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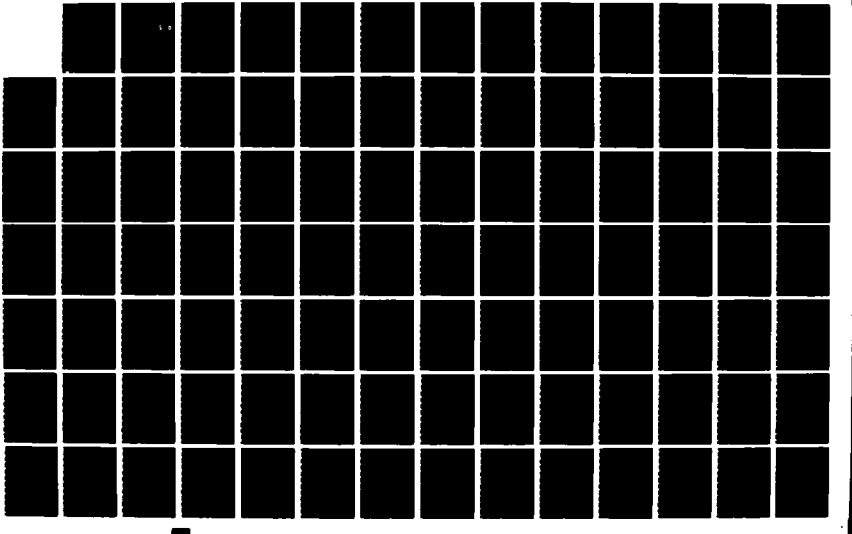

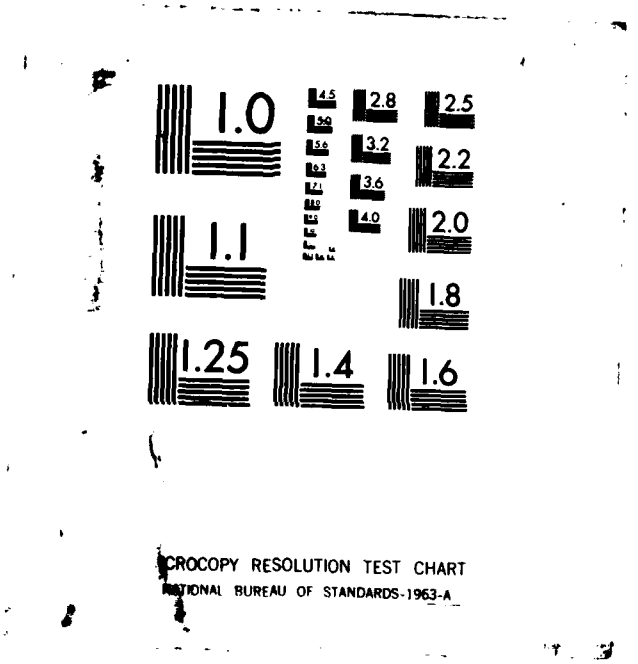

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A PROPOSED LOGISTICS CAREER DEVELOPMENT MODEL

THESIS

Frank Gorman
Captain, USAF

AFIT/GLM/LSM/86S-27

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A PROPOSED LOGISTICS CAREER DEVELOPMENT MODEL

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 Logistics Management

Frank Gorman, B.S.
Captain, USAF

September 1986

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Abstract

Concerns have been raised by senior USAF leadership about the current senior military logistician's ability to manage the totality of USAF logistics systems. This thesis addresses this issue by proposing a logistics career development program for USAF military logisticians. Based upon historical programs and lessons learned, a model career development program is suggested. This program combines elements of experience, education, and training and sequences them over a military career. This model was sent to a representative sample of 1840 of today's practicing logisticians for evaluation. The results of this field evaluation are documented and analyzed by military rank and logistics functional specialty. Each of the elements of career development is analyzed. The sequencing of those elements is also addressed. The results are valuable because they provide insight about what practicing USAF logisticians think is important in a logistics career development program.

A PROPOSED LOGISTICS CAREER DEVELOPMENT MODEL

I. Introduction

Logistics is an important element of war making. In 1836, the French theorist, Jomini, ranked logistics an equal to the other components of war. He emphasized, "without logistics, strategy and tactics do not matter" (19:22). Warfare today still requires a balance between strategy, tactics, and logistics. General Bruce C. Clarke recently wrote:

> We must have enough fighting forces to effectively conduct the offensive but they won't be able to do their job without sufficient supporting forces, supplies, and materiel. Therefore, we must keep the "tooth" and "tail" elements in balance. In these days of mechanical warfare, we will find that supplies, spare parts, and maintenance personnel are essential ....The absence of such a logistics base prevented the tactical part of the plan from being launched in the Desert One Operation (6:5).

General Clarke commented further that logistics considerations are of paramount importance during the earliest stages of planning, continue throughout the operation and end only after the last troops have been withdrawn (6:5).

The battlefield of the future will be extremely complex. The demands upon responsive, quality logistics will become even more paramount than it is today. According to Lieutenant Colonel Davis, the logistics processes and infra-

structure we possess today are outdated in terms of war fighting concepts and technology. The environment and operational requirements are changing and will continue to change. The battlefield of the future will be radically different from anything experienced to date (10:3). These factors serve notice that tomorrow's logistician must have a better, more complete understanding of the entire flow of the logistics process (32:2).

Lieutenant General Register, Deputy Chief of Staff for Logistics, United States Army, described the logistics process:

> Logistics must be viewed as a continuum that extends from source, origin, to point of consumption....The logistician's perspective is that the logistics progression is a system of links, and one must know how they interface. The system could be viewed as a pipeline. You can not connect a two-inch pipe to a ten-inch pipe and expect a ten-inch flow out the two-inch end. It just won't work. But when properly managed, the interfaces between the links can provide logistics that will produce the intended flow. (43:1)

No other profession demands the synchronization of so many elements and specialties to orchestrate balanced combat support (44:1). But, according to Lieutenant General Leo Marquez, Air Force Deputy Chief of Staff for Logistics and Engineering, we bring our people up in only one specialty without an understanding of the total logistics process.

> No longer can we afford to build discrete specialists in maintenance, or munitions, or supply, or transportation. To understand your particular discipline is no longer enough; you must fully understand the part you play in the entire logistics process and be able to see where you are helping or benefiting that process (32:2).

Lieutenant General Marc C. Reynolds, Vice Commander, Air Force Logistics Command, supported this view when he voiced his concern over the "stovepiping" of logistics officers at the School of Systems and Logistics, Air Force Institute of Technology (AFIT) in a 28 August 1985 letter to Lieutenant General Marquez. He felt that the school's structure was fostering a narrow, vertical view of logistics to students. His proposed solution was to eliminate student specialization in areas such as supply and maintenance management and have only one logistics option. Contracting was the only specialization exempted. In his words the "programs should be combined into one graduate logistics degree which produces a broader logistician cognizant of the interrelationships in logistics" (26).

The need to develop senior logisticians to manage the ever changing totality of logistics systems has been identified as a major concern (31:33). According to Lieutenant General Marquez, we have "stovepiped" our officers in narrow logistics subsystem function. Not recognizing the need for managers instead of functional specialists, officers have reached senior positions unprepared to manage the totality of our complex logistics system. Logisticians must have a complete understanding of the entire flow of our logistics process. The challenge of tomorrow is to become a complete logistician (32:2).

Specific Problem

Lieutenant General Marquez has stated that senior military logisticians must be able to understand and integrate the total logistics system (38:1). However, the implementation of the current logistics career progression program described in AFR 36-23, Officer Career Development (17), has apparently produced senior officers who are functional specialists and lack the proper background and qualifications to operate and manage the total logistics system. The current logistics career progression program is not developing the right kind of logisticians.

This thesis therefore attempted to develop a career development model for logisticians. The model was designed to develop logisticians with a systems perspective that could manage the total logistics system. The remainder of this chapter discusses some important definitions, the specific research objectives and associated research questions, the scope of the research, some potential contributions, and the organization of the study.

Definitions

1. Logistics in its most comprehensive sense, includes those aspects of military operations that deal with (a) design and development, acquisition, storage, movement, distribution, maintenance, evacuation, and disposition of materiel; (b) movement, evacuation, and hospitalization of personnel; (c) acquisition or construction, maintenance,

operation, and disposition of facilities; and (d) acquisition or furnishing of services (14:38).

2. Logistician is an individual whose primary specialty or profession is the planning of logistics operations, or who is responsible for ensuring that logistics operations are carried out in support of the activities and objectives of an organization (51:304).

3. Senior logistician is a senior officer, colonel or above, serving in a logistics Air Force Specialty Code (AFSC).

4. Specialist is a logistician who has served in only one discrete logistic AFSC, such as maintenance (40XX) or supply (64XX).

5. Multidisciplined is to be experienced in more than one logistics AFSC.

6. Generalist is a logistician who is multidisciplined.

7. Stovepiping is the practice of vertical progression in one specialty. This occurs when an officer serves in only one discrete AFSC for an entire career. The officer only progresses in a path that leads upward through various management levels such as from Wing to Major Air Command (MAJCOM) to Air Staff (HQ USAF).

8. Executive Development Program is a type of program that is designed to enhance the experience, performance and/or education of officers before they attain senior

officer status. The Air Staff Training Program (ASTRA) is an example of an executive development program.

9. Systems Perspective is a view of logistics as a "set" of functions, and their interrelationships between the functions and environment. A systems perspective views logistics as a whole.

Research Objective

The main objective of this research was to develop a viable career development model that would produce senior logisticians capable of managing the total logistics system. The secondary objective was to validate the model by its acceptability to practicing logisticians.

Research Questions

To meet the primary research objective, the following questions were posed:

1. What are the qualifications/background a senior logistician needs?

2. Should there be both generalist and specialist logisticians in the Air Force?

3. Are their assignments, training, and education that provide the proper background and qualifications as determined in research question 1?

4. Is there a logical sequencing of assignments, training, and education during a career that can best provide for the background and qualifications needed by a senior logistician?

5. If an executive development program is used should it be selective or open to all participants?

6. How does the Air Force promotion system fit into career development planning?

7. How do the needs of the individual fit into career development planning?

The research questions for the secondary objective of model validation could not be formulated until after the model was constructed. The research questions for the secondary objective are presented here and are discussed in detail in Chapter III.

1. Do practicing military logisticians agree with the goal of the model? The goal of the logistics career development model is to develop logisticians that can comprehend and integrate the total logistics system.

2. Do practicing military logisticians believe that the ideal career development model includes a combination of experience, training, and education?

3. Do practicing military logisticians believe that the ideal career development model should be flexible?

4. Do practicing military logisticians believe that education is the best way to ensure that logisticians develop a systems perspective?

5. Do practicing military logisticians believe that communication and interpersonal skills training should be improved in the Air Force?

6. Do practicing military logisticians believe that all education, training, and AFSC structures should be combined where possible to emphasize systems thinking in logistics?

7. Do practicing military logisticians believe that a senior logistician should have a graduate degree in logistics or other closely related field?

8. Do practicing military logisticians believe that an ideal executive development program should be selective and specifically tailored to the person according to his/her background and the philosophy of creating a well-rounded logistician?

9. Do practicing military logisticians believe that supervisors should be accountable for career counseling and their subordinate's career development?

10. Do practicing military logisticians agree with the phasing of career activities as presented in the career development model?

Scope

This study is concerned only with developing a career development model for logisticians. The concepts presented or referenced may or may not apply to other career fields. There are things that logisticians must do to be promoted and successful and there are things that all officers must do to be promoted and be successful. This research will concentrate on the things that logisticians must do. Things

that all officers must do such as Professional Military Education and the like will not be examined as it is expected that logistics officers will accomplish the necessary steps to be successful officers.

The proposed logistics career development model presented in Chapter IV was constructed, based on the researcher's examination of career development literature and the researcher's own personnel experience and opinions. The model was not based on the opinions of practicing logisticians.

A survey was used to validate the proposed model. The survey only "sampled" the opinions of practicing logisticians and did not attempt to obtain a census of the total population of practicing logisticians.

Potential Contributions

This research attempted to develop a career development model designed to produce systems oriented, multidisciplined logisticians. This study has three potential contributions.

1. This research offers ideas and programs that could be implemented by the Air Force (in whole or part) to develop systems oriented, multidisciplined logisticians.

2. This thesis integrates some of the best and current literature on characteristics of logisticians and career development models. The literature review could serve as a reference for other researchers.

3. This research asked practicing logisticians their opinions concerning many areas of career development. This may represent the first attempt to determine the career development desires of practicing USAF logisticians.

Organization of the Study

The balance of the study is presented in Chapters II through VI. Chapter II contains the literature review that served as the knowledge base for the study. First, the important qualities and characteristics of a logistician are enumerated. These qualities and characteristics are the goals of the proposed career development model. Next, the evolution of career development models from 1965 to present is presented. Many ideas and elements of these career development models are used in the proposed career development model.

Chapter III describes the research methodology. The research was conducted in two phases, which correspond with the primary and secondary objectives of the study. The research questions for the second phase of the study are explained and the experimental design presented. The design for data analysis is explained and finally, the limitations of the study are discussed.

Chapter IV presents the proposed career development model along with the assumptions of the model.

Chapter V presents the finding of the study.

Chapter VI contains the conclusions and recommendations of this study.

The appendices contain the questionnaire, data base, statistical programs, and selected comments on the questionnaire.

II. Literature Review

This chapter provides the basis of knowledge upon which a proposed logistics career development model was built. The model is discussed in Chapter III. First, the qualities and characteristics needed by logisticians are explored. These desired attributes of a logistician form the goals of the proposed career development model. The proposed model then attempts to cultivate these essential attributes in logisticians. Second, an extensive review of proposed career development models from 1965 to the present is offered. The scope and methodology employed in the literature review of career development model is discussed in Chapter IV. These models demonstrate an evolution in thought and are presented as background for the reader. Also many ideas concerning career development that were still applicable today were taken and applied to the author's proposed model. In many cases, a good idea in the past is still a good idea today.

Qualities and Characteristics of Logisticians

Before a career development model for logisticians can be constructed, it is important to first establish that which distinguishes a logistician. The desirable qualities, characteristics, and traits of the logistician must then be enumerated. Once enumerated, these qualities and characteristics become the goals which a logistics career development

model should strive to develop in its participants. There are various thoughts expressed in the literature as to what makes up a successful logistician. An overview of these thoughts is presented here.

Leadership and Management. Although leadership and management ability are important for all officers, it deserves to be cited here as these abilities are cornerstones of the traits of an effective logistician. Leadership has been defined as the art of influencing and directing people to accomplish the mission. Management is the manner in which resources are used to achieve objectives. In essence, you lead people and manage things. The Air Force needs people who can do both (16:14-15).

General Clarke strongly emphasized leadership as an important trait for logisticians, you should be leaders first and logisticians second" (7:29). Too often logisticians get caught up in specialties such as supply and transportation, and forget their primary concern of training, coaching, developing, or in other words, leading the troops. General Clarke also insisted that soldiers are more motivated by dedicated leadership than by sophisticated management techniques. A good leader will produce a good unit, one that produces good logistics support (7:29).

Lieutenant General Marquez, speaking at a meeting of the Spare Parts Committee of the Aerospace and Electronics Industries Association, maintained that the Air Force must

become more adept at administering its logistics functions. He went on to say that our career progression system has produced functional specialists rather people who can operate and manage total system. The Air Force needs managers in our senior positions not maintenance officers or supply officers (33:10).

Professor Blanchard, Assistant Dean of Engineering, Virginia Polytechnic Institute and State University, stated that a logistician must be a management-oriented individual, knowledgeable in the principles of management, planning, organizing, and controlling (2:340).

Lieutenant General Walter F. Ulmer, Jr., U.S. Army, noted that the "leadership-management dilemma" is "a bit phony. . . .I can't think of any significant number of great leaders who couldn't count their horses or artillery" (48:12). Perhaps, as General Ulmer illustrates, leadership and management are two sides of the same coin.

In a thesis research in which twenty logistics experts were surveyed, Captain Overbey discovered that a logistician should be both a leader and manager (38:115). Overbey's research concluded that a logistician must be able to lead people and effectively manage the goals and resources of the organization (38:123). The complete logistician must possess both leadership and management abilities to be effective.

Specialists vs. Generalists. One of the long-standing controversies in logistics is whether a logistician should be a specialist or generalist.

The first task of an Air Force officer and logistician is to become an expert in his designated specialty. Brigadier General Richard F. Gillis said, "...you must get a basic foundation in your own career field and become an expert" (22:47). Lately, there has been concern that specialization does not produce well-rounded logisticians. Dr. Poist, a Professor of Management at the University of Maryland, noted that the most common mistake is to concentrate or specialize in only two areas at the expense of balanced preparation (40:26). Echoing this concern, Dr. Snyder, a Professor at Texas A&M University, asked the question, "Where are the corps of generalists for top-level command and staff positions to come from if the Air Force only gives ROTC scholarships to students in technical specialties (48:8)?

A resolution of this apparent conflict was stated by Lieutenant General Marquez:

> To understand your particular discipline is no longer enough. . . . That does not mean that you should not know your own mission area well. On the contrary, you must know it better than ever and also those that impinge on it. (32:2)

The Career Guide for the Aircraft and Munitions Maintenance Officer gives this advice:

> Diversity is a key to career development. As you begin your career, learn as much as possible about the

> specific area in which you are working... As your career progresses, consider broadening your knowledge and expertise by volunteering for an assignment in a different logistics field. If your goal is to be a colonel or general officer, which it should be, there are few jobs available for pure maintainers at those grades. (22:63-64)

Overbey's research indicated that logistician should be multidisciplined. A survey of twenty logistics experts revealed that ideally a logistician should have experience in three different functional areas in which they have become specialists (38:104,128). The most important areas identified were maintenance, logistics planning, and supply. The experts asserted that a logistician can not be totally effective as a systems integrator without sound understanding of the different logistics functions (38:128).

It appears that the complete logistician must be both a specialist and generalist. A logistician begins his career in a specialty in which he must become an expert. He must then diversify into other logistics specialities and become a mutlidisciplined generalist.

Communication and Interpersonal Skills. Two of the most underrated characteristics of the complete logistician is the ability to communicate, both orally and in writing, and interpersonal relationship skills. Although all officers, regardless of career field, must possess these skills to be successful, it is imperative for a logistician. A logistician needs communicative and interpersonal skills as system integration tools. It is through the effective

management of people that a logistician can integrate a complex logistics system (5:3). A recent Occupational Survey Report on the Logistics Plans and Programs Utilization Field, AFSC 66XX and 004X, that surveyed 906 officers found that 75 percent of the sample performed five tasks in common (53:2,6). Those tasks were:

Draft or write messages or letters
Attend logistics-related meetings, conferences, or working groups
Review incoming correspondence
Prepare briefings
Conduct briefings

Interestingly, all five of these tasks stress communicative and interpersonal skills.

A study done by AT&T in 1981, showed that employees with social science/humanities degrees were promoted to higher managerial positions earlier than those with engineering or business degrees. An assessment center measurement of the distinguishing qualities between the two groups revealed that the social science/humanities group scored higher on all dimensions, especially in interpersonal and administrative skills. They were also better than the engineering and business college majors in oral and written communications skills (48:11).

Another study done by the Midwest College Placement Service on 524 graduates who had reached midcareer status reported the skills these graduates valued most. The top rated skills were the ability to work well with others, leadership, decision-making skills, analytical and problem

solving ability, and oral and written communications skills (48:11-12).

Communicative and interpersonal skill are definitely important to the complete logistician. When asked if an engineering background was important for a maintenance officer, one Palace Log resource manager for maintenance at the Air Force Military Personnel Center (AFMPC) replied, "what we need is more maintenance officers who can write well" (41).

Lieutenant Colonel Davis in his article, "The Challenge for Logisticians--The Future", admonished logisticians to do a better job of articulating logistics supportability to design engineers so that logistics concepts can be built into new weapon systems (10:5). Colonel Jones, a Professor at the United States Military Academy, said in more down-to-earth terms:

> Logisticians need to listen regularly and intently, schedule conferences with their customers to exchange ideas, and air problems. Good leaders and managers get out of the office and onto the floor, not just to check, inspect, and correct but to encourage and stroke. When treated as adults and partners--as dignified and valued team members--[workers] will flood you with ideas and spawn champions throughout your organization (29:35-36).

One person can not comprehend an entire system in every minute detail, but he can integrate one. The complete logistician must rely on the expertise of specialists in the interrelated functions (5:3). Communicative and interpersonal skills draw the needed cooperation and information

from these specialists and insure that direction is understood and executed properly. These skills make possible the integration of complex functions into a complete system.

Graduate Education. Another important characteristic of the complete logistician is a graduate education. The goal of graduate education for logisticians is to improve management performance by giving officers the broad educational background that will equip them both to understand their technological and cultural environment and to analyze and solve its problems (15:2). Many authors favor the logistician receiving an advanced degree from the Air Force Institute of Technology (AFIT) rather than a civilian institution (38:103, 125; 23:40; 4:45).

A masters thesis by Captains Hale and Rooney demonstrated that AFIT, School of Systems and Logistics, graduates performed better than nongraduate degree officers across five of nine management dimensions. The five dimensions were decision-making, performance style, planning, communication, and general evaluation (23:40). In another thesis, Captains Chamberlin and Smith evaluated the performance of AFIT logistics graduates versus logistics officers with graduate business degrees from civilian colleges. In this study the AFIT graduates were rated higher in eight of the nine management dimensions. The only dimension in which no statistical significant difference could be shown was communication (4:45).

The experts surveyed by Overbey also agreed that graduate education, especially through AFIT, was important to the development of a logistician (38:104). However, Overbey cautioned that academic inbreeding of the logistics corps could occur if all logisticians were educated at AFIT. Overbey recommended that civilian institutions be used to educate some Air Force logisticians (38:125).

There is much agreement that a graduate degree is important in the development of a logistician. A strong academic background can provide the foundation from which a logistician can build a solid career. According to many authors, AFIT is the preferred method of obtaining a graduate degree. Currently, the academic specialty code awarded to an AFIT graduate in logistics management is different from a graduate of a civilian institution with the same degree. All graduate education requirements and student quotas are based only on the AFIT logistics management education codes while the civilian degrees are not counted. This demonstrates that in practice, the Air Force also implies a preference for logistics education at AFIT.

Future Orientation. A logistician must also be a futurist. According to Professor Peppers, former Associate Dean of the School of Systems and Logistics at the Air Force Institute of Technology, the logistician more than any other professional should be alert to the potential of the future. The logistician must put some time and energy toward decid-

ing what the future will be so that he can prevent the ill effects of poor logistics support and help the development of good logistics (39:8).

Problem Solving Ability. Both Professor Peppers and Professor Demidovich called for pioneers in logistics dynamics. They stated that it was part of every logistics manager's job to be innovative and to solve problems. A logistician studies, questions, and creates. This could be accomplished by self evaluation, working to understand others, and looking beyond the prison of our own data base (12:16).

Proposed Logistics Career Development Models

In constructing a career development model for logisticians, an examination of models developed by others can give insight and provide a working background for this research. A review of different models can show both the strengths and weaknesses of various concepts and ideas which may be incorporated into a proposed career development model. Underlying each model there are qualities and characteristics of logisticians that were seen as important at the time by the model developers. For the most part these qualities and characteristics were unstated. Key career development models for logisticians from 1965 to the present are presented next as a background for the proposed model.

Kenealy and Canady. Lieutenant Commander Kenealy and Captain Canady (30) proposed a model in their 1965 AFIT

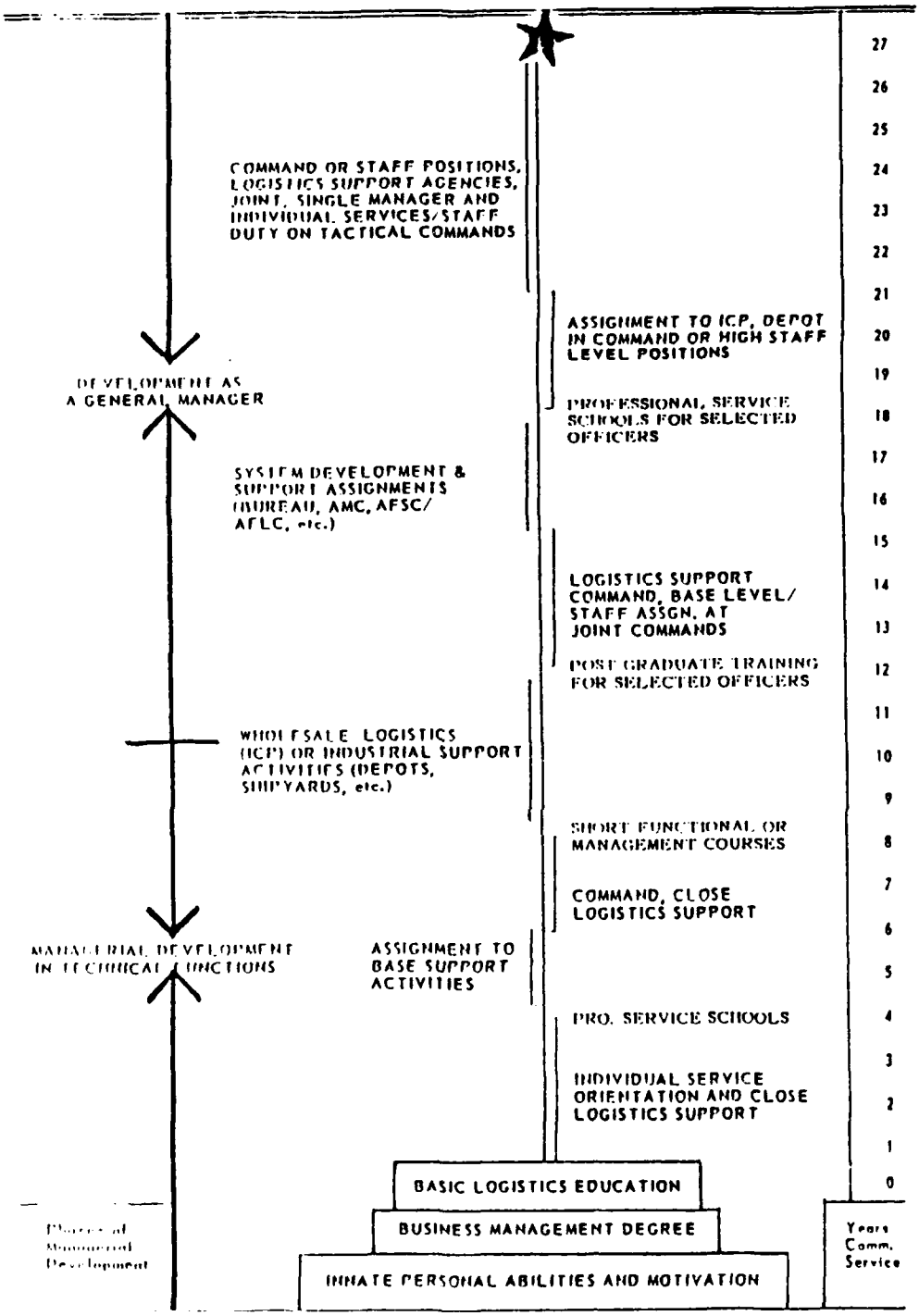

Figure 1.

Common and Integrated Career Development for Logistics Managers (30:62)

thesis that attempted to create a common career pattern for logisticians in the Army, Navy and Air Force. This model can be seen in Figure 1.

After assessing the strengths and weaknesses of each services programs they noted that the Army produced highly motivated and broadly based logisticians. This was a result of selecting officer volunteers to form a logistics cadre from diverse career fields between their tenth and twenty-first year of service. The Navy, on the other hand, selected logisticians at initial entry into the service and placed them into the supply corps. Due to the nature of shipboard service it was a logical decision to place all support activities except maintenance, which traditionally was the responsibility of engineering, under one officer. The result is an officer who can manage supply, food services, finance, etc., Of the three services, the Air Force, Kenealy and Canady found, produced the most narrowly based logistician according to experience.

Kenealy and Canady felt that there were four objective job requirements: education, experience, management ability, and innate personal attributes. They attempted to blend these requirements into a model with the objective of creating a managerial specialist. They thought the basic problem of logistics management was that there were too many technical supervisors and not enough general managers.

Their model was divided into three phases. Figure 1 depicts the first two phases. The first phase involves technical experience during the first ten to twelve years of service. Here an officer learns a specific specialty. Some individuals never leave this phase for reasons of limitations of ability or personal preference. The second phase is characterized by the separation of the general manager from the technical supervisor. During this phase, the officer becomes more of a manager than a specialist. The third phase is described as managerial supermen. These are people that can manage in any environment, regardless of level or technical setting. Managerial supermen possess innate abilities that defy development through any type of programmed means.

It was interesting to note that Kenealy and Canady described the evolution from specialist to generalist that a logistician should pass through in their model. During phase one, the first ten years of service, a logistician becomes a specialist. At the ten year point, phase two, the logistician transitions to a generalist. This would indicate that as a logistician's experience and rank increases, the logistician becomes more of a generalist and less of specialist.

Dawson and Tierney. In 1967, Lieutenant Colonel Dawson and Captain Tierney (11) perceived many of the same problems experienced in logistics career development today. They saw

that career development was confined to one or two functional specialties that constrained the perspective needed for managers who had to be cognizant of a wide range of diversified functions. While specialization was desirable at lower level management, such development did not provide for the development of top level managers. This practice had repercussions at top management levels when a functional specialist was designated a "logistics manager" and was suddenly thrust into an environment which required him to manage a multitude of functions which were foreign to him. The Air Force had created a system that produced senior officers who had only depth of experience in one field, rather than broad experience in several related fields (11:4, 65-66).

Through their research Dawson and Tierney proposed a dual track logistics career progression model. The first track proceeded through eight phases: (1) Executive Selection: Initial entry of officers into a functional specialty in logistics. (2) Training: Technical training in a specialty provided by Air Training Command. (3) Education: The basic education required was a baccalaureate degree. (4) Application: Work experience in a functional specialty. (5) Cross Functionality: Selection of top candidates into the logistics generalist AFSC, 66XX. (6) Incubation: The management trainee is assigned duties requiring integrated logistics management. (7) Increased Responsibility: The

officer is groomed for increased responsibility at the staff-level through further education. An AFIT short course in logistics management or more preferably graduate studies in the AFIT Logistics Management Program bridges the gap between operating technical logistics functions and developing logistics plans and programs at the staff-level.
(8) Assumption of Executive Responsibility: The logistics officer if fully experienced, trained, and educated to assume high level responsibility as a logistician in key staff-level jobs (11:85-92).

The second track was a highly selective program for senior regular captains and lieutenant colonels which was modeled after the Army's Logistics Career Program. In essence a corps of highly qualified logistics officer specialists would be trained in "development positions" and given priority in education and training opportunities. At the conclusion of this training the officer would be awarded an "L" suffix to his AFSC to distinguish him from others. Close career monitoring was mandatory for these specially trained officers. The objective for each officer was to be designated by an annual HQ USAF DCS/Systems and Logistics board as a "Designated Logistician." Such a designation would qualify an individual as a candidate for the top logistics command and senior staff jobs (11:92-96).

Basically, Dawson and Tierney proposed an overall program, track one, for the development of all logistics

officers and an executive development program, track two, for a few selected officers. There were two additional points of interest that Dawson and Tierney presented in their model. The first point, was that interest in subordinates shown by supervisors was important to the subordinate's positive career intent (11:69-70). Secondly, education could be a substitute for lack of experience (11:90-92).

Logistics Officer Program. The objective of the Army Logistics Officer Program (LOP) was to identify and develop officers of proven ability for assignment to important key logistics positions (50:2). These key positions are highly responsible and require incumbents with extensive diversified logistics experience.

The LOP was intended to complement an officer's career branch, or career field, rather than substitute for it. This would be in keeping with the Army Officer Personnel Management System, which requires officers to select a secondary skill in addition to their basic branch skill (50:4). The program was designed to produce competent logistics generalists and basic branch officers by alternating logistics and branch assignments with specially channeled schooling of selected captains through colonels (50:8-10). This alternating of assignments and acceptance of officers into the LOP from almost all career branches, especially combat arms, maintained an operational perspective in army logistics.

Despite the creation of an elite logistics corps that followed a structured pattern of career progression, one study in 1973 indicated that the Army did not produce better logisticians than the Air Force (50:34). Lieutenant Colonel Stewart and Major Tipton compared the level of experience of Army logistician in key positions with the level of experience of Air Force logisticians in key positions. Captain Calta provided the database for Air Force logisticians in his thesis in 1971. Calta had described the Air Force career progression method as unstructured (3:46). Stewart and Tipton wanted to discover if the structured approach of the Army produced more experienced senior logisticians than the unstructured Air Force system. Their conclusion was that Army logisticians were not significantly better prepared than their Air Force counterparts (50:34).

Quinn. Lieutenant Colonel Quinn (42) advocated a logistician progression model that was combination of experience, education, and technical training. This model is described in Figure 2 as a pyramid structure with an "L" at the apex representing a logistician. The figure shows that the logistician must comprehend the functional logistics specialties of supply (S), transportation (T), maintenance (M), and other logistics areas (X) in order to manage the total logistics system.

The first assignment for an officer was to one of the logistics specialties such as maintenance, number 1 in the

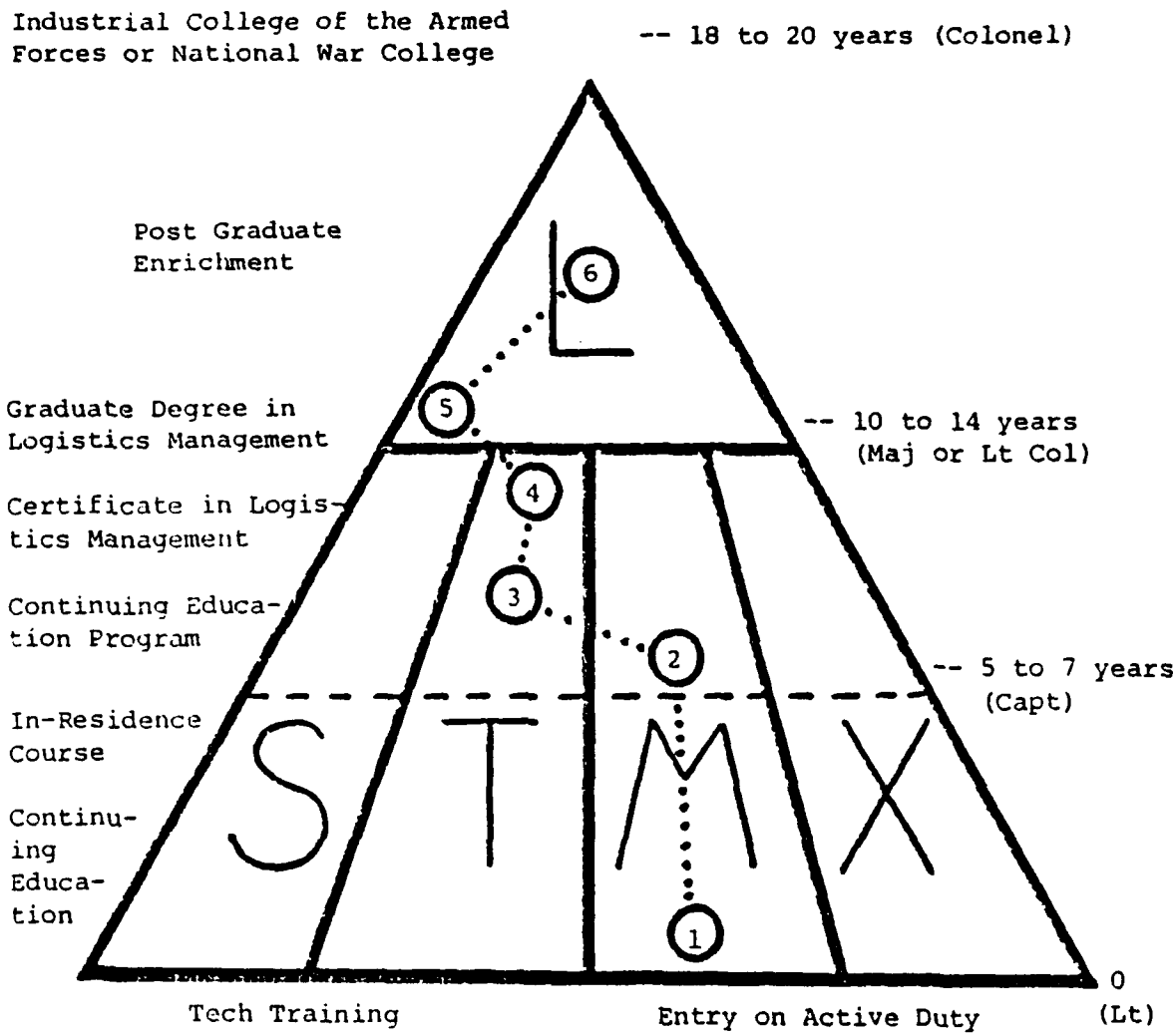

Figure 2.

