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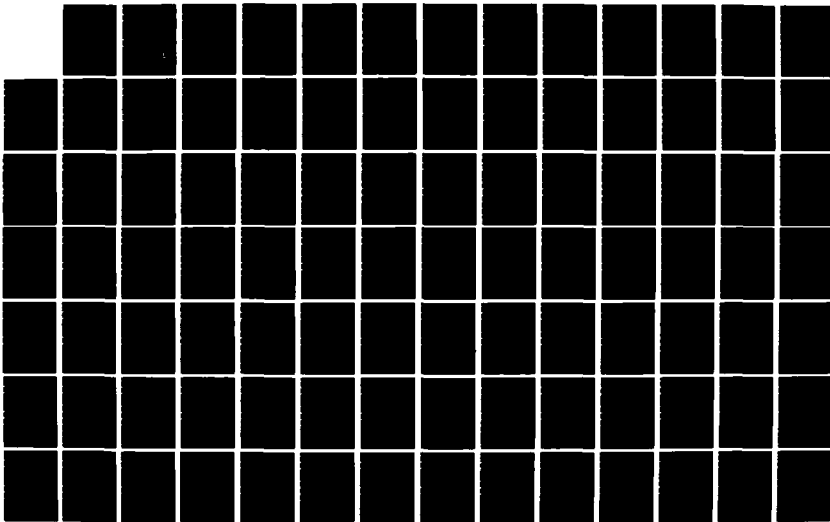
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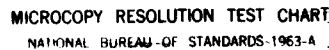
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A NORMATIVE MODEL OF THE ESSENTIAL
QUALITIES, CHARACTERISTICS,
AND BACKGROUND REQUIREMENTS
FOR A PROFESSIONAL SENIOR
MILITARY LOGISTICIAN

THESIS

Allan D. Overbey
Captain, USAF

AFIT/GLM/LSM/85S-61

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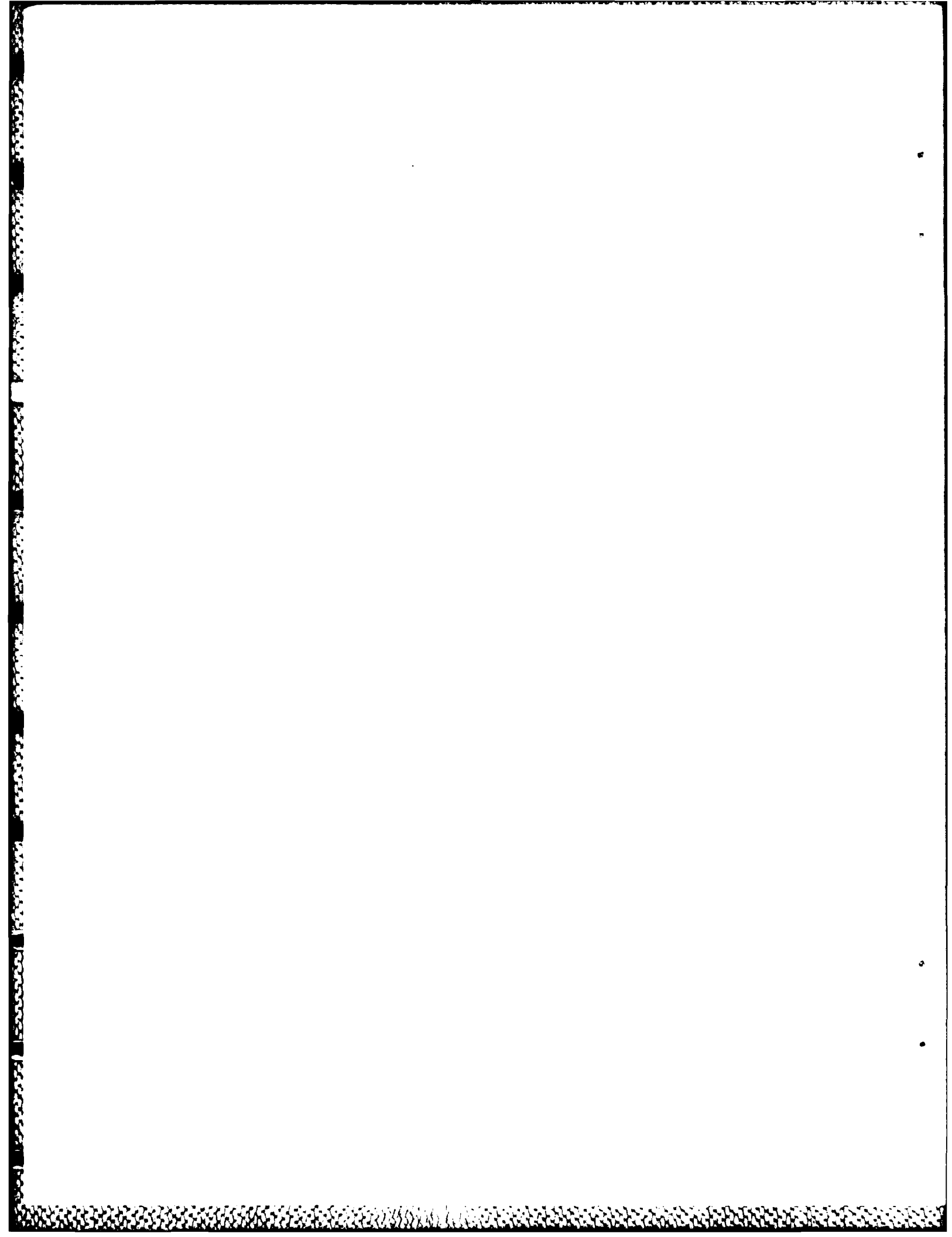
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A NORMATIVE MODEL OF THE ESSENTIAL QUALITIES,
CHARACTERISTICS, AND BACKGROUND REQUIREMENTS
FOR A PROFESSIONAL SENIOR MILITARY LOGISTICIAN

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

Allan D. Overbey, B.S.

