups had very favorable feelings toward the AFIT Civil Engineering School Instructor and Air Force Academy Instructor positions. Both are career broadening positions within the civil engineering career field and were the two most preferred positions by each of the groups in the rank ordering. Each group also responded favorably to the Reserve Officer Training Corps Instructor position. Lieutenants had a significantly stronger feeling towards this position than captains and majors.

There were differing attitudes among groups toward the Services Squadron Commander, Squadron Officer School Instructor, and Officer Training School Flight Commander positions. With regards to the Services Squadron Commander position, captains and majors had positive feelings whereas lieutenants had a slightly negative view. Conversely, lieutenants perceived the Squadron Officer School Instructor

and Officer Training School Flight Commmander positions favorably while captains and majors generally had a less than neutral response.

Finally, all five groups indicated negative feelings toward the Basic Military Training School Deputy Squadron Commander, Services Operations Officer, Recruiting Service Officer, Missile Combat Crew Member, and Basic Military Training School Squadron Commander positions. These positions correspond exactly to the five least preferred positions indicated by the combined groups in the rank ordering.

Conclusions

Career progression is important to the Air Force and the individual officer. The Air Force seeks to produce professional and versatile officers capable of assuming increased responsibilities. It is therefore important for Air Force management to provide the necessary opportunities for career development and personal growth. Although there is no specific career plan an officer must follow to be successful, studies have shown that career broadening was a key ingredient for advancement to the senior ranks.

This study provided an assessment of Air Force civil engineering officer perceptions and attitudes of being assigned to career broadening positions. The results showed that civil engineering officers, in the ranks second lieutenant through major, appeared strongly committed to the

civil engineering career field. All ranks highly favored the two career broadening positions within the career field which are the AFIT Civil Engineering School Instructor and Air Force Academy Instructor.

If civil engineering officers had to take a career broadening position outside the career field, such an assignment appears most appropriate during the junior captain time frame. This was based on the following rationale:

- Civil engineering is currently overmanned in the junior ranks
- Lieutenants will have an opportunity to obtain professional registration
- Junior officers perceived positive effects of career broadening on promotion opportunity, career progression within civil engineering, advancement to the senior ranks, retention, and officership
- Most officers preferred this time frame

The positions most favored by the junior officers are the Reserve Officer Training Corps Instructor, Squadron Officer School Instructor, and Officer Training School Flight Commander.

Career broadening assignments outside the civil engineering career field should be limited for senior captains and majors. Reasons include the current manning shortage in these ranks and the negative feelings regarding career broadening in general. The most favored career broadening positions by senior captains and majors are the Services Squadron Commander and Reserve Officer Training Corps Instructor.

This assessment on perceptions of career broadening assignments provides senior Air Force civil engineering leaders and the Air Force Military Personnel Center with career information on civil engineering officers. Consequently, these results can be used to improve career broadening opportunities for civil engineering officers in the Air Force.

Appendix A: Survey Package*

DEPARTMENT OF THE AIR FORCE
AIR UNIVERSITY
AIR FORCE INSTITUTE OF TECHNOLOGY
WRIGHT-PATTERSON AIR FORCE BASE OH 45433-6583

27 MAR 1986

REPLY TO ATTN OF: LS

SUBJECT: Survey on Career Broadening Opportunities for Civil Engineering Officers (Survey Control Number 86-36)

TO: Air Force Civil Engineering Officers

1. The current overage in civil engineering officer manning affects your assignment process. For the past three years, there have been more officers assigned versus total authorized in the grades lieutenant through lieutenant colonel for the civil engineering career field. The Air Force operates in terms of total officers, and must keep authorizations and assignments balanced. While the civil engineering career field is overmanned, some functional areas continue to fall short. Other functional areas depend totally on career broadening assignments to fill quotas.

2. For these reasons, civil engineering officers are being assigned to career broadening positions for one tour. Upon completion of the tour, the officer returns to the civil engineering career field. Career broadening is important to both the individual officer and the Air Force. We are interested in your perceptions of career broadening and, in particular, your feelings of being assigned to various career broadening positions. The attached survey was prepared to help meet that need.

3. Your participation is voluntary, and your responses will be anonymous. Please do not put your social security number in the box located in the upper left hand corner of the machine scored response form (AFIT Form 11D). Results will be presented only in terms of group averages describing what the "typical" officer would say. When the results of the study are published, readers will in no way be able to identify specific individuals.