The Logistician Progression Model (42)

figure. During this initial assignment the officer also participated in a logistics certification program. This program was administered by AFIT/LS consisting of a series of correspondence and resident courses. The intent was to provide continuing schooling in the officer's own career field as well as other logistics functions to enhance both depth and breadth of knowledge.

At the five to seven year point, number 2, the officer was selected for a four to nine week resident course at AFIT in a different functional area. Depending on the officer's performance, AFIT would recommend subsequent assignment to a new career field, number 3. The figure shows a lateral move to transportation at number 3.

When the officer has completed 10 to 14 years of service, he should have completed the logistics certification program, number 4, and been selected to attend the AFIT Graduate Logistics Program, number 5. The graduate program would be structured to emphasize yet another logistics specialty. This emphasis would be created by tailoring the elective courses taken by the officer. In Figure 2, the officer has used the AFIT graduate program to broaden into the supply career field.

Upon graduation from AFIT the officer will have experienced two logistics specialties, completed a logistics certification program, and studied an additional logistics specialty in graduate education. The officer would then be

qualified to assume the position of a logistician, represented by number 6 in Figure 2. To keep abreast of innovations in logistics, the logistician would continue to participate in continuing education courses, workshops, and research seminars.

Quinn also stated two primary assumptions that, if violated, could invalidate his model. He assumed equal opportunity for promotion between career fields would occur. This was absolutely essential otherwise logisticians would be at a disadvantage due to attendance in the AFIT Graduate Logistics Program late in their career while they were majors and lieutenant colonels. He also assumed that not attending a resident intermediate service school would not harm promotion opportunity. An Air Force promotion board would view AFIT graduate school attendance as a substitute for an intermediate service school.

Quinn also felt his model would be an excellent guide for the rated logistician who could use the certification program and the AFIT Graduate Logistics Program to make up for lack of experience in logistics specialties.

Moening. Lieutenant Colonel Moening (36) suggested that there was no prescribed course to becoming a logistician and there probably should not be. However, he thought a well-rounded logistician should have experience in more than one specialty at more than one operating level, be active in professional organizations, seek out professional

certification, and pursue a masters degree in logistics or another directly related field.

Moening believed that a logistician should have dual qualification in at least two specialties with one being in a core logistics area. This qualification would be obtained through both schooling and duty performance with a minimum of two years in any broadening assignments.

Moening also advocated that professional certification be used as a criteria in hiring and promotions. Realizing that such a transformation of Air Force policy would be slow, he recommended that bonus points be awarded in the officer evaluation process for having a certification, such as a Certified Professional Logistician (CPL) certification from the Society of Logistics Engineers.

Another important element of Moening's development plan was to promote participation in symposiums, seminars, and conferences. More than attendance would be required. The true professional logistician would prepare papers, participate on panels, and give lectures and speeches.

Masterson. Colonel Masterson decided that the logistics leader of tomorrow should be a generalist. Unfortunately, according to Masterson, the Air Force has traditionally relied on some invisible hand to produce generalist logisticians (34:20).

> Unfortunately while specialization solved the problems of competent performance of duties in the individual fields of effort, it also resulted in effectively sealing off the technical specialists from knowledge

> of and experience in the overall management of the business as a whole. It dried up the source of personnel qualified to assume the responsibility of top management (34:37).

Masterson advocated an executive development program along a generalist path that would involve a strong master-apprentice relationship in the bringing up of middle managers (34:41). A strong mentor was seen as essential in creating generalist logisticians.

Masterson said that there were four basic problems in developing logisticians. All four adversely affected motivation and retention. They were, a waterboy image of logistics, bad working conditions, high exposure and risk, and unequal opportunity especially against the rated force. Masterson believed that if rated officers wanted to become logisticians they must be logisticians first with flying becoming only an avocation (34:40). Rated logisticians should not have less logistics experience then their non-rater logistics counterparts. However, Masterson did feel that rated logisticians added perspective, communication, and dimension to logistics (34:38).

Life Stages. The idea that man passes through various stages during his life was first structured in 1950, when Erickson proposed a theory of eight distinct life stages in his book Children and Society. Later researchers and theorists attempted to adapt the concept of life stages with family stages and career stages to career development.

This body of knowledge has definite relevance for the armed forces. It is important because if the Air Force can determine the major factors which motivate its officers, then the Air Force can better adjust the organization/ employee relationship so as to improve performance. To that end, a major concern of management should be to determine, understand, and if possible meet the needs of employees. In most types of businesses, employee needs must be met to ensure employee loyalty and to avoid costly turnover and strikes. In effect an organization attracts and maintains a group of employees by satisfying the needs of the individual. Otherwise, there would be no reason for individuals to join or stay with groups and organizations. Therefore, if management can better understand the underlying system of needs and motivation in human behavior, then management can better serve the interest of both the employee and the organization (54:111).

Silverling. Military officers are also subject to the same life/career stages as their civilian counterparts. The major difference may be that military careers are more time compressed. Many full military careers last only twenty years versus the usually longer civilian careers. Commander Silverling demonstrated the effects of life stages on three groups of naval officers in his 1983 thesis for the Naval Postgraduate School. He found that different age groups had different views of careers, professional goals, and personal

goals that corresponded with the theories of life, family, and career stages (46).

Hall. To answer the question of what are life/career stages, a review of one of the classic works in life/career stages written by Douglas T. Hall in his book Careers in Organizations bears examination (24).

Hall divided careers into three stages and described the task and socio-emotional needs of each stage. These career stages are described in Figure 3. The three stages were Early Career, Middle Career, and Late Career. Hall made many suggestions as to how an organization could design

Stage	Task Needs	Socio-Emotional Needs
Early Career	1 Develop action skills 2 Develop a specialty 3 Develop creativity, innovation 4 Rotate into new area after 3-5 years	1 Support 2 Autonomy 3 Deal with feelings of rivalry, competition
Middle Career	1 Develop skills in training and coaching others (younger employees) 2 Training for updating and integrating skills 3 Develop broader view of work and organization 4 Job rotation into new job requiring new skills	1 Opportunity to express feelings about mid-life (anguish, defeat, limited time, restlessness) 2 Reorganize thinking about self (mortality, values, family, work) 3 Reduce self-indulgence and competitiveness 4 Support and mutual problem solving for coping with mid-career stress
Late Career	1 Shift from power role to one of consultation, guidance, wisdom 2 Begin to establish self in activities outside the organization (start on part-time basis).	1 Support and counseling to help see integrated life experiences as a platform for others 2 Acceptance of one's one and only life cycle. 3 Gradual detachment from organization

Figure 3.

Developmental Needs in Early, Middle, and Late Career (24:87)

career development to satisfy the needs of the individual while enhancing the productivity and goal attainment of the organization.

During Early Career, the first step in developing an employees's career is to realize that the new employee expects challenging work and psychological involvement. The tendency of many organizations is either to assign low level work to test the ability of the employee or to submit him/her to a job-rotating training programs that does not allow enough time in any one job to develop expertise or to be given responsibility. The new employee needs an initial job that challenges his/her ability and develops special skills and expertise in a specialty (24:75).

One way to identify challenging jobs is to identify competent, demanding supervisors, who will hold high expectations for the new employee (24:154).

At this early career stage the young person also has a strong need for performance feedback. Unfortunately, most supervisors are reluctant to give accurate appraisals to their subordinates because of the uncomfortable face-to-face confrontation involved. Related to feedback is the need for coaching and psychological support from the boss (24:156).

The boss obviously can have a big effect on the new employee. Therefore, any attempt to develop the new employee must also develop the boss. Supervisors must be trained to deal with the new employee. The effective

supervisor must learn how to give good performance reviews and develop skills in confronting interpersonal problems (24:156-158).

Hall recommended that employees in the early stage of their careers rotate to a new specialty after three to five years. By doing so, the new employee avoids being trapped in a too narrow, or an eventually obsolete field.

During the Middle Career stage from age forty to retirement, the person is concerned with producing something lasting and worthwhile. The person feels less mobile and is more concerned with job security. It is during this period that a person experiences mid-life crisis and asks the question of "is that all there is". An awareness of advancing age and death and a feeling of impending obsolescence grows (24:83).

Hall recommends that people in mid-career should be trained to help develop younger employees in a mentoring relationship. This recommendation parallels Hall's words while discussing the early career stage. Hall said that supervisors need to be trained to give good feedback to new employees. This feedback satisfies the early career employee's need for guidance. This type of mentoring environment keeps the mid-career manager up-to-date, fresh, and energetic. It also creates in the middle career employee a sense of creating something worthwhile and lasting through mentoring his/her junior employees (24:85).

To prevent the feelings of obsolescence, mid-career employees should also be rotated to jobs that require learning of new skills and knowledge. Hall also advocated exposing the mid-career employee to training that updates, and provides new skills and ideas (24:85-86).

Hall had very little to say concerning the Late Career stage. Hall described Late Career as one of decline as the person prepares for retirement (24:86).

Hall made two very important points about career development that should be highlighted. First, job rotation should occur throughout the entire career, not just during the early stage (24:160). Second, an effective career development program must involve the supervisor as a career developer, challenging job designer, and career planner. The intrinsic reward for the supervisor is that he/she creates an employee that follows his guidance wisdom. This satisfies the need to produce something lasting and worthwhile. However, Hall points out, there must be an extrinsic reward also. Only if a manager is rewarded in some tangible, meaningful way for subordinate development will the supervisor become more concerned with the subordinate's development (24:156-157).

Rutenberg. Lieutenant Colonel Rutenberg thought that the challenge of logistics was to balance resources and synchronize their flow between points of origin and use. To do so the Air Force must develop logistics officers who are

capable of comprehending the big picture of combat support. Rutenberg felt that we must foster the development of logisticians rather than officers whose view of logistics is confined to one or two specialties (44:2).

However, Rutenberg's point of departure from other authors was that he did not support broadening assignments or professional education. He felt that assignments which take officers out of their specialties for broadening tend to extract high prices in advancement and "identity" within specialty areas. He also expressed doubt that a true appreciation for other logistics disciplines could be gained in a single-shot, time-constrained academic setting. Instead, Rutenberg proposed the use of professional reading forums and "opportune" education as a less disruptive and a more sustaining method of expanding and nurturing broad logistics awareness (44:3).

Rutenberg's logistics professionalism model consisted of six elements. The first element was an initial assignment handbook for logisticians. This handbook would demonstrate to the new logistics officer that his or her specialty is a subset of logistics. It would further show how the specialities interact and combine to achieve logistic advantage. The clear conclusion would be that specialties are complementary and interdependent. Rutenberg hoped that this handbook would be a reference document and be used in the opening session of every specialist training program.

Secondly, Rutenberg felt that the reading and discussion of articles in the Air Force Journal of Logistics by logisticians would provide a continuing professional forum for logisticians. The third element in Rutenberg's model was an Air Command and Staff College Non-resident Elective Course. Rutenberg thought a course addressing combat logistics would reinforce the complementary nature of logistics disciplines to both logisticians and operational officers. The fourth element was a Field Grade Professionalism Course. This course would be a preparatory course with the goal of preparing an officer to qualify for the Certified Professional Logistician certification awarded by the Society of Logistics Engineers. The fifth element in Rutenberg's model was a senior logistics management short course targeting the Lieutenant Colonel level. Rutenberg did not explain the purpose of this course in any detail. One can only attempt to draw one's own conclusion from title. The same was also true of Rutenberg's sixth element of his model which he called senior level broadening opportunities. Rutenber's only comment concerning the sixth element was that forums such as the Long Range Logistics Planning Group and Crosstalk would fulfill this function (44:3-6).

Ostrofsky. Benjamin Ostrofsky, a Professor at the University of Houston and a Fellow member of the Society of Logistics Engineers, coined the term logistician of the third kind. Ostrofsky's model points to the need for a

logistician who is a multidisciplined generalist. A logistician of the third kind refers to the type of logistician needed to meet the demands of an ever increasingly complex, technological world. This type of logistician was a generalist with expertise in physical distribution and engineering. Logisticians of the first kind are those that are oriented toward physical distribution while logisticians of the second kind are engineers that consider logistics support of a system. Ostrofsky advocated a blending of the two into a logistician of the third kind. A logistician who is a blending of the physical distribution specialist and the technological specialist. A logistician of the third kind could meet the technological challenges of the future and integrate it into weapon system support (37:29-32).

USAFE Proposal. In December 1984, Major General Lew Curtis, HQ USAFE/LG, proposed a career development model in a message HQ USAF/LEYW/LEYM (28). The proposed model was a selective model that combined education and generalist experience to develop senior logisticians.

Major General Curtis suggested that company grade logistics officers between their eighth and eleventh year of service be selected for a senior logistics officer program cadre. These officers would be thoroughly screened to ensure that they had the potential to become senior logisticians.

Major General Curtis' proposal had three steps. The first step would involve education. Curtis' proposal did not state exactly what that education should be, but it did state that AFIT would complement this stage. As part of the education step, Curtis proposed that all the logistics staff officer courses taught at Maxwell AFB, Alabama be combined into one course. This would present logistics as a whole rather than segmented specialties. Emphasis would be placed on issues or processes confronting the senior logistician such as manpower, funding, requirements systems development, etc., and the interface among the various disciplines. Curtis was unclear as to whether this education would be offered to all logistics officers that require a staff officer course or just to those in the senior logistician cadre.

After completing the education requirement, the officer would enter the assignment step. The officer would be assigned for two years to logistics generalist positions in various commands. These generalist positions would be included into the program after being identified by the respective commands.

After completing the assignment step, the officer would return to his/her initial career field and assume a command or leadership position. This leadership phase of career development is the most important because success here should determine which officers will be the senior logisticians of the future.

Overbey. In his 1985 AFIT thesis, Captain Overbey attempted to identify the qualities and characteristics needed by a professional senior logistician (38). Overbey's study also identified some specific experience and education that would develop the desired qualities and characteristics. Figure 4 displays Overbey's model. Overbey obtained his results using an iterative Delphi survey to obtain consensus from twenty logistics experts.

Overbey found that a logistician's most important qualities and characteristics were: (1) a proper mix of leadership and management; (2) strong job knowledge and breadth of knowledge; (3) ability to think and act creatively; (4) convincing writing and speaking ability; (5) intense dedication to duty; (6) high motivation level; and above all (7) common sense (38:124).

To develop these qualities and characteristics, Overbey suggested a career development program that combined education and experience.

Overbey thought that the foundation of a logistician's career development should be based on education. While a specific undergraduate degree was not recommended, the experts in Overbey's sample, agreed that a logistician should possess a masters degree in logistics. Both AFIT graduate logistics programs and civilian institution graduate logistics programs could be used. Using civilian institutions would promote academic diversity and could prevent

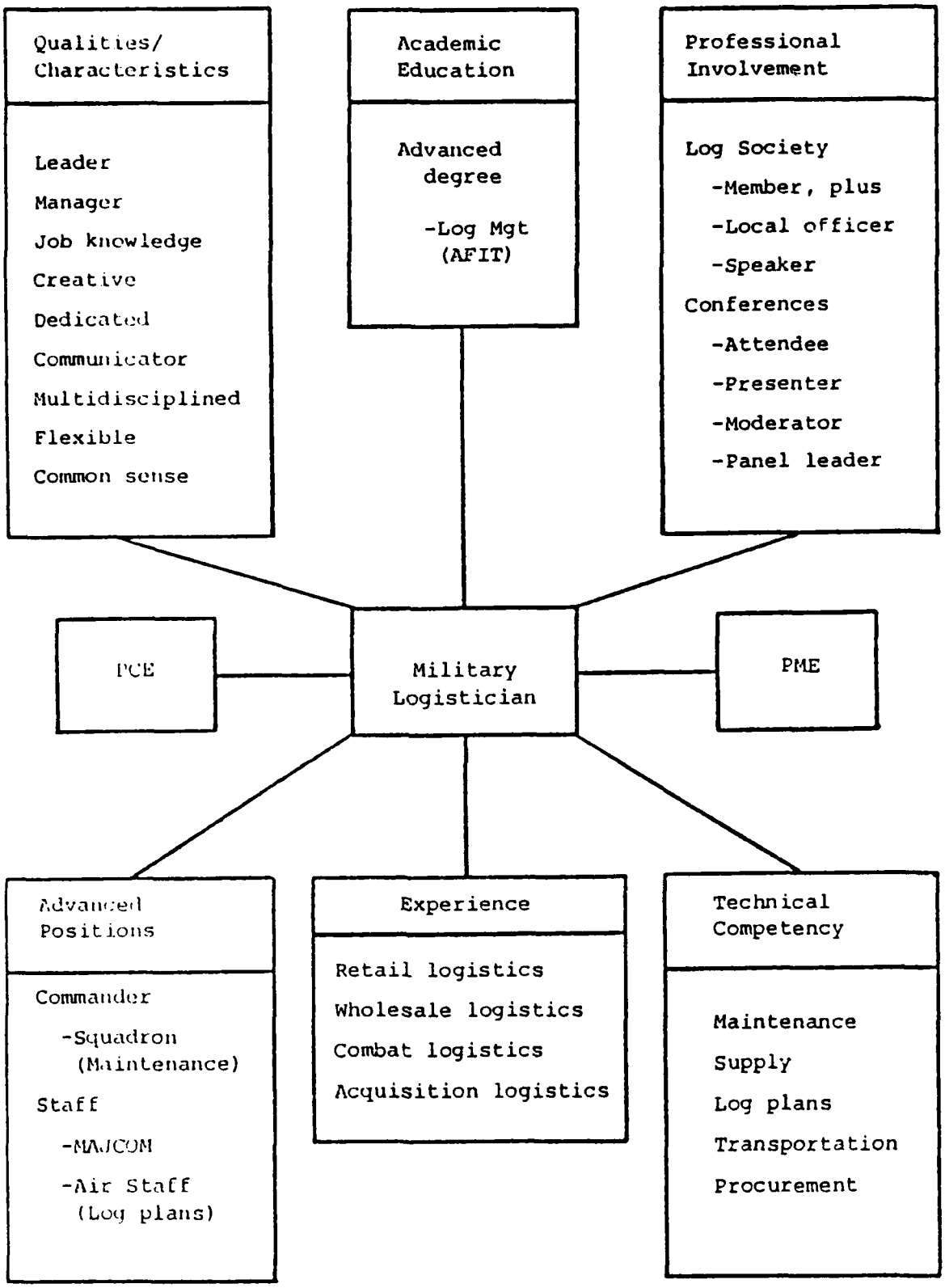

Figure 4.

Normative Model of a Logistician's Essential Qualities, Characteristics, and Background Requirements (38:131)

the undesirable inbreeding of ideas within military logistics (38:125). Education-with-Industry could also enhance early career development and promote the desired diversity (38:129).

Overbey's experts suggested that professional continuing education (PCE) could enhance the logistics officer's technical competency and also supplement the education requirement. Logistics officers should attend PCE classes throughout their career that would be commensurate with their level of assignment and grade (38:126).

Logisticians should be active members of professional logistics associations and societies. Logistics officers should attend local and national meetings, write papers, and present papers. The value of these organizations is in the exchange of ideas, knowledge, and experience (38:127).

A key aspect of Overbey's model was the expert's consensus that a senior logistician should be multidisciplined. A logistician cannot be totally effective as a logistics system integrator unless he/she has a sound understanding of the different functional areas. Overbey suggested that the Air Force should develop multidisciplined logisticians in a variety of ways, to include education, PCE, and professional involvement. The primary method would be work assignments in different functional areas until the officer becomes a specialist in each. The experts felt that a logistician should be a specialist in at least two functional areas with

one of them being either maintenance, supply or logistics planning. At least two assignments should be at the wing/base level and one at the wholesale level. All this experience should be gained prior to the officer's 11th year of service (38:127-128).

Overbey's model also recommended two staff tours. The first tour at MAJCOM level and the second at Air Staff. The MAJCOM assignment should be in logistics planning while the Air Staff tour, later during career development, could be in any logistics area (38:129).

A final aspect in the logistician's career development was command. Any level of command was appropriate, though a squadron commander assignment in a logistics functional area was seen as the most beneficial. The panel of experts viewed command experience as an excellent way of developing multilevel logisticians (38:129-130).

Collins. Collins examined the issue of experience and stovepiped career development of Deputy Commanders for Maintenance (DCM) in his AFIT thesis (8). Other authors such as Rutenberg (44:3), Quinn (42), Dawson and Tierney (11:90-92) suggested that education could be a reasonable substitute for a lack of experience. While Masterson felt that experience was the best teacher and suggested that rated officers without logistics experience or with little logistics experience were not true logisticians (34:38). Collins hypothesized that breadth and depth of experience

were important factors in the effectiveness of a wing DCM. He reasoned that if an officer had a stovepiped career in only one functional area of logistics and/or had limited experience in aircraft maintenance he should be less effective. Conversely, the officer who was multidisciplined in various logistics fields and with extensive experience in maintenance should be the more effective DCM (8:3-5).

Collins sampled 58 DCMs from a population of 167 (8:21). He statistically described the sample for experience, education, and background and attempted to correlate this to effectiveness as measured by a one year averaged mission capability rate (8:38-42).

Collins demonstrated that there was a lack of breadth and experience among DCMs in his sample as compared to the AFR 36-1, Officer Classification (18:A13-19) qualifications for award of AFSC 4096 (8:48). Pilots constituted 41 percent of his sample, navigators made up 29 percent, while non-rated officers comprised 30 percent of the DCMs (8:47). Collins was not able to show that less experienced and broadened officers performed at a lesser level as predicted by the hypothesis (8:58). All officers performed equally as well regardless of experience. Collins' findings suggests that experience has no affect on effectiveness.

Crimiel. Crimiel did a study similar to Collins on the Deputy Commander for Resource Management (DCR). From a population of 134 DCRs, he sampled 51 for descriptive sta-

tistics. Crimiel correlated their background with effectiveness (9:29). Effectiveness was measured by an average Mission Effectiveness Inspections (MEI) in the five functional areas under the DCR's control (9:25).

The descriptive statistics showed that 55 percent of the 51 DCRs in Crimiel's sample had been stovepiped in their careers, eight percent were multidisciplined, 8 percent had no background in logistics, and 56 percent of the 51 DCRs were rated (9:40-41). Correlation of the descriptive data demonstrated no relationship to effectiveness (9:47). Again, all officers performed equally as well regardless of experience.

Both Collins and Crimiel's research showed that experience had no relationship to effectiveness. Perhaps, as Rutenberg, Quinn, Dawson and Tierney suggest education can substituted for experience.

Stein. Dr. Robert G. Stein, contributing editor to Logistics Spectrum magazine, suggested that the primary classification within ten years in the Air Force will be "Logistician", rather than the present military system of functional specialties. The functional specialties will remain as suffix after the logistics code (49:48).

Stein states that functional specialization inhibits mission accomplishment as it results in sub-optimization. In his experience and upon comparing notes with Lieutenant General Marquez, one functional specialty is usually opti-

mized to the detriment of the total logistics system. In most cases this is a result of ignorance of the other functional specialty or of the concept of logistics system theory.

Stein also blames functional parochialism as the root cause of: (1) overpricing of spare parts; (2) purchasing too many items or the wrong items going to property disposal; and (3) the high out-of-commission rates for weapon systems (49:48).

As the logistics profession becomes more complex, more educated, more systems theory oriented, and computer dominated, there will be more need for a logistics specialty being primary with the functional specialties being secondary. It will become nearly impossible for narrowly educated and focused people to integrate such a vast and complex logistics system. The logistician must employ a systems perspective to manage the total logistics system. This necessitates a need for the logistics generalist and thusly, one logistics AFSC rather than separate functional specialties.

Logistics Career Development Plan. On 21 March 1985 HQ USAF/LEX hosted a workshop that resulted in an initial proposal to develop generalist logisticians at the senior levels. Lieutenant General Leo Marquez spearheaded this effort (27).

Recognizing the need for a certain number of senior officers to be generalists rather than specialists, a goal of managing officers assignments so that 20 percent of all future logistics colonels would hold two or more fully qualified logistics AFSCs was established. This would be accomplished by crossflowing officers from a home-base AFSC to related logistic's AFSCs. The officer would spend a tour in the related AFSC and then return to their home-base AFSC. The logistics AFSCs identified for crossflow were:

31XX	Missile Maintenance
40XX	Aircraft and Munitions Maintenance
60XX	Transportation
64XX	Supply
65XX	Acquisition Contracting
66XX	Logistics Plans and Programs

The participating officers would be high potential officers identified by the major air commands and whose records had been screened by AFMPC. The broadening would be accom-

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1st Window: 4-8 years
4 years in home-base AFSC
line duty

2nd Window: 10-15 years
Initial or second crossflow assignment
Staff level

3rd Window: 16-20 years
Proven leaders
Assignment carefully orchestrated
Squadron CC or senior staff level

Figure 5.

Windows of Opportunity (21)

plished during three career "windows of opportunity". The windows of opportunity are depicted in Figure 5 (35).

Through subsequent iterations in 1986, the development plan was made less formal. The windows of opportunity were deleted as was the 20 percent generalist, senior officer goal. The program evolved into the introduction of quality screening in the selection of the estimated 180 officers per year that previous to the plan normally crossflowed between AFSCs (25).

Summary

This chapter examined the qualities and characteristics needed in logisticians and various models developed since 1965 to provide logisticians with those qualities and characteristics.

The most important qualities and characteristics for logisticians found in the literature were leadership, management ability, specialization, a generalist orientation, communicative and interpersonal skills, a graduate education in logistics, a future orientation, and problem solving skills. Additionally, Overbey's study added the characteristics of strong job knowledge and breadth of knowledge, ability to think and act creatively, intense dedication to duty, high motivation, and above all common sense.

Many of models shared common elements. Most agreed that it was important to have both specialists and generalists. Generalists were viewed as upper management and

needed special attention in their development. Generalists were seen as multidisciplined officers, meaning that they were specialists in more than one logistics function. The most common methods of developing generalists were highly selective programs to give officers broad logistics experience through either AFSC rotation, education, short courses, certification programs, and professional society involvement or a combination thereof.

Hall further justified job rotation and involving supervisors in the career development of subordinates. Job rotation throughout the career of an officer increased the well being and productivity of the individual. An active interest in the career development of subordinates by supervisors increased the well being and productivity of the supervisor as well as the subordinates.

Another recurring theme in the literature is the system perspective that must be present in effective logisticians. Rutenberg advocated the use of a logistics handbook that demonstrated the interfaces of the logistics functions. Major General Curtis suggested that there should be only one staff officer course for logisticians rather than separate courses for each specialty. Stein went further and said that all logistics specialties should be combined into one logistics AFSC.

Some models were highly structured. The Army Logistics Officer Program created a corps of selected logisticians and

orchestrated their assignments. Other models such as Quinn's plotted an officer's career from initial entry into service until they attained senior logistician status, approximately 20 years later. These approaches contrast with Moening's, who suggested that there was no one method of creating a logistician and that there should not be one. Moening felt that dual AFSC qualification through experience and education, professional certification, and professional society involvement were key elements in a logistician's development. However, he thought there were many ways to obtain this without a structured road map.

The researcher used the qualities and characteristics of a logistician and the career development models as a base of knowledge. From this base of knowledge a career development model was proposed. That proposed model is fully described in Chapter IV after an explanation of the methodology used in model construction is presented in Chapter III.

III. Methodology

The purpose of this study was to construct a logistics career development model and then test the model's validity. To achieve these objectives a two-phase plan was used. The first phase involved a comprehensive search of career development literature. This literature was used to construct the proposed model. The second phase involved testing the model's validity through a survey of active duty Air Force logistics officers. The research objectives, investigative questions, hypotheses, and statistical tests employed are presented in this chapter. This chapter describes both phases of the research in detail.

Model Construction

The logistics career development model was built based upon three factors: published research studies, expert opinion expressed in the literature, and the author's synthesis of the research studies and expert opinion.

The literature reviewed was targeted at two pertinent subjects: The characteristics needed by a senior logistician and career development models designed to develop those characteristics in logisticians.

The literature search was conducted using the Defense Technical Information Center (DTIC), Defense Logistics Studies Information Exchange (DLSIE), Air University Index, and the Reader's Guide to Periodic Literature. An extensive

literature review of all germane publications over the last two years was accomplished. Literature trails in located publications were followed to find other important sources that appeared to contribute to contemporary thought since 1965. The advice of my thesis advisor and reader were also used to locate literature important to this research. The pertinent literature was presented in Chapter II. The important qualities and characteristics of logisticians were presented first, followed by the important models and ideas in logistics career development from 1965 to present. Not all the models presented were necessarily used in constructing the proposed model. Many of the models were presented to illustrate the evolution of thought from 1965 and to give a firm knowledge base for the presentation of this study.

Using this research plan, the researcher synthesized the literature, used his personnel background and creativity, and constructed a logical logistics career development model. The actual model is presented in Chapter IV.

Model Validity

The degree of personal acceptance by active duty Air Force logisticians was used to measure model validity. It was reasoned that the model would be valid if it was acceptable to logisticians who are both knowledgeable of the current logistics career fields and who would be willing to participate in the model, if implemented. The survey constructed to test model acceptance is included as Appendix A.

Population and Sample. The population of concern consisted of all Air Force logistics officers in the grades of second lieutenant to general. Logistics officers were defined as those serving in the following AFSCs:

31XX	Missile Maintenance
40XX	Aircraft and Munitions Maintenance
60XX	Transportation
64XX	Supply
66XX	Logistics Plans and Programs
004X	Director of Logistics
009X	Deputy Commander of Resource Management

Due to the total logistics systems orientation of the proposed career development model the procurement/manufacturing AFSC, 65XX, was not included in the population. The procurement/manufacturing career field is more closely associated and specialized in weapon system acquisition and Air Force Systems Command rather than a broader logistics weapon system support. Realizing this, Lieutenant General Reynolds suggested, in a letter to Lieutenant General Marquez, that the procurement/manufacturing program at the AFIT School of Systems and Logistics be exempted from General Reynolds' proposed combining of all logistics options into one logistics management program (26). For this reason procurement/manufacturing officers were excluded in this study.

The actual number of logisticians in the population varies from day to day; however, estimates were obtained from the various career field resource managers (26) and from the Colonel's Group at the Air Force Military Personnel Center (AFMPC) at Randolph AFB, Texas (50). The estimates

TABLE 1

ESTIMATE OF NUMBER OF LOGISTICS OFFICERS

	AFSC							
GRADE	31XX	40XX	60XX	64XX	66XX	004X	009X	TOTAL
Capt	232	1439	413	519	408	--	--	3011
Maj	87	577	162	249	59	--	--	1334
Lt Col	69	577	142	166	169	80	131	1334
Col	30	223	40	51	14	115	276	749
Total	418	2816	757	985	850	195	407	6428

are presented in Table 1. The number of general officers currently serving in logistics related positions could not be determined and therefore was not included in the study population. Lieutenants were excluded from the sample as their knowledge of logistics was limited and their career intent was unknown. The sample was therefore limited to captain through colonel in the logistics AFSCs. This resulted in an estimated study population of 6428 logistics officers.

Experimental Design. The study population was divided into a nested stratified sample with eleven strata. The

RANK	
Strata 1	Captains
Strata 2	Majors
Strata 3	Lieutenant Colonels
Strata 4	Colonels
AFSC	
Strata 5	31XX AFSC, Missile Maintenance
Strata 6	40XX AFSC, Aircraft/Munitions Maintenance
Strata 7	60XX AFSC, Transportation
Strata 8	64XX AFSC, Supply
Strata 9	66XX AFSC, Logistics Plans & Programs
Strata 10	004X AFSC, Director of Logistics
Strata 11	009X AFSC, Director of Resource Management

Figure 6.

Sample Strata

stratification was done to examine the effects of rank and AFSC. Strata one through four divide the sample by rank, while strata five through eleven divide the sample by AFSC. The stratification plan is presented in Figure 6 and Tables 2 and 3.

The sample size needed to yield a 90 percent confidence interval $\pm$ five percent was computed for each strata using the following formula (13:11-14):

$$n = \frac{N(z^2) \times p(1-p)}{(N-1)\ (d^2) + (z^2) \times p(1-p)}$$

where n = sample size
N = population
p = maximum sample size factor (.50)
d = desired tolerance (.05)
z = factor of assurance (1.645) for 90% confidence level

TABLE 2

RANK STRATA

	31XX	40XX	60XX	64XX	66XX	004X	009X
Capt	STRATA 1						
Maj	STRATA 2						
Lt Col	STRATA 3						
Col	STRATA 4						

The sample size needed for a 90 percent confidence level for each strata is shown in Table 4. This sample size was determined to be within the desired confidence level and time and cost constraints of this study.

A proportionate random sample that considered grade and AFSC was taken in each strata to ensure a representative sample. The proportionate sample size for each strata was then doubled to take into account an estimated 50 percent questionnaire return rate.

A simple random sample for each grade and AFSC was obtained using the ATLAS database of the AFMPC. The sample

TABLE 3

AFSC STRATA

	31XX	40XX	60XX	64XX	66XX	004X	009X
Capt							
Maj	STRATA	STRATA	STRATA	STRATA	STRATA	STRATA	STRATA
Lt Col	5	6	7	8	9	10	11
Col							

was randomized by randomly selecting a number between one and ten. An inquiry was then made into the ATLAS database for all logisticians with the random number as the last digit of their social security number. It was assumed that the last digit of the social security number was randomly assigned to everyone.

The ATLAS request yielded 3013 sample members. Since a minimum of 1305 respondents were required, the sample size was judged to be sufficient. The judgment of sufficiency took into account a 50 percent return rate. Also, each strata was checked to see if a sufficient number of sample

TABLE 4

SAMPLE SIZE REQUIRED FOR 90 PERCENT CONFIDENCE LEVEL

RANK		AFSC	
Strata 1	249	Strata 5	165
Strata 2	225	Strata 6	246
Strata 3	225	Strata 7	200
Strata 4	199	Strata 8	212
Total	838	Strata 9	205
		Strata 10	163
		Strata 11	114
		Total	1305

members had been identified by the ATLAS inquiry. All strata had sufficient numbers.

The actual number of returned surveys was 1840, which was more than enough to be statistically powerful at the 90 percent confidence level. The demographic breakdown of survey respondents is presented in Table 5. All strata had sufficient numbers with two exceptions. Strata 5, missile maintenance, and strata 11, director of resource management, were 6 and 5 respondents short, respectively, of the number required to achieve a 90 percent confidence level. However, both strata did achieve an 85 percent and 86 percent confi-

TABLE 5

DEMOGRAPHIC BREAKDOWN OF SURVEY RESPONDENTS

	AFSC							
GRADE	31XX	40XX	60XX	64XX	66XX	004X	009X	TOTAL
Capt	36	188	49	64	52	--	--	389
Maj	58	87	104	123	124	1	--	497
Lt Col	48	178	86	87	96	88	44	627
Col	17	36	24	28	9	148	65	327
Total	159	489	263	302	281	237	109	1840

dence level respectively. Based upon the return rate of 61 percent, the total number of respondents overall and in each strata, the sample was judged to be sufficiently powerful to justify the assumption of a normal distribution and the use of analysis of variance for data analysis.