Captain, USAF

September 1985

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Abstract

Logisticians must play a more central role in the planning and employment of air power in the future, according to the deputy chief of staff for USAF Logistics and Engineering. Lt Gen Leo Marquez said, however, that Air Force senior logisticians are currently unprepared to fill a central role in creating and sustaining combat operations because they do not possess the proper qualifications and background requirements. This thesis was therefore an effort to develop a normative model of the essential qualities, characteristics, and background requirements for a professional senior military logistician. A thorough review of the existing literature offered an insight into the terms "logistics" and "logistician" as well as an historical perspective of the military logistician. In addition, the relevant literature coupled with extensive studied opinion were used to develop a research plan which consisted of interviews and a Delphi survey. The research plan was then used to obtain expert opinion from selected individuals in the logistics profession. From an analysis of the experts' opinions, a normative model was constructed and topics for further research were suggested. The model identified intrinsic qualities and characteristics, and specific requirements for academic

education, professional involvement, advanced career positions, logistics experience, and technical competency. The research also suggested ideas and programs which could be implemented in the future to assist the development of senior military logisticians. The thesis consolidated some of the best, currently available thinking about who the senior military logistician should be.

A NORMATIVE MODEL OF THE ESSENTIAL QUALITIES,
CHARACTERISTICS, AND BACKGROUND REQUIREMENTS FOR
A PROFESSIONAL SENIOR MILITARY LOGISTICIAN

I. Introduction

Logistics and logisticians must play a more central role in the future planning and employment of Air Force power, according to the Air Force deputy chief of staff for Logistics and Engineering. Lt Gen Leo Marquez recently stated that senior military logisticians must be able to understand and integrate the total logistics system to create and sustain effective combat operations. However, senior military logisticians, said General Marquez, are currently unprepared to fill a central role in employing air power because they lack the proper background and qualifications.

This chapter introduces the research issues concerning the essential qualities, characteristics, and background requirements the senior Air Force logistician should possess. The chapter begins with a discussion on the general issue and background on the research topic followed by a description of the specific problem. Definitions of key terms are then presented as well as the research objectives, research questions, and potential contributions

of the research. The chapter concludes with an overview of the remaining chapters in the thesis.

General Issue and Background

The field of logistics has long been recognized as requiring specialized managers/leaders. The persons who manage the logistics system are responsible for a significant portion of the nation's defense resources. The magnitude and impact of the logistics portion of the defense effort is evidenced by the fact that about 41 percent of the \$101.5 billion fiscal year 1985 United States Air Force (USAF) defense budget is earmarked for logistics (57). According to Kaufman, of the Brookings Institution, the Department of Defense (DOD) procurement area alone has increased 91 percent since fiscal year 1981. Moreover, expenditures for procurement of major and minor systems, munitions, and spare parts are projected to climb another 59 percent during the next three years (35:2-3). It can be seen that management of the logistics arena can have a profound impact on the readiness and deterrent posture of the United States. Col John C. Lackas (USAF retired) remarked:

. . . with the growth in the magnitude of military operations and responsibilities in the Twentieth Century, logistics has become as important to the military man as strategy, and, with the rapid and extensive development of the technology of interface, logistics has tended to merge with strategy; in fact, it is conceivable that the responsibility of the military man in a push-button war would be primary, if not solely, that of the logistician. (14:2)

To further illustrate, the post-Vietnam period has been an era of technological revolution in the Air Force. The level of sophistication and complexity of today's weapon systems is staggering. Air Force Logistics Command (AFLC) Pamphlet 190-4 states:

Given new technology, and more capable and sophisticated systems, [logistics] is not a static process. Indeed, providing logistics today requires the ability to anticipate requirements--and where that's not possible--to react rapidly and responsively. (16:3)

In addition, the sheer volume and cost of numerous end items required to support these complex weapon systems has placed increasing demands on the Air Force logistical process. Air Force logisticians are responsible for nearly 850,000 different Air Force supply items and almost \$94 billion in capital assets (16:4,7). Masterson contended that the demands on the logistician in the future will be compounded by a "revolution in logistics" (41:4). He argued that the changing nature of warfare will entail a logistics system that must be flexible and responsive to the needs of the Air Force. In his Air War College report, he wrote:

Between 1850 and 1950 the conditions and methods of logistics were transformed by a revolution in warfare more fundamental than any that had occurred in the preceding 5,000 years. (41:4)

He further maintained that without well-motivated and developed logisticians, the future may inevitably lead to sophisticated logistical systems that are seriously

entangled in complexity, struggling to deliver "the tools of war to their users" (41:4). Masterson asserted that the dilemmas facing the logistician are twofold: first, a need to keep pace with technology; and second, a requirement to ensure development of a compatible logistics system (41:12). All of this therefore leads us to believe that the Air Force logistician must be a dynamic individual capable of adapting to the challenging requirements of the logistics process.

Recently, there has been a growing perception, particularly among the Air Force senior leadership, that the Air Force logistician is not properly "groomed" to meet the service's logistics management needs (40:10). An Air Force Institute of Technology (AFIT) study conducted in 1965 by Kenealy and Canady suggested that the Air Force possessed "the most narrowly based" group of logisticians of the three military services. Their study indicated that the development of a multidisciplined logistician in the Air Force was achieved more by chance than by systematic and programmed action. In addition, they discovered that only about 20 percent of the logistics work force ever attained the 0046 AFSC--the Air Force Specialty Code for Director of Logistics. In contrast, Kenealy and Canady found that the Navy logistician has historically spent his or her entire military career in logistics, systematically progressing over the full gamut of the logistics spectrum.