4. Please complete the survey and return it to AFIT/LSG in the enclosed envelope within ten working days. If you have any questions, contact Captain Rick Ingenloff at Autovon 785-4437. Thanks for your cooperation and participation.

LARRY L. SMITH, Colonel, USAF
Dean
School of Systems and Logistics

4 Atch
1. Key Terms
2. Survey
3. AFIT Form 11D
4. Return Envelope

* Survey package photographically reduced for this text

DEFINITION OF KEY TERMS

The 11 career broadening positions and Air Force Specialty Codes (AFSCs) used throughout the survey are described below. Civil engineering officers are routinely assigned to these positions. Career broadening assignments may be within the civil engineering career field or outside. The Air Force Academy Instructor and AFIT Civil Engineering School Instructor are career broadening positions within the career field. The other nine positions are outside the field.

Recruiting Service Officer (AFSC 0920): The recruiting service officer recruits officers to meet the needs of the Air Force, manages advertising and publicity programs, and maintains liaison with community officials and educators to enhance the officer corps image.

Air Force Academy Instructor (AFSC 0940): The instructor is a member of the Air Force Academy faculty and is responsible to educate, counsel, and train Air Force cadets in a precommissioning environment. The Air Force Academy is located near Colorado Springs, Colorado.

AFIT Civil Engineering School Instructor (AFSC 0940): The instructor is a member of the Air University faculty and teaches various civil engineering short courses at Wright Patterson AFB, Ohio.

Basic Military Training School Squadron Commander (AFSC A0940): The commander motivates and trains students to become Air Force airmen. This includes managing military, academic, and physical training courses to evaluate individual potential for the enlisted ranks. The Basic Military Training School is located at Lackland AFB, Texas and is part of the Air Training Command.

Basic Military Training School Deputy Squadron Commander (AFSC 0940): The deputy squadron commander assists the commander in motivating and training students to become Air Force airmen. This includes managing military, academic, and physical training courses to evaluate individual potential for the enlisted ranks. The Basic Military Training School is located at Lackland AFB, Texas and is part of the Air Training Command.

Reserve Officer Training Corps Instructor (AFSC 0940): The instructor is assigned to a school with an Air Force Reserve Officer Training Corps Detachment and is responsible to recruit, motivate, educate, counsel, and train Air Force cadets in a precommissioning environment.

Squadron Officer School Instructor (AFSC 0940): The instructor is a member of the Air University faculty and teaches the Squadron Officer School Course at Maxwell AFB, Alabama.

Officer Training School Flight Commander (AFSC 0950): The flight commander motivates and trains students to become Air Force officers. This includes conducting military, academic, and physical training courses to evaluate individual potential for the commissioned service. Officer Training School is located at Lackland AFB, Texas and is part of the Air Training Command.

Missile Combat Crew Member (AFSC 182X): A missile combat crew member plans, organizes, and directs missile launch activities. These include managing missile launch crews, monitoring alert status, and launching missiles.

Services Squadron Commander (AFSC A6216): The services squadron commander manages services activities at the installation level. This includes food service, billeting, linen exchange, furnishings management, laundry and dry cleaning, mortuary affairs, and wartime readiness. The commander also acts as the consumer liaison with the commissary and base exchange activities.

Services Operations Officer (AFSC 622X): The services operations officer manages one or more services activities such as billeting, food service, linen exchange, mortuary affairs, and wartime readiness.

SURVEY ON CAREER BROADENING
FOR
CIVIL ENGINEERING OFFICERS

Survey Control Number 86-36
(Expires on 1 Jul 86)

Instructions: Answer all items by filling in the appropriate spaces on the machine scored response form (AFIT Form 11D) provided. Select only one response to each item and clearly erase any responses you change. If for any item you do not find a response that fits your situation exactly, use the one that is closest to the way you feel. Please answer each item as honestly and frankly as possible.

To ensure your response remains anonymous, do not put your social security number in the box located in the upper left hand corner of the response form. Also, note the number in the lower right hand corner of the form. This number is not used and in no way does it connect the individual with the response.