Research Objective

The objective of the model validation phase of this research was to validate the proposed logistics career development model by its acceptability to practicing logisticians.

Research Questions

Using a survey of active duty Air Force logisticians, this study attempted to answer the following research questions:

1. Do practicing military logisticians agree with the goal of the model? The goal of the logistics career development model is to develop logisticians that can comprehend and integrate the total logistics system.

2. Do practicing military logisticians believe that the ideal career development model includes a combination of experience, training, and education?

3. Do practicing military logisticians believe that the ideal career development model should be flexible?

4. Do practicing military logisticians believe that education is the best way to ensure that logisticians develop a systems perspective?

5. Do practicing military logisticians believe that communication and interpersonal skills training should be improved in the Air Force?

6. Do practicing military logisticians believe that all education, training and AFSC structures should be combined where possible to emphasize systems thinking in logistics?

7. Do practicing military logisticians believe that a senior logistician should have a graduate degree in logistics or other closely related field?

8. Do practicing military logisticians believe that an ideal executive development program should be selective and specifically tailored to the person according to his/her background and the philosophy of creating a well-rounded logistician?

9. Do practicing military logisticians believe that supervisors should be accountable for career counseling and their subordinate's career development?

10. Do practicing military logisticians agree with the phasing of career activities as presented in the career development model?

Investigative Questions, Research Hypotheses, and Associated Tests

All statistical analysis was done using the Statistical Package for the Social Sciences (SPSSx) (47). An alpha of .05 was used to test all hypotheses. Statistical programs used in this study are presented in Appendix C.

Statistical analysis was not possible for the investigative questions, as only the strength of respondent agreement could be presented. Therefore, the results for each investigative question were described using descriptive statistics. The strength of respondent agreement was measured on a Likert scale and portrayed as a mean, median, and mode with variability expressed as percentages of total responses.

Each of the hypotheses compared the differences in respondent belief by strata. First, each rank strata was compared against all other rank strata for significant differences between means on the survey questions using a one way analysis of variance. Then, each AFSC strata was compared against all other AFSC strata for significant differences between means using a one way analysis of variance. A Sheffe test was used to isolate the strata in which significant differences occurred. The Sheffe test also was used to determine homogeneous strata that could be grouped together to form subgroups due to equivalent means according to variability. Where survey questions showed significant differences between means for both rank and AFSC, an analysis of variance (ANOVA) using both variables was performed to determine interaction effect.

A 90 percent confidence level could be used for all F tests results due to a sufficiently large number of respondents in each strata. The only exceptions were strata 5 and strata 11, missile maintenance and directors of resource management. Both of these strata fell short of the number of respondents required to achieve a 90 percent confidence level by 6 and 5 respondents, respectively. However, both strata 5 and 11 did have a sufficiently large number of respondents to justify an 85 and 86 percent confidence level, respectively, for all F test results.

The nonparametric Chi square statistic was used on survey questions 28 through 32 due to the use of a nominal scale. The Chi square statistic was used to determine if the number of responses in each category on the scale was due to a non-random result.

The following investigative questions and hypotheses address each of the previously stated research questions:

1a. What is the strength of respondent agreement with the expressed goal of the proposed career development model?

$H1_b$ There is no difference in the mean level of goal agreement between sample strata.

This investigative question and hypothesis was addressed by question 4 of the survey instrument. The complete text of the survey is contained in Appendix A.

2a. What is the strength of respondent belief that the ideal career development model includes a combination of experience, training, and education?

$H2_b$ There is no difference in the mean level of belief between sample strata that the ideal career development model includes a combination of experience, training and education.

This investigative question and hypothesis was addressed by questions 5, 6, 7, and 9 of the questionnaire. Question 5 addressed the experience portion of the career development model. Questions 6 and 7 addressed communication and interpersonal skills training, while question 9 dealt with education.

3a. What is the strength of respondent belief that the ideal career development model should be flexible?

$H3_b$ There is no difference in the mean level of belief between sample strata that the ideal career development model should be flexible.

Questions 8 and 19 of the survey dealt with this investigative question and hypothesis. Question 8 asked about flexibility in career development for an overall career development model. Question 19 focused on flexibility in an executive development program.

4a. What is the strength of respondent belief that education is the best way to ensure that logisticians develop a systems perspective?

$H4_b$ There is no difference in the mean level of belief between sample strata that education is the best way to ensure that logisticians develop a systems perspective.

This investigative question and hypothesis was addressed by survey question 9.

5a. What is the strength of respondent belief that communication and interpersonal skills training should be improved?

$H5_b$ There is no difference in the mean level of belief that communication and interpersonal skills training should be improved between sample strata.

This investigative question and hypothesis was addressed by questions 10 through 13. Question 13 measured respondent's opinions concerning the quality of the current communication and interpersonal skills training conducted by the Air Force. Questions 10 through 12 measured respondent's opinions concerning the need to improve current communication and interpersonal skills training.

6a. What is the strength of respondent belief that there should be a single core block of instruction at initial technical training for all prospective logisticians that presents logistics as a system?

$H6_b$ There is no difference in the mean level of belief between sample strata that there should be a single core block of instruction that presents logistics as a system.

This investigative question and hypothesis was addressed by survey question 14.

6c. What is the strength of belief that there should be a single logistics staff officer course for field grade logisticians?

$H6_d$ There is no difference in the mean level of belief between sample strata that there should be a single staff officer course for logisticians.

Survey question 15 measured respondent belief concerning this investigative question and hypothesis.

6e. What is the strength of respondent belief that all current logistics AFSCs should be combined into one AFSC while retaining some method of identifying experience in a logistics specialty?

$H6_f$ There is no difference in the mean level of belief between sample strata that all current logistics AFSCs should be combined into one AFSC?

This investigative question and hypothesis was addressed by survey question 16.

7a. What is the strength of respondent belief that a senior logistician should have a graduate degree in logistics or other closely related field?

$H7_b$ There is no difference in the mean level of belief between strata that a senior logistician should have a graduate degree in logistics or other closely related field.

This investigative question and hypothesis was addressed by survey question 17.

8a. What is the strength of respondent belief that the ideal executive development program should be selective in its participants?

$H8_b$ There is no difference in the mean level of belief between sample strata that the ideal executive development program should be selective.

This investigative question and hypothesis was addressed by survey question 18.

8c. By what method do practicing military logisticians believe participants should be selected for executive development?

This investigative question was addressed by survey question 36. The survey question presents several alternative methods of participant selection which the respondent may choose. The respondent also had the opportunity to select the "other" response and write in a selection method that was not enumerated on the survey. The selection method proposed in the career development model, selection of below-the-zone selectees was one of the alternatives.

8d. What is the strength of respondent belief that the ideal executive development program should be specifically tailored for the individual officer?

$H8_e$ There is no difference in the mean level of belief between sample strata that the ideal executive development program should be specifically tailored for the individual officer.

This investigative question and hypothesis was addressed by survey question 19.

8f. What is the strength of respondent belief that the ideal executive development program should consist of one or two separate two year assignments designed to give the individual officer accelerated experience?

$H8_g$ There is no difference in the mean level of belief between sample strata that the ideal executive development program should consist of one or two separate two year assignments designed to give the officer accelerated experience.

This investigative question and hypothesis was addressed by survey questions 20 and 21. Question 20 dealt with the purpose of varied experience in an executive development program. The purpose was to help program participants gain experience at a faster rate than normal. Question 21 concerned how the varied experience should be structured. The model proposes one or two separate two year assignments.

9a. What is the strength of respondent belief that supervisors should be accountable for career counseling and subordinate development?

$H9_b$ There is no difference in the mean level of belief between sample strata that the supervisor should be accountable for career counseling and subordinate development.

This investigative question and hypothesis was addressed by survey question 22.

10a. What is the strength of respondent belief that a logistician should became a technical specialist first and a generalist second?

$H10_b$ There is no difference in the mean level of belief between sample strata that a logistician should become a technical specialist first and a generalist second?

This investigative question and hypothesis was addressed by survey questions 23 to 32. Questions 23 through 27 asked the respondent to determine the rank at which an officer is a specialist. Questions 28 through 32 asked the

respondent to determine the management level an officer should be assigned at each rank. Questions 28 through 32 were structured as a management level hierarchy with squadron level at one end of the scale and HQ USAF at the other end. Each point on the scale, moving away from squadron, was assumed to indicate a management level that was further removed from a specialist orientation. for example, a logistician at the squadron level would be considered a specialist while a logistician at HQ USAF would be a generalist. A descriptive analysis of means for all strata and for each individual strata was done. A pattern for the overall sample and each strata for the specialist/ generalist mix at each rank and management level was presented.

10c. When do respondents believe is the best time to attend a communications and interpersonal relationship course?

This investigative question was addressed by survey question 34.

10d. When do respondents believe is the best time to attend a graduate logistics program?

This investigative question was addressed by survey question 33.

10e. When do respondents believe is the best time to select participants for an executive development program?

This investigative question was addressed by survey question 35.

Survey and Pretest. A questionnaire was developed based upon the critical components of the proposed logistics career development model. The linkage between research objective, research question, investigative question, hypothesis, and survey question was presented in the preceding sections. The complete text of the survey instrument with instructions is presented in Appendix A.

A five point Likert scale was used in questions 4 through 35 of the questionnaire. A description of the Likert scale is presented in Figure 7. The Likert scale was selected for its ease of construction and understanding by respondents, thereby, ensuring maximum participation. Emory stated that the Likert scale was reliable and provided a greater volume of data than other scales (20:255-258).

1	2	3	4	5
highly disagree	disagree	neither agree nor disagree	agree	highly agree

Figure 7.

Likert Rating Scale

The remainder of the questions in the survey instrument, questions 1 to 3 and question 36, were multiple choice. Questions 3 and 36 gave the respondent an opportu-

nity to give an answer that was not one of the original choices.

The survey was pretested to determine adequacy, clarity and internal validity. Twenty-four practicing logisticians in three organizations, representing most of the ranks and AFSCs in the sample strata, took part in the pretest. Pretest participants were excluded from the actual survey sample. The pretest resulted in minor changes to a few of the questions.

The survey was also approved by the AFIT Survey Control Officer and the Personnel Survey Branch, AFMPC. AFMPC removed one question from the survey that dealt with the methods by which a supervisor could be accountable for career counseling and development of subordinates. The Personnel Survey Branch disagreed with the combining of supervisor accountability for career counseling and subordinate development on the same question. Time constraints did not allow for question revision.

Limitations

Due to the magnitude of this research effort in attempting to survey half the logistics officers in the Air Force, there were some limitations. There were many ways to stratify the sample. The researcher chose to stratify by rank and AFSC. There was no attempt made to examine the effect on the responses to the research questions by the factors of rated versus non-rated, years of logistics expe-

rience, specific type of logistics experience, or the myriad other ways one might look at a logistician.

As mentioned previously, this research also excluded lieutenants, generals, and procurement officers from the sample. An extrapolation of the research results to these groups may not be applicable.

The method of validation of the proposed career development model may have presented some special problems. The survey did not define systems theory for the respondents. Some officers have been exposed to systems theory and have applied the theory in their work while others have not been exposed to systems theory. Since the proposed career development model is strongly based upon systems theory, a lack of systems understanding by survey respondents may have caused neutral or erroneous responses to some of the survey questions.

IV. A Logistics Career Progression Model

The goal of the proposed logistics career progression model is to develop senior logisticians who will have the proper qualities and characteristics to comprehend and integrate the total logistics system. A secondary benefit of the model is the continual enhancement of the qualities and characteristics of all logistics officers throughout the Air Force as they develop toward senior officer status.

The proposed model is a combination of education, training and experience. It proposes the combining of all logistics AFSCs into one AFSC as well as an executive development program to groom officers for senior leadership. The proposed career development model provides a structure for the mental development of the officer as a logistician. The model also emphasizes the importance of the officer supervisor as a career developer for his/her subordinates.

The model is not meant to be rigid. It allows for the random development of logistics officers within the bounds of a logistics systems orientation. It recognizes that the needs of an uncertain future can be undermined by too rigid a structure that may produce the wrong type of leaders, managers, and specialists to meet the challenges of tomorrow. The best method to provide the leaders of the future is to ensure a degree of diversity.

To comprehend the total logistics system, an officer must be able to think in terms of a system perspective. The logistician must be able to understand the interaction and interdependence of the logistics specialties, functions, and operational levels. The logistician must also understand the relationship of logistics to the total mission of the Air Force. The remainder of this chapter describes a proposed career development model that was designed to impress upon logisticians a systems perspective of the total logistics system. The proposed model is depicted in Figure 8 and Table 6.

Training

Training is an important ingredient in the career development of a logistics officer. During initial training, an officer not only learns a specialty skill but also begins to develop an understanding of the unspoken value system, goals, and mores that are actually practiced in the Air Force and by its logistics officers. The officer also begins to understand the scope and bounds of his specialty in relationship to other specialties. Initial technical training is the most opportune time to teach an officer a systems perspective of the total logistics system. Later in the career of an officer, training can continue to emphasize the systems perspective and teach the officer how to effectively use systems integration tools such as communication skills.

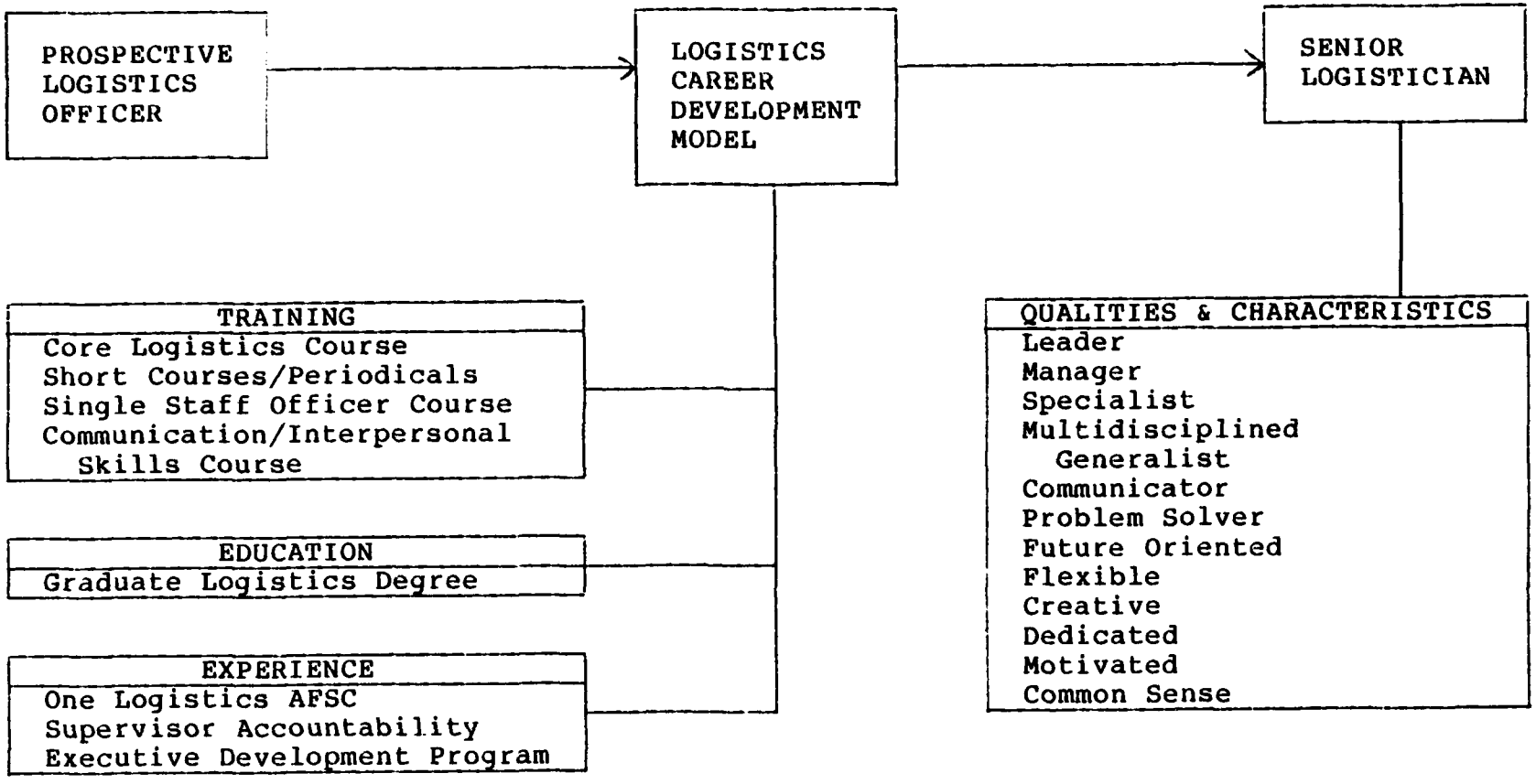

Figure 8.

Proposed Logistics Career Development Model

TABLE 6

COMPONENTS OF THE CAREER DEVELOPMENT MODEL

Components	Authors
Core logistics course offered	Gorman
Short courses and periodicals	Rutenberg (45:3)
Single staff officer course	Curtis (29)
Communication and interpersonal relationships skills courses	Davis (12:5) Jones (30:35-36)
Graduate education in logistics	Dawson & Tierney (13:91) Quinn (49) Overbey (39:125)
One logistics AFSC	Stein (48:48)
Broadening of all officers through changes in duty assignment	Moening (37:2-3) Quinn (49) Dawson & Tierney (13:92)
Executive Development	
Highly selective	Dawson & Tierney (13:92) Army Logistics Officer Program (49:2) Curtis (29
Select Below-the-Zone Majors and Intermediate Service school candidates	Gorman
Two assignments in different functional areas, each lasting a minimum of two years	Gorman Moening (37:2-3) Curtis (29) Logistics Career Development Plan (36)
Individually tailored program	Gorman
Supervisor accountable for career counseling and development	Hall (25:156-157)

Core Course. The first element in the model is a core course that emphasizes logistics as a system. This course should begin the technical training of all logistics specialty courses. The same core course should be taught to all prospective logisticians regardless of the logistics specialty. The specific content of the course is not important at this point of development, only the fact that the course should present a systems view of logistics. Rutenberg advocated a logistics handbook that would describe the interrelationships within logistics. Such a handbook could be used as a reference document in designing the core course. The handbook should be made available to all logisticians who are entering or who previously completed technical training.

Short Courses and Periodicals. For those logistics officers who did not have the benefit of the core course, short courses offered at AFIT could incorporate the systems viewpoint into their lesson plan. Also professional periodicals such as the Air Force Journal of Logistics could be used to supplement the course work, as long as they emphasize the system perspective. Articles that demonstrate the complementary nature of the logistics functions could broaden a reader's perspective and nurture systems thinking.

Staff Officer Course. One staff officer course should be offered for all logistics disciplines. By the time a logistician has attained field grade rank he/she should see

logistics in a systems perspective. Combining the logistics staff officer courses into one course could complete the integration of logistics into one system for most officers. Such a course would expose the staff officer to all aspects of logistics. Also, the officer would be exposed to officers from different logistics specialties in an academic environment that could promote the free exchange of ideas.

Communication and Interpersonal Skills Course. Another aspect to integrating logistics systems is the ability to communicate and interact with people. Currently, the Air Force only emphasizes effective writing and briefing skills in our educational and training schools. Some attempts at group interaction and counseling skills are taught by instructors at Officer Training School, ROTC, and the Professional Military Education courses. However, in most cases the instructors are not communications professionals, but officers who teach communication and interpersonal skills as a small part of a broader officership curriculum.

Communication and interpersonal skills should be taught in an AFIT short course by professional psychologists, communication experts, or the like. Our logistics officers must be given realistic and professional interpersonal and communication training in a context which emphasizes mission accomplishment through people. No one individual can comprehend an entire system. The logistics officer must rely upon subordinates in their specialties. To do so

effectively, the logistics officer must be able to communicate and interact in such a way as to elicit maximum effort. Only then can the logistics officer integrate the total logistics system.

Education

Education can form the foundation for an officer attempting to comprehend the total logistics system. The fact that an officer has worked and been trained in two or more logistics specialties does not mean that he/she can automatically see, understand, and translate that experience into a logistics systems perspective. A cognitive process must occur that links the experience to systems thinking. While this cognition can occur on its own, it can also be facilitated and taught to large numbers in an educational environment.

Graduate Education. An important part of the complete education of the logistician is a masters degree in logistics management or other closely related field. Graduate education at AFIT and civilian institutions emphasize the systems perspective that is important in logistics system integration (45:76; 49:48). Preferably the logistician will attend the AFIT program as research has demonstrated that AFIT does provide logistics education that enhances performance (23). However, some officers should attend civilian institutions in order to counter any inbreeding of ideas that AFIT would perpetuate (38:125).

Whatever the source of the degree, an advanced education appears to be essential to the truly professional logistician.

Experience

Experience is a valued commodity. But, one experience may be more valuable than another. The challenge to career development is to ensure that the experience a logistician receives will move him/her closer to becoming a logistics systems integrator. The careful programming of experience through an executive development program may provide the best method for a few selected officers. However, a broader program of combining AFSCs may impress upon more officers the importance of logistics as a system. The key to successful career development rests heavily upon the active involvement of the supervisor in career development of subordinates.

One Logistics AFSC. A prime method of demonstrating the systems perspective of logistics is to combine the five logistics AFSCs (31XX, 40XX, 60XX, 64XX, and 66XX) into one. Logistics specialties could be denoted by a suffix to the AFSC. Such an AFSC would do away with the sub-optimization of goals between logistics specialties (49:48) and facilitate the easy flow of logisticians from one functional area to another. An officer at wing level could, at the direction of the DCR, spend 18 months in supply initially and the remainder of his three or four year tour in transportation.

Dual qualification could be accomplished in a single tour and at the discretion of a lower level commander who is cognizant of both the individual officer's capabilities as well as the mission requirements.

This single logistics AFSC could also benefit both the person and the organization at other organizational levels such as the MAJCOM and Air Staff level. The MAJCOM/LG and USAF/LE would have the freedom to move logistics officers to fit the experience needed by the individual and the organizational goals regardless of the functional specialties. This method of providing a variety of logistics experience allows more flexibility and better personnel matching to a job.

The Air Force needs both specialists and generalists. The first assignment for a logistics officer should be in a functional specialty. The first assignment should never be to a generalist position such as a Air Logistics Center, MAJCOM or Air Staff. The young officer should develop a sense of accomplishment and expertise in a specialty. Subsequent assignments should be to other specialties or generalist positions depending on the desires of the individual and the needs of the Air Force. Under no circumstances should an officer be "forced" to remain in a single specialty for more than two tours. Involuntarily retaining an officer in one specialty for more than two tours could lead to unnecessary narrowing and dissatisfac-

AD-A174 533 A PROPOSED LOGISTICS CAREER DEVELOPMENT MODEL(U) AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OH SCHOOL OF SYSTEMS AND LOGISTICS F GORMAN SEP 86 2/3

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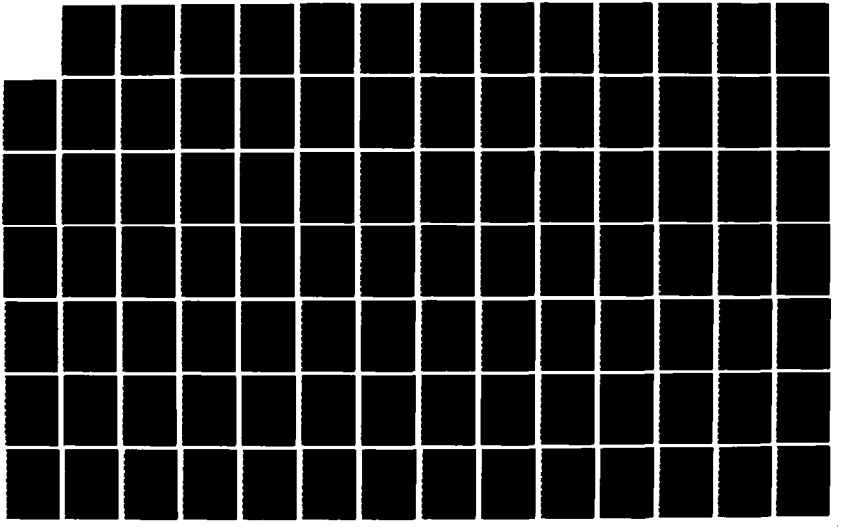

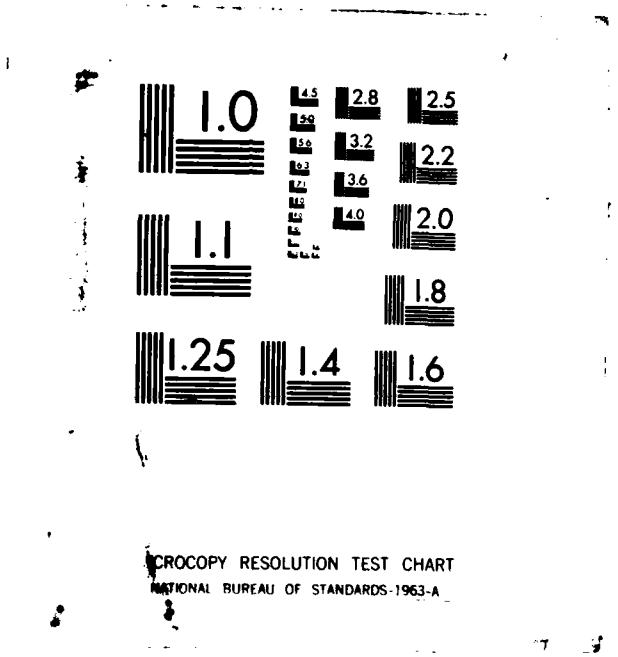
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CROCOPY RESOLUTION TEST CHART
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tion of the officer. Officers who prefer to remain in one specialty for their career should be permitted to do so.

Supervisor's Role. Air Force supervisors are in the best positions to determine the career development needs of their subordinates (17:17). AFR 36-23, Officer Career Development, recognizes this importance and makes the supervisor responsible for career counseling and development of subordinate officers (17:17). However, much career counseling and developing of subordinates by supervisors may not be done. What is missing is accountability for subordinate development. Hall pointed out that supervisors must be rewarded in some tangible, meaningful way before they will become concerned with subordinate development (22:156-157). An Army survey of nearly 25 percent of their officer corps indicated that 96 percent felt that subordinate development should be a main factor in the officer's evaluation (1:4-8). The Air Force could make officers accountable for junior officer development be making it a mandatory statement, possibly in the professional qualities block in section II, of the Officer Effectiveness Report (OER). This mandatory statement would only be applicable to those officers who supervisor other officers. Such a mandatory statement could improve accountability and increase the likelihood that career development counseling is accomplished by supervisors.

Executive Development. Officers selected for executive development should be those most likely to attain senior officer status. The optimal point to develop executives appears to be the eight to twelve year interval. Selecting officers already selected for below-the-zone major and/or intermediate service school (ISS) candidacy for executive development would most likely provide the maximum payback. These officers have demonstrated ability above those of their peers and would be more likely to attain senior officer status. This selection criteria would not waste resources on those who are less likely to reach senior levels.

The development of these select officers would begin as soon as they are identified on the promotion and intermediate service school candidates list. The program would consist of a four to five year job rotation with approximately two years in each job. The assignments would be orchestrated around the six months to one year needed for ISS attendance. The specific program would be tailored to each individual with the goal of giving the officer the experience and education needed to be a well-rounded logistician. Each officer would have a personalized program designed to provide for any lack of experience or education the officer missed or needs in order to become a senior logistician. The program would take the randomness out of the officer's development and could be responsive to the needs of the future and the individual.

For example, if the selected officer has never attended the AFIT Graduate Logistics Program he would have priority to attend. If an officer has not had a staff level job or been in an operational command he/she could be assigned for two years at a MAJCOM headquarters and then to an operational wing for another two years.

The effect of this program is to compress the time needed to gain experience for the selected officer. Whereas, it might have taken six to eight years to obtain a similar level of experience under the current assignment system, the executive development program could ensure the officer receives the experience in only four years.

The experience must be coordinated with the requirement to attend intermediate service school. For many officers it might be preferable that they attend the six month Armed Forces Staff College. This school offers two major advantages over other ISS assignments. It exposes the logistician to the joint environment and is also shorter in duration than most other ISS assignments. The three year directed duty assignment required of AFIT graduates to serve in advance academic degree positions must be worked into the job rotation or deferred until after program completion.

The program must be designed very carefully. The needs of the individual must be matched to the required background needed in senior logisticians. The current limitations on OER endorsement level should be waived and the individual

should be exempted from any command quota system. This will allow the deserving officer to receive the highest possible endorsement.

Once the officer has completed the program, he/she would be returned to the mainstream assignment process. The officer, now a Lieutenant Colonel or selectee, should be given a key command or leadership position. The command position will allow the logistics officer to use all the concepts of a logistics systems perspective in a real world situation. It is here that the logistician will prove his/her worthiness to assume senior officer status.

Phasing

The phasing of career activities according to the proposed model is presented in Figure 9. The figure shows the periods of time or windows of opportunity associated with each career activity.

Upon entry into the one logistics AFSC, every prospective logistician would begin their career with technical training conducted by Air Training Command. All prospective logisticians would begin their technical training with a core block of instruction in logistics systems. After this core block of instruction each officer would receive training in their respective specialty.

The officer's first assignment would be to a specialist position. Here the officer could develop expertise and a sense of personal competence. The supervisor would provide

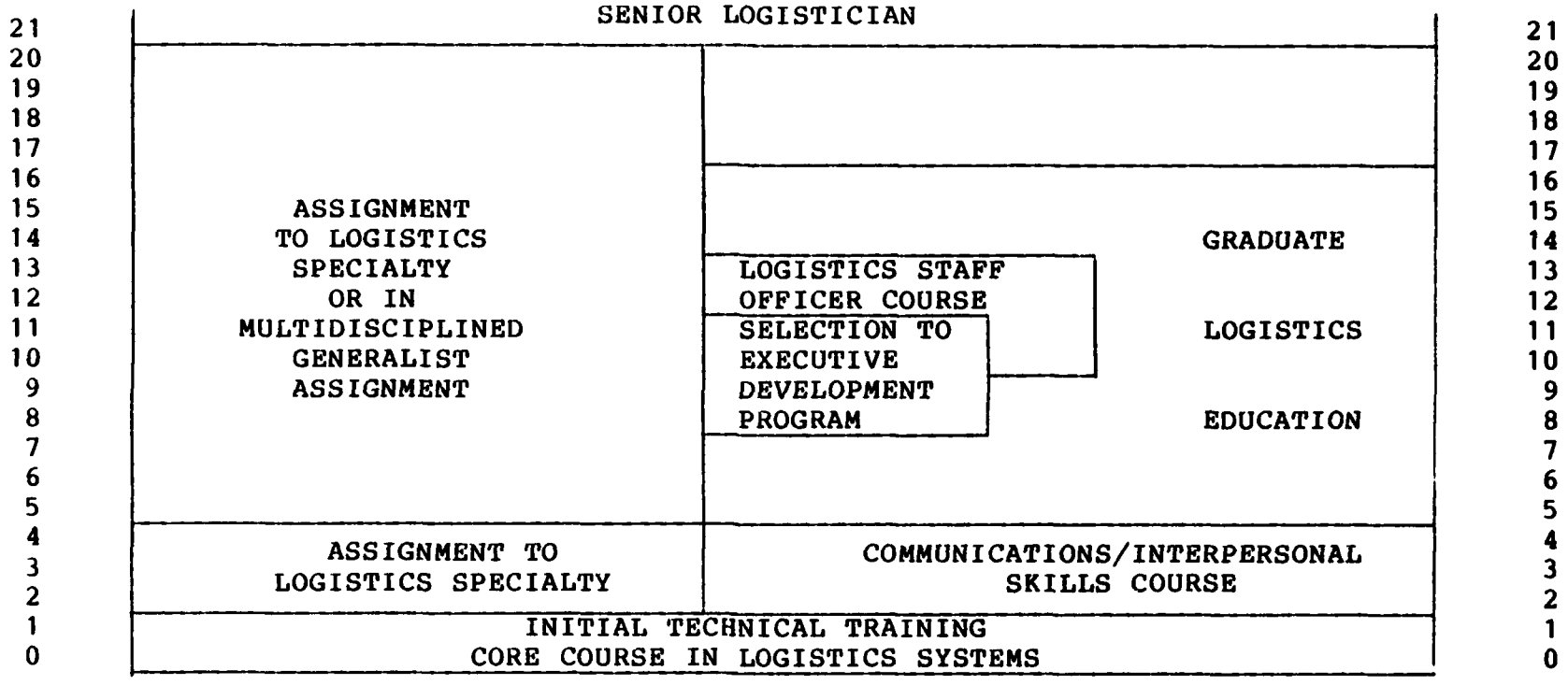

Figure 9.

Phasing of Assignments, Education, and Training

career counseling and job rotation within the specialty so that the officer receives a full understanding of the logistics specialty. At the discretion of the supervisor, the officer may also crossflow into another logistics specialty area within the same organization. This type of counseling and career developing by supervisors should continue throughout the career of the officer.

The officer should attend a short course in communication and interpersonal skills as early in the career as possible. Preferably the officer should attend prior to completing four years of service.

Subsequent assignments could be to specialist or generalist positions depending on the desires of the officer and the needs of the service. If the officer chooses to become a generalist, each assignment should take the officer closer to becoming a multidisciplined generalist.

Graduate education could occur at any point in the officer's career, as it does currently. It should not occur later than the rank of Lieutenant Colonel. An exception to this would be if a Lieutenant Colonel was certain to attain senior officer status and remain in the service for the Air Force to receive a sufficient pay back for the cost of the education. All officers who enter the executive development program should attend graduate education in logistics if they have not already done so.

Selection for executive development would occur at the point when an officer is selected for below-the-zone major or candidacy for intermediate service schools. This is approximately the eight to twelve year point. A personally tailored four year program would be developed to give the officer the education and experience necessary to assume senior logistics officer positions in the future. The program should consist of two assignments lasting two years each that would give the officer the experience he/she missed or needs to have to become a senior logistician.

The logistics officer would attend the single logistics staff officer course whenever the officer would have normally have attended the former specialty staff officer courses. This usually occurs once an officer has attained field grade rank and is assigned to a staff position.

Once a logistics officer has been promoted to the rank of colonel, he/she should possess the proper qualities and characteristics to assume the status and position of senior logistician.

Assumptions of the Model

The validity of the model is based upon various assumptions that should be enumerated. The violation of any of the model assumptions could alter the effect of the model and/or invalidate the model completely. The assumptions are listed below.

The present system of phase points or timing for promotion will continue as will the single Air Force promotion board for all officers regardless of AFSC. The promotion boards will also retain the present positive bias for accelerated promotion for those who have already received a previous below-the-zone promotion.

Intermediate service school candidacy will continue to be determined at the major promotion board. Candidates for the executive development program will consist of all below-the-zone selectees and those who scored high enough in the primary zone to become ISS candidates. Some preference can be given to logisticians for Armed Forces Staff College attendance over other career fields. Also, the gap between candidacy, designation and subsequent attendance at ISS will continue to be approximately one to three years.

The ability to integrate a logistics system is a cognitive process that can be learned through education, or experience, or an interaction of the two.

Funding will be available to hire communication and interpersonal relationship professionals to develop and teach a short course for logisticians. Resources could be allocated to combine current logistics staff officer courses into one course. Also resources could be made available to develop a core logistics course in logistics systems for the technical training of prospective logisticians.

Creating one logistics AFSC will enable a logistics officer to more freely move from one logistics specialty to another. Supervisors will have the freedom to place logisticians into positions regardless of the logistics specialty according to the ability and experience needs of the individual as well as the needs of the organization. Any additional funding necessary due to the increased amount of on-the-job training and crosstraining will be provided.

Supervisors will do more career counseling and development of their subordinates, once supervisors become accountable to their superiors. Supervisors already have the ability to career counsel and develop their subordinates. For those supervisors who do not have the ability, the Air Force will provide training to improve career counseling and career development skills.