They further said that about 60 percent of the Navy's logistics officer corps work their way up to logistician status (36:59-61). A search of the literature since the Kenealy and Canady study has revealed no additional insight into the breadth of USAF logisticians. However, recent comments from the USAF deputy chief of staff for Logistics and Engineering suggest that, 20 years later, the Air Force is still producing a "narrowly based" group of logistics personnel (39:33).

General Marquez said that Air Force logisticians are unprepared to manage the total logistics process because of what he calls "stovepiping"--funneling individuals into the specialized disciplines of logistics such as maintenance, supply, and transportation. General Marquez stated:

. . . we must have people who are able to operate and manage a total system. Instead, we have been developing senior officers who, in many cases, have come up through the ranks in only one specialty. Not recognizing that we needed managers, these people have reached senior positions unprepared to manage the totality of our complex logistics system. (40:10)

Specific Problem

Air Force Regulation (AFR) 36-1, Officer Classification, and AFR 36-23, Officer Career Development, serve as guides for the development of all officers, including those in logistics specialties. However, these regulations have provided only general guidelines and apparently the

requirements established have not adequately developed the kind of logistician the deputy chief of staff for Logistics and Engineering has said is needed to manage and lead in today's Air Force. According to General Marquez, the Air Force has fallen short in the selection and development of "well-rounded senior logisticians" (39:33). He further stated that the Air Force needs a "complete, overall plan and balanced program" to develop its logisticians (39:33). Therefore, research was needed to determine more precisely what special characteristics and background senior military logisticians should possess in order to be prepared to manage the complex logistics systems entrusted to them.

Definition of Terms

To establish the proper framework for the material presented in the following chapters, an understanding of some key terms is essential.

1. Characteristics are distinguishing traits, qualities, or properties that senior military logisticians should possess to successfully accomplish the Air Force mission.

2. Consensus is considered attained when at least 50 percent of the respondents agree on a statement's rating or when at least 50 percent of the respondents who answered the question select a specific response. This

criteria was applied to both the interviews and the Delphi survey.

3. Expert is an individual with at least ten years of logistics experience, prominent in the profession as a logistician, and familiar with the Air Force logistics system.

4. Interview schedule is a questionnaire used during a personal or telephone interview which is filled out by the interviewer. The questionnaire contains the specific questions that will be asked by the interviewer and does not contain a listing of individuals that have been or will be interviewed (64:177).

5. 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 (60:304).

6. Logistics has various connotations, both within the private sector and throughout the DOD. For the purpose of this study, the following definition of "logistics," as proposed by Peppers is used.

Logistics . . . is a full system, an integrated whole, which involves four processes (requirements determination, acquisition, distribution, and conservation) which must be employed in part, at least, to perform four essential tasks (procurement, transportation, supply, and maintenance). (3:157)

7. Measures are specific steps, policies, and/or criteria the Air Force should establish and implement to prepare and develop military logisticians.

8. Military logistician is a senior officer (colonel or above) serving in an identified Air Force Specialty Code as Director of Logistics.

Note: A more detailed discussion of military logistics and logisticians is presented in Chapter II.

9. Multidisciplined is to be experienced in more than one functional area of military logistics.

10. Purposive judgment sampling is a sampling method that involves a deliberate effort to obtain a sample from a population in which the criteria for selection have been predetermined. Often called "expert choice," this method involves selecting participants who have been judged as being the "best ones," or the most qualified for providing information for a particular study (25:177-178).

11. Requirements are those conditions, necessities, prerequisites, and/or demands considered essential to the existence or development of military logisticians.

12. Senior officer is a member of the USAF serving in the grade of 0-6 (colonel) or above.

Research Objectives

The main objective of this study was to identify the qualities, characteristics and background requirements

for the professional senior Air Force logistician. A secondary objective was to determine what measures, if any, the Air Force could employ to develop the professional military logistician.

Research Questions

To meet the research objectives, the following questions were posed:

1. Are there any special qualities or characteristics that military logisticians should possess?

2. Should military logisticians meet any kind of special educational, professional, or experience requirements?

3. Does the current Air Force guidance support the appropriate development of military logisticians?

4. Should the Air Force conduct early screening and selection of military logistician candidates?

5. Does a model career development profile exist for Air Force logisticians? If not, should there be a model career development profile? If so, is the model adequate?

Potential Contributions

The purpose of the research was to construct a normative model of the essential qualities, characteristics, and background requirements for a professional senior military logistician. The model presented in this study

describes the logistician in a manner which is not presently covered by the existing literature. This study offers four potential contributions.

1. The normative model can serve as a guide for career officers seeking to enter the logistics career field and for personnel managers seeking to fill logistics positions.

2. The research suggests ideas and programs which could be implemented in the future to assist the development of senior military logisticians.

3. The thesis contains an exhaustive literature review which provides an insight into the history of logisticians and the terms "logistics" and "logistician."

4. This research consolidates some of the best, currently available thinking about who the military logistician should be.

Overview

The remaining chapters in the thesis are devoted to the task of developing and presenting a normative model of the professional military logistician. Chapter II presents an exhaustive literature review of logistics and the logistician, while Chapter III highlights the research plan for obtaining data about the senior military logistician. A presentation of the research findings and data

analysis is contained in Chapter IV. Chapter V consolidates the information gleaned during the study and presents a normative model and recommendations.

II. Background

Research into the military logistician began with a literature review of the relevant material. This chapter provides a detailed presentation of military logistics and military logisticians. A review of the terms "logistics" and "logisticians" is presented by highlighting the various definitions and descriptions that have been advanced since the inception of the terms about 3,500 years ago. The chapter then traces the history of the military logistician beginning with the ancient Egyptians and progressing up through the Twentieth Century. Afterwards, the qualities of a professional military logistician are examined followed by a discussion of the various methods and ideas that have been proposed for the development of professional military logisticians.