****

Section I: Background Information

1. What is your current rank?

   A. Second Lieutenant
   B. First Lieutenant
   C. Captain (less than eight years of commissioned service)
   D. Captain (eight years or more of commissioned service)
   E. Major
   F. Lieutenant Colonel

2. Do you have any prior enlisted time?

   A. No
   B. Yes; less than two years prior enlisted service
   C. Yes; two years or more of prior enlisted service

3. What is your sex?

   A. Male
   B. Female

4. What is your area of specialization?

   A. Civil Engineer
   B. Mechanical Engineer
   C. Electrical Engineer
   D. Industrial Engineer
   E. Architect
   F. Other

5. What is your present assignment?

A. Base level civil engineering
B. Headquarters (Air Staff, Major Command, Numbered Air Force)
C. RED HORSE
D. AFIT Civil Engineering School Instructor
E. Air Force Academy Instructor
F. Career broadening position outside civil engineering
G. Other

6. Do you have a Regular Commission?

A. Yes
B. I was offered a Regular Commission but did not accept it
C. No; but I would accept if offered
D. No; but not sure I would accept if offered
E. No; but I would not accept if offered

7. If you are assigned to a career broadening position outside civil engineering, how will this affect (delay) your effort in obtaining Professional Registration.

A. It won't; I already have my Professional Registration
B. It won't; there is no Professional Registration in my field
C. I am not sure if I will get my Professional Registration
D. It won't; I do not plan on getting my Professional Registration
E. It won't; I can still get my Professional Registration during or after the career broadening assignment
F. It will; I am presently working on getting my Professional Registration

8. If civil engineering officers had to take a career broadening assignment, at what point in their career do you feel they should take it?

A. First assignment
B. First Lieutenant
C. Captain (less than eight years of commissioned service)
D. Captain (eight years or more of commissioned service)
E. Major
F. Any time is acceptable

Section II: We are interested in your feelings about career broadening in general. Please use the following scale to answer items 9-14.

Strongly Disagree	Disagree	Slightly Disagree	Neither Agree nor Disagree	Slightly Agree	Agree	Strongly Agree
A	B	C	D	E	F	G

9. I feel that a career broadening assignment will enhance my promotion opportunity in the Air Force.

10. I feel that career broadening is helpful for career progression within the civil engineering career field.

11. Career broadening is essential for advancing to the senior officer ranks.

12. If the timing was right, I would volunteer for a career broadening assignment.

13. If I was given an assignment to a career broadening position on my next assignment, I would consider getting out of the Air Force.

14. Career broadening would make me a better officer.

****

Section III: We are interested in your feelings regarding 11 career broadening positions to which civil engineering officers could possibly be assigned. Each position is listed separately and followed by five statements. Please use the above scale (in Section II) to answer all items. The attachment on "Definition of Key Terms" provides a short description of each career broadening position.

AFSC 0920 - Recruiting Service Officer

15. I feel that an assignment for one tour would enhance my promotion opportunity.

16. I think I would find this job to be satisfying.

17. I feel that an assignment for one tour would have a negative impact on my career progression within civil engineering.

18. If I got an assignment for one tour in this position, I would consider getting out of the Air Force.

19. I think I would be motivated to do this job.

Strongly Disagree	Disagree	Slightly Disagree	Neither Agree nor Disagree	Slightly Agree	Agree	Strongly Agree
A	B	C	D	E	F	G

AFSC 0940 - Air Force Academy Instructor

20. I feel that an assignment for one tour would enhance my promotion opportunity.

21. I think I would find this job to be satisfying.

22. I feel that an assignment for one tour would have a negative impact on my career progression within civil engineering.

23. If I got an assignment for one tour in this position, I would consider getting out of the Air Force.

24. I think I would be motivated to do this job.

AFSC 0940 - AFIT Civil Engineering School Instructor

25. I feel that an assignment for one tour would enhance my promotion opportunity.

26. I think I would find this job to be satisfying.

27. I feel that an assignment for one tour would have a negative impact on my career progression within civil engineering.

28. If I got an assignment for one tour in this position, I would consider getting out of the Air Force.

29. I think I would be motivated to do this job.

AFSC A0940 - Basic Military Training School Squadron Commander

30. I feel that an assignment for one tour would enhance my promotion opportunity.

31. I think I would find this job to be satisfying.

32. I feel that an assignment for one tour would have a negative impact on my career progression within civil engineering.