V. Findings and Analysis of Data

This research was concerned with constructing a logistics career development model. The research design, outlined in Chapter III, divided the research into two phases. Phase one was the construction of the model, while phase two was model validation. The results of phase one, model construction, are contained in Chapter IV. This chapter focuses on phase two results. Specifically, this chapter deals with validation of the career development model by its acceptability to practicing Air force logisticians. Each research question presented in Chapter III is sequentially addressed. Tables have been used to clarify and consolidate the findings.

Research Question One

> Do practicing military logisticians agree with the goal of the model?

Discussion. The most essential element of the proposed logistics career development model was the goal. The goal of the model was to develop senior logisticians who can comprehend and integrate the total logistics system. To do so, the senior logistician should perceive logistics from a system perspective. This research question was addressed by question 4 of the survey questionnaire. The results are presented in Table 7.

TABLE 7

ANALYSIS OF QUESTION 4,
SYSTEMS PERSPECTIVE IN LOGISTICS
(N = 1835)

	PERCENTAGE OF RESPONSES TO EACH LIKERT SCALE VALUE*							
STRATA	1	2	3	4	5	MEAN	MEDIAN	MODE
RANK								
1. CPT	1.6	2.6	14.8	53.0	28.1	4.034	4	4
2. MAJ	0.4	4.0	13.5	51.5	30.6	4.078	4	4
3. LTC	1.1	3.2	13.7	50.5	31.5	4.080	4	4
4. COL	0.0	5.8	13.1	53.5	27.5	4.028	4	4
AFSC								
5. 31XX	0.6	8.2	13.8	42.8	34.6	4.025	4	4
6. 40XX	1.0	2.5	16.7	53.9	25.9	4.012	4	4
7. 60XX	0.4	2.3	17.2	52.7	27.5	4.047	4	4
8. 64XX	0.7	3.3	10.9	55.0	30.1	4.106	4	4
9. 66XX	1.8	4.6	8.6	49.3	35.7	4.125	4	4
10. 004X	0.4	4.2	9.7	50.2	35.4	4.160	4	4
11. 009X	0.0	4.9	22.9	55.0	17.4	3.853	4	4
OVERALL	0.8	3.8	13.8	51.8	29.8	4.060	4	4

* NOTE: Likert scale values are: 1 corresponds to "highly disagree," 2 corresponds to "disagree," 3 corresponds to "neither agree or disagree," 4 corresponds to "agree," and 5 corresponds to "highly agree."

Survey Question 4:

An effective Logistics Career Development Program must develop a systems perspective in the logistics officer.

There was overwhelming agreement across all eleven rank and AFSC strata with the goal of the proposed logistics career development model. The overall mean score for all strata was 4.06 with 81.6 percent of the respondents either agreeing or highly agreeing.

A one way ANOVA revealed no significant differences between rank strata. However, a significant difference was discovered between AFSC strata. An F test score of 2.6069 (p=.0161) was obtained. The Scheffe test isolated the between strata difference to AFSC 009X, mean of 3.8532, and 004X, mean of 4.1603. Directors of logistics felt more strongly about the importance of a systems perspective than did directors of resource management. Even though the mean for directors of resource management was statistically different from the mean for directors of logistics, it should be pointed out that all strata agreed with the goal of the proposed logistics career development model.

Findings. Logisticians agreed that the goal of logistics career development should be to instill a systems perspective in participants.

Research Question Two

Do practicing military logisticians believe that the ideal career development model includes a combination of experience, training, and education?

Discussion. The proposed logistics career development model was composed of three important components: experience, training, and education. To determine concurrence, respondents were asked to respond to survey questions 5, 6, 7, and 9.

Experience. Question 5 of the survey dealt with experience.

Survey Question 5:

> An effective Logistics Career Development Program must include the careful programming of an officer's experience throughout his/her career.

There was overall agreement with this question. The results are displayed in Table 8. The overall mean for all strata was 4.03 with 80.6 percent of the respondents either agreeing or highly agreeing.

The one way ANOVA by rank and then by AFSC showed significant differences between strata in both groups. The F test score for rank strata was 5.9009 (p=.0005) and the F test score for AFSC strata was 4.5867 (p=.0001). An ANOVA using rank and AFSC concurrently showed no interaction effect.

The Scheffe test on the rank strata revealed significant differences between colonels and the two junior ranks of majors and captains. An examination of homogeneous subgroups showed colonels and lieutenant colonels in one group and major and captains in another. Majors and captains tended to feel more strongly about the importance of

TABLE 8

ANALYSIS OF QUESTION 5,
PROGRAMMED EXPERIENCE IN CAREER DEVELOPMENT
(N = 1839)

STRATA	PERCENTAGE OF RESPONSES TO EACH LIKERT SCALE VALUE* 1	2	3	4	5	MEAN	MEDIAN	MODE
RANK								
1. CPT	1.3	4.1	10.3	47.9	36.3	4.139	4	4
2. MAJ	0.8	4.2	13.9	49.3	31.8	4.070	4	4
3. LTC	0.5	7.3	13.1	48.8	30.3	4.011	4	4
4. COL	1.2	9.5	11.3	56.3	21.7	3.878	4	4
AFSC								
5. 31XX	0.6	9.4	19.5	47.8	22.6	3.824	4	4
6. 40XX	0.2	7.0	11.1	48.2	33.6	4.080	4	4
7. 60XX	1.1	4.9	13.7	52.5	27.8	4.008	4	4
8. 64XX	0.7	4.6	11.6	48.0	35.1	4.123	4	4
9. 66XX	1.8	3.6	11.0	49.1	34.5	4.110	4	4
10. 004X	1.7	5.9	8.4	58.2	25.7	4.004	4	4
11. 009X	0.0	12.8	19.3	46.8	21.1	3.761	4	4
OVERALL	0.9	6.2	12.4	50.1	30.5	4.030	4	4

* NOTE: Likert scale values are: 1 corresponds to "highly disagree," 2 corresponds to "disagree," 3 corresponds to "neither agree or disagree," 4 corresponds to "agree," and 5 corresponds to "highly agree."

carefully programming experience in career development. This result seemed to indicate an almost hierarchical effect. The higher the rank the less likely one agreed with carefully programmed experience. A Pearson Correlation Coefficient of - .0953 (p=.000) gave some support, although weak, to this relationship. Even with these differences between ranks, the overall concept of experience as a vital component of logistics career development was supported.

The Scheffe test on AFSC strata indicated a significant difference between AFSC 009X and the three AFSCs 40XX, 64XX, and 66XX. Also, a significant difference between AFSC 31XX and AFSC 64XX was revealed. Both AFSC 31XX, missile maintenance, and AFSC 009X, directors of resource management, had lower means and differed significantly from all other AFSC strata. These AFSCs were not as convinced of the importance of carefully programmed experience. Directors of logistics did not differ significantly with any strata. The mean and variance for directors of logistics made this strata homogeneous to all three subgroups identified by the Scheffe procedure. Generally, all strata agreed with carefully programmed experience as a component of career development. Colonels and AFSCs 31XX and 009X were slightly less convinced.

Training. Questions 6 and 7 dealt with communication and interpersonal skills training.

Survey Question 6:

Improving communicative skills (oral and written) is absolutely essential in an effective Logistics Career Development Program.

In question 6, all strata agreed that improving communicative skills was important. Results are displayed in Table 9. The overall mean for all strata was 4.342 with 90.1 percent of the respondents either agreeing or highly agreeing. The modal response was 5, highly agree, with 873 (47.4 percent) respondents out of 1840.

The one way ANOVA for both rank and AFSC revealed significant differences for rank and AFSC strata. The rank strata F test score was 4.6934 (p=.0029) while the AFSC strata had an F score of 2.2229 (p=.0385). No interaction effects were noted.

The Scheffe test gave evidence to captains differing significantly from lieutenant colonels and colonels. Captains felt communication skills were slightly less important in logistics career development than did field grade and senior officers. An examination of homogeneous subgroups showed that the two subgroups included captains in subgroup one and lieutenant colonels and colonels in the other subgroup. Majors were homogeneous to both subgroups.

A Scheffe test for AFSC strata indicated that no two strata were significantly different at the .05 alpha level.

Agreement was almost unanimous that communicative skills should be improved in a logistics career development

TABLE 9

ANALYSIS OF QUESTION 6,
IMPROVING COMMUNICATIVE SKILLS
(N = 1840)

	PERCENTAGE OF RESPONSES TO EACH LIKERT SCALE VALUE*							
STRATA	1	2	3	4	5	MEAN	MEDIAN	MODE
RANK								
1. CPT	1.0	3.3	9.5	45.0	41.1	4.219	4	4
2. MAJ	0.8	2.2	6.2	42.3	48.5	4.354	4	5
3. LTC	0.3	2.1	6.4	40.7	50.6	4.391	5	5
4. COL	0.0	1.5	6.4	44.6	47.4	4.379	4	5
AFSC								
5. 31XX	0.0	2.5	6.3	47.2	44.0	4.327	4	4
6. 40XX	1.0	2.0	7.4	45.2	44.4	4.299	4	4
7. 60XX	0.0	1.1	6.1	38.4	54.4	4.460	5	5
8. 64XX	0.3	3.0	9.9	42.4	44.4	4.275	4	5
9. 66XX	1.4	2.8	6.8	39.9	49.1	4.324	4	5
10. 004X	0.0	3.0	5.5	43.0	48.5	4.371	4	5
11. 009X	0.0	0.9	4.6	43.1	51.4	4.450	5	4
OVERALL	0.5	2.3	7.0	42.7	47.4	4.342	4	5

* NOTE: Likert scale values are: 1 corresponds to "highly disagree," 2 corresponds to "disagree," 3 corresponds to "neither agree or disagree," 4 corresponds to "agree," and 5 corresponds to "highly agree."

model. No AFSC strata differences were noted. However, the higher the rank, the higher the level of agreement with communication skill's importance to logisticians. A Pearson Correlation Coefficient of .073 (p=.001) was achieved between rank and question 6.

Survey Question 7:

> Improving interpersonal relationship skills should be an objective of the ideal Logistics Career Development Program.

There was significant agreement among all strata that interpersonal skills training was important in logistics career development. Results are presented in Table 10. The overall mean for all strata was 4.049 with 83.2 percent of the respondents either agreeing or highly agreeing. There were no statistically significant differences between strata means.

Education. Question 9 dealt with the importance of education in developing a systems perspective in logisticians.

Survey Question 9:

> The best way to ensure that logistics officers develop a systems perspective is through education.

Respondents were somewhat divided on this question. Results are presented in Table 11. Although 41.5 percent of the respondents agreed or highly agreed, 28.9 percent disagreed or highly disagreed and 29.6 percent neither agreed or disagreed. The overall mean for all strata was 3.163 with a modal response of 4, agree. Many unsolicited comments were

TABLE 10

ANALYSIS OF QUESTION 7,
IMPROVING INTERPERSONAL SKILLS
(N = 1840)

	PERCENTAGE OF RESPONSES TO EACH LIKERT SCALE VALUE*							
STRATA	1	2	3	4	5	MEAN	MEDIAN	MODE
RANK								
1. CPT	1.3	4.9	15.7	51.7	26.5	3.972	4	4
2. MAJ	1.0	3.8	10.3	55.1	29.8	4.089	4	4
3. LTC	0.6	4.5	11.3	56.1	27.4	4.053	4	4
4. COL	0.3	3.1	10.7	60.9	25.1	4.073	4	4
AFSC								
5. 31XX	0.6	3.1	11.3	54.7	30.2	4.107	4	4
6. 40XX	0.6	3.7	11.5	55.8	28.4	4.078	4	4
7. 60XX	0.8	4.6	11.8	56.7	26.2	4.030	4	4
8. 64XX	1.0	6.0	14.2	51.3	27.5	3.983	4	4
9. 66XX	1.8	5.0	11.4	53.4	28.5	4.018	4	4
10. 004X	0.4	3.0	11.0	63.7	21.9	4.038	4	4
11. 009X	0.0	1.8	11.0	56.0	31.2	4.165	4	4
OVERALL	0.8	4.1	11.8	55.8	27.4	4.049	4	4

* NOTE: Likert scale values are: 1 corresponds to "highly disagree," 2 corresponds to "disagree," 3 corresponds to "neither agree or disagree," 4 corresponds to "agree," and 5 corresponds to "highly agree."

TABLE 11

ANALYSIS OF QUESTION 9,
SYSTEMS PERSPECTIVE THROUGH EDUCATION
(N = 1837)

	PERCENTAGE OF RESPONSES TO EACH LIKERT SCALE VALUE*							
STRATA	1	2	3	4	5	MEAN	MEDIAN	MODE
RANK								
1. CPT	4.1	18.3	24.7	41.0	11.9	3.381	4	4
2. MAJ	2.0	25.4	27.6	37.5	7.5	3.230	3	4
3. LTC	3.0	28.4	33.2	31.3	4.1	3.051	3	3
4. COL	2.8	31.0	31.6	31.3	3.4	3.015	3	3
AFSC								
5. 31XX	1.3	27.8	29.7	38.0	3.2	3.139	3	4
6. 40XX	3.3	27.2	28.0	33.7	7.8	3.155	3	4
7. 60XX	2.7	20.6	30.9	39.3	6.5	3.263	3	4
8. 64XX	3.3	24.6	24.3	40.9	7.0	3.236	3	4
9. 66XX	3.2	26.3	29.2	32.4	8.9	3.174	3	4
10. 004X	3.8	29.1	35.4	27.0	4.6	2.996	3	3
11. 009X	0.9	25.7	36.7	33.9	2.8	3.119	3	3
OVERALL	2.9	25.9	29.6	35.0	6.5	3.163	3	4

* NOTE: Likert scale values are: 1 corresponds to "highly disagree," 2 corresponds to "disagree," 3 corresponds to "neither agree or disagree," 4 corresponds to "agree," and 5 corresponds to "highly agree."

received concerning this question. Over 30 respondents added to the questions the phrase "and experience". This may indicate, along with the descriptive statistics, a relative importance ranking of education after experience rather than a total rejection of education's importance.

The one way ANOVA by rank disclosed an F test score of 12.6032 (p=0000). Further analysis using the Scheffe procedure showed that colonels differed significantly from majors and captains. Lieutenant colonels also differed significantly with captains. A breakdown by homogeneous subgroups hinted at a hierarchical effect. In other words, the higher the rank the less likely the respondent agreed with the importance of education. A Pearson Correlation Coefficient of -.1375 (p=.000) reflected this inverse relationship. From the unsolicited comments, it may be that higher ranking officers value experience more highly than education.

The one way ANOVA by AFSC found no significant differences.

Findings. Logisticians generally supported the idea that the ideal logistics career development model should include carefully programmed experience, communication training, and interpersonal skills training. The overall strata mean for questions 5, 6, and 7 indicated agreement. The exception was question 9, concerning education. Question 9's mean score indicated a neutral response to

education as the best way to ensure logisticians develop a systems perspective. However, more respondents agreed than disagreed. There does appear to be some evidence of a ranking of relative importance with experience valued more highly than education.

Some responses to the survey questions appeared to be somewhat dependent on the rank of the respondent. Higher ranking officers were less likely to agree with carefully programming an officer's experience. But, higher ranking officers were more likely to agree with the importance of improving communication skills.

Improving interpersonal skills as a component of logistics career development enjoyed universal agreement among all strata.

Research Question Three

> Do practicing military logisticians believe that the ideal logistics career development model should be flexible?

Discussion. The proposed logistics career development model supports a high degree of flexibility. Questions 8 and 19 addressed the issue of flexibility in logistics career development. Question 19 specifically focused on flexibility in a logistics executive development program while question 8 concerned flexibility in an overall logistics career development program. Both questions were asked in a negative manner. In other words, the opposite of flexibility was asked. Disagreement with either question

indicated agreement with flexibility in logistics career development. A Pearson Correlation Coefficient of .6538 (p=.000) supported the grouping of these two questions into one construct.

Survey Question 8:

> An effective Logistics Career Development Program must have a set pattern of assignments, education, and training that all logistics officers complete.

The overall mean for question 8 was 2.953 with 35.6 percent agreeing, 43.2 percent disagreeing, and 21.3 percent neither agreeing or disagreeing. The modal response was 2, disagree. This result indicated more disagreement with the set pattern and more agreement with flexibility. However, the results were not strongly in favor of one over the other. Results are presented in Table 12.

The one way ANOVA and Scheffe test by rank showed significant differences between captains and all other ranks. An F test score of 10.4252 (p=.0000) was achieved between strata means. Captains were more likely to prefer a set pattern of career development that all logisticians should follow.

The one way ANOVA discovered no significant differences by AFSC.

Survey Question 19:

> An effective executive development program should have a set pattern of assignments and education that all participants complete.

TABLE 12

ANALYSIS OF QUESTION 8,
SET PATTERN OF CAREER DEVELOPMENT
(N = 1839)

STRATA	PERCENTAGE OF RESPONSES TO EACH LIKERT SCALE VALUE* 1	2	3	4	5	MEAN	MEDIAN	MODE
RANK								
1. CPT	5.4	29.4	19.1	31.7	14.4	3.204	3	4
2. MAJ	8.0	35.2	18.5	27.0	11.3	2.982	3	2
3. LTC	8.0	40.5	22.5	21.5	7.5	2.801	3	2
4. COL	6.1	36.7	25.7	23.5	8.0	2.905	3	2
AFSC								
5. 31XX	6.9	39.6	22.0	26.4	5.0	2.830	3	2
6. 40XX	8.2	35.4	20.9	26.4	9.2	2.930	3	2
7. 60XX	6.5	37.8	17.2	28.6	9.9	2.977	3	2
8. 64XX	7.9	34.4	16.6	29.1	11.9	3.026	3	2
9. 66XX	6.4	36.7	22.1	20.6	14.2	2.996	3	2
10. 004X	6.3	36.3	27.4	22.8	7.2	2.882	3	2
11. 009X	5.5	32.1	29.4	21.1	11.9	3.018	3	2
OVERALL	7.1	36.1	21.3	25.5	10.1	2.953	3	2

* NOTE: Likert scale values are: 1 corresponds to "highly disagree," 2 corresponds to "disagree," 3 corresponds to "neither agree or disagree," 4 corresponds to "agree," and 5 corresponds to "highly agree."

The overall mean for question 19 was 2.896 with 35.6 percent agreeing, 43.9 percent disagreeing, and 21.3 percent neither agreeing or disagreeing. Results are presented in Table 13. The response distribution indicated more agreement than disagreement with flexibility in an executive development program. The modal response was 2, disagree, as was the mode for question 8. The mean of 2.896 for question 19 was also comparable to the mean of 2.953 for question 8. As the correlation coefficient of .6538 (p=.000) suggested, the responses for question 19 paralleled those of question 8. However, a t test between question means did reflect a significant difference between responses. A t value of 2.72 was attained with a two tailed probability of .007. Although the responses between questions were similar, respondents felt more strongly about having more flexibility in an executive development program.

The F test score for rank strata was 11.9893 (p=.0000). The Scheffe test indicated that captains differed with all other ranks. Once again, captains preferred less flexibility in career development than more senior officers.

The one way ANOVA by AFSC revealed no significant differences. However, an examination of the response distribution suggested that AFSC 009X, directors of resource management, were divided into two distinct groups. The response distribution was bimodal. One group of resource managers agreed while the other group disagreed.

TABLE 13

ANALYSIS OF QUESTION 19,
SET PATTERN OF EXECUTIVE DEVELOPMENT
(N = 1838)

	PERCENTAGE OF RESPONSES TO EACH LIKERT SCALE VALUE*							
STRATA	1	2	3	4	5	MEAN	MEDIAN	MODE
RANK								
1. CPT	4.6	28.4	20.9	39.4	6.7	3.152	3	4
2. MAJ	6.7	36.5	21.0	29.8	6.0	2.921	3	2
3. LTC	7.8	42.1	20.6	25.5	4.0	2.758	3	2
4. COL	5.5	41.0	23.5	26.0	4.0	2.820	3	2
AFSC								
5. 31XX	5.7	42.1	24.5	24.5	3.1	2.774	3	2
6. 40XX	8.0	38.0	18.6	31.3	4.1	2.855	3	2
7. 60XX	4.6	39.7	24.8	25.6	5.3	2.874	3	2
8. 64XX	5.0	37.4	17.5	32.8	7.3	3.000	3	2
9. 66XX	6.1	33.6	21.4	32.5	6.4	2.996	3	2
10. 004X	6.3	38.8	23.6	27.0	4.2	2.840	3	2
11. 009X	10.1	30.3	24.8	30.3	4.6	2.890	3	2/4
OVERALL	6.4	37.5	21.3	29.7	5.1	2.896	3	2

* NOTE: Likert scale values are: 1 corresponds to "highly disagree," 2 corresponds to "disagree," 3 corresponds to "neither agree or disagree," 4 corresponds to "agree," and 5 corresponds to "highly agree."

Findings. Generally, logisticians indicated support for some flexibility in career development. More respondents agreed with flexibility than a set pattern. However, the results indicated that some set pattern is desired. Captains were especially prone to want a set pattern of career development. Results also indicated that more flexibility is desired in an executive development program than an all encompassing logistics career development program.

Research Question Four

> Do practicing military logisticians believe that education is the best way to ensure that logisticians develop a systems perspective?

See the education subsection in research question two.

Research Question Five

> Do practicing military logisticians believe that communication and interpersonal skills training should be improved in the Air Force?

Discussion. In research question two, respondents indicated that communication and interpersonal skills were important in logistics career development. This research question was designed to measure whether logisticians felt that current communication and interpersonal relationship training in the Air Force was sufficient.

This issue was addressed in survey questions 10 through 13. Questions 10 through 12 were written in a positive form while question 13 was written in a negative form. In other words, in question 13, respondents were asked the opposite. An agree response on questions 10 through 12 indicated

TABLE 14

CORRELATION MATRIX OF QUESTIONS 6, 7, 10, 11, 12, AND 13*

QUESTIONS	6	7	10	11	12	13
6	1.0000	.5040	.4298	.4609	.3232	-.0615
7		1.0000	.3368	.2719	.6032	-.0761
10			1.0000	.6209	.5035	-.1837
11				1.0000	.4147	-.2192
12					1.0000	-.1955
13						1.0000

* NOTE: All probabilities, with two exceptions, were at p=.000, indicating the probability was lower than SPSSx system programming permitted printing. The probability for questions 6 and 13 was p=.004 while the probability for questions 7 and 13 was p=.001.

respondent agreement with the research question. A disagree response on question 13 indicated respondent agreement with the research question.

The Pearson Correlation Coefficients on questions 10 through 13 supported both their grouping as a construct and the intended inverse relationship of question 13. The correlation scores are presented in Table 14. The correlation scores also show the relationship of questions 10 through 13 with questions 6 and 7 of research question two.

Survey Question 10:

More emphasis needs to be given to oral communication skills in Air Force training.

Most respondents felt that oral communication skills training should be improved. Results are presented in Table 15. The overall mean for all strata was 3.565 with a median and mode of 4, agree. There were 58.5 percent of the respondents who either agreed or highly agreed, 13.6 percent who either disagreed or highly disagreed, and 27.9 percent who neither agreed or disagreed.

The one way ANOVA by rank found no significant differences. However, the one way ANOVA by AFSC yielded a significant difference between AFSC strata. An F test score of 3.6111 (p=.0015) was obtained. The Scheffe test identified AFSC 009X as differing significantly with AFSCs 40XX and 66XX. Directors of resource management felt stronger about placing more emphasis on oral communication skills than aircraft/munitions maintenance or logistics plans and programs officers.

Survey Question 11:

More emphasis needs to be given to written communication skills in Air Force training.

Most respondents agreed that written communication skills training should be improved. Results are presented in Table 16. The overall mean for all strata was 3.878 with 73.2 percent agreeing or highly agreeing, 8.9 percent disagreeing, and 17.9 percent neither agreeing or disagreeing.

TABLE 15

ANALYSIS OF QUESTION 10,
EMPHASIZE ORAL COMMUNICATION TRAINING
(N = 1839)

	PERCENTAGE OF RESPONSES TO EACH LIKERT SCALE VALUE*							
STRATA	1	2	3	4	5	MEAN	MEDIAN	MODE
RANK								
1. CPT	2.1	14.4	26.2	45.5	11.8	3.506	4	4
2. MAJ	1.0	13.1	26.8	44.9	14.3	3.584	4	4
3. LTC	0.6	12.8	31.3	44.7	10.7	3.520	4	4
4. COL	0.0	9.8	25.5	50.3	14.4	3.693	4	4
AFSC								
5. 31XX	0.0	9.4	21.4	61.6	7.5	3.673	4	4
6. 40XX	1.0	14.7	30.5	41.9	11.9	3.489	4	4
7. 60XX	0.8	8.7	29.7	46.0	14.8	3.654	4	4
8. 64XX	1.0	14.9	26.5	44.7	12.9	3.536	4	4
9. 66XX	2.5	14.6	28.5	43.4	11.0	3.459	4	4
10. 004X	0.0	12.3	29.7	44.1	14.0	3.597	4	4
11. 009X	0.0	7.3	21.1	54.1	17.4	3.817	4	4
OVERALL	0.9	12.7	27.9	45.9	12.6	3.565	4	4

* NOTE: Likert scale values are: 1 corresponds to "highly disagree," 2 corresponds to "disagree," 3 corresponds to "neither agree or disagree," 4 corresponds to "agree," and 5 corresponds to "highly agree."

TABLE 16

ANALYSIS OF QUESTION 11,
EMPHASIZE WRITTEN COMMUNICATION TRAINING
(N = 1840)

	PERCENTAGE OF RESPONSES TO EACH LIKERT SCALE VALUE*							
STRATA	1	2	3	4	5	MEAN	MEDIAN	MODE
RANK								
1. CPT	2.3	8.7	16.2	49.6	23.1	3.825	4	4
2. MAJ	0.8	9.1	16.9	48.9	24.3	3.869	4	4
3. LTC	0.5	8.1	19.8	46.4	25.2	3.877	4	4
4. COL	0.0	5.5	18.0	51.7	24.8	3.957	4	4
AFSC								
5. 31XX	0.0	6.9	13.8	57.2	22.0	3.943	4	4
6. 40XX	1.0	9.4	17.6	47.2	24.7	3.853	4	4
7. 60XX	0.4	4.6	17.5	47.1	30.4	4.027	4	4
8. 64XX	1.3	9.9	18.5	47.7	22.5	3.801	4	4
9. 66XX	2.1	9.3	21.0	47.3	20.3	3.744	4	4
10. 004X	0.0	8.0	19.8	48.9	23.2	3.873	4	4
11. 009X	0.0	3.7	12.8	52.3	31.2	4.110	4	4
OVERALL	0.9	8.0	17.9	48.7	24.5	3.878	4	4

* NOTE: Likert scale values are: 1 corresponds to "highly disagree," 2 corresponds to "disagree," 3 corresponds to "neither agree or disagree," 4 corresponds to "agree," and 5 corresponds to "highly agree."

A one way ANOVA by rank showed no significant differences while the one way ANOVA by AFSC did yield significant differences. An F test score of 4.578 (p=.0005) was achieved between AFSC strata. Once again AFSC 009X differed with two other strata, AFSCs 64XX and 66XX. Directors of resource management felt more strongly about increased emphasis on written communication skills than supply or logistics plans and programs officers.

Survey Question 12:

More emphasis needs to be given to interpersonal skills in Air Force training.

Generally, respondents agreed that interpersonal skills training in the Air Force should be improved. Results are displayed in Table 17. The overall mean was 3.714 with 64.7 percent agreeing or highly agreeing, 8.4 percent disagreeing or highly disagreeing, and 26.8 percent neither agreeing or disagreeing.

The one way ANOVA by rank revealed no significant differences. However, the one way ANOVA by AFSC did yield a F test score of 2.4089 (p=.0254), indicating the existence of a significant difference between AFSC strata. But, the Scheffe test did not uncover any significant differences between strata at the .05 level of significance.

Survey Question 13:

The quality of communication and interpersonal skills training in the Air Force is excellent.

TABLE 17

ANALYSIS OF QUESTION 12,
EMPHASIZE INTERPERSONAL SKILLS TRAINING
(N = 1840)

STRATA	PERCENTAGE OF RESPONSES TO EACH LIKERT SCALE VALUE* 1	2	3	4	5	MEAN	MEDIAN	MODE
RANK								
1. CPT	1.5	7.7	24.7	47.6	18.5	3.738	4	4
2. MAJ	1.0	6.8	23.7	49.3	19.1	3.787	4	4
3. LTC	1.0	7.8	29.2	48.6	13.4	3.657	4	4
4. COL	0.6	7.3	29.4	48.3	14.4	3.685	4	4
AFSC								
5. 31XX	0.6	6.9	19.5	56.6	16.4	3.811	4	4
6. 40XX	0.8	7.2	25.2	48.5	18.4	3.765	4	4
7. 60XX	1.1	5.7	29.3	47.5	16.3	3.722	4	4
8. 64XX	1.3	9.9	25.8	47.7	15.2	3.656	4	4
9. 66XX	2.1	8.2	27.8	46.3	15.7	3.651	4	4
10. 004X	0.4	7.6	34.2	46.4	11.4	3.608	4	4
11. 009X	0.0	4.6	22.9	52.3	20.2	3.881	4	4
OVERALL	1.0	7.4	26.8	48.5	16.2	3.714	4	4

* NOTE: Likert scale values are: 1 corresponds to "highly disagree," 2 corresponds to "disagree," 3 corresponds to "neither agree or disagree," 4 corresponds to "agree," and 5 corresponds to "highly agree."

Respondents were somewhat unsure on this issue. Results are presented in Table 18. The overall mean for all strata was 2.696 with only 17.6 percent agreeing or highly agreeing, 44.4 percent disagreeing or highly disagreeing, and 38.0 percent neither agreeing or disagreeing. Although many respondents felt that the quality of communication and interpersonal skills training in the Air Force was not excellent, many were not sure one way or the other.

A one way ANOVA by rank revealed an F test score of 3.8467 (p=.0093), indicating a significant difference between rank strata. The Scheffe test isolated the difference to captains and majors. Captains were more likely than majors to feel that the quality of communication and interpersonal skills training was excellent.

A one way ANOVA by AFSC also yielded a significant difference between AFSC strata. An F test score of 2.3065 (p=.0319) was achieved. The Scheffe procedure found the difference to be between AFSCs 004X and 31XX. Directors of logistics felt more strongly that the quality of communication and interpersonal skills training in the Air Force was excellent than did missile maintenance officers, or any other AFSC for that matter. The director of logistics strata mean was 2.8312 with only 21.9 percent of the respondents agreeing or highly agreeing, 38.0 percent disagreeing or highly disagreeing, and 40.1 percent neither

TABLE 18

ANALYSIS OF QUESTION 13,
CURRENT COMMUNICATION INTERPERSONAL TRAINING EXCELLENCE
(N = 1840)

	PERCENTAGE OF RESPONSES TO EACH LIKERT SCALE VALUE*							
STRATA	1	2	3	4	5	MEAN	MEDIAN	MODE
RANK								
1. CPT	4.1	40.4	32.6	22.1	0.8	2.751	3	2
2. MAJ	5.6	43.1	38.4	12.5	0.4	2.590	3	2
3. LTC	4.1	37.8	40.4	16.7	1.0	2.726	3	3
4. COL	3.1	39.4	39.4	17.1	0.9	2.734	3	2/3
AFSC								
5. 31XX	5.0	46.5	37.7	10.1	0.6	2.547	2	2
6. 40XX	4.3	42.1	36.6	16.4	0.6	2.669	3	2
7. 60XX	5.7	39.9	36.9	16.7	0.8	2.669	3	2
8. 64XX	4.3	38.4	36.1	22.9	0.3	2.745	3	2
9. 66XX	4.3	40.9	39.1	14.6	1.1	2.673	3	2
10. 004X	1.7	36.3	40.1	21.1	0.8	2.831	3	3
11. 009X	6.4	32.1	45.9	13.8	1.8	2.725	3	3
OVERALL	4.3	40.1	38.0	16.8	0.8	2.696	3	2

* NOTE: Likert scale values are: 1 corresponds to "highly disagree," 2 corresponds to "disagree," 3 corresponds to "neither agree or disagree," 4 corresponds to "agree," and 5 corresponds to "highly agree."

agreeing or disagreeing that the quality of the training was excellent.

The ANOVA showed no interaction effect between rank and AFSC.

As expected, an inverse relationship between question 13 and the others pertaining to this research question was observed. Table 14 illustrates this negative relationship.

Findings. Logisticians generally agreed that communication and interpersonal skills training in the Air Force should be improved. Responses to questions 10 through 12 showed that logisticians felt more emphasis should be placed on communication and interpersonal skills training. Directors of resource management felt stronger about this than other groups. Responses to question 13 expressed mild dissatisfaction with the quality of current Air Force training.

Research Question Six

> Do practicing military logisticians believe that all education, training, and AFSC structures should be combined where possible to emphasize systems thinking in logistics?

Discussion. To measure respondent's feelings concerning this research question, they were asked a series of survey questions. Questions 14 through 16 asked for respondent opinion concerning a core block of instruction in logistics systems during initial technical training, combining logistics staff officer courses, and establishing one logistics AFSC.

Survey Question 14:

A core block of instruction that emphasizes the scope of the logistics system (i.e. logistics flow form acquisition to disposal and interfaces between logistics functions) should be taught at the beginning of all initial technical training to prospective logisticians.

Teaching a core block on logistics systems had wide support. Results are presented in Table 19. The overall mean for all strata was 3.943 with 79.0 percent of the respondents agreeing or highly agreeing, 10.2 percent agreeing or highly disagreeing, and 10.8 percent neither agreeing or disagreeing.

The one way ANOVA by rank found no significant difference between rank strata. The one way ANOVA by AFSC did find a significant difference between AFSC strata with an F test score of 6.9397 (p=.0000). The Scheffe test indicated that the difference was between AFSC 004X and AFSCs 31XX and 40XX. Directors of logistics felt more positively about a core block of instruction than did missile, aircraft, and munition maintenance officers. A significant difference was also noted between AFSC 66XX and 31XX. Logistics plans and programs officers desired a core block of instruction more than did missile maintenance officers. Despite the difference between AFSC strata there was general agreement with having a core block of instruction in logistics systems.

Many unsolicited comments were received concerning a core block of instruction in logistics systems. Most comments were positive and added that the block of instruction

TABLE 19

ANALYSIS OF QUESTION 14,
CORE BLOCK IN LOGISTICS SYSTEMS
(N = 1838)

STRATA	PERCENTAGE OF RESPONSES TO EACH LIKERT SCALE VALUE* 1	2	3	4	5	MEAN	MEDIAN	MODE
RANK								
1. CPT	1.8	9.3	14.1	45.5	29.3	3.913	4	4
2. MAJ	1.2	8.7	10.3	51.4	28.4	3.972	4	4
3. LTC	1.6	9.1	8.3	54.7	26.3	3.951	4	4
4. COL	0.3	8.6	12.3	56.1	22.7	3.923	4	4
AFSC								
5. 31XX	0.0	13.9	12.7	55.7	17.7	3.772	4	4
6. 40XX	1.4	13.3	13.1	49.3	22.9	3.789	4	4
7. 60XX	1.1	6.8	11.4	58.6	22.1	3.935	4	4
8. 64XX	3.0	7.3	7.0	49.2	33.6	4.030	4	4
9. 66XX	1.4	6.0	9.6	47.3	35.6	4.096	4	4
10. 004X	0.0	4.2	10.1	53.6	32.1	4.135	4	4
11. 009X	0.9	9.2	11.0	61.5	17.4	3.853	4	4
OVERALL	1.3	8.9	10.8	52.1	26.9	3.943	4	4

* NOTE: Likert scale values are: 1 corresponds to "highly disagree," 2 corresponds to "disagree," 3 corresponds to "neither agree or disagree," 4 corresponds to "agree," and 5 corresponds to "highly agree."

was needed but should be later in a logistician's career rather than during initial technical training. Some suggested that the end of the course would be more appropriate, while others thought that three to four years of experience should be obtained before attending this block of instruction. Comments are presented in Appendix D.