Military Logistics and Logisticians

In order to make assured conquests it is necessary always to proceed within the rules: to advance, to establish yourself solidly, to advance and establish yourself again, and always prepare to have within reach of your army your resources and your requirements.
(28:175)

— Frederick the Great: Instructions
for his Generals, ii, 1747

Research into the military logistician could not be conducted without first addressing the basic literary

answers to the questions of "What is military logistics?", and "What is a military logistician?"

Logistics is an ancient concept dating back about 3,500 years. The term itself, however, did not come into use until many years later. Logistics appears in the English language with two separate meanings. The first meaning was derived from the Greek word logistikos and the Latin word logisticus, both of which mean calculation in the mathematical sense. The second derivation came from the French logistique which, in turn, was derived from loger, which means to lodge or quarter (37:498).

The Greek and Latin meanings of "logistics" remained relatively constant over the centuries, but as Rider pointed out, the French translation probably contributed to much of the ambiguity which surrounded the term. Rider asserted that some authors identified logista as a military officer of the Roman legions who was chiefly responsible for supply and transportation functions. However, R. E. Latham said the term first appeared in Medieval Latin about 1574 and was the title for an accountant. He also noted that the root word log- appeared in the words loglucea, a noun meaning lodge or hut, and logio, a verb meaning to lodge or dwell, about 1350 and 1380 respectively (53:3).

The term "logistics" remained a relatively obscure term until 1836, when the French theorist, Jomini, gave

more precise meaning to it. Regarded by some historians as the "Father of Logistics," Jomini defined "logistics" as

The practical art of moving armies, material details of marching and formations, the layout of temporary camps and cantonments, in a word, the execution of the plans of strategy and tactics. (22:89)

He further gave logistics an equal place among the other components of warfare, strategy and tactics. He said, "Without logistics, strategy and tactics do not matter" (22:89).

Although Jomini defined "logistics" as "the practical art of moving armies," he did not restrict its meaning solely to the mechanics of transportation. He also included the staff work, administrative arrangements, and reconnaissance and intelligence involved in moving and sustaining organized military forces as integral components of logistics (41:6-7).

Jomini was soon eclipsed by a more dominant, influential contemporary, von Clausewitz. In a short time, the prominent military leaders of the world adopted Clausewitz's philosophy and interpretation of war. Since Clausewitz did not consider the concept of logistics as important in his work, Vom Kriege, Masterson said, "Jomini's definition offered little insight into logistics except to recognize its existence" (41:7). Rider further added, ". . . the concept of logistics lost most

of the military meaning which Jomini had given it" (53:6-7). As an example, an English Major General published in 1876 a dictionary in which he defined "logistics" as ". . . the study of the military resources of countries, which forms part of the information gathered by the intelligence department of armies" (53:7). However, in 1895, Edward S. Farrow, an instructor of tactics at the United States Military Academy, published his own military encyclopedia and, according to Rider, "brought logistics back toward its original meaning" (53:7).

[Logistics] is derived from Latin Logista, the Administrator or Intendant of the Roman armies. It is properly that branch of the military art embracing all the details for moving and supplying armies. It includes the operations of the ordnance, quartermaster's, subsistence, medical, and pay departments. It also embraces the preparation and regulation of magazines, for opening a campaign, and all orders of march and other orders from the General-in-Chief relative to moving and supplying armies. Some writers have, however, extended its significance to also embrace Strategy. (53:7)

Several years earlier, in 1888, Lt Charles G. Rogers, USN, had introduced the subject of Naval Logistics into the course curricula at the Naval War College. Since its introduction, however, Rider said the subject had undergone "varying degrees of importance and emphasis in the curriculum" (53:7-8).

In approximately 1898, the term "logistics" was formally incorporated into the U.S. military vocabulary though its meaning remained somewhat clouded (45:403).

Two decades later, Lieutenant Colonel Thorpe, a Marine Corps officer, published his book, Pure Logistics: The Science of War Preparation, in which he "resurrected the thoughts of Jomini in a more modern form" (53:8). Thorpe wrote:

The term "pure" and "applied" may be used with the same meaning as to Logistics as to other sciences. Pure Logistics is merely a scientific inquiry into the theory of Logistics--its scope and function in the Science of War, with a broad outline of its organization. Applied Logistics rests upon the pure, and concerns itself, in accordance with general principles, with the detailed manner of dividing labor in the logistical field in the preparation for war and in maintaining war during its duration. (59:9)

Although "academic inquiry" regarded logistics as both a science and an art, many noted authors such as Farrow and Herbert A. Allen thought of it principally in terms of its application. For instance, Farrow revised his work, A Dictionary of Military Terms, in 1918 and presented a definition of logistics which was more concise than the definition of his earlier edition: "Logistics-- That branch of the military art which embraces the details of moving and supplying armies" (53:9). Two subsequent military dictionaries were published during the 1930s but, said Rider, they carried the "same definitions" and they "had no great impact upon" the structure of the U.S. military services at that time (53:9).

In World War II, the magnitude of the task of moving and supplying armies was greater than ever before

experienced in military history. The editor of Fortune wrote in 1942,

All that [logistics] does is feed the Army, fuel the Army . . . heal and transport the Army. It is not the battle. All that it does is to procure the rifles, guns, ammunition, trucks, half-tracks, and tanks for the battle. It is altogether the biggest and toughest business that the American organizing genius has ever been called upon to perform. (56:67)

To meet its logistics needs, the Army established the Army Service Forces. The newly created Army Service Forces met its task of moving and supplying armies all around the world but, in the opinion of its headquarters staff, the words "supply" and "service" were not descriptive of the actual task. In the minds of its senior leaders, logistics seemed like a more appropriate term. Consequently, in 1944, "logistics" officially appeared in U.S. Army dictionaries (41:7). At the end of the war, the Army Service Forces issued its final report titled "Logistics in World War II" and in its introduction, an explanation of "logistics" was provided.