33. If I got an assignment for one tour in this position, I would consider getting out of the Air Force.

34. I think I would be motivated to do this job.

Strongly Disagree	Disagree	Slightly Disagree	Neither Agree nor Disagree	Slightly Agree	Agree	Strongly Agree
A	B	C	D	E	F	G

AFSC 0940 - Basic Military Training School Deputy Squadron Commander

35. I feel that an assignment for one tour would enhance my promotion opportunity.

36. I think I would find this job to be satisfying.

37. I feel that an assignment for one tour would have a negative impact on my career progression within civil engineering.

38. If I got an assignment for one tour in this position, I would consider getting out of the Air Force.

39. I think I would be motivated to do this job.

AFSC 0940 - Reserve Officer Training Corps Instructor

40. I feel that an assignment for one tour would enhance my promotion opportunity.

41. I think I would find this job to be satisfying.

42. I feel that an assignment for one tour would have a negative impact on my career progression within civil engineering.

43. If I got an assignment for one tour in this position, I would consider getting out of the Air Force.

44. I think I would be motivated to do this job.

AFSC 0940 - Squadron Officer School Instructor

45. I feel that an assignment for one tour would enhance my promotion opportunity.

46. I think I would find this job to be satisfying.

47. I feel that an assignment for one tour would have a negative impact on my career progression within civil engineering.

48. If I got an assignment for one tour in this position, I would consider getting out of the Air Force.

49. I think I would be motivated to do this job.

Strongly Disagree	Disagree	Slightly Disagree	Neither Agree nor Disagree	Slightly Agree	Agree	Strongly Agree
A	B	C	D	E	F	G

AFSC 0950 - Officer Training School Flight Commander

50. I feel that an assignment for one tour would enhance my promotion opportunity.

51. I think I would find this job to be satisfying.

52. I feel that an assignment for one tour would have a negative impact on my career progression within civil engineering.

53. If I got an assignment for one tour in this position, I would consider getting out of the Air Force.

54. I think I would be motivated to do this job.

AFSC 182X - Missile Combat Crew Member

55. I feel that an assignment for one tour would enhance my promotion opportunity.

56. I think I would find this job to be satisfying.

57. I feel that an assignment for one tour would have a negative impact on my career progression within civil engineering.

58. If I got an assignment for one tour in this position, I would consider getting out of the Air Force.

59. I think I would be motivated to do this job.

AFSC A6216 - Services Squadron Commander

60. I feel that an assignment for one tour would enhance my promotion opportunity.

61. I think I would find this job to be satisfying.

62. I feel that an assignment for one tour would have a negative impact on my career progression within civil engineering.

63. If I got an assignment for one tour in this position, I would consider getting out of the Air Force.

64. I think I would be motivated to do this job.

Strongly Disagree	Disagree	Slightly Disagree	Neither Agree nor Disagree	Slightly Agree	Agree	Strongly Agree
A	B	C	D	E	F	G

AFSC 622X - Services Operations Officer

65. I feel that an assignment for one tour would enhance my promotion opportunity.

66. I think I would find this job to be satisfying.

67. I feel that an assignment for one tour would have a negative impact on my career progression within civil engineering.

68. If I got an assignment for one tour in this position, I would consider getting out of the Air Force.

69. I think I would be motivated to do this job.

****

Section IV - Overall Preference Rating:
In this section, we are interested in your assignment preferences if you knew you had to take a career broadening assignment sometime in your career. Please rank order the 11 positions (items 70-80) on the machine scored response form using a scale from "A" to "K", where "A" is the most preferred and "K" is the least preferred. To assist you with this, the following chart indicates a numerical ranking and the corresponding letter response.

	(Most Preferred)										(Least Preferred)
Numerical Ranking	1	2	3	4	5	6	7	8	9	10	11
Letter Response	A	B	C	D	E	F	G	H	I	J	K

70. _____ Recruiting Service Officer
71. _____ Air Force Academy Instructor
72. _____ AFIT Civil Engineering School Instructor
73. _____ Basic Military Training School Squadron Commander
74. _____ Basic Military Training School Deputy Squadron Commander
75. _____ Reserve Officer Training Corps Instructor
76. _____ Squadron Officer School Instructor
77. _____ Officer Training School Flight Commander
78. _____ Missile Combat Crew Member
79. _____ Services Squadron Commander
80. _____ Services Operations Officer

Section V: In this section, we are interested in your overall feeling about the following Air Force positions right now. Ask yourself whether you tend to feel positive or negative about each position. Please use the scale below to answer items 81-92.