Survey Question 15:

> All logistics functional specialty staff officer courses taught by Air Training Command to field grade officers (i.e. aerospace maintenance, supply staff officer, and transportation staff officer) should be combined into one logistics staff officer course.

Respondents did not support the combining of all logistics staff officer courses into a single course. Results are displayed in Table 20. The overall mean was 2.667 with only 28.2 percent agreeing or highly agreeing, 54.2 percent disagreeing or highly disagreeing, and 17.6 percent neither agreeing or disagreeing. The modal response was 2, disagree, with 722 (39.3 percent) responses.

A one way ANOVA by rank yielded an F test score of 4.3553 (p=.0046), indicating a significant difference between rank strata. The Scheffe test isolated the difference to captains and colonels. Colonels tended to disagree more than captains on combining logistics staff officer courses. The homogeneous subgrouping of rank strata suggested a possible hierarchical effect by rank. A Pearson Correlation Coefficient of -.079 (p=.000) gave slight evidence that the higher the rank the more likely an officer

TABLE 20

ANALYSIS OF QUESTION 15,
SINGLE LOGISTICS STAFF OFFICER COURSE
(N = 1838)

STRATA	PERCENTAGE OF RESPONSES TO EACH LIKERT SCALE VALUE* 1	2	3	4	5	MEAN	MEDIAN	MODE
RANK								
1. CPT	14.7	30.5	22.5	20.2	12.1	2.845	3	2
2. MAJ	14.7	40.2	16.5	21.5	7.0	2.660	2	2
3. LTC	15.0	41.1	17.2	19.6	7.0	2.625	2	2
4. COL	15.3	44.6	14.4	21.4	4.3	2.547	2	2
AFSC								
5. 31XX	10.7	39.0	26.4	16.4	7.5	2.711	3	2
6. 40XX	15.3	33.1	18.8	22.9	9.8	2.787	3	2
7. 60XX	20.2	40.7	14.4	18.6	6.1	2.498	2	2
8. 64XX	19.5	40.1	12.6	19.9	7.9	2.566	2	2
9. 66XX	12.2	43.4	17.9	19.4	7.2	2.659	2	2
10. 004X	11.4	40.5	18.6	23.2	6.3	2.726	2	2
11. 009X	8.3	48.6	18.3	20.2	4.6	2.462	2	2
OVERALL	14.9	39.3	17.6	20.6	7.6	2.667	2	2

* NOTE: Likert scale values are: 1 corresponds to "highly disagree," 2 corresponds to "disagree," 3 corresponds to "neither agree or disagree," 4 corresponds to "agree," and 5 corresponds to "highly agree."

disagreed with establishing a single logistics staff officer course.

A one way ANOVA by AFSC indicated a significant difference existed between AFSC strata. However, the Scheffe test failed to find a significant difference between any two strata.

No interaction effect between rank and AFSC was discovered.

Survey Question 16:

> All logistics AFSCs (31XX, 40XX, 60XX, 64XX, and 66XX) should be combined into one logistics AFSC while retaining a method of identifying functional experience.

Overall, respondents disagreed with combining AFSCs. Results are presented in Table 21. The overall mean for all strata was 1.988 with only 12.4 percent of the respondents agreeing or highly agreeing, 78.1 percent disagreeing or highly disagreeing, and 9.6 percent neither agreeing or disagreeing. The modal response to question 16 was 2, disagree, with 727 (39.5 percent) responses. Response 1, highly disagree, was not far behind with 710 (38.6 percent) responses.

The one way ANOVA by rank showed no significant differences. However, the one way ANOVA by AFSC did show a significant difference between AFSC strata. An F test score of 5.0859 (p=.0000) was attained. The Scheffe test identified the difference to be between AFSC 40XX with AFSCs 64XX and 009X. Directors of resource management and supply

TABLE 21

ANALYSIS OF QUESTION 16,
SINGLE LOGISTICS AFSC
(N = 1840)

STRATA	PERCENTAGE OF RESPONSES TO EACH LIKERT SCALE VALUE* 1	2	3	4	5	MEAN	MEDIAN	MODE
RANK								
1. CPT	41.4	36.0	8.2	10.3	4.1	1.997	2	1
2. MAJ	39.6	36.4	9.7	10.9	3.4	2.020	2	1
3. LTC	39.2	40.7	8.8	8.1	3.2	1.954	2	2
4. COL	32.4	46.2	12.5	7.3	1.5	1.994	2	2
AFSC								
5. 31XX	41.5	32.7	11.3	12.6	1.9	2.006	2	1
6. 40XX	44.8	39.3	7.6	5.7	2.7	1.822	2	1
7. 60XX	42.6	38.0	9.5	7.2	2.7	1.894	2	1
8. 64XX	33.8	37.7	9.6	13.9	5.0	2.185	2	2
9. 66XX	40.2	38.1	8.2	9.3	4.3	1.993	2	1
10. 004X	30.0	48.1	10.1	8.9	3.0	2.068	2	2
11. 009X	24.8	44.0	18.3	11.9	0.9	2.202	2	2
OVERALL	38.6	39.5	9.6	9.2	3.2	1.988	2	2

* NOTE: Likert scale values are: 1 corresponds to "highly disagree," 2 corresponds to "disagree," 3 corresponds to "neither agree or disagree," 4 corresponds to "agree," and 5 corresponds to "highly agree."

officers felt slightly more positive about combining AFSCs than did aircraft and munitions maintenance officers. However, only 24.8 percent of the directors of resource management agreed or highly agreed with combining AFSCs. Also, only 18.9 percent of the supply officers agreed or highly agreed. Response 2, disagree, was still the modal response for both directors of resource management and supply officers.

Findings. Of the three areas measured in this research question, only the core block of instruction in logistics systems was supported. Most logisticians agreed with establishing a core block of instruction in logistics systems during initial technical training. There was a general lack of support for combining all logistics staff officer courses into a single course. Logisticians rejected the proposal to combine all logistics AFSCs into one.

Research Question Seven

> Do practicing military logisticians believe that a senior logistician should have a graduate degree in logistics or other closely related field.

Discussion. To find the answer to this research question, respondents were asked to respond to survey question 17.

Survey Question 17:

> Officers preparing to become future senior logisticians (Colonels) should obtain a graduate degree in logistics or other closely related field.

Many respondents agreed that a graduate degree was important in the career development of a future senior logistician. Results are presented in Table 22. However, there were a large number of respondents who disagreed or were unsure. There were 44.0 percent of the respondent who agreed or highly agreed, 31.9 percent who disagreed or highly disagreed, and 24.2 percent who neither agreed or disagreed.

The one way ANOVA by rank found no significant differences. However, the one way ANOVA by AFSC yielded an F test score of 5.7644 (p=.0000) between AFSC strata. The Scheffe test uncovered the difference to be between AFSC 40XX and 64XX. As a group, aircraft and munition maintenance officers disagreed with the importance of graduate education. Supply officers, on the other hand, thought graduate logistics education more desirable than did other AFSCs.

There appeared to be some division of groups among aircraft and munition maintenance officers. Their response distribution for this question was bimodal, an equal number agreed as disagreed. Response 2, disagree, and response 4, agree, both had 142 of the 489 total responses. There were 35.3 percent of the maintenance officers who agreed or highly agreed, 40.3 percent who disagreed or highly disagreed, and 24.3 percent who neither agreed or disagreed. Aircraft and munition maintenance officers as a whole were

TABLE 22

ANALYSIS OF QUESTION 17,
GRADUATE EDUCATION
(N = 1840)

	PERCENTAGE OF RESPONSES TO EACH LIKERT SCALE VALUE*							
STRATA	1	2	3	4	5	MEAN	MEDIAN	MODE
RANK								
1. CPT	9.8	24.9	20.1	33.7	11.6	3.123	3	4
2. MAJ	8.5	23.7	24.3	33.6	9.9	3.127	3	4
3. LTC	6.9	25.5	24.7	33.5	9.5	3.132	3	4
4. COL	5.5	21.7	27.8	34.3	10.7	3.229	3	4
AFSC								
5. 31XX	6.9	22.0	30.8	30.8	9.4	3.138	3	3/4
6. 40XX	11.2	29.0	24.3	29.0	6.3	2.904	3	2/4
7. 60XX	7.2	20.9	26.6	36.1	9.1	3.190	3	4
8. 64XX	7.3	21.5	17.5	40.1	13.6	3.311	4	4
9. 66XX	7.5	20.3	22.4	37.4	12.5	3.270	3	4
10. 004X	3.4	29.1	23.6	31.6	12.2	3.203	3	4
11. 009X	4.6	21.1	32.1	30.3	11.9	3.239	3	3
OVERALL	7.7	24.2	24.2	33.7	10.3	3.146	3	4

* NOTE: Likert scale values are: 1 corresponds to "highly disagree," 2 corresponds to "disagree," 3 corresponds to "neither agree or disagree," 4 corresponds to "agree," and 5 corresponds to "highly agree."

divided concerning the benefits to be derived from graduate education for a senior logistician.

A few unsolicited comments concerning this question mentioned that graduate education was nice to have, but experience was more important. Comments to survey questions are presented in Appendix D.

Findings. Although graduate logistics education was somewhat supported, it was not considered to be important by a large number of respondents. Aircraft and munition maintenance disagree more than any other group. Supply officers supported graduate logistics education more than any other functional group.

Research Question Eight

> Do practicing military logisticians believe that an ideal executive development program should be selective and specifically tailored to the person according to his/her background and the philosophy of creating a well-rounded logistician?

Discussion. Research question eight concerned the goal and structure of the proposed executive development program. The research question was answered through a series of survey questions. Question 18 asked respondents to express their opinion as to whether an executive development program should be selective or open to all logistics officers. Question 36 was designed to determine what type of selection method should be used to select participants for executive development. This question was multiple choice and did not use a Likert scale. Option 4, of question 36, gave the

respondent an opportunity to reiterate their response to question 18, if the respondent believed that an executive development program should be open to all. Question 19 concerned the degree of flexibility respondents felt should be present in executive development. Question 20 was designed to elicit a respondent's opinion concerning the goal of a proposed executive development program. The goal of the executive development program was stated and respondents were asked to express their opinions. Question 21 focused on a proposed method by which the goal of the executive development program could be obtained. A method of tailoring the program to the individual was presented and respondents were given the opportunity to express their opinion.

The correlation coefficients of the survey questions gave some support to the grouping of these questions as a construct. A correlation matrix of these questions is presented in Table 23.

Survey Question 18:

> An executive development program for developing officers for senior logistician (Colonel) status that gives its participants special experience and opportunities should include all logistics officers as participants.

Most respondents felt that all logistics officers should be included as participants in an executive development program. In other words, the program should not be selective. Results are presented in Table 24. The overall mean was 3.572 with 63.6 percent agreeing or highly agree-

TABLE 23

CORRELATION MATRIX OF QUESTIONS 18, 19, 20, AND 21*

QUESTIONS	18	19	20	21
18	1.0000	.2721	.1006	.1767
19		1.0000	.2335	.2587
20			1.0000	.4246
21				1.0000

* NOTE: All probabilities were at p=.000, indicating the probability was lower than SPSSx system programming permitted printing.

ing, 19.7 percent disagreeing, and 16.7 percent neither agreeing or disagreeing.

The one way ANOVA by rank yielded an F test score of 13.7804 (p=.0000) indicating a significant difference between rank strata. The Scheffe test found significant differences between captains with lieutenant colonels and colonels. A significant difference was also found to exist between majors and colonels. The grouping of means by homogeneous subgroups indicated a hierarchical effect by rank. The higher the rank the more selective the respondent felt an executive development program should be. A Pearson Correlation coefficient of -.1484 (p=.000) gave some evidence to the relationship.

TABLE 24

ANALYSIS OF QUESTION 18,
SELECTION FOR EXECUTIVE DEVELOPMENT
(N = 1839)

	PERCENTAGE OF RESPONSES TO EACH LIKERT SCALE VALUE*							
STRATA	1	2	3	4	5	MEAN	MEDIAN	MODE
RANK								
1. CPT	2.1	9.0	16.0	53.1	19.8	3.796	4	4
2. MAJ	1.6	16.5	16.3	46.7	18.9	3.648	4	4
3. LTC	3.3	20.1	15.2	47.0	14.4	3.490	4	4
4. COL	3.4	21.7	21.1	44.3	9.5	3.349	4	4
AFSC								
5. 31XX	0.6	17.0	26.4	45.3	10.7	3.484	4	4
6. 40XX	3.1	15.4	14.1	52.9	14.5	3.605	4	4
7. 60XX	1.1	16.0	14.4	49.0	19.4	3.696	4	4
8. 64XX	2.6	15.2	13.9	47.4	20.9	3.685	4	4
9. 66XX	3.2	16.7	19.2	43.4	17.4	3.552	4	4
10. 004X	3.8	25.7	16.5	42.2	11.8	3.325	4	4
11. 009X	2.8	14.7	21.1	49.5	11.9	3.532	4	4
OVERALL	2.6	17.1	16.7	47.7	15.9	3.572	4	4

* NOTE: Likert scale values are: 1 corresponds to "highly disagree," 2 corresponds to "disagree," 3 corresponds to "neither agree or disagree," 4 corresponds to "agree," and 5 corresponds to "highly agree."

The one way ANOVA by AFSC indicated significant differences with an F test score of 3.8716 (p=.0008). However, the Scheffe test failed to find a significant difference between AFSC strata at an alpha level of .05.

No interaction effect was detected between rank and AFSC.

Survey Question 36:

The best method to select participants for an executive development program that would ensure the best quality and greatest number of future senior logisticians (Colonel) is:

(1) Convene a board of senior logisticians to select participants.
(2) Select logisticians who are selected for a below-the-zone promotion.
(3) Have the personnel resource managers for logistics at AFMPC select the best qualified participants.
(4) Program is open to all officers so selection is not necessary.
(5) Other.

Respondents generally felt that participants for executive development should be selected by a board of senior logisticians. Using a board of senior logisticians was the modal response with 997 respondents out of a total of 1801. Option 1 received 55.4 percent of the responses.

The second most favored response was option 4, with 385 responses, representing 21.4 percent of the total number of responses. Surprisingly, this contradicted the results obtained in question 18. In question 18, 63.6 percent of the respondents indicated that an executive development

program should be open to all. This may indicate a problem with the internal validity of one or both of the questions.

There were 197 respondents that selected option 5, other. Many of these respondents suggested alternate selection methods or expounded on the other options. Many of these respondents enumerated criteria to be used by a board, board membership criteria, or board procedures. The comments to question 36 are presented in Appendix D.

Survey Question 19:

> An effective executive development program should have a set pattern of assignments and education that all participants complete.

Respondents indicated that a pattern was desirable but there should be flexibility. Respondents also indicated that there should be more flexibility in an executive development program than in an overall logistics career development program. The results of question 19 were addressed in research question three and displayed in Table 13.

Survey Question 20:

> An effective executive development program should help the participant gain varied experience at a faster rate than he/she normally would.

Respondents agreed with the goal of the proposed executive development program. Results are presented in Table 25. The overall mean for all strata was 3.761 with 73.8 percent agreeing or highly agreeing, 10.3 percent disagreeing or highly disagreeing, and 15.8 percent neither agreeing or disagreeing.

TABLE 25

ANALYSIS OF QUESTION 20,
EXECUTIVE DEVELOPMENT PROGRAM GOAL
(N = 1837)

	PERCENTAGE OF RESPONSES TO EACH LIKERT SCALE VALUE*							
STRATA	1	2	3	4	5	MEAN	MEDIAN	MODE
RANK								
1. CPT	1.5	8.2	15.7	58.1	16.5	3.797	4	4
2. MAJ	1.0	12.1	17.8	56.0	13.1	3.681	4	4
3. LTC	1.0	8.0	16.3	61.2	13.6	3.784	4	4
4. COL	2.1	7.0	12.2	66.4	12.2	3.795	4	4
AFSC								
5. 31XX	1.3	10.7	20.1	57.9	10.1	3.648	4	4
6. 40XX	1.6	10.4	17.4	58.9	11.7	3.685	4	4
7. 60XX	0.4	9.9	15.3	61.5	13.0	3.767	4	4
8. 64XX	0.7	8.7	14.3	60.3	16.0	3.823	4	4
9. 66XX	1.1	8.2	16.4	57.3	17.1	3.811	4	4
10. 004X	2.1	6.3	10.1	66.7	14.8	3.857	4	4
11. 009X	2.8	6.4	19.3	56.9	14.7	3.743	4	4
OVERALL	1.3	9.0	15.8	60.0	13.8	3.761	4	4

* NOTE: Likert scale values are: 1 corresponds to "highly disagree," 2 corresponds to "disagree," 3 corresponds to "neither agree or disagree," 4 corresponds to "agree," and 5 corresponds to "highly agree."

The one way ANOVA by rank and AFSC found no significant differences between strata.

Survey Question 21:

> An effective executive development program should consist of one or two separate two year assignments in areas that are specifically chosen to move the officer closer to becoming a well-rounded logistician.

Respondents supported the proposed assignment method mentioned in the survey question. Results are presented in Table 26. The overall mean for all strata was 3.82 with 75.7 percent agreeing or highly agreeing, 8.2 percent disagreeing or highly disagreeing, and 16.2 percent neither agreeing or disagreeing.

The one way ANOVA by rank did not yield a significant difference. The one way ANOVA by AFSC did achieve an F test score of 2.9234 (p=.0077). The Scheffe test determined that the significant difference was between AFSCs 31XX and 64XX. Supply officers tended to agree more strongly with the proposed assignment method than did missile maintenance officers. Even with this difference, both AFSCs did agree with the proposed assignment method.

Findings. The results of research question eight are somewhat contradictory. Respondents indicated in question 18 a preference for an executive development program that would be open to all. But, in question 36, most respondents indicated a preference for a selective program by signifying selection should be accomplished by a board of senior logisticians. While a statistically significant conclusion

TABLE 26

ANALYSIS OF QUESTION 21,
EXECUTIVE DEVELOPMENT PROGRAM ASSIGNMENT METHOD
(N = 1839)

	PERCENTAGE OF RESPONSES TO EACH LIKERT SCALE VALUE*							
STRATA	1	2	3	4	5	MEAN	MEDIAN	MODE
RANK								
1. CPT	2.1	7.5	13.1	56.8	20.6	3.864	4	4
2. MAJ	1.6	7.7	15.5	60.7	14.5	3.788	4	4
3. LTC	1.0	6.2	19.0	59.2	14.7	3.804	4	4
4. COL	0.9	5.8	15.3	63.6	14.4	3.847	4	4
AFSC								
5. 31XX	1.3	11.9	23.9	49.7	13.2	3.616	4	4
6. 40XX	1.8	8.2	14.9	58.5	16.6	3.798	4	4
7. 60XX	0.4	8.4	17.5	62.4	11.4	3.760	4	4
8. 64XX	1.0	4.0	13.6	65.8	15.6	3.910	4	4
9. 66XX	2.8	3.9	16.4	56.6	20.3	3.875	4	4
10. 004X	0.8	7.2	14.3	60.3	17.3	3.861	4	4
11. 009X	0.0	3.7	17.4	66.1	12.8	3.881	4	4
OVERALL	1.4	6.8	16.2	59.9	15.8	3.820	4	4

* NOTE: Likert scale values are: 1 corresponds to "highly disagree," 2 corresponds to "disagree," 3 corresponds to "neither agree or disagree," 4 corresponds to "agree," and 5 corresponds to "highly agree."

can not be made, it would seem that if an executive development program was selective, most practicing logisticians would prefer the selection to be made by a board of senior logisticians.

Most respondents agreed with the proposed goal of the executive development program and the suggested assignment method. Respondents also desired more flexibility in an executive development program than would be found in an overall logistics career development program.

Research Question Nine

> Do practicing military logisticians believe that supervisors should be accountable for career counseling and their subordinate's development?

Discussion. A key element in the proposed logistics career development model is the importance of supervisor involvement in a subordinate's career development. Survey question 22 addressed the issue of supervisor accountability for the career development process.

Survey Question 22:

> Supervisors should be accountable to their superiors for the career counseling and development of their subordinates.

Respondents agreed that supervisors should be accountable. Results are presented in Table 27. The overall mean for all strata was 4.044 with 82.5 percent agreeing or highly agreeing, 6.9 percent disagreeing or highly disagreeing, and 10.7 percent neither agreeing or disagreeing.

TABLE 27

ANALYSIS OF QUESTION 22,
SUPERVISOR ACCOUNTABILITY
(N = 1838)

	PERCENTAGE OF RESPONSES TO EACH LIKERT SCALE VALUE*							
STRATA	1	2	3	4	5	MEAN	MEDIAN	MODE
RANK								
1. CPT	2.8	6.7	13.9	48.3	28.3	3.925	4	4
2. MAJ	1.2	6.4	12.3	52.3	27.8	3.990	4	4
3. LTC	1.6	5.4	8.9	54.5	29.5	4.049	4	4
4. COL	0.3	2.2	7.7	51.4	38.5	4.255	4	4
AFSC								
5. 31XX	0.6	7.5	8.8	58.5	24.5	3.987	4	4
6. 40XX	2.5	6.7	12.3	46.6	31.9	3.988	4	4
7. 60XX	0.8	4.9	10.3	57.4	26.6	4.042	4	4
8. 64XX	1.0	6.3	11.3	48.5	32.9	4.060	4	4
9. 66XX	2.8	4.3	11.0	56.2	25.6	3.975	4	4
10. 004X	0.4	3.0	9.3	51.5	35.9	4.194	4	4
11. 009X	0.9	2.8	7.4	54.6	34.3	4.185	4	4
OVERALL	1.5	5.4	10.7	52.1	30.4	4.044	4	4

* NOTE: Likert scale values are: 1 corresponds to "highly disagree," 2 corresponds to "disagree," 3 corresponds to "neither agree or disagree," 4 corresponds to "agree," and 5 corresponds to "highly agree."

The one way ANOVA by rank showed a significant difference between rank strata with an F test score of 9.5269 (p=.0000). The Scheffe test and examination of the homogeneous subgroups indicated that colonels differed from all other ranks. Colonels felt more strongly that supervisors should be accountable.

The one way ANOVA by AFSC yielded an F test score of 2.4103 (p=.0253), but the Scheffe test failed to find a significant difference between any two strata at the .05 level of significance.

Research Question Ten

> Do practicing military logisticians agree with the phasing of career activities as presented in the career development model?

Discussion. To ascertain the answer to this research question, the phasing of career activities in the proposed logistics career development model was divided among four investigative questions. The first investigative question was designed to determine if logisticians agree that an officer should be a specialist first and a generalist second. The second investigative question was to determine if logisticians agree that an officer should attend a short course in communicative and interpersonal skills as soon as possible after entry into the Air Force. The third investigative question involved asking logisticians if they agree that a logistics officer should attend a graduate logistics education program between 4 and 16 years of service. The

final investigative question was to find out if logisticians agree that the best time to select participants for a executive development program is between 8 and 12 years of service. This time span corresponds to when an officer is eligible to be selected for below-the zone promotion to major or candidacy for ISS.

To answer the investigative questions and ultimately the research question, respondents were asked to respond to a series of survey questions. Questions 23 to 27 were asked in a sequenced order to determine respondent opinion about at which rank an officer is or should be a specialist or generalist. To show agreement with the phasing of the model, the responses should indicate a gradual shifting from specialist to generalist as the rank increases. Questions 33 to 35 used a time span scale rather than a Likert scale. Question 33 asked respondents to select the best time to attend a graduate logistics program. Question 34 concerned the best time to a short course in communication and interpersonal skills training. Question 35 asked respondent opinion concerning the best time span to select officers for an executive development program.

Originally, questions 28 to 32 were intended to correspond to questions 23 to 27. Both sets of questions were designed to test respondent agreement with the phasing of logisticians as specialists initially and generalists later. However, questions 28 to 32 assumed that management level

TABLE 28

CORRELATION MATRIX OF QUESTIONS 23, 24, 25, 26, AND 27*

QUESTIONS	23	24	25	26	27
23	1.0000	.7045	.2104	-.0087	-.1377
24		1.0000	.5363	.2560	.0763
25			1.0000	.6738	.4878
26				1.0000	.7865
27					1.0000

* NOTE: All probabilities, with two exceptions, were at p=.000, indicating the probability was lower than SPSSx system programming permitted printing. The probability for questions 24 and 27 was p=.001, while the probability for questions 23 and 26 was p=.355.

correlated with whether an officer was a specialist or generalist. An examination of the correlation scores for both sets of questions indicated that the two sets of questions may be testing two different constructs. The underlying assumption of management level relationship to the specialist/generalist dichotomy may be false. The results of questions 28 to 32 are presented as respondent opinion as to where logisticians perceive the best career opportunity are for each rank.

Specialist First, Generalist Second. Respondents were asked in questions 23 to 27 at what rank a logistician is a specialists. For example, an agree response would indicate that respondents felt that lieutenants should be specialists, a disagree response would indicate that respondents felt that lieutenants should be generalists, while the neither agree or disagree response would indicate a middle ground between specialist and generalist along a continuum.

A high degree of correlation, moving along the diagonal of the table, indicated a continual shifting from one response value to the next as respondents progressed through the series of questions. This indicated that a gradual shifting from specialist to generalist by increasing rank had occurred. The correlation scores for this series of questions were presented in Table 28. This creeping effect was also demonstrated by the shifting of means for this series of questions as shown in Tables 29 through 33.

Survey Question 23:

Lieutenants should be specialists.

Respondents generally believed that lieutenants should be specialists. Results are presented in Table 29. The overall mean for all strata was 3.747 with 71.4 percent agreeing or hignly agreeing, 19.2 percent disagreeing or highly disagreeing, and 9.4 percent neither agreeing or disagreeing.

The one way ANOVA by rank yielded a significant difference between rank strata. An F test score of 27.5197 (p=.0000) was obtained. The Scheffe test and an examination of homogeneous subgroups suggested a possible hierarchical effect. Captains differed with all other ranks, while majors differed with colonels. Indications were that the higher the rank the more a respondent believed that a lieutenant should be a specialist. A Pearson Correlation Coefficient of .192 (p=.000) tends to support this relationship.

The one way ANOVA by AFSC also yielded a significant difference between AFSC strata. An F test score of 7.5894 (p=.000) was obtained. The Scheffe test found that AFSC 004X differed significantly from AFSCs 40XX and 64XX. Directors of logistics tended to feel more strongly that lieutenants should be specialists than did aircraft and munition maintenance officers and supply officers.

No interaction was detected between rank and AFSC.

Survey Question 24:

Captains should be specialists.

Almost identical results were obtained for captains as were obtained for lieutenants. Results are presented in Table 30. The overall mean for all strata was 3.604 with 66.4 percent agreeing or highly agreeing, 16.3 percent disagreeing or highly disagreeing, and 17.4 percent neither agreeing or disagreeing. A t test between means for captains and lieutenants indicated that the means were

TABLE 29

ANALYSIS OF QUESTION 23,
LIEUTENANT SPECIALISTS
(N = 1837)

	PERCENTAGE OF RESPONSES TO EACH LIKERT SCALE VALUE*							
STRATA	1	2	3	4	5	MEAN	MEDIAN	MODE
RANK								
1. CPT	10.1	22.9	12.1	36.3	18.6	3.304	4	4
2. MAJ	6.0	13.1	9.7	42.1	30.0	3.754	4	4
3. LTC	4.0	9.6	8.3	49.4	28.7	3.893	4	4
4. COL	2.5	11.0	8.0	42.9	35.6	3.982	4	4
AFSC								
5. 31XX	3.8	12.6	11.3	50.3	22.0	3.755	4	4
6. 40XX	7.8	19.8	9.0	39.9	23.5	3.515	4	4
7. 60XX	6.8	10.3	9.1	46.4	27.4	3.772	4	4
8. 64XX	6.3	15.7	9.7	40.3	28.0	3.680	4	4
9. 66XX	4.6	10.4	9.6	44.3	31.1	3.868	4	4
10. 004X	2.1	6.8	9.3	43.9	38.0	4.089	4	4
11. 009X	2.8	12.8	8.3	49.5	26.6	3.844	4	4
OVERALL	5.6	13.6	9.4	43.5	27.9	3.747	4	4

* NOTE: Likert scale values are: 1 corresponds to "highly disagree," 2 corresponds to "disagree," 3 corresponds to "neither agree or disagree," 4 corresponds to "agree," and 5 corresponds to "highly agree."

TABLE 30

ANALYSIS OF QUESTION 24,
CAPTAIN SPECIALISTS
(N = 1836)

	PERCENTAGE OF RESPONSES TO EACH LIKERT SCALE VALUE*							
STRATA	1	2	3	4	5	MEAN	MEDIAN	MODE
RANK								
1. CPT	7.7	22.1	20.3	40.4	9.5	3.219	3	4
2. MAJ	3.4	13.7	17.9	50.2	14.7	3.595	4	4
3. LTC	3.0	7.7	16.9	58.3	14.1	3.727	4	4
4. COL	0.9	8.9	13.8	57.5	18.8	3.843	4	4
AFSC								
5. 31XX	3.1	10.1	23.3	54.1	9.4	3.579	4	4
6. 40XX	5.5	16.8	16.4	46.8	14.5	3.481	4	4
7. 60XX	4.9	9.9	16.0	54.8	14.4	3.639	4	4
8. 64XX	5.3	15.7	17.3	49.0	12.7	3.480	4	4
9. 66XX	1.8	11.8	19.6	51.4	15.4	3.668	4	4
10. 004X	1.3	6.8	15.3	61.9	14.8	3.822	4	4
11. 009X	0.0	10.1	15.6	56.9	17.4	3.817	4	4
OVERALL	3.8	12.6	17.4	52.2	14.2	3.604	4	4

* NOTE: Likert scale values are: 1 corresponds to "highly disagree," 2 corresponds to "disagree," 3 corresponds to "neither agree or disagree," 4 corresponds to "agree," and 5 corresponds to "highly agree."

TABLE 31

ANALYSIS OF QUESTION 25,
MAJOR SPECIALISTS
(N = 1836)

STRATA	PERCENTAGE OF RESPONSES TO EACH LIKERT SCALE VALUE* 1	2	3	4	5	MEAN	MEDIAN	MODE
RANK								
1. CPT	10.3	37.4	27.1	20.9	4.4	2.716	3	2
2. MAJ	5.8	40.7	32.9	17.7	2.8	2.710	3	2
3. LTC	5.4	32.6	37.5	20.9	3.5	2.845	3	3
4. COL	2.5	26.4	39.6	26.1	5.5	3.058	3	3
AFSC								
5. 31XX	5.0	41.5	35.2	14.5	3.8	2.704	3	2
6. 40XX	7.0	36.8	31.1	21.1	4.1	2.785	3	2
7. 60XX	7.6	35.0	36.9	16.7	3.8	2.741	3	3
8. 64XX	7.0	35.5	29.1	26.8	1.7	2.806	3	2
9. 66XX	6.1	35.4	36.1	18.6	3.9	2.789	3	3
10. 004X	2.1	30.8	41.4	21.1	4.6	2.954	3	3
11. 009X	5.5	19.3	37.6	30.3	7.3	3.147	3	3
OVERALL	6.0	34.7	34.4	21.0	3.9	2.819	3	2

* NOTE: Likert scale values are: 1 corresponds to "highly disagree," 2 corresponds to "disagree," 3 corresponds to "neither agree or disagree," 4 corresponds to "agree," and 5 corresponds to "highly agree."

significantly different. The two tailed t test value was 7.17 (p=.000). Respondents agreed that a captain should be a specialist but to a lesser degree than a lieutenant.

The one way ANOVA by rank and AFSC both yielded significant differences. The Scheffe test results corresponded exactly with the differences between strata that was obtained for lieutenants. The same ranks and AFSCs differed. The F test score for rank was 29.8411 (p=.0000) and the F test score for AFSC was 5.0039 (p=.0000).

No interaction effect between rank and AFSC was noted.

Survey Question 25:

Majors should be specialists.

Overall, respondents indicated that majors were in the middle ground between specialist and generalist. Results are presented in Table 31. There was a leaning toward more of a generalist than a specialist. The overall mean for all strata was 2.819 with 24.9 percent of the respondents agreeing or highly agreeing, 40.7 percent disagreeing or highly disagreeing, and 34.4 percent neither agreeing or disagreeing that majors should be specialists.

The one way ANOVA by rank yielded an F test score of 10.6976 (p=.0000) indicating a significant difference. The Scheffe test indicated that colonels differed with all other ranks. Colonels thought that a major should be more of a specialists than the other ranks did.

The one way ANOVA by AFSC also indicated a significant difference with an F test score of 3.7484 (p=.0000). The Scheffe test isolated the difference to be between 009X and all other AFSCs except 004X. An examination of homogeneous subgroups showed that AFSC 004X was homogeneous with AFSC 009X. Directors of resource management along with directors of logistics felt that a major should be more of a specialist than did the other AFSCs.

The results of both the one way ANOVA by rank and AFSC seemed to be parallel, since many AFSC 009X and 004X officers are also colonels. However, no interaction effect between rank and AFSC were discovered.

Survey Question 26:

Lieutenant Colonels should be specialists.

Respondents believed that lieutenant colonels should be generalists. Results are displayed in Table 32. The overall mean for all strata was 2.281 with 11.4 percent agreeing or highly agreeing, 70.5 percent disagreeing or highly disagreeing, and 17.6 percent neither agreeing or disagreeing.

There were no significant differences between strata.

Survey Question 27:

Colonels should be specialists.

Respondents agreed that colonels should be generalists. Results are presented in Table 33. The overall mean for all strata was 1.9 with 8.0 percent agreeing or highly agreeing,

80.6 percent disagreeing or highly disagreeing, and 11.4 percent neither agreeing or disagreeing.

The one way ANOVA by rank uncovered significant differences between rank strata with an F test score of 7.7763 (p=.0000). The Scheffe test found the difference to be between captains and all other ranks. Captains felt that a colonel should be less of a generalist and more of a specialist.

The one way ANOVA by AFSC yielded an F test score of 4.3183 (p=.0002), indicating a significant difference between AFSC strata. The Scheffe test discovered the difference to be between AFSCs 004X and 40XX. Directors of logistics felt that a colonel should be more of a generalist than did aircraft and munition maintenance officers.

An interaction effect was detected between rank and AFSC. An F test score of 1.724 (p=.041) was obtained.

Phasing of Graduate Logistics Education. Survey question 33 addressed this investigative question.

Survey Question 33:

> The best time to attend a full time graduate logistics program for an officer is?

Most respondents felt that the best time to attend graduate logistics education was between 4 and 8 years of service. Results are presented in Table 34. There were 1144 respondents, representing 62.6 percent of the total number of respondents that chose this time span. The second most favored time span was 8 to 12 years of service, with

TABLE 32

ANALYSIS OF QUESTION 26,
LIEUTENANT COLONEL SPECIALISTS
(N = 1837)

STRATA	PERCENTAGE OF RESPONSES TO EACH LIKERT SCALE VALUE* 1	2	3	4	5	MEAN	MEDIAN	MODE
RANK								
1. CPT	19.3	50.8	13.9	12.1	3.9	2.304	2	2
2. MAJ	15.5	54.2	18.1	9.9	2.2	2.290	2	2
3. LTC	16.6	56.3	16.9	8.0	2.2	2.230	2	2
4. COL	9.5	58.3	22.4	8.3	1.5	2.340	2	2
AFSC								
5. 31XX	18.9	54.7	18.9	5.0	2.5	2.176	2	2
6. 40XX	15.1	54.4	16.8	9.6	4.1	2.331	2	2
7. 60XX	15.6	54.4	17.9	10.3	1.9	2.285	2	2
8. 64XX	15.7	53.7	17.0	11.7	2.0	2.307	2	2
9. 66XX	18.6	54.3	13.6	11.4	2.1	2.243	2	2
10. 004X	11.0	61.2	19.8	7.2	0.8	2.257	2	2
11. 009X	15.6	50.5	25.7	6.4	1.8	2.284	2	2
OVERALL	15.6	54.9	17.6	9.4	2.4	2.281	2	2

* NOTE: Likert scale values are: 1 corresponds to "highly disagree," 2 corresponds to "disagree," 3 corresponds to "neither agree or disagree," 4 corresponds to "agree," and 5 corresponds to "highly agree."