The word "logistics" has been given many different shades of meaning. A common definition is: "That branch of military art which embraces the details of the transport, quartering, and supply of troops in military operations." As the word is used in the following pages, its meaning is even broader. It embraces all military activities not included in the terms "strategy" and "tactics." In this sense logistics includes procurement, storage, and distribution of equipment and supplies; transport of troops and cargo by land, sea, and air; construction and maintenance of facilities; communication by wire, radio, and the mails; care of sick and wounded; and the induction, classification, assignment, welfare, and separation of personnel. (53:10)

As Rider pointed out, this application of the concept of logistics "assumed significant proportions" (53:10). No longer was logistics the mere moving and supplying of armies; it also included construction, communication, medicine, and personnel (53:10). During early U.S. space flights, for example, Walter Cronkite, reporting for CBS news, freely used the word "logistics" and explained it in these general terms (49).

In the years that followed, various definitions and interpretations of logistics were offered. The end result of these actions was an increased use of the term "logistics." Logistics was no longer restricted to the military environment. It was as common in the commercial sector as it was in the military. Yet, as Masterson said, "increased use [of logistics] is not tantamount to increased understanding" (41:7).

In the industrial or commercial sector, logistics was referred to as either "business" or "industrial logistics" and it included such activities as material flow, product distribution, transportation, purchasing and inventory control, warehousing, and customer service (4:4). In his book, Industrial Logistics, Magee defined logistics as

. . . the art of managing the flow of materials and products from source to user. The logistic system includes the total flow of materials, from the acquisition of raw materials to the delivery of finished products to the ultimate users. (38:2)

Heskett, Ivie, and Glaskowsky said industrial logistics created "place and time utility in goods and service" (29:9). They asserted that "place utility" was created mainly by transportation and "time utility" was primarily established by the storage of goods and the current availability of services (29:9).

Military logistics, on the other hand, included the elements of maintenance planning, test and support equipment, supply support, transportation and handling, facilities, personnel and training, and technical data (4:4). The Department of Defense Dictionary of Military and Associated Terms defined logistics as

The science of planning and carrying out the movement and maintenance of forces. In its most comprehensive sense, those aspects of military operations which deal with: a. design and development, acquisition, storage, movement, distribution, maintenance, evacuation, and disposition of material; b. movement, evacuation, and hospitalization of personnel; c. acquisition or construction, maintenance, operation, and disposition of facilities; and d. acquisition or furnishing of services. (20:178)

The United States Air Force Dictionary offered yet another definition:

1. a. In an operational sense, that part of the military activity that provides for the buildup and support of a military force by providing for supplies, equipment, transportation, maintenance, construction and operation of facilities, movement and evacuation of personnel, and other like services, so as to render the military force efficient and effective in both combat and noncombat operations. b. Restrictive. The furnishing of supplies and equipment. 2. In terms of military theory, the art or science of building up a military force and/or providing support by the means

suggested in sense 1, including aspects of recruitment, training, and assignment of personnel; the practice of this art or science. (60:305)

Originally, logistics was restricted to activities of quartering, supplying, and transporting troops. But, because of the increasing complexity of warfare, the Air Force revised its concept of logistics with a broader definition covering all activities associated with material, personnel, facilities, and services. The United States Air Force Dictionary elaborated:

The broad sense derives from the nature of a military force. This force consists of trained men with material (weapons and equipment), likewise of intangibles--a will to endure or fight, and leadership. The processes by which the physical parts of this force (material and personnel) are procured, made ready, transported, supplied, served, and maintained are the processes of logistics. Since these processes are inextricably engaged with those of tactics and strategy, their manipulation and control is that of an art or science. However, since they are apart and distinguishable from the things that the force is created to do, they are not in themselves the operation. Instead, they are the helpmates of the operation. (60:305)

Other interpretations of logistics were promulgated, but according to Masterson, none seemed to be more authoritative than the other. Masterson wrote:

Logistics is relatively uncharted territory. It means different things to different people, services, and countries, and is therefore a source of confusion for thinkers and planners. Even within the confines of Air Force thinkers there is a need for better definition and clarification. (41:2)

In short, Masterson contended there was no clear definition of logistics and this was a major source of confusion and ambivalence to the military logistician.

Ironically, as early as September 1951, this same problem was identified by a working group of military logisticians for the Deputy Chief of Staff, Material. Their report stated:

. . . logistics officers are fully aware of the critical importance of logistics, the high order of talents and abilities needed to administer it, and the challenge which it can offer to the best minds, the fact remains that the rank and file of people in and out of logistics are not necessarily aware of it, do not fully understand it, and hence cannot get excited about it. (41:2-3)

Adding to the long list of interpretations were the major air commands (MAJCOMs) within the Air Force; some MAJCOMs had several definitions of the term. For example, the AFIT Compendium of Authenticated Systems and Logistics Terms, Definitions, and Acronyms identified two separate descriptions of logistics which were used by AFLC. According to AFLC Manual 72-2, logistics was "the phase of military operations involving procurement, delivery, storage, shipment, and scheduling of military supplies, including personnel" (19:401). AFLC Regulation 400-15 presented a comparable definition:

The determination of initial and follow-on requirements and the procurement, storage, transportation, distribution, maintenance, quality control, and disposal of material and related services for the military forces. (19:401)