Strongly Dislike	Dislike	Like	Strongly Like
A	B	C	D

81. Recruiting Service Officer
82. Air Force Academy Instructor
83. AFIT Civil Engineering School Instructor
84. Basic Military Training School Squadron Commander
85. Basic Military Training School Deputy Squadron Commander
86. Reserve Officer Training Corps Instructor
87. Squadron Officer School Instructor
88. Officer Training School Flight Commander
89. Missile Combat Crew Member
90. Services Squadron Commander
91. Services Operations Officer
92. Civil Engineering Officer

****

Section VI: We are interested in your feelings about your present job, and career and promotion opportunities. Please use the following scale to answer items 93-99.

Strongly Disagree	Disagree	Slightly Disagree	Neither Agree nor Disagree	Slightly Agree	Agree	Strongly Agree
A	B	C	D	E	F	G

93. I plan on making the Air Force a career.

94. Promotion opportunities within the Air Force for civil engineering officers are good.

95. I am usually satisfied with my present job.

96. I usually work very hard at my job.

97. I would like to move to another job right now.

98. I enjoy working in the civil engineering career field.

99. Career progression opportunities are good in the civil engineering career field.

YOU HAVE COMPLETED THE SURVEY. THANK YOU FOR YOUR PARTICIPATION.

Appendix B: Frequency Analysis of Responses to Survey Items 93-99

TABLE 26

Survey Item 93: Officer Intends to Make the Air Force a Career

	Frequencies (and %) by Group					
Response	2Lt	1Lt	Jr Capt	Sr Capt	Maj	All Groups
Strongly Disagree	13 (5.6)	19 (4.4)	6 (1.5)	2 (1.1)	3 (1.6)	43 (3.0)
Disagree	19 (8.2)	42 (9.7)	15 (3.8)	1 (0.5)	0 (0.0)	77 (5.4)
Slightly Disagree	13 (5.6)	22 (5.1)	10 (2.6)	2 (1.1)	0 (0.0)	47 (3.3)
Neither	58 (24.9)	83 (19.1)	41 (10.5)	7 (3.8)	1 (0.5)	190 (13.2)
Slightly Agree	35 (15.0)	67 (15.4)	39 (10.0)	13 (7.0)	6 (3.1)	160 (11.1)
Agree	45 (19.3)	80 (18.4)	112 (28.6)	40 (21.5)	23 (11.9)	300 (20.9)
Strongly Agree	50 (21.5)	121 (27.9)	168 (43.0)	121 (65.1)	160 (82.9)	620 (43.1)
Total	233	434	391	186	193	1437

TABLE 27

Survey Item 94: Promotion Opportunities Within the Air Force are Good for Civil Engineering Officers

	Frequencies (and %) by Group					
Response	2Lt	1Lt	Jr Capt	Sr Capt	Maj	All Groups
Strongly Disagree	22 (9.5)	21 (4.8)	9 (2.3)	5 (2.7)	8 (4.2)	65 (4.5)
Disagree	22 (9.5)	49 (11.3)	17 (4.4)	12 (6.5)	21 (11.0)	121 (8.5)
Slightly Disagree	47 (20.3)	59 (13.6)	27 (7.0)	22 (11.8)	10 (5.2)	165 (11.5)
Neither	28 (12.1)	57 (13.1)	43 (11.1)	21 (11.3)	8 (4.2)	157 (11.0)
Slightly Agree	60 (26.0)	97 (22.3)	112 (28.9)	25 (13.4)	43 (22.5)	337 (23.5)
Agree	46 (19.9)	134 (30.8)	153 (39.4)	76 (40.9)	79 (41.4)	488 (34.1)
Strongly Agree	6 (2.6)	18 (4.1)	27 (7.0)	25 (13.4)	22 (11.5)	98 (6.8)
Total	231	435	388	186	191	1431