TABLE 33

ANALYSIS OF QUESTION 27,
COLONEL SPECIALISTS
(N = 1836)

STRATA	PERCENTAGE OF RESPONSES TO EACH LIKERT SCALE VALUE* 1	2	3	4	5	MEAN	MEDIAN	MODE
RANK								
1. CPT	36.3	38.1	11.1	9.0	5.4	2.090	2	2
2. MAJ	38.9	40.1	12.9	5.8	2.2	1.923	2	2
3. LTC	42.2	40.7	11.5	3.8	1.8	1.823	2	1
4. COL	42.3	43.3	9.2	3.7	1.5	1.788	2	2
AFSC								
5. 31XX	40.3	40.9	13.8	2.5	2.5	1.862	2	2
6. 40XX	35.5	41.0	11.7	7.4	4.5	2.045	2	2
7. 60XX	41.1	39.2	12.9	5.3	1.5	1.871	2	1
8. 64XX	36.7	41.7	12.7	6.7	2.3	1.963	2	2
9. 66XX	45.4	37.5	8.2	6.4	2.5	1.832	2	1
10. 004X	47.3	40.9	8.4	3.0	0.4	1.684	2	1
11. 009X	38.5	44.0	13.8	0.9	2.8	1.853	2	2
OVERALL	40.1	40.5	11.4	5.4	2.6	1.900	2	2

* NOTE: Likert scale values are: 1 corresponds to "highly disagree," 2 corresponds to "disagree," 3 corresponds to "neither agree or disagree," 4 corresponds to "agree," and 5 corresponds to "nighly agree."

TABLE 34

ANALYSIS OF QUESTION 33,
ATTEND GRADUATE LOGISTICS PROGRAM
(N = 1828)

STRATA	SPAN OF YEARS 0-4	4-8	8-12	12-16	16-20	MEAN	MEDIAN	MODE
RANK								
1. CPT	5.4	67.1	24.4	2.6	0.5	2.257	2	2
2. MAJ	3.2	62.2	29.7	4.6	0.2	2.364	2	2
3. LTC	2.9	63.4	30.0	3.5	0.2	2.347	2	2
4. COL	5.9	56.1	33.6	4.4	0.0	2.364	2	2
AFSC								
5. 31XX	3.8	76.3	19.2	0.6	0.0	2.167	2	2
6. 40XX	3.7	59.5	31.8	4.5	0.4	2.384	2	2
7. 60XX	1.9	62.6	32.1	3.4	0.0	2.370	2	2
8. 64XX	3.3	64.5	27.6	4.3	0.3	2.339	2	2
9. 66XX	6.8	64.6	25.0	3.2	0.4	2.257	2	2
10. 004X	3.8	58.7	34.0	3.4	0.0	2.370	2	2
11. 009X	6.5	54.2	32.7	6.5	0.0	2.393	2	2
OVERALL	4.0	62.6	29.4	3.8	0.2	2.335	2	2

TABLE 35

ANALYSIS OF QUESTION 34,
ATTEND COMMUNICATION/INTERPERSONAL SKILLS COURSE
(N = 1817)

STRATA	SPAN OF YEARS 0-4	4-8	8-12	12-16	16-20	MEAN	MEDIAN	MODE
RANK								
1. CPT	79.6	17.3	2.3	0.8	0.0	1.243	1	1
2. MAJ	73.4	19.7	5.8	0.8	0.4	1.352	1	1
3. LTC	64.0	26.3	7.6	1.9	0.2	1.479	1	1
4. COL	60.7	29.9	7.9	1.6	0.0	1.503	1	1
AFSC								
5. 31XX	74.4	19.2	4.5	1.9	0.0	1.340	1	1
6. 40XX	71.5	24.2	3.1	1.2	0.0	1.341	1	1
7. 60XX	65.8	24.3	8.4	1.5	0.0	1.456	1	1
8. 64XX	76.3	18.0	5.0	0.3	0.3	1.303	1	1
9. 66XX	71.3	19.0	7.9	1.4	0.4	1.405	1	1
10. 004X	59.4	30.6	7.9	1.7	0.4	1.533	1	1
11. 009X	56.6	32.1	9.4	1.9	0.0	1.566	1	1
OVERALL	69.3	23.2	6.0	1.3	0.2	1.398	1	1

537 respondents, representing 29.4 percent of the total. The overall mean for all strata was 2.335.

The one way ANOVA by rank showed no significant differences. However, the one way ANOVA by AFSC revealed an F test score of 3.5354 (p=.001) indicating a significant difference between AFSC strata existed. The Scheffe procedure disclosed the difference to be between AFSC 31XX and AFSCs 40XX and 009X. Missile maintenance officers were more likely to believe that graduate education should occur earlier than did aircraft and munition maintenance officers and directors of resource management.

No interaction effect was discovered.

Phasing of Communication and Interpersonal Skills Training. This investigative question was addressed by survey question 34.

Survey Question 34:

> The best time to attend a short course in communication and/or interpersonal skills is?

The respondents felt the best time to attend a short course in communication and interpersonal skills was during the 0 to 4 year time span. Results are presented in Table 35. The 0 to 4 year time span received 1259 responses, representing 69.3 percent of the total number of responses. The second most favored time span was 4 to 8 years. There were 422 responses, representing 29.9 percent of the total, for this time span. The overall mean for all strata was

1.398. The response distribution is skewed to the left toward the earlier time spans.

The one way ANOVA by rank yielded an F test score of 13.3045 (p=.0000) indicating a significant difference between rank strata. The Scheffe test found the difference to be between captains with lieutenant colonels and colonels. A significant difference was also noted between majors and colonels. Further examination of homogeneous subgroups suggested a hierarchical effect. The higher the rank the higher the preferred time span. A correlation coefficient of .1418 (p=000) gave some support for this observation.

The one way ANOVA by AFSC also yielded a significant difference with an F test score of 4.7247 (p=.0001). The Scheffe test discovered the difference to be between AFSCs 64XX and 009X. Directors of resource management tended to feel the time span should be higher than did supply officers.

No interaction effect was found.

Phasing of Executive Development Program. Survey question 35 addressed the selection time span for executive development.

Survey Question 35:

> The best time in the career of an officer to select him/her for an executive development program is?

Most respondents favored selection of participants for an executive development program during the 8 to 12 year

TABLE 36

ANALYSIS OF QUESTION 35,
SELECT FOR EXECUTIVE DEVELOPMENT PROGRAM
(N = 1829)

STRATA	SPAN OF YEARS 0-4	4-8	8-12	12-16	16-20	MEAN	MEDIAN	MODE
RANK								
1. CPT	1.0	26.3	50.8	20.9	1.0	2.946	3	3
2. MAJ	0.2	16.4	51.9	28.9	2.6	3.174	3	3
3. LTC	0.5	15.4	45.3	34.0	4.8	3.273	3	3
4. COL	1.2	12.7	45.5	34.1	6.5	3.319	3	3
AFSC								
5. 31XX	0.6	19.9	45.5	31.4	2.6	3.154	3	3
6. 40XX	0.4	21.5	47.5	27.5	3.1	3.113	3	3
7. 60XX	0.4	14.1	51.3	30.8	3.4	3.228	3	3
8. 64XX	0.3	18.7	48.0	28.7	4.3	3.180	3	3
9. 66XX	1.4	16.2	50.0	29.5	2.9	3.162	3	3
10. 004X	0.9	11.9	46.8	35.3	5.1	3.319	3	3
11. 009X	0.9	16.5	47.7	28.4	6.4	3.229	3	3
OVERALL	0.7	17.5	48.3	29.9	3.7	3.185	3	3

time span. Results are presented in Table 36. This time span received 883 responses, representing 48.3 percent of the total number of responses. The second most favored response was the 12 to 16 year time span. This time span received 546 responses, representing 29.9 percent of the total. The 4 to 8 year time span received 320 responses, representing 17.5 percent of the total. The overall mean for all strata was 3.185. The response distribution appears to be clustered around the mid career point of an officer.

The one way ANOVA by rank uncovered a significant difference between rank strata with an F test score of 18.3216 (p=.0000). The Scheffe test isolated the difference to be between captains and all other ranks. Captains preferred selection to an executive development program earlier than did more senior officers. A correlation coefficient of .1612 (p=.000) gave some evidence of a hierarchical effect.

Although the one way ANOVA by AFSC suggested a significant difference with an F test score of 2.1204 (p=.0000), the Scheffe test failed to uncover any differences between strata.

No interaction effect between rank and AFSC was discovered.

Findings. The phasing of various career activities expressed in the proposed logistics career development model was supported. Respondents agreed that a logistician should be a specialist first and a generalist second. Respondents

also agreed with the phasing of communication/interpersonal skills training, graduate logistics education, and selection for executive development as described in the proposed logistics career development model. Basic differences were noted by rank in that captains preferred to phase career activities earlier than more senior officers. Another basic difference was noted in that directors of resource management preferred to phase career activities later than other AFSCs.

Generally the responses to questions 23 to 27 seemed to suggest that rank was related to whether an officer should be a specialist or generalist. The higher the rank the less of a specialist and the more of a generalist an officer should be. Correspondingly, the lesser the rank the more of a specialist an officer should be. The rank of major appeared to be the transition grade from specialist to generalist.

The rank of the respondent appeared to have some influence upon the responses. Captains tended to think of themselves and lieutenants as more of a generalist than did field grade and senior officers. Field grade and senior officers tended to think that a company grade officer should be more of a specialist. Captains also tended to believe that a colonel should be more of a specialist than the colonels believed. Colonels also thought that a major should be more of a specialist than did the other ranks.

Colonels tended to group themselves and lieutenant colonels as generalists and all others as specialists. This result seemed to correspond with the rank strata result, since most of the directors of logistics and resource management were colonels. See Table 5 for breakdown of rank and AFSC for the sample.

AFSC also appeared to be a factor in the responses to questions 23 to 27. AFSCs 004X and 009X appeared to differ more often with the other AFSCs. Directors of logistics and directors of resource management tended to be more extreme in their views. They tended to feel that colonels should be more of a generalist and that majors, captains, and lieutenants should be more of a specialist than did respondents of other AFSCs.

Responses to question 33 indicated that the best time to attend graduate logistics education was between 4 and 8 years of service. Missile maintenance officers tended to prefer an earlier time period.

Responses to question 34 indicated that the best time to attend a short course in communication and interpersonal skills training was between 0 and 4 years of service. Higher ranking officers preferred later time periods than did more junior officers. Also, directors of resource management preferred a later time period to attend communication and interpersonal skills training. Supply officers preferred the earliest possible time period.

TABLE 37

ANALYSIS OF QUESTIONS 28 TO 32,
THE IDEAL ASSIGNMENT FOR CAREER DEVELOPMENT*

GRADE	QUESTION	MANAGEMENT LEVEL					CHI SQUARE (P=.0000)
		SQUADRON	WING	NAF/ALC	MAJCOM	HQ USAF	
Lt	28	1468 (MODE)	334	14	10	2	4255.584
Capt	29	219	1013 (MODE)	397	169	5	1643.350
Maj	30	54	226	618	806 (MODE)	90	1240.286
Lt Col	31	89	161	209	807 (MODE)	526	1002.526
Col	32	14	330	155	449	833 (MODE)	1679.160

* NOTE: Numbers reflect the count for all respondents to questions 28 to 32.

Responses to question 35 indicated that the best time to select participants for executive development is between 8 and 12 years of service. Higher ranking officers tended to favor later time periods while captains preferred an earlier time period.

Career Opportunities at Different Management Levels

Discussion. As a part of this research effort, respondents were asked to respond to a series of survey questions pertaining to career opportunities at various management levels. Questions 28 to 32 asked for respondent perception of what the ideal management level for each rank should be. The results may be of interest to the reader. Results are presented in Table 37.

Survey Question 28:

> The ideal assignment from a career development viewpoint for a lieutenant is at?

Respondents agreed that lieutenants should be assigned to a squadron. Squadron level was the modal response with 1468 responses, representing 80.8 percent of the total responses. The second most favored response was wing level with 334 responses, representing 18.3 percent of the total responses. The Chi-square value for the response distribution was 4255.584 (p=.0000), indicating a non-random result.

No differences by rank of respondent were noted.

Respondents with AFSC 66XX differed with all other respondents. Logistics plans and programs officers felt

that career opportunities existed at wing level for a lieutenant. Only 56.6 percent of the 66XX responses were for squadron level assignments, while 40.6 percent of the responses were for wing level.

Survey Question 29:

The ideal assignment from a career development viewpoint for a captain is at?

Most respondents felt that captains should be assigned to wing level. Wing assignment was the modal response with 1013 responses, representing 56.2 percent of the total responses. The Chi-square value for the response distribution was 1643.35 (p=.0000), indicating a non-random result.

A difference by rank of respondent was observed. Only 49.0 percent of the captains felt that wing level was the best assignment level for themselves. Captains saw career opportunities at NAF/ALC and MAJCOM level, respectively. Colonels had a different point of view and felt very strongly about captains at wing level. Colonels gave 62.5 percent of their responses to wing level.

Clusters of differences by AFSC were observed. AFSC 31XX, missile maintenance, strongly believed that captains should be at wing level, giving 71.2 percent of their responses to wing level. AFSCs 40XX, 60XX and 64XX dispersed their responses a bit more than AFSC 31XX and gave 49.5, 49.8 and 52.7 percent, respectively, of their responses to wing level.

Survey Question 30:

The ideal assignment from a career development viewpoint for a major is at?

For majors, most respondents felt that a MAJCOM assignment offered the most opportunities. However, the responses were much more dispersed for majors than for captains. MAJCOM level received 44.9 percent of the total responses for major assignments. NAF/ALC received the second largest number of responses with 34.4 percent of the total. The Chi-square value for the response distribution was 1240.286 (p=.0000), indicating a non-random result.

Majors felt somewhat stronger about their career opportunities being at MAJCOM assignments. Of the majors, 51.3 percent favored MAJCOM assignments. Captains, lieutenant colonels, and colonels agreed with majors about MAJCOM assignments, but to a lesser degree. There response percentage for MAJCOM assignment was 40.8, 44.2, 41.7 percent, respectively.

AFSCs 40XX, 004X, and 009X divided their responses almost equally between two choices, NAF/ALC and MAJCOM. Aircraft and munition maintenance officers gave 32.8 percent of their responses to NAF/ALC and 38.7 percent to MAJCOM. Directors of logistics divided their responses with 37.8 percent going to each of the two management levels. Directors of resource management also divided their responses with 38.7 percent going to NAF/ALC and 36.8 percent going to MAJCOM.

Survey Question 31:

The ideal assignment from a career development viewpoint for a lieutenant colonel is at?

Most respondents believed the best career opportunities for lieutenant colonels were at MAJCOM level. MAJCOM assignment received 45.0 percent of the total responses, while HQ USAF, the next favored, received 29.4 percent. The Chi-square value for the response distribution was 1002.526 (p=.0000), indicating a non-random result.

Captains felt somewhat stronger than the other ranks, that lieutenant colonels should seek a MAJCOM assignment. Captains gave 51 percent of their responses to MAJCOM, whereas majors, lieutenant colonels, and colonels gave 43.3, 44.7, and 40.2 percent, respectively.

No differences by AFSC were noted.

Survey Question 32:

The ideal assignment from a career development viewpoint for a colonel is at?

Most respondents felt that the best career opportunity for a colonel was at HQ USAF. HQ USAF received 46.7 percent of the responses. The second most favored response was MAJCOM with 25.2 percent of the responses. The Chi-square value for the response distribution was 1679.165 (p=.0000), indicating a non-random result.

An apparent hierarchical effect was observed according to the rank of the respondent. The higher the rank of the respondent the less convinced the respondent was that HQ

USAF was the best assignment for a colonel. Captains gave the most responses to HQ USAF with 59.5 percent, majors were next with 49.2 percent, followed by lieutenant colonels with 43.7 percent, and finally colonels gave 33.4 percent of their responses to HQ USAF. Colonels saw an equal career opportunities at a MAJCOM and gave 33.1 percent of their responses to MAJCOM.

A variety of differences were observed between AFSCs. AFSC 31XX, missile maintenance, saw the best career opportunity at wing level for a colonel. Missile maintenance officers split their responses with 38.6 percent for wing level and 34.0 percent at HQ USAF. Aircraft and munition maintenance officers also saw opportunities at wing level for colonels and gave 22.3 percent of their responses. However, they also gave 21.0 percent to MAJCOM and their largest share, 47.1 percent, to HQ USAF. AFSCs 60XX, 64XX, and 66XX saw the best opportunities for colonels at HQ USAF, giving 53.1, 57.3 and 49.8 percent, respectively, of their responses. The second most favored response for transportation, supply, and logistics plans and programs officers was MAJCOM with 23.8, 23,5, and 25.3 percent, respectively, of their responses. AFSC 004X, directors of logistics, saw the greatest career opportunity for colonels at MAJCOM, giving 38.2 percent of their responses. A close second choice for directors of logistics was HQ USAF with 32.9 percent of their responses. AFSC 009X, directors of resource manage-

ment, felt that HQ USAF offered the best opportunity, giving 40.4 percent of their responses. Resource managers were tempted by assignments at wing and MAJCOM level, as indicated by the percentage split of their responses between wing and MAJCOM of 25.0 and 29.8 percent, respectively. The widest difference between AFSCs was observed with colonel assignments.

Findings. There does appear to be some parallels between management level and the specialist/generalist dichotomy. It was observed that almost unanimously, respondents agreed that lieutenants should be assigned at squadron level. Correspondingly, respondents almost unanimously agreed, in survey question 23, that a lieutenant should be a specialist. A case could be made that it is at squadron level that a logistician first learns his/her craft and begins to develop expertise in a specialty. It was also observed that as the rank increased the more the responses for management level varied. For example, responses were much more varied for majors than for captains. The same was true with captains and lieutenants. Responses for captains were more varied than responses for lieutenants. Correspondingly, respondents previously indicated on survey questions 23 to 27, that a logistician became more of a generalist with increased rank. Considering the definition of a generalist as a multidisciplined specialist, the results of both sets of questions seem congruent. A multi-

disciplined specialist or generalist should have a wider range of career choices than a specialist. Consequently, the choice of the "best" management level should increase with increased rank.

Findings indicate a definite difference of opinion on the "ideal" management level to be assigned at a given rank. For example, captains saw career opportunities at various management levels differently than did colonels. Missile maintenance officers also saw career opportunities differently than directors of resource management. The best assignment seems to depend on the eyes of the beholder.

Summary

This chapter focused on the validation of the proposed logistics career development model. The results of a survey of practicing Air Force logisticians were presented. Validation of the proposed model was based on the acceptability of various model elements that were expressed in ten research questions. Each of the research questions, described in Chapter III, was examined in this chapter. Many program elements of the proposed logistics career development model were validated, while some program elements were not.

Almost all logisticians agreed that instilling a systems perspective in logisticians was an appropriate goal for logistics career development. There was also strong agreement that an effective logistics career development model should consist of a combination of carefully

programmed experience and training in communication/ interpersonal skills.

Logisticians felt that more emphasis should be placed on oral and written communication and interpersonal skills training. Logisticians also expressed some dissatisfaction with current communication and interpersonal skills training in the Air Force.

Logisticians were not convinced that education was the best method to ensure that logisticians develop a systems perspective. This pessimism was also observed in respondent views on graduate logistics education. Only a small majority, 44 percent, agreed that graduate logistics education was important in the development of a senior logistician. Supply officers felt graduate logistics education was important, while aircraft and munition maintenance officers disagreed. But, even among aircraft and munition maintenance officers there appeared to be group of officers who agreed with graduate logistics education. This group within aircraft and munition maintenance officers was equal in number to those that disagreed.

There was general agreement among logisticians that a flexible career development program was desired. However, captains and about a third of the directors of resource management preferred a set pattern of career development that all complete.

Most logisticians agreed with having a core block of instruction in logistics systems during initial technical training. Directors of logistics were more supportive of the idea than were missile maintenance and aircraft and munition maintenance officers.

The proposal to combine all logistics staff officers courses taught by Air Training Command into one course was not supported. Colonels tended to disagree more on combining staff officer courses than did captains.

Logisticians also rejected the idea of combining all logistics AFSCs into a single AFSC. All rank and AFSC strata disagreed with this proposal. However, for directors of resource management and supply officers the strength of their disagreement was less than the other AFSCs. Aircraft and munition maintenance officers were strongly opposed to combining AFSCs.

Logisticians also responded to a series of questions concerning a proposed executive development program that would be embedded within the proposed logistics career development model. Logisticians agreed that the goal of the executive development program should be to provide an officer with varied experience at a faster rate than would normally be obtained. Concurrence was also achieved on a proposed method of reaching that goal. Logisticians supported an assignment method consisting of one or two separate two year assignments in areas especially chosen to move

the officer closer to becoming a well-rounded logistician. There were mixed results on whether an executive development program should be selective. A statistically valid conclusion could not be drawn. However, indications were that if a program was selective, logisticians preferred selection to be made by a board of senior logisticians. The proposed selection of below-the-zone majors was not supported.

Logisticians felt that a supervisor should be accountable to their superior for the career counseling and development of subordinates. Colonels, more than any other rank, felt very strongly about supervisory accountability.

Logisticians also agreed that an officer should be a specialist initially and a generalist later in his/her career. Most respondents (71.4 percent) agreed that a lieutenant should be a specialist. The same agreement was achieved for captains, but to a lesser degree (66.4 percent). Major appeared to be the transition rank between specialist and generalist. Most logisticians agreed that lieutenant colonels and colonels should be generalists.

Interestingly, captains saw themselves and lieutenants as more of a generalist than did higher ranking officers. In almost a hierarchical manner, the higher the rank, the more likely the respondent tended to think of captains and lieutenants as specialists. Conversely, Colonels saw themselves as generalists, while captains tended to feel that a

colonel should be a little less of a generalist and a bit more of a specialist.

There were many differences that were dependent on the AFSC of the respondent. Directors of logistics and directors of resource management tended to see all majors and below as specialists. This was not too surprising since most of these officers are colonels. Aircraft and munition maintenance and supply officers felt that captains and lieutenants should be more of a generalist than did the other AFSCs. Also, aircraft and munition maintenance felt that colonels should be more of a specialist than the colonels thought they should.

The phasing of career activities as described in the proposed logistics career development model was supported by most logisticians. Logisticians felt that the best time to attend a short course in communication and interpersonal skills training was between 0 and 4 years of service. Logisticians agreed that the best time to attend a full time graduate logistics education program was between 4 to 8 years of service. Logisticians also agreed that selection for an executive development program should occur between 8 and 12 years of service.

In general, captains preferred to phase career activities sooner than did higher ranking officers. For example, captains thought attendance at a communication and interpersonal skills course should be earlier than field grade and

senior officers. Captains also felt that selection for executive development should occur earlier.

As part of the research study, respondents were asked which management level offered the best career opportunities for each rank. Respondents indicated that lieutenants should be assigned at squadron level, captains at wing level, majors and lieutenant colonels at MAJCOM level, and colonels at HQ USAF level.

Differences according to the rank of the respondent were noted. Captains saw career opportunities for themselves at wing level, as did the other ranks, but they also felt that NAF/ALC and MAJCOM assignments were desirable. Colonels, on the other hand, felt very strongly that the best assignment for a captain was at wing level. Majors felt more strongly that majors should be assigned at MAJCOM level than did other ranks. Captains also felt stronger than other ranks, including lieutenant colonels, that the best assignment for a lieutenant colonel was at MAJCOM level. Although most respondents felt that the best assignment for a colonel was HQ USAF level, the rank of the respondent made a difference. Generally, the higher the rank of the respondent, the less convinced the respondent was that HQ USAF was the best choice for a colonel. Colonels saw themselves with an equal career opportunity at MAJCOM level as they would have at HQ USAF level.

There were also many differences according to the AFSC of the respondent. Logistics plans and programs officers saw more opportunities at wing level for a lieutenant than did other AFSCs. Missile maintenance officers strongly believed that the best opportunity for a captain was at wing level. Aircraft and munition maintenance officers, directors of logistics, and directors of resource management saw an equally good opportunity for majors at NAF/ALC and MAJCOM. The largest observed difference by AFSC was with colonel assignments. Missile maintenance officers felt that colonels should be assigned at wing level. Many aircraft and munition maintenance officers saw opportunities for colonels at wing level, but gave most their responses to HQ USAF level. Directors of logistics felt that colonels should be at MAJCOM level, while directors of resource management felt that colonels would find their best opportunities at HQ USAF.

As shown, the rank and functional orientation by AFSC made a difference in where logisticians saw their best career opportunities to be.

VI. Conclusions and Recommendations

Review

Lieutenant General Leo Marquez, Deputy Chief of Staff for USAF Logistics and Engineering, believes that senior logisticians must be able to understand and integrate the total logistics system. This research was aimed at developing a career development model for that kind of logistician. The development model proposed in this research was based on an exhaustive review of career development literature and the personnel experience of the researcher.

The model was tested for validity using a survey of practicing military logisticians. Each element of the proposed model was tested. A sample of 1840 USAF practicing logistics officers participated in the validation phase. This sample was stratified into eleven strata according to rank, captain through colonel, and AFSC, 31XX, 40XX, 60XX, 64XX, 66XX, 004X, and 009X. Each strata had a sufficiently large number of respondents so that statistical differences between strata could be tested by analysis of variance at the 90 percent confidence level.

This chapter describes the conclusions and recommendations drawn from the results of model construction and validation.

Discussion

This concluding discussion summarizes the research findings and places the proposed logistics career development model in perspective.

Logistics is a system of interrelated and dependent functions. To be an effective logistician, one must have a thorough understanding of both the logistics functions and their relationships to one another. However, a logistician must be able to do more than understand--a logistician must be able to integrate the separate functions into a total logistics system capable of supporting combat operations. Most logisticians in the sample viewed logistics as a system and indicated that developing a systems perspective in logisticians was a worthy goal for a logistics career development program.

Experience is a very important element in logistics career development. In fact, this research found evidence that experience was the most valuable component of career development. Logisticians prefer that experience be gained within the framework of a set pattern of career development that also allows for flexibility and individual differences. Some signposts are needed as references and benchmarks along the way to guide career development. This was especially true for younger officers with less experience. Captains more than any group in the research sample indicated a desire for a set pattern of career development.

One method of obtaining a great deal of flexibility in logistics would be the creation of a single AFSC. Much has been said about the need for multidisciplined generalists that can manage within their particular specialty and function as generalists. However, the barriers to crossflowing officers into different functional specialties have precluded the development of a large number of multidisciplined generalists. Having a single AFSC would facilitate the crossflow of more officers across several functional specialties. Even though there were advantages to this proposal, it was not supported by the logisticians surveyed in this research. The group that disagreed most with combining logistics AFSCs into one was aircraft and munitions maintenance officers while the group that showed some signs of approval was directors of resource management. It may be that maintainers have more functional loyalty than other logisticians. Resource managers, on the other hand, who manage a logistics system made up of diverse functions could possibly have seen some benefit to a single AFSC in their career development.

A large part of the total experience of an officer is shaped by the involvement of the supervisor. Realizing this, most logisticians felt that supervisors should be accountable for the career counseling and development of their subordinates. It was interesting that the group that felt most strongly was colonels. This corresponded with

Hall's career stage model where one of the activities of the latter stages of the career was mentoring. According to Hall, the latter stages of the career is when one establishes a mentoring relationship in an attempt to leave behind something lasting and worthwhile. One method of supervisor accuntability that might be used is to make this a mandatory subject on the OER. Accountability may improve the "amount" of supervisor involvement in career development. The Air Force should also improve the "quality" by providing supervisors with career development training.

Most logisticians were convinced that communication and interpersonal skills are important in career development. This result may be due to the importance of communication and interpersonal skills in systems integration. It is through these skills that systems integration is accomplished through people. The higher the rank the more a logistician was convinced of communication and interpersonal skills' importance. It may be that the positions the higher ranking officers occupy require more systems integration. Therefore, higher ranking officers appreciate good communication and interpersonal skills more than those in lower ranks and functional speciality positions. For example, resource managers were strongly in favor of placing more emphasis on oral and written communications skills. A resource manager with a complex logistics system to integrate (and often times more rated than logistics experience)

may find communication and interpersonal skills an extremely useful integration tool.

Many logistics officers expressed some dissatisfaction with present Air Force training in communication and interpersonal skills. Currently, this training is offered through initial officer entry programs and resident PME. Although this training corresponds with the 0 to 4 year time span in which logisticians felt this training should be obtained, many officers do not have the opportunity to attend resident PME. And even when they do attend resident PME and officer training programs, communication and interpersonal skills training is taught by personnel who may be unskilled in the subject they attempt to teach. Could it be that this important systems integration tool is not used effectively by logistics officers because of poor training or a lack of training? The proposed logistics career development model proposes that this important systems integration tool be acquired through a resident or on-site course taught by professional communication and interpersonal skills instructors.

Another aspect of logistics career development explored in this research was an executive development program to groom future senior logisticians for high level systems integration positions. Logisticians agreed that the goal of an executive development program should be to help the logistician gain varied experience at a faster rate than

AD-A174 533 A PROPOSED LOGISTICS CAREER DEVELOPMENT MODEL(U) AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OH SCHOOL OF SYSTEMS AND LOGISTICS F GORMAN SEP 86 3/3

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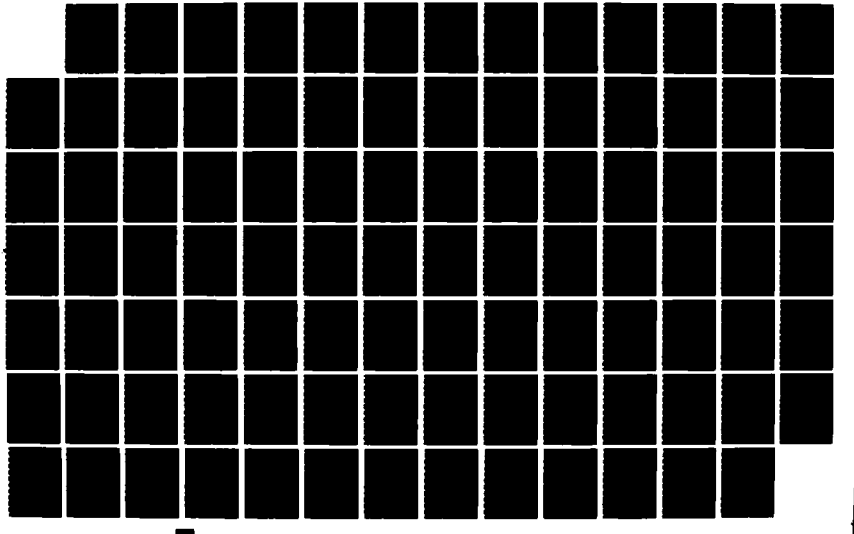

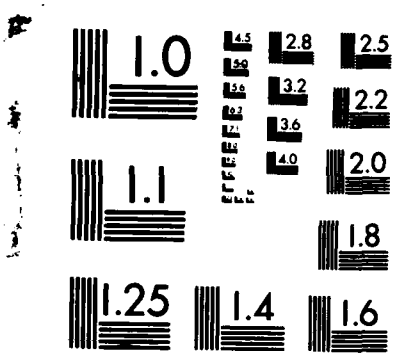

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normal. Logisticians also agreed that this could be accomplished using an assignment method of one to two separate two year assignments in areas especially chosen to develop well-rounded logisticians. An executive development program, according to the sampled logisticians, should be tailored to the needs of both the officer and the Air Force. Logisticians expressed a desire for greater flexibility in executive development than in an overall logistics career development program.

One area of interest in executive development was whether the program should be selective or open to all. Unfortunately the research results were inconclusive. The addition of the words, "and the greatest number" in question 36 may have biased the results. Any replication of the results of this study should consider rewording the question used in this study. Despite the inconclusive results, logisticians did indicate that if an executive development program was selective, they would prefer selection to be done between 8 and 12 years of service by a board of senior logisticians. Logisticians did not support the selection of below-the-zone officers as proposed in the model. Some of the comments received indicated that some logisticians felt that below-the-zone promotion was an indicator of success in visibility rather than competency in logistics.

Although previous studies have found a great deal of support for graduate logistics education, this study found

only mild support. The group that was the most supportive was supply officers while the least supportive group was aircraft and munition maintenance officers. This result may be indicative of the greater value logisticians place on experience over education. Similarly, logisticians also indicated only mild support for education as the best way to develop a systems perspective. Unsolicited comments from survey respondents suggested that experience was the best or at least equally as good a method of developing a systems perspective as education. Although only mild support for graduate education was generated, most logisticians felt that the best time to attend school was between 4 and 8 years of service.

Most logisticians *concurred* with having a core block of instruction in logistics systems (i.e. logistics flow from acquisition to disposal and interfaces between logistics functions) taught at the beginning of all technical training to new logisticians. Directors of logistics and logistics plans and programs officers were the most supportive of this block of instruction; while missile maintenance and aircraft and munitions maintenance officers tended to disagree. This may be due to concern over the additional length a core course could add to an already lengthy course. Unsolicited comments expressed support for the concept but recommended that the instruction be offered at the end of the course after the logistician has obtained some experience.

Logisticians did not support the combining of present logistics staff officer courses into a single course. The higher the rank the more logisticians tended to disagree. It is doubtful that this concept would gain much support from any quarter if implementation was attempted.

Logisticians agreed that an officer should be a specialist initially and a generalist later. It was interesting to note that each rank saw themselves differently than other ranks saw them. For example, captains saw themselves and lieutenants as being more of a generalist than did more senior officers. Colonels tended to think of majors and below as specialists and themselves and lieutenant colonels as generalists. Captains felt that colonels should be a little less of a generalist and a bit more of a specialist. In spite of these differences, most logisticians felt that major was the transition rank from specialist to generalist.

Some differences were also noted by AFSC. Directors of logistics and resource management felt that majors and below should be specialists. This paralleled the results obtained according to rank, since most of these officers are colonels. Aircraft and munition maintenance officers thought that colonels should be more of a specialist than colonels thought they should. This may have been due to the perception that the Deputy Commander for Maintenance should be a maintenance specialist.

Similar results were obtained when logisticians were asked about the "best" career opportunities at different management levels for each rank. The perception of the "best" management level to be assigned depended upon the eyes of the beholder. Each rank and AFSC had a different viewpoint for themselves and others of what the "best" assignment should be. The widest differences concerned colonel assignments. The lower the rank the more an officer tended to believe that colonels should be assigned to HQ USAF. The higher the rank the more an officer saw possibilities at different management levels for colonel assignments. Colonels saw an equal opportunity for themselves at HQ USAF and MAJCOMs. It was surprising that more colonels did not think that the best assignment was at wing level where opportunities for command exist. Missile maintenance officers, in the other hand, did feel that the best opportunity for a colonel was at wing level, while directors of logistics felt that a MAJCOM assignment was the best for a colonel. Some of the differences according to AFSC may be due to the peculiarities of the speciality. For example, all AFSCs agreed that the best assignment for a lieutenant was at squadron level except for logistics plans and programs officers. Logistics planners felt the best opportunities were at wing level. This corresponds with the fact that there are very few authorizations for lieutenant logis-

tics planners at squadron level. Most of the positions are at wing level.

There did appear to be some parallels between management level and the specialist/generalist dichotomy. The higher in rank the more of a generalist and less of a specialist an officer becomes. Correspondingly, the higher the rank the more logisticians saw assignment opportunities at many different management levels. Considering the definition of a generalist as a multidisciplined specialist, the results of the management level questions seem congruent with the specialist/generalist results. A multidisciplined specialist or generalist should have a wider range of career choices than a narrowly defined specialist since he/she can perform as either a specialist or generalist. Consequently, the choices of the "best" management level should increase with increased rank and diverse experience.