Though Masterson said that "no adequate definition of logistics" existed, he nonetheless provided his own description of logistics which combined the definitive

requirements of the logistics career area which were spelled out in AFR 36-1 and the essential relationship of logistics to strategy and tactics (41:10). He suggested:

Logistics is the dynamic science and art of a coordinated and systematic application of the resources of missile maintenance, aircraft maintenance/avionics, munitions, transportation, supply services, fuels management, supply management, procurement management, and logistics plans and programs in support of strategic and tactical plans and operations. (41:10)

More recent definitions of logistics, however, did not clear the haze which Masterson contended had surrounded the term since its inception. The recent trend, said Moening, has been to broaden the concept of logistics rather than to define it in terms of specific tasks and functions. For instance, AFLC Pamphlet 190-4 provided this simplistic explanation: "Logistics is the process of providing goods and services where they're needed, when they're needed" (16:3). Moening said the classical description of logistics, which encompassed the buying, supplying, and transporting, and maintaining of goods and services, had given way to a broader definition in the AFLC Action Officers Guidebook: "Military logistics is a set of activities which, taken together, constitute a system of creating, supporting and operating military forces on the battlefield" (43:1).

This broad, conceptual view of logistics was even described in AFM 1-1, Basic Aerospace Doctrine of the United States Air Force:

Logistics is the principle of sustaining both men and machine in combat by obtaining, moving, and maintaining warfighting potential. Success in wartime depends on getting sufficient men and machines in the right position at the right time. (17:2-9)

These broad definitions of "logistics," said many authors, reflect the circular path which logistics has taken over the past 30 years. In the 1950s, Eccles commented, "Logistics deals with the creation and sustained support of weapons and combat forces" (23:19).

Although numerous definitions of "logistics" have been advanced, Blanchard suggested that "military logistics" is basically system/product support oriented. In other words, the defense community places more emphasis on the "sustaining life-cycle support of the system or product while in use by the consumer" (4:4-5). On the other hand, he contended that "business logistics" concerns itself primarily with production operations and the physical distribution of goods and services by the producer. Though these concepts have been considered adequate by their respective communities, Blanchard maintained that neither logistics concept is suitable in today's expanding technological environment. This limitation stems from the parochial view of support and the fact that neither one defines or integrates overall system requirements; a point which Masterson emphasized in his 1973 report when he concluded "that few Air Force leaders" viewed logistics "as a

whole--a system" (41:10). Blanchard said the field of logistics has become much broader than initially defined.

Considering the current trends where the scope of logistics is expanding, the spectrum of activity included in business logistics and military logistics is less than desirable if one is to view logistics in terms of the total system life cycle. (4:6)

With this new thought in mind, the Society of Logistics Engineers offered this definition of "logistics":

The art and science of management, engineering, and technical activities concerned with requirements, design, and supplying and maintaining resources to support objectives, plans, and operations. (4:6)

According to Blanchard, this definition is "conceptual in nature" and supports the life-cycle approach to logistics (4:6). Furthermore, he believed, it still retains the earlier considerations of both business logistics and military logistics and is therefore a more practical definition (4:6).

Though there have been many definitions of "logistics," the foregoing discussion should have provided some insight into the question, "What is military logistics?" The answers to the remaining question, "What is a logistician?", have been just as complex. The simplest definition of a "military logistician" was offered by Webster's Third New International Dictionary which said a military logistician is "a specialist in [military] logistics" (62:1330). The United States Air Force Dictionary elaborated by saying:

[A logistician is] one whose specialty or profession is planning logistic operations, or who is responsible for seeing that logistics are carried out. This term is applied by some users only to the highest level logistic planners. (60:304-305)

A broader definition of the "military logistician" was suggested by Masterson. He said that a military logistician is a "broadly based, experienced, generalist of the highest executive order, working in close partnership and concert with the strategist and tactician" (41:10).

Moening, on the other hand, viewed the logistician more from a system's perspective. He described a logistician as follows:

. . . an individual who has the experience, training, skills and foresight to envision the entire logistics process of determining the requirement and seeing that requirement is satisfied with the right component when and where it is needed. (43:1-2)

Rutenberg claimed, more specifically, that the logistician is an individual who provides "balanced and synchronized support" to the operational commanders in support of strategic and tactical plans (54:1). He said logisticians convert strategic plans into necessary resources through specialized functions. Moreover, he contended:

[Logisticians] plan and construct airbases and facilities; they design equipment using virtually every technology; they purchase, store, package, distribute and repair aircraft, missiles, electronics, vehicles, real property, and plant equipment; they marshal a fighting unit's resources, move them to the battle area, bed them down, plug them in, and keep them fed with fuel and food. And they adapt and rearrange the resulting infrastructure to keep it in constant harmony with ever-changing strategic and tactical plans. (54:1)

To summarize, there have been many definitions and descriptions of "logistics" and "logisticians." Though their wordings have been different, their implications have been generally the same. Once restricted solely to the military, logistics and logisticians have now spanned the entire spectrum of public and private organizations' production and operations functions. In the commercial sector, they have supported the business operations of an organization; while in the military environment, they have been important in sustaining warfighting capability.

The Military Logistician
in Retrospect

Supply cannot be achieved without command. (28:316)

— Winston Churchill
6 June 1935

Military logistics gradually evolved as an important element of warfare, taking its place alongside the principles of strategy and tactics. In his book, Pure Logistics: The Science of War Preparation, Thorpe wrote: "Strategy and tactics provide the scheme for the conduct of military operations, logistics provides the means therefore" (59:1). As strategies and tactics have changed, so have the means to wage war. History has shown repeatedly that the means of warfare have often been the difference between victory and defeat.