TABLE 28

Survey Item 95: Officer is Satisfied With Present Job

	Frequencies (and %) by Group					
Response	2Lt	1Lt	Jr Capt	Sr Capt	Maj	All Groups
Strongly Disagree	8 (3.4)	9 (2.1)	8 (2.1)	4 (2.2)	1 (0.5)	30 (2.1)
Disagree	18 (7.7)	26 (6.0)	12 (3.1)	8 (4.3)	3 (1.6)	67 (4.7)
Slightly Disagree	23 (9.9)	35 (8.0)	18 (4.7)	6 (3.2)	4 (2.1)	86 (6.0)
Neither	15 (6.4)	31 (7.1)	17 (4.4)	3 (1.6)	3 (1.6)	69 (4.8)
Slightly Agree	46 (19.7)	78 (17.9)	59 (15.3)	32 (17.2)	24 (12.4)	239 (16.7)
Agree	89 (38.2)	190 (43.6)	191 (49.6)	82 (44.1)	89 (46.1)	641 (44.7)
Strongly Agree	34 (14.6)	67 (15.4)	80 (20.8)	51 (27.4)	69 (35.8)	301 (21.0)
Total	233	436	385	186	193	1433

TABLE 29

Survey Item 96: Officer Works Very Hard at Present Job

Response	Frequencies (and %) by Group					
	2Lt	1Lt	Jr Capt	Sr Capt	Maj	All Groups
Strongly Disagree	1 (0.4)	2 (0.5)	0 (0.0)	0 (0.0)	1 (0.5)	4 (0.3)
Disagree	6 (2.6)	0 (0.0)	3 (0.8)	0 (0.0)	0 (0.0)	9 (0.6)
Slightly Disagree	8 (3.4)	8 (1.8)	2 (0.5)	4 (2.2)	0 (0.0)	22 (1.5)
Neither	6 (2.6)	12 (2.8)	7 (1.8)	4 (2.2)	1 (0.5)	30 (2.1)
Slightly Agree	24 (10.3)	35 (8.0)	31 (8.1)	13 (7.0)	4 (2.1)	107 (7.5)
Agree	102 (43.8)	195 (44.7)	139 (36.1)	68 (36.6)	57 (29.7)	561 (39.2)
Strongly Agree	86 (36.9)	184 (42.2)	203 (52.7)	97 (52.2)	129 (67.2)	699 (48.8)
Total	233	436	385	186	192	1432

TABLE 30

Survey Item 97: Officer Would Like to Move to Another Job

	Frequencies (and %) by Group					
Response	2Lt	1Lt	Jr Capt	Sr Capt	Maj	All Groups
Strongly Disagree	40 (17.2)	53 (12.2)	59 (15.2)	28 (15.4)	53 (27.6)	233 (16.3)
Disagree	32 (13.8)	73 (16.8)	92 (23.8)	41 (22.5)	46 (24.0)	284 (19.9)
Slightly Disagree	31 (13.4)	40 (9.2)	37 (9.6)	26 (14.3)	16 (8.3)	150 (10.5)
Neither	22 (9.5)	64 (14.7)	46 (11.9)	22 (12.1)	18 (9.4)	172 (12.0)
Slightly Agree	36 (15.5)	55 (12.6)	41 (10.6)	17 (9.3)	17 (8.9)	166 (11.6)
Agree	35 (15.1)	79 (18.2)	64 (16.5)	29 (15.9)	18 (9.4)	225 (15.8)
Strongly Agree	36 (15.5)	71 (16.3)	48 (12.4)	19 (10.4)	24 (12.5)	198 (13.9)
Total	232	435	387	182	192	1428

TABLE 31

Survey Item 98: Officer Enjoys Working in Civil Engineering

	Frequencies (and %) by Group					
Response	2Lt	1Lt	Jr Capt	Sr Capt	Maj	All Groups
Strongly Disagree	11 (4.7)	9 (2.1)	7 (1.8)	2 (1.1)	0 (0.0)	29 (2.0)
Disagree	13 (5.6)	14 (3.2)	8 (2.1)	3 (1.6)	3 (1.6)	41 (2.9)
Slightly Disagree	10 (4.3)	17 (3.9)	9 (2.3)	6 (3.2)	3 (1.6)	45 (3.2)
Neither	15 (6.5)	24 (5.6)	16 (4.1)	1 (0.5)	3 (1.6)	59 (4.1)
Slightly Agree	38 (16.4)	59 (13.7)	37 (9.5)	16 (8.6)	5 (2.6)	155 (10.9)
Agree	78 (33.6)	153 (35.5)	138 (35.6)	57 (30.8)	62 (32.3)	488 (34.2)
Strongly Agree	67 (28.9)	155 (36.0)	173 (44.6)	100 (54.1)	116 (60.4)	611 (42.8)
Total	232	431	388	185	192	1428