One of the most valuable insights provided by this research was the differences that were shown by functional specialty. Logisticians in different AFSCs had different viewpoints stemming from their backgrounds and experience. The most notable area of differences involved missile maintenance officers and resource managers.

There were many areas of differences between missile maintenance officers and other logisticians. Missile maintenance officers were not as convinced as were other career

fields of the importance of carefully programmed experience in career development. They also tended to desire graduate logistics education earlier. More than any other career field, missile maintenance officers felt that the quality of communication and interpersonal skills training in the Air Force was lacking. Missile maintenance officers were also not as supportive as other career fields of having a block of instruction in logistics systems during initial technical training of new logisticians. Within executive development, missile maintenance officers least liked the proposed assignment rotation method. Missile maintenance officers also were different from other career fields in that they saw the "best" career opportunities for colonels at wing level.

Much of the difference between missile maintenance officers and other logistics career fields may be because they have evolved along a separate path. To begin with, missile maintenance officers' careers are managed at AFMPC by Palace Missile personnel resource managers rather than Palace Log. This difference is indicative of the closer relationship that exists between missile operators and maintainers than exists between aircraft operators and logistics support officers. Full qualification as a missile operator is a prerequisite for a missile maintenance officer; whereas, aircraft logisticians do not have to have been rated officers to enter their career fields. Another aspect

of life in missile maintenance that tends to isolate them from the rest of the logistics community is that up until very recently, with the advent of the ground launched cruise missile (GLCM), missile maintenance was a one command career field. Almost all missile maintenance officers began and ended their career in the Strategic Air Command. Fortunately, many missile maintenance officers are now broadening their experience in a Tactical Air Force environment as GLCM maintainers.

Many differences were observed in the research between resource managers and other logistics career fields. Resource managers as a group did not wholly agree with the goal of developing a systems perspective in logisticians. Like missile maintenance officers, resource managers were not totally convinced of the importance of programmed experience. However, unlike missile maintenance officers, resource managers were at the other extreme in the timing of graduate logistics education and felt it should be later in the career did all other career fields. Resource managers were somewhat divided on the issue of flexibility in career development. Half wanted a set pattern, while the other half wanted flexibility. More than any other group, resource managers felt that oral and written communication skills were extremely important. However, they thought these skills should be taught later in a career than did other career fields. Resource managers were also more

supportive than other career fields of combining all logistics AFSCs into one. Resource managers also tended to group all majors and below as specialists.

Much of the differences between resource managers and other career fields may be due to their background and the scope of the job. There are very few resource managers in the Air Force. Most are assigned at wing level, are colonels, are rated, and have limited logistics experience. Yet these resource managers have one of the most diverse logistics systems to integrate and are close to the front line of sustaining combat operations. The limited logistics experience may explain why resource managers did not rate a systems perspective as highly as did other logisticians. It may also explain the greater need resource managers felt for increased emphasis in communication and interpersonal skills training. To integrate the complex logistics system they manage; they, more than most logisticians must rely upon the knowledge of functional specialists. Their job is one of systems integration through the effective management of people. Communication and interpersonal skills would be invaluable to the successful resource manager. This reliance on subordinate officers for technical expertise may also be the reason resource managers tended to see majors and below as specialists. The diversity and magnitude of the systems integration effort of a resource

manager may have also influenced their somewhat positive feeling about combining all logistics AFSCs into one.

Recommendations

During the course of this research many career development concepts and program elements were proposed and field tested for acceptability to practicing logisticians. As a result recommendations for future research and program implementation surfaced.

This research effort broke ground for further research in career development that use a large sample of practicing logisticians. There is one recommendation for future research.

Many of the concepts and programs field tested in this research could be implemented by the Air Force. One of the benefits of this study is that the acceptability of these concepts and programs is known. Ranks and AFSC that are likely to embrace or reject implemented programs have been identified. There are five recommendations for program implementation.

1. Future research should examine the differences according to rank and AFSCs on career development issues not covered in this research. In addition to rank and AFSC, other demographics such as major command, rated experience, etc., should be explored for differences in career development viewpoints. The goal of the research could be to

develop a career development model based on the opinions of practicing logisticians.

2. To improve the effective use of communication and interpersonal skills as a system integration tool, the Air Force should develop a short course at the Air Force institute of Technology. This course should be designed and taught by professional communication and interpersonal skills experts. The course should be taught in resident or on-site to all logistics officers before 4 years of service.

3. To improve the systems perspective of logisticians, the Air Force should develop a core course in logistics systems that will be taught by Air Training Command (ATC) to all new logistics officers during their initial technical training. This core instruction concept for different, but related, career fields is already in use in the training of space operations officers by ATC. A logistics core course could be patterned along those lines.

4. To obtain more multidisciplined generalists, the Air Force should create a program that will allow greater numbers of quality officers to crossflow between logistics functional specialities. Since a single AFSC does not have much field support, another vehicle for crossflowing logistics officers between specialities needs to be developed.

5. To improve the amount of supervisor involvement in subordinate career development, the Air Force should make supervisor accountability a mandatory item on the OER. To

improve the quality of supervisor involvement, the Air Force should direct ATC to provide supervisors with training in career development.

6. To provide for the best possible future senior logisticians, the Air Force should develop an executive development program for logisticians. The program should be tailored to the individual and involve one to two separate two year assignments in areas specifically chosen to move the officer closer to becoming a total system logistician. A board of senior logisticians should select these officers between 8 and 12 years of service for the program.

Appendix A: Questionnaire And Instructions

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

16 JUN 1986

REPLY TO ATTN OF: LS

SUBJECT: Logistics Career Development Survey Package

TO:

1. Military logisticians play a vital role in planning and integrating our nation's defense resources to create and sustain effective combat operations. Currently, much attention is being focused on the career development of the military logisticians who will direct the combat support power of the Air Force.

2. You possess an Air Force Specialty Code in a logistics functional area and the experience that identifies you as a professional Air Force logistician. As such, your thoughts and opinions as to what constitutes an effective career development program for Air Force logisticians is extremely important.

3. Your response is extremely important to research currently being conducted by the Air Force Institute of Technology. For the career development program that will result from this effort to be an accurate reflection of the considered opinion of the Air Force logistics community, it is important that each questionnaire be completed and returned. Please complete the attached questionnaire and return it within five working days. Your thoughts and opinions are important and should count in this research!!!

4. All the information you provide will be strictly confidential. Your individual responses will be combined with others and will not be attributed to you personally.

5. Your participation is completely voluntary, but I would greatly appreciate your help. Thank you for your assistance.

DAVID E. LLOYD, Lt Col, USAF
Director, Graduate Log Mgmt Program
School of Systems and Logistics

2 Atch
1. Questionnaire
2. Return Envelope

INSTRUCTIONS

1. This questionnaire has 36 questions. Some questions are multiple choice and others solicit your opinion on a five point scale. Please note the meanings for each point on the scale changes in each section of the questionnaire.

2. Please answer each question directly on the questionnaire and then transfer your answer to the OPSCAN answer sheet.

3. Some questions, depending upon your answer, may require you to specify a choice which is not found in the list of possible answers to the questions. Please take the time to write your answer in the space provided. If you need more space, please use the margins or the back of the questionnaire. Your thoughts and opinions are important!!!

4. Some of the questions refer to an EXECUTIVE DEVELOPMENT PROGRAM. This is a type of program that is usually designed to enhance the experience, performance, and/or education of officers that are more likely to achieve senior officer status (the grade of Colonel or higher). The current ASIRA program is an example of one type of executive development program.

5. When you have completed the questionnaire and transferred your responses to questions 1-37 to the OPSCAN answer sheet, PLEASE RETURN THE ENTIRE QUESTIONNAIRE AND THE OPSCAN ANSWER SHEET IN THE ENCLOSED ENVELOPE.

6. You should be able to complete this questionnaire and the OPSCAN answer sheet in less than 20 minutes.

7. I thank you for your attention to this important effort which may affect logistics officer career development someday.

QUESTIONS 1-3 ARE DESIGNED TO GATHER DEMOGRAPHIC DATA ON SURVEY RESPONDENTS.

1. What is your primary AFSC?

1) 31XX MISSILE MAINTENANCE
2) 40XX MAINTENANCE
3) 60XX TRANSPORTATION
4) 64XX SUPPLY
5) 66XX LOGISTICS PLANS & PROGRAMS
6) 004X DIRECTOR OF LOGISTICS
7) 009X DEPUTY COMMANDER FOR RESOURCE MANAGEMENT

2. What is your grade?

1) Captain
2) Major
3) Lieutenant Colonel
4) Colonel

3. What is your current major command?

1) TAC
2) SAC
3) MAC
4) AFLC
5) PACAF
6) USAFE
7) Other (please specify)

QUESTIONS 4-27 ARE DESIGNED TO ELICIT YOUR OPINION CONCERNING LOGISTICS CAREER DEVELOPMENT. PLEASE USE THE SCALE SHOWN BELOW TO GIVE YOUR ONE BEST RESPONSE TO EACH QUESTION.

1 highly disagree	2 disagree	3 neither agree nor disagree	4 agree	5 highly agree

4. An effective Logistics Career Development Program (LCDP) must develop a systems perspective in the logistics officer.	1	2	3	4	5
5. An effective Logistics Career Development Program must include the careful programming of an officer's experience throughout his/her career.	1	2	3	4	5

1 highly disagree	2 disagree	3 neither agree nor disagree	4 agree	5 highly agree

6. Improving communicative skills (oral and written) is absolutely essential in an effective Logistics Career Development Program (LCDP).	1	2	3	4	5
7. Improving interpersonal relationship skills should be an objective of the ideal Logistics Career Development Program.	1	2	3	4	5
8. An effective Logistics Career Development Program (LCDP) must have a set pattern of assignments, education, and training that all logistics officers complete.	1	2	3	4	5
9. The best way to ensure that logistics officers develop a systems perspective is through education.	1	2	3	4	5
10. More emphasis needs to be given to oral communication skills in Air Force training.	1	2	3	4	5
11. More emphasis needs to be given to written communication skills in Air Force training.	1	2	3	4	5
12. More emphasis needs to be given to interpersonal skills in Air Force training.	1	2	3	4	5
13. The quality of communication and interpersonal skills training in the Air Force is excellent.	1	2	3	4	5
14. A core block of instruction that emphasizes the scope of the logistics system (i.e. logistics flow from acquisition to disposal and interfaces between logistics functions) should be taught at the beginning of all initial technical training to prospective logisticians.	1	2	3	4	5
15. All logistics functional specialty staff officer courses taught by Air Training Command to field grade officers (i.e. aerospace maintenance, supply staff officer, and transportation staff officer) should be combined into one logistics staff officer course.	1	2	3	4	5

1 highly disagree	2 disagree	3 neither agree nor disagree	4 agree	5 highly agree

16. All logistics AFSCs (31XX, 40XX, 60XX, 64XX, & 66XX) should be combined into one logistics AFSC while retaining a method of identifying functional experience.	1	2	3	4	5
17. Officers preparing to become future senior logisticians (Colonel) should obtain a graduate degree in logistics or other closely related field.	1	2	3	4	5
18. An executive development program for developing officers for senior logistician (Colonel) status that gives its participants special experience and opportunities should include all logistics officers as participants.	1	2	3	4	5
19. An effective executive development program should have a set pattern of assignments and education that all participants complete.	1	2	3	4	5
20. An effective executive development program should help the participant gain varied experience at a faster rate than he/she *normally would*.	1	2	3	4	5
21. An effective executive development program should consist of one or two separate two year assignments in areas that are specifically chosen to move the officer closer to becoming a well-rounded logistician.	1	2	3	4	5
22. Supervisors should be accountable to their superiors for the career counseling and development of their subordinates.	1	2	3	4	5
23. Lieutenants should be specialists.	1	2	3	4	5
24. Captains should be specialists.	1	2	3	4	5
25. Majors should be specialists.	1	2	3	4	5
26. Lieutenant Colonels should be specialists.	1	2	3	4	5
27. Colonels should be specialists.	1	2	3	4	5

QUESTIONS 28-32 ARE DESIGNED TO ELICIT YOUR OPINION CONCERNING ASSIGNMENTS FOR CAREER LOGISTICIANS. PLEASE INDICATE THE ONE MANAGEMENT LEVEL THAT BEST DESCRIBES YOUR OPINION. PLEASE USE THE SCALE BELOW TO ANSWER THESE QUESTIONS.

1	2	3	4	5
Squadron	wing/base	NAF/ALC	MAJCOM	HQ USAF

28. The ideal assignment from a career development viewpoint for a lieutenant is at:	1	2	3	4	5
29. The ideal assignment from a career development viewpoint for a captain is at:	1	2	3	4	5
30. The ideal assignment from a career development viewpoint for a major is at:	1	2	3	4	5
31. The ideal assignment from a career development viewpoint for a lieutenant colonel is at:	1	2	3	4	5
32. The ideal assignment from a career development viewpoint for a colonel is at:	1	2	3	4	5

QUESTIONS 33-35 ARE DESIGNED TO ELICIT YOUR OPINION CONCERNING THE BEST TIME PERIOD FOR A LOGISTICIAN TO ATTEND/PARTICIPATE IN EDUCATIONAL PROGRAMS OR AN EXECUTIVE DEVELOPMENT PROGRAM. PLEASE USE THE SCALE SHOWN BELOW TO GIVE YOUR ONE BEST ANSWER TO EACH QUESTION.

1	2	3	4	5
0-4 years	4-8 years	8-12 years	12-16 years	16-20 years

33. The best time to attend a full time graduate logistics program for an officer is:	1	2	3	4	5
34. The best time to attend a short course in communication and/or interpersonal skills is:	1	2	3	4	5
35. The best time in the career of an officer to select him/her for an executive development program is:	1	2	3	4	5

PLEASE SELECT THE ONE CHOICE THAT BEST DESCRIBES YOUR OPINION CONCERNING LOGISTICS OFFICER CAREER DEVELOPMENT.

36. The best method to select participants for an executive development program that would ensure the best quality and greatest number of future senior logisticians (Colonel) is:

1) convene a board of senior logisticians to select participants.
2) select logisticians who are selected for a below-the-zone promotion.
3) have the personnel resource managers for logistics at AFMPC select the best qualified participants.
4) program is open to all officers so selection is not necessary.
5) Other (please specify)

Appendix B: Data Base

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00005423313445444444443234444434442134553121
00005424643445522555243324224444421122342231
00005425232444343333243334444445422123452123
00005427227555555555255355554555555123452124
00005428227554422344344244245455444112422331 4
00005429417553444333253534355511344123452133 4
00005430447215521444211142221422222245542354
00005431217544434334444234455524424112453121
00005433227555552454141144534545221134523231 4
00005435427435344452241235344454321134453131 4
00005437132555545343333333343354333124452141
00005438132435433444323334344444332123452131
00005439142534423444232142244544321134523133
00005441132244422242244142244443211124442135
00005443422525525555135115233533333114452131
00005444137444412244243344244244322124  21411
00005445122544522345222124232454322234223244
00005446127425524334242134243444333 1    3134
```

```
00005525741355422443344354455544332123442355
00005526411543332443244234254443222134522135
00005529521244421444244443244443211223342134
00005530231444433443242234244354322113442141
00005531514435523444 23 242254332211233 52  1
00005532534445432444242225444543221223333141
00005533634544424222343122244444322231541221
000055342275555234442522443444553211234221424
00005536524555455453252124521412345324532321
00005537537454322111342444425455422123523224 4
00005539217355423334322143344411111124352133 6
00005540227544212442242142245545421123332131 6
00005541217445545255455244445524422112342121 6
00005542427454424224244344244444222134152131 6
00005544232435523444342224243444322112343131
00005545437555432333442255433533211     2141
00005546737345432554242244455444444123453231 6
00005547247444423333442242242433333135432231 6
00000290112555544444442144254554422124342135
00000308525554423433353243343534444134242133
00000420335454434333441234325443321113453125
00001169527554422233342224244444222124  3234
00001965637415512454351122142444311112342341
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00001827337554423244444154244555321134452135 2
00002528217543431334444244344322222123242131 3
00002543237445412444341124153534432111422131 3
00002594436554422333342244243544221123452144
00002595547434223442244434244443321234542154
00002596644444434554234242344444322124553253
00002597336454554335343344444422245234553221
00002598223344433444343122334444444113423241
00002599427555514333344112222522222143532131 1
00002876435545544555455555544455311123454323 1
00002936215334522335442124244511111124322134
00002943415443324334353223243322222123451124
00002944245425513453334134243454321123453241
00003565437444412222341142244444322234142131 5
00003596736445432243343244333444422124522124
00003600746445523444354444445544222123452121
00003602736434424333342242243443221124122331
00003629337544454454343224445455543312434213 5
00003637426345544334243444444444333124543141
00003651313344423342342134243333222142552141
00003652316454554455443144445444221234452131
00003726226555524335252545244525522 1422141
00003745116554545445245454345453222124452335
00003836215455425333241124244444321142252241
00003909527445534554254232454522443224351241 2
00003978323344444444432113334444422214455313 1
00003983222555544445145115444222222111222143
00004141227555523333341144241533321 2 311
```

```
00004144242445444444242344455542211132452135
00004169524555453454353333555555311233343131
00004185537545424444243342244544221123512133 5
00004194336435423453342233343455443114522343
00004255446345433454242232244454321124542121
00004264236225532333245333333455533112422133
00004270526444534444322244444444221224542121
00004372237553524345254234314155444112442134
00004413537545423343252144244444322124552135 1
00004515637545434554353235355354211112222114 2
00004573225444424444254115224411111234233231
00004589235324422334343243222534332124253244
00004781417242222222442242424444442224455312 12
00004829746535422444254334244555321123453134
00004855526544434444242143344454321124552234
00004859216455454344553425432552222224452343
00004860313455444454352324244554321123453144
00004866116334442222341122232443211123452121
00004874224435522555343334244544321123453231
00004879624455524444242244234333331234532 31
00004880213455425444343235225524422134232121
00004887634555412554254424154533211123443144
00005046435455522454155114254454221124542145
00005434647445454445343244454444332124531231 4
```

```
SET             width=80
TITLE           'cell count of ranks & AFSCs in sample'
FILE HANDLE     helen/NAME='tdata'
DATA LIST       file=helen fixed records=1/
                id 1-8 AFSC 9 RANK 10 CMD 11 q4 12 q5 13 q6 14 q7 15
                q8 16 q9 17 q10 18 q11 19 q12 20 q13 21 q14 22 q15 23
                q16 24 q17 25 q18 26 q19 27 q20 28 q21 29 q22 30
                q23 31 q24 32 q25 33 q26 34 q27 35 q28 36 q29 37
                q30 38 q31 39 q32 40 q33 41 q34 42 q35 43 q36 44
                q37 45
MISSING VALUES  AFSC, RANK, CMD, q4 to q37 (9)
VALUE LABELS    AFSC 1 '31XX' 2 '40XX' 3 '60XX' 4 '64XX' 5 '66XX'
                  6 '004X' 7 '009X'/
                RANK 1 'CPT' 2 'MAJ' 3 'LTC' 4 'COL'/
                CMD 1 'TAC' 2 'SAC' 3 'MAC' 4 'AFLC' 5 'PACAF'
                  6 'USAFE' 7 'OTHER'/
                q4 to q27 1 'H DISAGREE' 2 'DISAGREE' 3 'NEITHER'
                  4 'AGREE' 5 'H AGREE'/
                q28 to q32 1 'SQN' 2 'WING' 3 'NAF/ALC' 4 'MAJCOM'
                  5 'HQ USAF'/
                q33 to q35 1 '0-4 yrs' 2 '4-8 yrs' 3 '8-12 yrs'
                  4 '12-16 yrs' 5 '16-20 yrs'/
                q36 1 'BOARD' 2 'BTZ' 3 'MPC SELECT' 4 'ALL'
                  5 'OTHER'/
                q37 1 'HQ USAF' 2 'UNIFIED CMD' 3 'ATC/AU'
                  4 'AFSC' 5 'AAC' 6 'COMBINED CMD'
CROSSTABS       variables=RANK (1,4) AFSC (1,7)/ tables=RANK by AFSC
OPTIONS         7
FINISH
```

```
SET             width=80
TITLE           'freq data by RANK & AFSC for q4 to q37'
FILE HANDLE     helen/NAME='tdata'
DATA LIST       file=helen fixed records=1/
                id 1-8 AFSC 9 RANK 10 CMD 11 q4 12 q5 13 q6 14 q7 15
                q8 16 q9 17 q10 18 q11 19 q12 20 q13 21 q14 22 q15 23
                q16 24 q17 25 q18 26 q19 27 q20 28 q21 29 q22 30
                q23 31 q24 32 q25 33 q26 34 q27 35 q28 36 q29 37
                q30 38 q31 39 q32 40 q33 41 q34 42 q35 43 q36 44
                q37 45
MISSING VALUES  AFSC, RANK, CMD, q4 to q37 (9)
SELECT IF       RANK EQ 1
VALUE LABELS    AFSC 1 '31XX' 2 '40XX' 3 '60XX' 4 '64XX' 5 '66XX'
                  6 '004X' 7 '009X'/
                RANK 1 'CPT' 2 'MAJ' 3 'LTC' 4 'COL'/
                CMD 1 'TAC' 2 'SAC' 3 'MAC' 4 'AFLC' 5 'PACAF'
                  6 'USAFE' 7 'OTHER'/
                q4 to q27 1 'H DISAGREE' 2 'DISAGREE' 3 'NEITHER'
                  4 'AGREE' 5 'H AGREE'/
                q28 to q32 1 'SQN' 2 'WING' 3 'NAF/ALC' 4 'MAJCOM'
                  5 'HQ USAF'/
                q33 to q35 1 '0-4 yrs' 2 '4-8 yrs' 3 '8-12 yrs'
                  4 '12-16 yrs' 5 '16-20 yrs'/
                q36 1 'BOARD' 2 'BTZ' 3 'MPC SELECT' 4 'ALL'
                  5 'OTHER'/
                q37 1 'HQ USAF' 2 'UNIFIED CMD' 3 'ATC/AU'
                  4 'AFSC' 5 'AAC' 6 'COMBINED CMD'
FREQUENCIES     variables=AFSC RANK CMD q4 to q37/
                statistics=default median/
                histogram/
                missing=include
FINISH
```

NOTE: THIS PROGRAM WAS VARIED TO OUTPUT FREQUENCY DATA FOR DIFFERENT RANKS AND AFSCs ZG FTCOUING THE "SELECT IF" STATEMENT TO THE RANK OR AFSC DESIRED. OUTPUT THAT INCLUDED ALL RANKS AND AFSCs WAS DONE BY DELETING THE "SELECT IF" STATEMENT.

```
SET             width=80
TITLE           'oneway anova by rank'
FILE HANDLE     helen/NAME='tdata'
DATA LIST       file=helen fixed records=1/
                id 1-8 AFSC 9 RANK 10 CMD 11 q4 12 q5 13 q6 14 q7 15
                q8 16 q9 17 q10 18 q11 19 q12 20 q13 21 q14 22 q15 23
                q16 24 q17 25 q18 26 q19 27 q20 28 q21 29 q22 30
                q23 31 q24 32 q25 33 q26 34 q27 35 q28 36 q29 37
                q30 38 q31 39 q32 40 q33 41 q34 42 q35 43 q36 44
                q37 45
MISSING VALUES  AFSC, RANK, CMD, q4 to q37 (9)
VALUE LABELS    AFSC 1 '31XX' 2 '40XX' 3 '60XX' 4 '64XX' 5 '66XX'
                  6 '004X' 7 '009X'/
                RANK 1 'CPT' 2 'MAJ' 3 'LTC' 4 'COL'/
                CMD 1 'TAC' 2 'SAC' 3 'MAC' 4 'AFLC' 5 'PACAF'
                  6 'USAFE' 7 'OTHER'/
                q4 to q27 1 'H DISAGREE' 2 'DISAGREE' 3 'NEITHER'
                  4 'AGREE' 5 'H AGREE'/
                q28 to q32 1 'SQN' 2 'WING' 3 'NAF/ALC' 4 'MAJCOM'
                  5 'HQ USAF'/
                q33 to q35 1 '0-4 yrs' 2 '4-8 yrs' 3 '8-12 yrs'
                  4 '12-16 yrs' 5 '16-20 yrs'/
                q36 1 'BOARD' 2 'BTZ' 3 'MPC SELECT' 4 'ALL'
                  5 'OTHER'/
                q37 1 'HQ USAF' 2 'UNIFIED CMD' 3 'ATC/AU'
                  4 'AFSC' 5 'AAC' 6 'COMBINED CMD'
ONEWAY          q4 to q35 by RANK (1,4)/
                ranges=scheffe
OPTIONS         1 10
STATISTICS      1
FINISH
```

```
SET             width=80
TITLE           'oneway anova by AFSC'
FILE HANDLE     helen/NAME='tdata'
DATA LIST       file=helen fixed records=1/
                id 1-8 AFSC 9 RANK 10 CMD 11 q4 12 q5 13 q6 14 q7 15
                q8 16 q9 17 q10 18 q11 19 q12 20 q13 21 q14 22 q15 23
                q16 24 q17 25 q18 26 q19 27 q20 28 q21 29 q22 30
                q23 31 q24 32 q25 33 q26 34 q27 35 q28 36 q29 37
                q30 38 q31 39 q32 40 q33 41 q34 42 q35 43 q36 44
                q37 45
MISSING VALUES  AFSC, RANK, CMD, q4 to q37 (9)
VALUE LABELS    AFSC 1 '31XX' 2 '40XX' 3 '60XX' 4 '64XX' 5 '66XX'
                  6 '004X' 7 '009X'/
                RANK 1 'CPT' 2 'MAJ' 3 'LTC' 4 'COL'/
                CMD 1 'TAC' 2 'SAC' 3 'MAC' 4 'AFLC' 5 'PACAF'
                  6 'USAFE' 7 'OTHER'/
                q4 to q27 1 'H DISAGREE' 2 'DISAGREE' 3 'NEITHER'
                  4 'AGREE' 5 'H AGREE'/
                q28 to q32 1 'SQN' 2 'WING' 3 'NAF/ALC' 4 'MAJCOM'
                  5 'HQ USAF'/
                q33 to q35 1 '0-4 yrs' 2 '4-8 yrs' 3 '8-12 yrs'
                  4 '12-16 yrs' 5 '16-20 yrs'/
                q36 1 'BOARD' 2 'BTZ' 3 'MPC SELECT' 4 'ALL'
                  5 'OTHER'/
                q37 1 'HQ USAF' 2 'UNIFIED CMD' 3 'ATC/AU'
                  4 'AFSC' 5 'AAC' 6 'COMBINED CMD'
ONEWAY          q4 to q35 by AFSC (1,7)/
                ranges=scheffe
OPTIONS         1 10
STATISTICS      1
FINISH
```

```
SET             width=80
TITLE           'anova'
FILE HANDLE     helen/NAME='tdata'
DATA LIST       file=helen fixed records=1/
                id 1-8 AFSC 9 RANK 10 CMD 11 q4 12 q5 13 q6 14 q7 15
                q8 16 q9 17 q10 18 q11 19 q12 20 q13 21 q14 22 q15 23
                q16 24 q17 25 q18 26 q19 27 q20 28 q21 29 q22 30
                q23 31 q24 32 q25 33 q26 34 q27 35 q28 36 q29 37
                q30 38 q31 39 q32 40 q33 41 q34 42 q35 43 q36 44
                q37 45
MISSING VALUES  AFSC, RANK, CMD, q4 to q37 (9)
VALUE LABELS    AFSC 1 '31XX' 2 '40XX' 3 '60XX' 4 '64XX' 5 '66XX'
                  6 '004X' 7 '009X'/
                RANK 1 'CPT' 2 'MAJ' 3 'LTC' 4 'COL'/
                CMD 1 'TAC' 2 'SAC' 3 'MAC' 4 'AFLC' 5 'PACAF'
                  6 'USAFE' 7 'OTHER'/
                q4 to q27 1 'H DISAGREE' 2 'DISAGREE' 3 'NEITHER'
                  4 'AGREE' 5 'H AGREE'/
                q28 to q32 1 'SQN' 2 'WING' 3 'NAF/ALC' 4 'MAJCOM'
                  5 'HQ USAF'/
                q33 to q35 1 '0-4 yrs' 2 '4-8 yrs' 3 '8-12 yrs'
                  4 '12-16 yrs' 5 '16-20 yrs'/
                q36 1 'BOARD' 2 'BTZ' 3 'MPC SELECT' 4 'ALL'
                  5 'OTHER'/
                q37 1 'HQ USAF' 2 'UNIFIED CMD' 3 'ATC/AU'
                  4 'AFSC' 5 'AAC' 6 'COMBINED CMD'
ANOVA           q4 to q35 by AFSC (1,7) RANK (1,4)
STATISTICS      3
OPTIONS         1
FINISH
```

```
SET             width=80
TITLE           'T tests q8 & q19, q23 & q24'
FILE HANDLE     helen/NAME='tdata'
DATA LIST       file=helen fixed records=1/
                id 1-8 AFSC 9 RANK 10 CMD 11 q4 12 q5 13 q6 14 q7 15
                q8 16 q9 17 q10 18 q11 19 q12 20 q13 21 q14 22 q15 23
                q16 24 q17 25 q18 26 q19 27 q20 28 q21 29 q22 30
                q23 31 q24 32 q25 33 q26 34 q27 35 q28 36 q29 37
                q30 38 q31 39 q32 40 q33 41 q34 42 q35 43 q36 44
                q37 45
MISSING VALUES  AFSC, RANK, CMD, q4 to q37 (9)
VALUE LABELS    AFSC 1 '31XX' 2 '40XX' 3 '60XX' 4 '64XX' 5 '66XX'
                  6 '004X' 7 '009X'/
                RANK 1 'CPT' 2 'MAJ' 3 'LTC' 4 'COL'/
                CMD 1 'TAC' 2 'SAC' 3 'MAC' 4 'AFLC' 5 'PACAF'
                  6 'USAFE' 7 'OTHER'/
                q4 to q27 1 'H DISAGREE' 2 'DISAGREE' 3 'NEITHER'
                  4 'AGREE' 5 'H AGREE'/
                q28 to q32 1 'SQN' 2 'WING' 3 'NAF/ALC' 4 'MAJCOM'
                  5 'HQ USAF'/
                q33 to q35 1 '0-4 yrs' 2 '4-8 yrs' 3 '8-12 yrs'
                  4 '12-16 yrs' 5 '16-20 yrs'/
                q36 1 'BOARD' 2 'BTZ' 3 'MPC SELECT' 4 'ALL'
                  5 'OTHER'/
                q37 1 'HQ USAF' 2 'UNIFIED CMD' 3 'ATC/AU'
                  4 'AFSC' 5 'AAC' 6 'COMBINED CMD'
T-TEST          pairs=q23 q24
                pairs=q8 q19
FINISH
```

```
SET             width=80
TITLE           'crosstabulation of q28 to q32 by RANK & AFSC'
FILE HANDLE     helen/NAME='tdata'
DATA LIST       file=helen fixed records=1/
                id 1-8 AFSC 9 RANK 10 CMD 11 q4 12 q5 13 q6 14 q7 15
                q8 16 q9 17 q10 18 q11 19 q12 20 q13 21 q14 22 q15 23
                q16 24 q17 25 q18 26 q19 27 q20 28 q21 29 q22 30
                q23 31 q24 32 q25 33 q26 34 q27 35 q28 36 q29 37
                q30 38 q31 39 q32 40 q33 41 q34 42 q35 43 q36 44
                q37 45
MISSING VALUES  AFSC, RANK, CMD, q4 to q37 (9)
VALUE LABELS    AFSC 1 '31XX' 2 '40XX' 3 '60XX' 4 '64XX' 5 '66XX'
                  6 '004X' 7 '009X'/
                RANK 1 'CPT' 2 'MAJ' 3 'LTC' 4 'COL'/
                CMD 1 'TAC' 2 'SAC' 3 'MAC' 4 'AFLC' 5 'PACAF'
                  6 'USAFE' 7 'OTHER'/
                q4 to q27 1 'H DISAGREE' 2 'DISAGREE' 3 'NEITHER'
                  4 'AGREE' 5 'H AGREE'/
                q28 to q32 1 'SQN' 2 'WING' 3 'NAF/ALC' 4 'MAJCOM'
                  5 'HQ USAF'/
                q33 to q35 1 '0-4 yrs' 2 '4-8 yrs' 3 '8-12 yrs'
                  4 '12-16 yrs' 5 '16-20 yrs'/
                q36 1 'BOARD' 2 'BTZ' 3 'MPC SELECT' 4 'ALL'
                  5 'OTHER'/
                q37 1 'HQ USAF' 2 'UNIFIED CMD' 3 'ATC/AU'
                  4 'AFSC' 5 'AAC' 6 'COMBINED CMD'
CROSSTABS       tables=AFSC by q28 to q32
CROSSTABS       tables=RANK by q28 to q32
OPTIONS         1,3,7,9
STATISTICS      1,11
FINISH
```

```
SET             width=80
TITLE           'Chi Square 28 to32'
FILE HANDLE     helen/NAME='tdata'
DATA LIST       file=helen fixed records=1/
                id 1-8 AFSC 9 RANK 10 CMD 11 q4 12 q5 13 q6 14 q7 15
                q8 16 q9 17 q10 18 q11 19 q12 20 q13 21 q14 22 q15 23
                q16 24 q17 25 q18 26 q19 27 q20 28 q21 29 q22 30
                q23 31 q24 32 q25 33 q26 34 q27 35 q28 36 q29 37
                q30 38 q31 39 q32 40 q33 41 q34 42 q35 43 q36 44
                q37 45
MISSING VALUES  AFSC, RANK, CMD, q4 to q37 (9)
VALUE LABELS    AFSC 1 '31XX' 2 '40XX' 3 '60XX' 4 '64XX' 5 '66XX'
                  6 '004X' 7 '009X'/
                RANK 1 'CPT' 2 'MAJ' 3 'LTC' 4 'COL'/
                CMD 1 'TAC' 2 'SAC' 3 'MAC' 4 'AFLC' 5 'PACAF'
                  6 'USAFE' 7 'OTHER'/
                q4 to q27 1 'H DISAGREE' 2 'DISAGREE' 3 'NEITHER'
                  4 'AGREE' 5 'H AGREE'/
                q28 to q32 1 'SQN' 2 'WING' 3 'NAF/ALC' 4 'MAJCOM'
                  5 'HQ USAF'/
                q33 to q35 1 '0-4 yrs' 2 '4-8 yrs' 3 '8-12 yrs'
                  4 '12-16 yrs' 5 '16-20 yrs'/
                q36 1 'BOARD' 2 'BTZ' 3 'MPC SELECT' 4 'ALL'
                  5 'OTHER'/
                q37 1 'HQ USAF' 2 'UNIFIED CMD' 3 'ATC/AU'
                  4 'AFSC' 5 'AAC' 6 'COMBINED CMD'
NPAR TESTS      chisquare=q28 to q32
STATISTCS       1
OPTIONS         2
FINISH
```