Just as military logistics has changed, so have military logisticians changed. Out of necessity, logisticians have had to evolve to keep pace with the changing nature of warfare itself, from primitive hand-held weapons to nuclear and space-age technology. The first formally identified logisticians were the Egyptians, circa 1600 B.C. They were called "Scribes of the Army" and their responsibilities were principally officer specialties in transportation and supply (36:11). Later, the Assyrians, circa 750 B.C., also employed logisticians in the planning and management of supply dumps, storehouses, and arsenals (36:11).

Perhaps the greatest logistician in ancient history was Alexander the Great, King of Macedonia. He has long been recognized as one of the greatest military leaders of all time, and military historians have attributed the foundation of Alexander's strategy and tactics to his emphasis on supply. Alexander studied the capabilities and limitations of his army and tailored a logistics system to it. Consequently, the logistical organization of the Macedonian army was well adapted for the rugged campaign across central and southwest Asia. Because of his superior mastery in intelligence gathering, planning, preparation, and organization, Alexander was able to overcome a hostile environment and consistently defeat

his enemies (1:26-28). In his book, Alexander the Great and the Logistics of the Macedonian Army, Engels wrote:

Alexander better understood the capabilities and limitations of his logistic system than perhaps any other commander, before or since. . . . In [Central Turkey], the king was even able to use logistics as a weapon against his opponent, forcing Darius to fight in unfavorable terrain. (26:121-122)

Following in the footsteps of Alexander the Great was Hannibal. He, like Alexander, recognized the importance of logistics as an integral component with strategy and tactics. Backed by an army of over 100,000 men and animals that, according to historians, "stretched for ten kilometers," Hannibal began his conquest of southern Europe in 221 B.C. (24:4). To further his strategy, Hannibal dispatched emissaries to all the tribes along the route. They acted as diplomats in arranging provisions and also as double agents in securing intelligence information. Though Hannibal's support plan took three years to develop, "never before had logistics been so carefully integrated with military and political strategy" (24:8). For fifteen years, Hannibal supplied his troops in combat until, finally, attrition and the Roman army defeated his forces circa 206 B.C. (24:3-9).

During the early Thirteenth Century, Genghis Khan emerged as a master logistician and an architect of warfare. He transformed his primitive, nomadic people into a disciplined, professional army with the "first integrated

logistics support system" (33:2). Ironically, the horse was the primary logistics support system in the Mongol army. Quite literally, it was the "teeth and tail" of the Mongols (33:3). The horse represented more than a mode of transportation; it was also the driving force behind Genghis' intricate battle tactics. In addition, the Mongolian pony was the army's primary source of provisions. The mares supplied both milk and the curd paste that was the principle staple of the Mongol diet. The ultimate success and survival of the Mongol army thus depended on the horse and the availability of grass. Yet, it was Genghis Khan's early recognition of these logistical factors which enabled him to conquer and reign for more than 40 years (33:2-5).

The first historical account of the creation of a separate military position that had a direct connection with today's logistician dates back to Julius Caesar circa 70 B.C. Within his military organization, he assigned an officer called the "Quaestor" to perform the function of supply. This term later gave rise to the military equivalent of "quartermaster." The quartermaster was then made a staff position in the professional armies of the German states in the Fifteenth Century, in the French armies in the Sixteenth Century, and in the Swedish Army of King Gustavus Adolphus a century later (36:11-12).

The science of logistics was advanced significantly under the auspices of Napoleon Bonaparte in the late Eighteenth Century. Like other great military leaders in history, Napoleon possessed "a deep appreciation of logistics and a concern for proper use of martial resources" (44:20). Following the First Revolutionary campaigns in which the French army had received poor logistics support, Napoleon personally took charge of the logistics preparation for his army. He completely reorganized the supply function, concentrating a great deal on acquisition and procurement. In the end, he spearheaded a logistics system that helped combine the advantages of speed, surprise, and mobility; thus, he was able to overwhelm his opponents. Although Napoleon had masterminded a brilliant logistics system, it was, ironically, his failure to recognize distribution as a key logistics consideration that eventually led to his downfall during the invasion of Russia in 1812 (44:20-23).

A host of self-inflicted wounds would contribute to the death of [Napoleon's army]: failure of military and political judgment, failures of command and communication, failures of will and discipline. Yet the damage caused by all these factors would seem superficial in comparison with the failure of French logistics. In a hostile [Russia], the huge army's support requirements would prove impossible to meet . . . [Napoleon's army] had outstripped the sources of supply . . . supply trains fell further and further behind. Not one convoy kept on schedule; most arrived weeks or even months late. By the time Napoleon's troops reached Moscow on September 14, 1812, their closest source of supply was a depot . . . 220 miles to the southwest. (2:2)

Nevertheless, the success of Napoleon's campaign across Europe was propelled and sustained, in part, by his understanding and appreciation of logistics planning (44:20).

The "logistician" in the U.S. first came into being when the Congressional Act of 1795 established the Office of Purveyor of Public Supplies in the Treasury Department. President George Washington appointed the first purveyor, who was responsible for

. . . procuring and providing for all arms, military and naval stores, provisions, clothing, Indian goods, and generally all articles of supply requisite for the service of the United States. (36:12)

Despite this, the Army and Navy did not have any professional logisticians to think about logistical support problems for the commander. In the 1800s, the commander had to be his own logistician to succeed (21:3-5).

The premier logistician in Nineteenth Century America, according to military historians such as Huston and van Creveld, was Gen Ulysses S. Grant. Not only was he a superb strategist and tactician, he was an acclaimed logistician along with the "Great Captains," Alexander the Great and Napoleon. Although logistics was not something new to Grant, he recognized that a complete understanding and appreciation of support was required to employ and sustain forces in the battlefield. Grant learned the concepts of interior and exterior lines of communication and the overall importance of logistics from the writings of

Jomini. When he engaged the South during the Civil War, Grant used the capabilities of logistics planning to his advantage, thus ensuring his victory (21:1-11).