TABLE 32

Survey Item 99: Career Progression Opportunities are Good in Civil Engineering

	Frequencies (and %) by Group					
Response	2Lt	1Lt	Jr Capt	Sr Capt	Maj	All Groups
Strongly Disagree	18 (7.9)	23 (5.3)	6 (1.6)	5 (2.7)	9 (4.7)	61 (4.3)
Disagree	24 (10.5)	36 (8.3)	17 (4.4)	9 (4.9)	10 (5.2)	96 (6.8)
Slightly Disagree	25 (10.9)	51 (11.8)	28 (7.3)	17 (9.2)	11 (5.8)	132 (9.3)
Neither	41 (17.9)	70 (16.2)	36 (9.4)	16 (8.7)	9 (4.7)	172 (12.1)
Slightly Agree	55 (24.0)	83 (19.2)	92 (24.0)	37 (20.1)	29 (15.2)	296 (20.8)
Agree	55 (24.0)	140 (32.3)	161 (42.0)	68 (37.0)	80 (41.9)	504 (35.5)
Strongly Agree	11 (4.8)	30 (6.9)	43 (11.2)	32 (17.4)	43 (22.5)	159 (11.2)
Total	229	433	383	184	191	1420

Bibliography

1. Beishke, Captain John J., Jr., and Captain James R. Lipsey. Career Progression to General Officer in the United States Air Force. MS thesis, LSSR 4-77B. School of Systems and Logistics, Air Force Institute of Technology (AU), Wright-Patterson AFB OH, September 1977 (AD-A047 229).

2. Brousseau, Kenneth R. "Job-Person Dynamics and Career Development," in Research in Personnel and Human Resources Management, Volume 2. Editors: Kendrith M. Rowland and Gerald R. Ferris (Greenwich CT: JAI Press Inc.) 1984, 125-154.

3. Burack, Elmer H. "The Sphinx's Riddle: Life and Career Cycles," Training and Development Journal, 38: 52-61 (April 1984).

4. Cady, Captain James R. Profile of a Successful Civil Engineering Career in the United States Air Force. MS thesis, LSM/84S-5. School of Systems and Logistics, Air Force Institute of Technology (AU), Wright-Patterson AFB OH, September 1984 (AD-A146 873).

5. Clayton, Captain Michael E. and Major Harold A. Mercer. An Analysis of Career Intent of Junior Civil Engineering Officers in the Air Force and Navy. MS thesis, LSSR 10-82. School of Systems and Logistics, Air Force Institute of Technology (AU), Wright-Patterson AFB OH, September 1982 (AD-A123 049).

6. Department of the Air Force. Officer Personnel: Officer Assignments. AFR 36-20. Washington: HQ USAF, 5 August 1981.

7. Department of the Air Force. Officer Personnel: Officer Career Development. AFR 36-23. Washington: HQ USAF, 11 March 1985.

8. Department of the Air Force. Officer Personnel: Officer Classification. AFR 36-1. Washington: HQ USAF, 1 January 1984.

9. Department of the Air Force. Services: Services Manager's Handbook. AFP 140-5. Washington: HQ USAF, 14 October 1983.

10. Earle, Captain Alec, Palace Blueprint. Officers' Career Newsletter: Career Broadening Assignments for Civil Engineering Officers. HQ AFMPC, Randolph AFB TX, Fall 1985.

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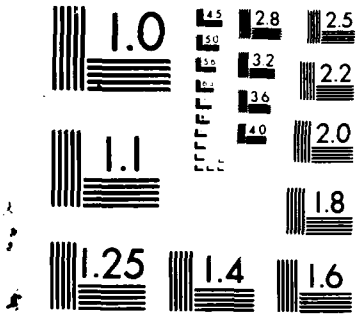

11. Earle, Captain Alec, Palace Blueprint. Civil Engineering Officer Manning Information. HQ AFMPC, Randolph AFB TX, 14 January 1986.