```
SET                 width=80
TITLE               'correlation matrix'
FILE HANDLE         helen/NAME='tdata'
DATA LIST           file=helen fixed records=1/
                    id 1-8 AFSC 9 RANK 10 CMD 11 q4 12 q5 13 q6 14 q7 15
                    q8 16 q9 17 q10 18 q11 19 q12 20 q13 21 q14 22 q15 23
                    q16 24 q17 25 q18 26 q19 27 q20 28 q21 29 q22 30
                    q23 31 q24 32 q25 33 q26 34 q27 35 q28 36 q29 37
                    q30 38 q31 39 q32 40 q33 41 q34 42 q35 43 q36 44
                    q37 45
MISSING VALUES      AFSC, RANK, CMD, q4 to q37 (9)
VALUE LABELS        AFSC 1 '31XX' 2 '40XX' 3 '60XX' 4 '64XX' 5 '66XX'
                      6 '004X' 7 '009X'/
                    RANK 1 'CPT' 2 'MAJ' 3 'LTC' 4 'COL'/
                    CMD 1 'TAC' 2 'SAC' 3 'MAC' 4 'AFLC' 5 'PACAF'
                      6 'USAFE' 7 'OTHER'/
                    q4 to q27 1 'H DISAGREE' 2 'DISAGREE' 3 'NEITHER'
                      4 'AGREE' 5 'H AGREE'/
                    q28 to q32 1 'SQN' 2 'WING' 3 'NAF/ALC' 4 'MAJCOM'
                      5 'HQ USAF'/
                    q33 to q35 1 '0-4 yrs' 2 '4-8 yrs' 3 '8-12 yrs'
                      4 '12-16 yrs' 5 '16-20 yrs'/
                    q36 1 'BOARD' 2 'BTZ' 3 'MPC SELECT' 4 'ALL'
                      5 'OTHER'/
                    q37 1 'HQ USAF' 2 'UNIFIED CMD' 3 'ATC/AU'
                      4 'AFSC' 5 'AAC' 6 'COMBINED CMD'
PEARSON CORR        AFSC RANK CMD q4 to q37
OPTION              1
FINISH
```

Appendix D: Selected Comments

Question 4:

"Systems perspective must encompass the entire Air Force, not just logistics. Knowing how logistics works is important, but knowing how/why the Air Force works and where logistics fits is more important. The Air Force is a sum of its parts and logistics is just one part."

"What do you mean by 'systems perspective?'"

Question 5:

"[An effective Logistics Career Development Program must be] aimed at a specific objective (e.g. wing DCM or major system DPML)."

"[A Logistics Career Development Program] may be very different for different officers and still be effective."

"[The words] 'must' and 'throughout' make this very rigid. There should be some programming, but we shouldn't make [it] a certain universal path, like the Army."

Questions 6 & 7:

"We need to commission officers who can speak, write and are comfortable with people!"

"A career officer should already have these [communicative] skills, regardless of career field."

"Good objective--but it's not the logisticians who need [interpersonal skills] training, its the people they work for."

"Especially with the enlisted personnel. We do a poor job in preparing the young officers for supervisory roles."

"Our officers are weak in [interpersonal skills]."

"While [communicative] skills are important, they are presented in enough programs already."

"Not part of program, just part of being [an] officer."

"[Communicative and interpersonal skills] should be in PME, since these are requirements for the entire Air Force."

Question 8:

"The field is too varied to make it mandatory to serve in all capacities. Must allow flexibility in the program."

"There's more than one path up the mountain. We need people of varied experience, not clones from the same mind set."

"Should not set pattern in concrete, must leave flexible."

"Do not establish too rigid a program to the point we turn out carbon copy logistics officers, some variety and flexibility."

"Individuals develop at different rates, need tailored progression."

Question 9:

"Formal education is helpful and gives the loggie a good overview of the system--or at least the theory of how it should operate."

"Only one way. School of hard knocks still works. Too much time in school house is detrimental."

"Best way is through experience, quickest way is through education."

"Education should be secondary to experience given."

"Experience is a must!"

"Don't understand the term systems perspective--perhaps I need the education!!"

"The best way is through experience in different fields. The tech schools I went to were basically worthless. Good vacations--but worthless compared to experience on the job."

"Intellectually grasping a concept isn't the same as having been there. Experience is necessary. I've worked for several 'educated logistics' officers who could barely spell their duty titles."

"I got mine through AFIT and CPL. Assignments in all take too long, too broad."

"Combine field experience with education."

"I surveyed 9 64XXs. They have no idea of what a 'systems perspective' is."

"Cannot agree unless you mix in experience. You can study forever, at some point you must implement."

"Formal? Practical? My answer is based on formal. The systems education comes through living with a system(s)."

Questions 10, 11, and 12:

"So much attention is given to writing with too much emphasis on grammatical rules, resulting in restriction of free flow of ideas and individual expression."

"There's enough at OTS, ROTC, USAFA--then SOS & ACSC."

"All supervisors must emphasis use of the skills already taught in PME."

"We add lots of academic requirements to our officer candidates from all sources. I suggest that we levy some basic communicative skill classes on these candidates. Classes such as speech, [English composition], [English literature], [technical] writing, would be extremely useful. With our current push for more technically oriented students such as engineers, math and science majors; we are hiring a generation of officers who cannot effectively communicate."

"Education in the USAF is only part of the answer. They need the basic skills before they are hired."

"As long as we have O-6's who insist on a writing style which includes 'action will be taken' or 'it is the opinion of this HQ,' we'll never get our point across. Train the fossils, too!"

"Effectively taught at service schools. LCDP should emphasize primarily logistic issues."

"Don't spend much time on interpersonal skill training. It's never more than marginally effective. Interpersonal skills are developed on the job."

"Every boss is different. It's hard to please everybody in this [administrative] world."

"USAF education in these areas is really rotten. We do not teach our folks how to speak or write. In my view our techniques are straight from the WWI manual. 'Tell them what you are going to brief, brief, then tell them what you said.' Our writing instruction tells us what not to do rather than giving a positive approach. Try Toastmasters for speaking [and] a good college course on creative writing as solutions."

Question 13:

"Don't need more--need better."

"It's weak for real world needs."

"SOS [and] ACSC were excellent."

"It's one of our weakest areas."

"I would evaluate all the various training courses I've experienced as good. The total result I see, however, is still disappointing. Maybe we need to teach supervisors how to teach communicative skills to subordinates."

"The problem isn't necessarily the skills, but inconsistent application of criteria for letters, APR's, OER's, etc. Whatever happened to pen [and] ink changes. We retype letter perfect and waste thousands of hours."

Question 14:

"Good/Great idea."

"I doubt an initial shot at the beginning of a technical course would be retained. Might be better at the end."

"Not necessarily as the first block, but should definitely be included."

"A basic exposure initially, but not a great deal. A follow on course at the 4-8 year point would be better."

"Seems better suited for emphasis at the 4-6 year point."

"Probably more effective after 3 years service."

"I'll agree that such instruction is needed, but not at the beginning of a course--more toward the end."

"Show them the model at [technical] school [and] let them see it in action as they gain experience."

"Should be taught at follow-on courses when the officer is better able to understand and appreciate."

"Put this at the 7-10 year point."

"In a broad, general presentation only. Newcomers won't grasp many technical details."

"Should come after some practical experience."

"We have this now in the supply school house."

"Not at all sure the information would be meaningful to a person without at least some experience in the AF. Terminology and jargon are foreign languages to a new person in [technical] training."

"This core block is a good idea, but not at the beginning of the training course. It should be the concluding block of initial course."

"However, students in initial training have no experience context in which to relate these system concepts. A re-enforcement training must be conducted at the 5-7 year point to tie real-world experience and conceptual constructs together."

"Nice to know, but not need to know--a young officer in the field does not really need to know the intricacies of acquisition at the Air Staff level. PPBS, POM, PDM, etc. may only be confusion factors--let's keep this type of training at the field grade level and spend that valuable training time for our young officers on more technical, in the field, applications."

Question 15:

"However, there should be overview courses taught to all specialities interrelating the other branches of logistics."

"But, I feel the courses should be strongly oriented towards a functional specialty and include broad overview of others."

"But they will be too much to contend with, unless staff officer courses are made more general and less technical. At which time I question their worth."

"There should be [an] interface course but not all continue as one course."

"But maybe this would be an appropriate forum for your core block on the logistics system."

"Absolute B/S! Make up a new course, if [required]."

"Real potential on this idea. This may be the perfect place to break down 'unions' and start thinking as generalists."

"Exposure to other areas is good, however a single course would be unproductive. Some specialization is still required."

Question 16:

"You will end up with ineffective generalists. A more effective, anti-stovepiping method would be to assign and train a person in various [logistics] AFSCs."

"Done at 66XX and 004X already for field graders."

"Officers should be experts in some area before they are diluted in the system."

"No for company grade; yes for field grade."

"I cannot consider 31XX and 40XX in the same breath with that of 64XX or 66XX. Past experience tells me that from Lt to Lt Col they have received opposing training [and] education. Could not think of combining unless the system changes."

"Jack of all trades and master of none? Suggest 'major' AFSC area with significant crossflow experience in one or more 'minors'."

"As a commander I want captains assigned to me to be functional in their position. Experience in a closely related area is imperative. The AFSC's listed are simply too broad."

"Fields are becoming more technically based...we need 'experts.'"

"I agree, but I say it should be at the field grade level. Leave the Lts and Capts as is."

"I'm interested in other career areas but feel blocked now."

"I want to remain a 31XX and have no desire to become a 40XX, 60XX, 64XX, 66XX."

"Would be a paperwork change only."

"Strongly disagree. That would dilute expertise to where officer is not effective at all."

"But crossing between AFSC[s] should be easier."

"This proposal loses sight of the fact that some degree of special knowledge is still required, even at the field grade level. Would you, as an aircraft maintenance officer, really like to work in transportation for an ex-Chief of Supply? Who's driving the train?"

"I agree with this idea because it will increase the awareness of the transportation officer of the needs and functions of maintenance, logistics and supply officers. This will also increase the wing/base commanders options on where people should work in his/her opinion. Also PCS expenses can be reduced because personnel can PCA to other jobs on the same base, hopefully, without the fear of jeopardizing their promotion chances. On the surface it may seem that they are homesteading at one particular base."

Question 17:

"I did and it helps."

"This is being overemphasized."

"Possibly desirable, but definitely not mandatory--strongest requirement should be leadership followed closely with a large measure of common sense."

"Degrees prove you can study; they say little about leadership or effective management."

"More emphasis should be placed on field experience and education--less on degree programs."

"As an AFIT [graduate], nothing else comes close."

"Specialized [training] will suffice--graduate degrees are highly overrated by the Air Force."

"Beneficial but not critical."

"Why is the Air Force so enamored of degrees? Wouldn't an intensive, comprehensive course without an academic degree suffice?"

"It would be helpful but not essential. Experience and professional skills development is most important."

Question 18:

"We can not all be Chief of Staff; therefore, all logistics officers need not be groomed for senior (O-6) logistics status. Select those with the background and potential for senior positions."

"You must be kidding! Not everyone will stay in, or if do say in, make O-6. Why train everyone--lets be selective!"

Question 19:

"Too structured a program may hinder instead of help."

"Not everyone is suited for all tasks at all levels."

"Seems self-defeating, as all don't have the same opportunities. We can't all be first violinists; some of us have to push wind through a trombone."

"Individual needs [and] desires are important."

"Still have trouble with a 'set' pattern--we can't build leaders with a 'cookie cutter' formula--it won't work."

"Can not be rigid. Tailor to individual. Concept is okay, but needs to remain flexible."

Question 20:

"Experience can only be gained by time. Rapid turnover causes incompetence at higher grades, where guidance [and] solutions are needed."

"Being careful not to provide so much variety that the officer has no solid core of experience."

"Too much--Too quick--Lose perspective."

"An effective executive development program would eliminate the assignment impediments which currently restrict crossflow of logisticians within logistics career fields."

Question 21:

"This is dreaming with dollars like they are. Would be better to increase the cross flow of people at a specific location, e.g. work in [transportation] 2 years [and] supply 2 years at same base."

"Only as long as they are meaningful jobs--not get-acquainted assignments."

"Not possible with PCS rules. Individual may get the experience, but not get promoted."

"Should give an officer experience in all logistics functions during one 3-4 year assignment at one location. Don't advocate more needless, costly PCS moves to develop people."

"Can't learn some in two years. Palace Log did this in 1976. What happened to it?"

Question 22:

"We supervisors can only advise, 'career' monitors at AFMPC supposedly 'develop' the individual's career."

"An area that has been neglected."

"Extremely important."

"A primary requirement which I haven't seen done."

"Supervisors don't understand career development any better than I do."

"The subordinates should also learn to help themselves. Find out--don't just wait to be counseled."

"Aren't we accountable now?"

"What's wrong with personal integrity to get this done."

"This is the most important missing link in our business."

Questions 23 through 27:

"Lts need exposure to the Big World while working in specialty."

"Depends on the level of assignment. Too many colonels are not, but they think they are. This is not a reflection on O-6s, but on the environment of micromanagement that has evolved. Even Casper Weinberger has said that '....in DoD, micromanagement starts at the top'."

"I'm not sure what these questions are after. I believe all officers through the rank of colonel are specialists to a large extent. The difference between the Lt and the Col is that the Col has broader experience base allowing him/her to 'specialize' across a broader spectrum of logistics areas."

"You need some specialists and some generalists. All one or the other would be a disaster."

"We need both but fewer specialists at each increased rank."

"Junior captains should specialize then transition through education and assignments/jobs to a more general leadership role as opposed to specialists. Seven years from Capt to Major is a long time."

"Major is generally a transition point from specialist to broader perspective."

"40XX officers are most effective when they are experts on their systems. O-1 thru O-6. May be different for other AFSCs."

"In all areas of logistics."

"Definition of 'specialist?' An untrained Colonel can really screw up a DCM job."

"Actually, they should all be a 'cross'--'generalists' (able to function in all situations) with a strong 'specialist' background (know what they're talking about)."

"Enlisted personnel are, and should be, the specialist."

"Colonels who 'think' that they are specialists are dangerous."

"Don't like the word 'specialist.' Every officer should be trained as a manager and a logistician should specialize in managing logistics functions. The Air Force currently demands us to be specialists and that concept will probably never change but we must not lose sight of the fact that we are logisticians first [and] specialists second."

Questions 28 through 32:

"NAF assignment undesirable."

"I think the career should be oriented toward being a [Squadron] Commander--not toward specialization. The training of an officer is for leadership, management, logistics--in that order."

"I wish you guys would stop worrying about 'your career' and start thinking about what is best for the AF. The system as set now has a major flaw. We keep inventing the wheel at base level (that's where the war is fought). We continually tell our officers to always go to the next highest level. If an officer goes back to the base level unit, his 'career' is gone. Granted we need qualified officers at all levels and someone needs to be at those levels, but let's not shoot the officer who goes to the base-level units."

"Lts should start at [squadron] level, Capts should be moved across as many levels as possible to broaden their experience. Level not important for field grades. Job is."

"Decline to respond. There is no ideal time. The level and timing varies depending on the individual."

"Need emphasis to get O-6's out of the dream palaces and back into real world."

"Lt at [squadron] level is an absolute must! All other grades require an increasing mix of squadron, NAF, MAJCOM, HQ USAF--they have no 'ideal' assignment."

"I hesitated to use choice #3 because I do not rank NAF and ALC together. My experience is that NAF is seldom career enhancing for a loggie. ALC is."

"Career development [does not equal] promotion."

"The basic perception of an assignment to a NAF is [that it is the] 'kiss of death' or certainly not a help to our career. It is perceived as the domain of the promotion-deferred or those who have reached their 'Peter Principle' level. I have also avoided ALC assignments in favor of being on the tactical 'edge' of the sword. Below O-5, I perceive this ALC as being extremely bureaucratic, i.e. 'little old ladies in green eyeshades and tennis shoes.'"

"I do not believe there is any ideal assignment or assignment pattern. Other than the fact that I believe Lieutenants could be at squadron/base level, and Captain is probably premature for the Air Staff, I don't think it matters where you are at any given time. I do think that an assignment pattern should be varied and that performance at whatever level is most important."

"There's a range of assignments we should consider for all roles--

Lieutenants: Squadron or wing/base--not NAF/ALC, MAJCOM or HQ USAF. We lose the officership in the NAF and up assignments.

Captains: Squadron, Wing/Base or NAF/ALC.

Majors: Lt Colonels: Now move them to MAJCOM and HQ USAF.

Colonels: the entire spectrum of levels applies--if you're grooming the colonel for G.D., thru NAF/ALC or higher probably."

"An early MAJCOM assignment will answer a lot of acquisition and development questions for young officers. Lt's should be rotated through various squadrons and wing staff positions. Captains should then go to MAJCOM assignment. Majors should fill ALC positions because those are tough positions requiring specialized knowledge of logistics plus understanding the interrelationship of the MAJCOM. ALC's and various government agencies. After an ALC assignment (plus the preceding assignment), then as a Lt Col you should be able to make a valuable input to HQ USAF/LE. Finally, all of this experience should be taken back to the wing as a Col. Then wing and squadron [commanders] will be more efficient."

Question 33:

"There is absolutely no need for a full time graduate logistics program. Too many opportunities are already available through off-duty programs."

"The only value a masters degree has for an Air Force officer is as a square filler for promotion!"

"Timing of a graduate level logistics education should be based in part on retention. The AF has a strong influence on retention in the 4-8 year group by offering a 'free' advanced degree. The service commitment incurred by these generally exceptional officers insures a good supply of professional logisticians for several years to come."

Question 34:

"Do it at each promotion."

"Never. Should have it before entering AF!!"

"Every 4-5 years and at start of career."

"Should also have this sort of training, in some fashion, in 4-8 years and 8-12 years."

Question 35:

"People change over the years and normally as a Major an officer's career perspective [and] goals are set. That is the time also for the Air Force to select individuals for special treatment/handling for senior/executive level development.

"Suggest provisions be made to select people at different ranks for executive training--select Capts, Majors, Lt Cols.

"Best time is the 11-16 year span. As a major selectee to Lt Col selectee."

"Right after major, around 12 year point--we know what kind of officer we have by then, with time to develop. Have to not hurt chances for O-5, though."

Question 36:

"Supervisors/bosses are the key, not board members or Puzzle Palace semi-executives. We pay good money for seniors to make decisions so let them do so."

"Nomination by supervisor, endorsed by Commander."

"Personal interviews--give officers that express an interest in becoming career logisticians an opportunity to speak for themselves. Don't let the selection of career logistics officers become a cold and impersonal process, done by a board of senior officers with no contact with the individuals being considered. Without direct involvement of the individual, I believe some serious mistakes will be made in relation to the career advancement of those being considered for positions as career logisticians."

"We have to go back to the 'old school' and learn that only supervisors know the capability of their people. If I've got a good--real good--person who has the skill and desire, you have to give me a way of getting this individual into the right program."

"Let MAJCOMs nominate their brightest career logisicians to attend this executive program. Nominations could be weeded down to the best by a board composed of current senior logisticians who are familiar with the talents and skills they are looking to develop."

"I'd like to see career development in terms of volunteer desires. There's a lot of maintenance and supply folks who haven't the dimmest notion of the other log fields, nor do they want to learn. These are what I call specialists. Surely, our 'executives' shouldn't have this kind of narrow-mindedness. Anyway, I feel we should develop those (starting at 1Lt), who indicate they want to learn the 'grand strategy' of logistics."

"One serious problem I see with the Executive Career Development program is that since it is by nature, limited to a few, the perception could arise that if an officer is not selected for the program, he is not promotion worthy."

"Career monitors at MPC already have a large enough 'good old boys network.' They are probably the worst choice for selecting candidates for any accelerated program."

"[Choice #3 is the] worst method. AFMPC is concerned with numbers--not qualitative assessments."

"Possibly could have a system to select the best officers from the 'whole person concept' similar to the system the Military Airlift Command has developed for the selection of Squadron Commanders and future development to O-6. Check into MAC's 'VOLANT EAGLE' program. Some aspects of this program could be applied to the executive development of logisticians."

"The best method to select senior officers is to review OERs to identify the best sustained performers. Performance should be 99% of our selection criteria. More effort should be placed on developing an OER system that tells us who our best performers are than on an executive development program that will have limited utility. Some of the best performers in senior logistician jobs have not been career logisticians. (I am a non-rated officer)."

"Be careful in creating a group of 'elite' officers for 'development' into senior logisticians. The mission of the Air Force is implemented at base level and that where the tough officers are or should be. A 'senior logistician' should have lots of base level experience with airplanes, gas masks, people and MREs. Those officers who chose to hang around HQ, Centers, and other executive jobs are most likely to be chosen for the 'executive training' program because they know a lot of Generals. 'Senior logisticians' must understand the problems of the TSgt who runs the swing shift on Friday night and all the 'logistics' and people problems he/she encounters. Otherwise, we develop 'slick' officers who know how to 'get the budget money' and the 'General's eye,' but can't put together a raid on Libya. Let's not have an official executive development program."

"The worst program will be a 'programmed' program. If officers are not selected it will be equivalent to a passover--especially in the minds of junior officers.

The rated pilot system of 'gates' may be the approach to take. Specialization is needed but broad experience must be added.

A good model is the German General Staff Officer system. Certain officers are selected in, at different levels, wear separate insignia, have special courses, and are almost hated by those not selected. Bad system for logisticians.

Program must be for all officers.

The AFLC Career Broadening Program is an excellent program to achieve these results.

Stovepiping is bad for logisticians. But a highly programmed selection course of career progression is devastating to the Air Force. careers need to be monitored, crossfeed is essential, specialization cannot be dropped--Generalists=mediocracy. We need specialists with broad experience and perspective."

"I want a board of senior loggies, as long as the senior logistician has been in logistics at least 5 years. Working for an O-6 DCR proved [that] not all O-6s are logisticians by position. This DCR didn't know what logistics was, he was still thinking like a pilot."

"From your perspective as a Captain, an O-6 probably appears like a 'senior' logistician. However, I am presently at a MAJCOM as an O-5 and I can tell you that logistics policy is not decided by O-6s in this command; it is decided by Flag Rank officers, most of whom are definitely not professional logisticians, so their 'executive development' is somewhat irrelevant from a logistics perspective."

As you can probably tell from my answer, I'm not a big fan of attempting to structure a logistics executive development program early in a young officer's career. This is mainly for two reasons:

a. Regardless of what we 'professional logisticians' would like, senior logisticians are going to continue to be rated officers promoted to flag rank.

b. Because of (a), we need a cadre of good quality experienced maintainers, supply, plans, transporter, officers (O-6) to back these senior folks up."

"This is a tough question. We must avoid a 'Good Old Boy' concept, that's what the [operations] side is in now. It is refreshing to see non-rated, professional colonels now, maybe we are finally doing something right. However, looking at the DCS level at a MAJCOM one finds damn few non-rated! Is AFLC our only hope?!"

"I'm not convinced there is a need for an 'exec develop' program--It appears that very few 'dummies' make Col in the Logistics Fields. It also appears that those who make Col develop exec and leadership skills on their own--I think practical application (on the job--variety of jobs; but no set pattern) is the key!"

"We have enough boards!"

"There should always be the element of command in a person's background before selection to any executive development program. People should be selected only after earning an 'A' prefix."

"No rated [supplements] allowed!!"

"Do not exclude operations types who enter the logistics career field in the rated supplement. Usually, these people bring valuable experience and knowledge to the logistics arena."

"Volunteers."

"With a written evaluation on the individual from the supervisor."

"Selection should be made by AFMPC based on individuals qualifications. There should also be an opportunity for nomination by the MAJCOM LG staffs."

"The AFMPC monitors should screen the records to provide the top 15-25 percent of a year group, then a board select from this group."

"Local board similar to SOS selection boards but possibly include an interview with appropriate DCS to discuss individual's potential and future career plans and goals."

"Let the MAJCOMs do it--they know their people better than MPC. MPC could have review and final approval authority."

"Question 36 gives me the idea that logisticians are the only qualified people who can pass judgment on logisticians. Get some [operations] people in the picture. We support them."

"Being selected from below-the-zone, doesn't mean one is better qualified, than the rest of the folks, to get the job done. Individual records, jobs, experience levels, and professionalism should be the key. Not square fillers."

"Board should not only review records but also see applicants. Face to face contact and stringent oral grilling will provide the best officers."

"Draw a line on the Major and LTC selection list which meets quantity and quality throughput needs. Bottom line--BTZ selections plus top 10% of normal progression for those in logistics related AFSCs."

"Have officers apply, via full resume route, for the jobs. Too often, OERs, Records, etc., do not reveal the full power/understanding/study people have done to become outstanding logisticians. Therefore, let them tell a board, in writing/oral interviews, why/how they intend to be a senior loggie."

"The supervisors must be directly involved in any selection process. I suggest a central selection process, probably a board, that selects participants who are nominated by their supervisor up through the chain of command."

"I don't like boards, they tend to look at cosmetics and not meat. All prospective students should submit a letter through his wing base RM, NAF LG or MAJCOM division requesting selection with reasons why he/she is qualified. Actual records (OERs, etc.) are largely meaningless."

"To allow selection prior to promotion would be to give mini-promotion board status to whoever is doing the selection that is, if someone is selected for executive development, he automatically becomes better qualified for promotion by virtue of the training received or simply because of being selected. If selection must be accomplished then it would be better performed in the same manner as service school selection. I would prefer to see training open to all officers so that those who have not reached their full potential might do so thru voluntary training."

"Board select from promising officers who have been to logistics-related fields at least five years. This will require any officer (support and non-support,i.e.)to have a good (or at least reasonable)grounding in the art of logistics. Most senior logisticians got into the field by being promoted out of flying squadron duties; the five year requirement would make infusion into the professional logistician areas mandatory at the Major/Lt Col level where retraining is possible without the leverage of high rank. My first boss in the 009X field was an O-6 RH-4C pilot who took the assignment as a DCR because he thought he was coming to the base to be the Dep Cdr for Reconnaissance! Also--watch out for the below-the-zoners; they may be your lean and hungry Cassius--right squares, right looks, but no morals regarding our profession."

"Summary: Program open to all initially--further weeding out at major level.

1. Give 1Lts to Captains (less than 8 years) a wide range of assignments. Do not keep them in the same command for more than one tour.
2. No back-to-back mobility jobs.
3. Junior officers must have an assignment in System/Logistics Command. They need to have the basics on how systems are developed, procured, provisioned, and deployed.
4. Junior officers must be sent to short courses, such as LOG 224 and 225, regardlessof the command to which they are assigned.
5. 66XX officers need senior officer career monitors or sponsors to help plan job assignments. Too many offices are forgotten in a wing LGX jobs where only rated officers are supported.
6. 66XX officers need more training on 'how' the supply systems works and in financial management areas.
7. Program open to all officers--select only the best once [they make] major.

NOTE: I'm leaving the active Air Force after 9 years (going reserve) because there was no career development program for 66XX. I was not given the opportunity to have the jobs that I need to be competitive for promotions and more responsible jobs."

"Some combination needs to be used. Officers should probably be nominated by their commands/AFMPC and then competitively selected. Equal weight should be given to written nominations packages as well as personnel files (OERs). Something similar to the White House Fellows Program, should not be limited to only those who apply. Some good people would be missed, so AFMPC needs to play role."

"I would be very apprehensive about the success of a selective method. Some advanced programs, such as AFLC Career broadening and EWI, currently preclude a significant portion of otherwise highly qualified personnel through the use of time-in-service criteria. This sends a negative signal to the prior enlisted service logistician."

"Until such a program is developed, MPC needs to be given direction to allow loggies to develop themselves. I very much wanted to expand my experience by moving from 66XX to transportation or supply. (I entered the 66XX career field by going to GRAD LOG. I've no experience in any 'feeder' career field such as trans or supply). I was told by the 66XX service managers that this was not possible because 66XX career field was to short. This problem smacks of the right hand not knowing what the left hand is doing. While you are studying the development at a career development program. Those of us who are striving to do it on our own get no support <u>now</u>."

"[Some combination of choices] 1 [and] 4 but select from logisticians only. It sounds like this is just another attempt to identify all MAJCOM's 'fair-haired' boys/girls. Does this mean that rated sups go right into the executive development program with no background/experience as a specialist? What about those officers who try to career broaden but are denied the opportunity because their AFSC is undermanned? Seems to me we're saying one thing to one group and advocating the logistics generalist concept for another. Be fair, senior logisticians should come from qualified logistics AFSC-holders. If we're not qualified, don't hold onto us just because of shortages--separate and build a quality logistician for senior senior positions."

<u>General Comments</u>:

"More 1-2 week courses should be offered for all logisticians. These could be at the unit or at Wright-Patterson. This would give more young officers early exposure to a variety of logistics disciplines while they are gaining valuable working level experience."

"Get all rated officers out of the Logistics career fields and retain more of the non-rated officers who have years of logistics management experience to fill the senior logistician positions."

"A final comment, we in logistics must fact the fact that the majority of senior people in logistics did not get in those positions because they are career logisticians. They got there because they are Pilots."

"What an appalling indictment of the logistics career field that a survey would even consider: 'Supervisors should be accountable to their superiors for the career counseling and development of their subordinates'. How vilifying that in a multi-page survey, the word leadership is never once mentioned. How indicative of the state we are in that we can not bring ourselves to say 'future leaders' vice the milk toast phrase 'senior logistician (Colonel)'. It is enough to cause a loss of hope even in the most avid optimist.

The vast majority of the questions seem to imply that if we could only identify the magic pathway to success, why then we could simply run the young officer through the paces, and yield a fully formed 'senior logistician (Colonel)'complete with 'interpersonal relationship skills' (whatever the Hell they are). Somewhere, we have lost sight of our goals and are about to redouble our efforts.

The survey is replete with thoughts that the system can correct for the deficiencies in leadership so long in evidence. The survey itself serves as evidence. It implies that if we improve communication skills, improve interpersonal relationship skills, develop a systems perspective, and improve the education by standardizing the curriculum, why then everything will be ok. All of these things should be the responsibility of the immediate supervisor. It is being a mentor, one of the key attributes of good leadership. A course in interpersonal relationship skills can not begin to compare with having to meet the mission out on the line, with being given responsibility commensurate with authority to do the job, by finding the way to motivate the troop who could care less. Education provides the foundation, experience is the real teacher. The officer you are looking for as a 'senior logistician (Colonel)'--a leader--is one who can move into a position and meet the mission, not by the application of personal technical knowledge, but by moving the people. The finest maintenance officer I have ever known was philosophy major with a Masters in history. He did not know a one way check valve from a synchrophaser, but he could lead his people. He could meet the mission with his people. the direction the survey is pointing most certainly seems to be away from that."

"I don't want some '66 loggie' selecting tomorrow's DCMs and Director of Munitions of MAJCOM. Also, I don't define a senior logistician, or more specifically [and] to my point, I don't define a Senior Maintainer as a Command (fighter) Pilot with 22 yrs behind a stick and six months as Assistant DCM at some wing. A senior maintainer, has 10 yrs of pure maintenance. OK, if he was even a navigator before that!"

"Most senior logistics leaders are not grown--but operations types with almost no education, training or experience in logistics."

"All of the logistics disciplines are so varied and require different talents in the officer corps I believe it will be a mistake if the logistics career field is combined into one AFSC. In fact my desire to become a 31XX was predicated upon the fact that I could remain within the ICBM community. Any effort to career broaden all logistics officers into other related disciplines would encourage me to return to my old career field, 18XX. In short, I find missile maintenance interesting. I would find fuels, transportation, supply dull, dull, dull."

"I am not in favor of 'generalist' logistics types. Perhaps the concept is valid for 6XXX AFSCs, but the aircraft maintenance field requires competence more than systems overviews. I do not wish to see individuals from 6XXX areas be assigned to O-6 4096 positions."

"I'm a career 64XX [and] former Resource Manager for 64XXs at MPC. Career development worked under the Palace Log concept when resource managers were allowed to do it. Putting junior capt's as Team Chiefs nas defeated the concept."

"Certified Professional Logistician (CPL) A worhty objective that the Air Force should formally recognize as a desirable career goal. Study for the CPL gives the best rounding, except for AFIT, I've encountered. It's a true systems approach. Industry is strongly advocating their logisticians to attain rating, we should advocate it too, as a mark of professional competence, 2nd as a separator. Program administered thru SOLE."

"You're questions were apple pie and motherhood. Of course I agree with progress, career development, special monitoring etc. who wouldn't. If I seem a little harsh it's because after 10 years in Logistics no planning has been done for career logisticians."

"This questionnaire was pure motherhood. Ideal assignments and needs of the Air Force rarely coincide. No selection system would ensure the best officers. Politics is too rampant in the Air Force. While it would be ideal to open 'the' program to all, again, needs of the Air Force would probably not allow most to follow the ideal path to a senior billet. The best logistics training is on-the-job in the trenches, where the light from star indorsements infrequently shines, supplemented by training. The last thing the logistics community needs is a prima donna program. The thing we do need is recognition for the job we do in the trenches. The smart loggie will milk 'luck of the draw' assignments and enhance OJT with formal/technical education to achieve a comprehensive knowledge of the logistics system."

"If we combine all logistics AFSCs into one, the outstanding 18XX's now coming to missile maintenance will prefer to stay in operations. Since coming to maintenance would decrease their chance for command.

Most 18XX's and 31XX do not consider themselves operators or logisticians, but missile officers. Speaking only for myself, I believe most missile officers would prefer to remain in a career filed that offers unique command opportunities."

"First, get serious about treating people as people, not just bodies or chesspieces.

Second, career planning and periodic supervisor-subordinate progress review sessions, documented and verified by the supervisor's boss in writing, will permit career plan changes. Changes will provide tailoring mechanism to optimize individual development and individual's contributions.

Third, rank career progress reviews on par with needs of the Air Force in assignment decisions.

Fourth, replace the current OERs with career progress reviews.

Fifth, help the new system work, don't fight it. We keep saying people are our most valuable asset without acting like it. Let's put action behind words to make humanistic philosophy operative."

"What we need is a clearly defined growth pattern within the LOG command--AFLC...There are few (about 10-15) meaningful positions for a major or Lt Col in the entire command. Each of the 5 MM's have a few. There are many positions with no authority. This situation causes us to grow our colonels outside the Log community and then make them instant Loggies."

"This questionnaire indicates someone does not believe the AFMPC resource managers are properly handling the career development of professional career logisticians. I in fact agree that AFMPC has not over the years followed any part of a cohesive game-plan for logistics career development, leaving it to chance or the expedient pressures of slot-filling in the personnel community. The Air Force is in great need of a well thought out, well understood career development program for career logisticians. Otherwise, as is prevalent now, we get specialists at the O-6 level versus generalists with a broad-based background in various logistics AFSCs."

"Currently, most executive logisticians are rated officers on their first assignment outside a cockpit. I resent working for someone who knows nothing about my job, but constantly tells me how to do it. They know nothing about long term impact on a wings maintenance program as they make these decisions. As a result, personnel become frustrated in an attempt to do their job."

"Don't allow supply to fall under maintenance."

"You're on the right track; Logistics needs career monitoring and developing based on a set of long term objectives."

"Your thinking is too narrow. Stop thinking about promotion to colonel and start telling logisticians how they can get promoted to general."

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Captain Frank Gorman was born 6 November 1952 in Fowler, Kansas. He graduated from Kubasaki High School, Okinawa, Japan, in 1970. From 1970 to 1973, he served in the U.S. Army as an airborne ranger in the 82nd Airborne Division, Ft Bragg, North Carolina, and Special Troops, I Corps, Republic of Korea. From 1973 to 1974, he attended the University of Oklahoma at Norman. He then was a missionary in Brazil until 1976. In 1977, he attended Brigham Young University at Provo and received a Bachelor of Science degree in Psychology in 1978. In September 1978, he entered the University of Utah at Salt Lake City and received a Masters of Social Work degree in 1980. Shortly after graduation, he was commissioned a second lieutenant in the U.S. Air Force through OTS. In April 1981, he completed personnel officer school at Keesler AFB, Mississippi, and was assigned to the 2849th ABG at Hill AFB, Utah, as chief of quality force and customer service. In 1983, he was transferred to HQ AFLC at Wright-Patterson AFB, Ohio, as the chief of PME and technical training. In May of 1985, he entered the Air Force Institute of Technology as a graduate student in Logistics Management at the School of Systems and Logistics.

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Concerns have been raised by senior USAF leadership about the current senior military logistician's ability to manage the totality of USAF logistics systems. This thesis addresses this issue by proposing a logistics career development program for USAF military logisticians. Based upon historical programs and lessons learned, a model career development program is suggested. This program combines elements of experience, education, and training and sequences them over a military career. This model was sent to a representative sample of 1840 of today's practicing logisticians for evaluation. The results of this field evaluation are documented and analyzed by military rank and logistics functional specialty. Each of the elements of career development is analyzed. The sequencing of those elements is also addressed. The results are valuable because they provide insight about what practicing USAF logisticians think is important in a logistics career development program.

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