12. Emory, C. William. Business Research Methods (Third Edition). Homewood IL: Richard D. Irwin, Inc., 1985.

13. Gutteridge, Thomas G. and Fred L. Otte. "Organizational Career Development: What's Going On Out There," Training and Development Journal, 37: 22-26 (February 1983).

14. Hardyck, Curtis D. and Lewis F. Petrinovich. Introduction to Statistics for the Behavioral Sciences (Second Edition). Philadelphia PA: W. B. Saunders Company, 1976.

15. Haynes, Captain Gerald W. and Captain William H. Herbert. An Investigation of the Determinants of a Successful Career as a USAF Procurement Officer. MS thesis, LSSR 5-77B. School of Systems and Logistics, Air Force Institute of Technology (AU), Wright-Patterson AFB OH, September 1977 (AD-A047 278).

16. Janowitz, Morris. The Professional Soldier. Glencoe IL: The Free Press, 1960.

17. Komar, Captain David M. and Captain William M. Wise. An Assessment Center Approach to Officer Development. MS thesis, LSSR 79-80. School of Systems and Logistics, Air Force Institute of Technology (AU), Wright-Patterson AFB OH, September 1980 (AD-A093 162).

18. Martin, Thomas N., Jr. "A Contextual Model of Employee Turnover Intentions," Academy of Management Journal, 22: 313-324 (June 1979).

19. Martin, Thomas N., Jr. "Integration of Intent to Leave and OD Interventions," California Management Review, 23: 81-86 (Fall 1980).

20. McClelland, Captain John C., HQ AFMPC. Telephone Interview. Randolph AFB TX, 19 December 1985.

21. McEnery, Jean M. and John J. McEnery. "Professionals Are Career-Minded Too," Training and Development Journal, 38: 72-75 (December 1984).

22. Mowday, Richard T. "Strategies for Adapting to High Rates of Employee Turnover," Human Resource Management, 23: 367-380 (Winter 1984).

23. Neter, John and William Wasserman. Applied Linear Statistical Models. Homewood IL: Richard D. Irwin, Inc., 1974.

24. Sheppeck, Michael A. and Craig Taylor. "Up the Career Path," Training and Development Journal, 39: 46-48 (August 1985).

25. SPSSx User's Guide (Second Edition). New York: McGraw-Hill Book Company, 1986.

26. Steel, Robert P. Lecture in ORSC661, Making Sense of Research Data. School of Systems and Logistics, Air Force Institute of Technology (AU), Wright-Patterson AFB OH, 10 February 1986.

27. Steers, Richard M. "Antecedents and Outcomes of Organizational Commitment," Administrative Science Quarterly, 22: 46-56 (March 1977).

28. Tenzer, Amy and others. "Executive Development in Financial Services," Training and Development Journal, 39: 39-41 (March 1985).

29. Winer, B. J. Statistical Principles in Experimental Design (Second Edition). New York: McGraw-Hill Book Company, 1971.

30. Wright, Major General Clifton D., Director of Engineering and Services. Letter: Engineer Crossflow. HQ USAF, Washington DC, 25 June 1984.

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This study assessed Air Force civil engineering officer perceptions of assignments to career broadening positions, both within and outside the civil engineering career field. Eleven career broadening positions to which civil engineering officers could possibly be assigned were evaluated. Data collection was accomplished by a mail survey of civil engineering officers in the ranks second lieutenant through major with AFSC 55XX, excluding rated supplements.

The results focused on officer perceptions and attitudes of assignments to career broadening positions for five groups defined by rank and commissioned service time. The groups were second lieutenant, first lieutenant, junior captain, senior captain, and major. Comparisons between the five groups were also assessed. When the results of the five groups are combined, the six most preferred career broadening positions were: AFIT Civil Engineering School Instructor, Air Force Academy Instructor, Reserve Officer Training Corps Instructor, Services Squadron Commander, Squadron Officer School Instructor, and Officer Training School Flight Commander. The five least preferred positions were: Basic Military Training School Deputy Squadron Commander, Services Operations Officer, Recruiting Service Officer, Missile Combat Crew Member, and Basic Military Training School Squadron Commander.

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