World War I marked the real beginning of the "Logistical Era." Improved weapon systems, vast quantities of equipment and supplies, and large numbers of personnel demanded superior logistics planning and support (8:38). To meet this demand, the Army developed the Quartermaster Corps and the Navy created the Supply Corps (36:12).

With World War II, the concept of logistics and logisticians took on even greater meaning. Field Marshal Earl Wavell, who had been a soldier for 42 years, commented:

The more I see of war, the more I realize how it all depends on administration and transportation. . . . It takes little skill or imagination to see where you would like your army to be and when; it takes much knowledge and hard work to know where you can place your forces and whether you can maintain them there. A real knowledge of supply and movement factors must be the basis of every leader's plan; only then can he know how and when to take risks with those factors, and battles are won only by taking risks. (61:231)

As a result, logistics management could no longer be overlooked and logistics planning was an essential element for waging war. While historians claimed that Generals Eisenhower, MacArthur, and Patton were master logisticians during World War II, each military service recognized that professional logisticians must be developed to support the

operational commanders. Following the 1947 establishment of the Air Force as a separate military department, each service began to reorganize its educational framework to provide formal logistics training (36:12).

Looking back, it is evident that "logistics" and "logisticians" have played a crucial role in warfare. History has shown that the successful commanders have not only been great military leaders, but they have been superb logisticians as well. These commanders understood the significance of logistics, and its capabilities and limitations for waging war. van Crevald noted that "logistics make up as much as nine-tenths" of sustaining war and therefore logisticians must be able to precisely calculate the movements and supply of military forces (61:231). The difference between the past and the present has been the changing nature of logistics. van Crevald maintained that the history of warfare saw logistics developing as a continuous process, from the support of standing armies to a system of continuous supply from bases (61:232). Change in the future of logistics has been inevitable just as change in the role of the logistician has been inevitable.

Qualities of a Professional Military Logistician

Without supplies neither a general nor a soldier is good for anything. (28:315)

— Clearchus of Sparta: Speech to the
Greek army in Asia Minor, 401 B.C.

A review of the literature revealed many views about the professional military logistician and especially about the qualities desired of a professional military logistician. In essence, all researchers agreed logisticians must possess some special characteristics and qualities that distinguish him or her from the individuals "off the street." Table 1 outlines some of the qualities and characteristics of the logistician.

General Clarke (USA retired), said that, first and foremost, logisticians have too often become trapped in their own specialties such as supply or transportation, and have forgotten that they have a primary responsibility to train and lead people. He further maintained that "a good leader will produce a good unit, one that produces good logistics support" (9:36).

Similarly, following an extensive analysis of military logistics history and the writing of his book, The Sineus of War: Army Logistics 1775-1953, Huston defined a great military logistician as a

. . . Commander who has the judgment--indeed the genius--to take into account realistically all available resources, at home, in the theater, or wherever they may be found and to balance his requirements and his mission so that his objective may be gained in the least possible time, with the least possible loss of men and supplies. (32:153)

In contrast, Blanchard emphasized the importance of the logistician as a manager. He charged that the "logistic support planner" or logistician should be a

TABLE 1

QUALITIES AND CHARACTERISTICS OF LOGISTICIANS

Qualities and Characteristics	Authors
Must be a leader	Clarke (9:36) Huston (32:153)
Must be a manager	Blanchard (4:340)
Must be forward looking and thinking about the future	Peppers (50:8-11) Davis (13:3)
Must be an articulate spokesperson	Davis (13:5)
Must be an innovative problem solver	Demidovich (15:16) Peppers (15:16)
Must be able to comprehend the entire logistics process	Rutenberg (54:2) Blanchard (4:340) Moening (43:1-2)
Must be multidisciplined, experienced in several functional areas of logistics	Masterson (41:36) Rutenberg (54:2) White (63:1) HQ USAF (18:A5-9)
Must be a blend of the supply oriented specialist and technological specialist-- "logistician of the third kind"	Ostrofsky (46:31)
Must be a specialist or generalist	Eccles (23:322)

management-oriented individual, knowledgeable in the basic principles of management (e.g., planning, organizing, controlling) (4:340).

Peppers remarked that a logistician must be an individual who constantly prepares for the future by planning for change today. According to Peppers, logisticians must be forward looking more than any other professional in the organization. Moreover, logisticians who are not alert for potential changes become "reactionary managers": they react to events after the events have already occurred (50:8-11).

Davis echoed Peppers' remarks. He stressed a need for logisticians who can "develop a vision for logistics architecture in the year 2000" (13:3). Furthermore, he stated that logisticians must be articulate spokespersons. They have to be able to communicate logistics supportability in terms that are meaningful to the engineer, not in vague generalities such as mean time between maintenance actions (13:5).

Just as importantly, some logistics experts asserted that logisticians must be innovative problem solvers (15:16). Furthermore, the logistician cannot be afraid to ask questions since a questioning attitude is an avenue for learning (15:20). Demidovich and Peppers also offered the following requirements for a successful logistician:

1. Must thwart "human obsolescence" by continuing education.
2. Must deter judgment in order to promote brainstorming.
3. Must be a good listener.
4. Must not be allowed to become "logistics isolated" (15:21-22).

Perhaps the most important attribute a military logistician must possess is the ability to comprehend the entire military logistics process. In other words, logisticians must be well rounded, multidisciplined individuals thoroughly familiar with the functional areas of military logistics. Rutenberg noted that the Air Force should develop logistics officers who are capable of "comprehending the big picture of combat support" (54:2). He further said that officers with a wide range of logistics background can "prioritize, direct and control the combined operations of supply, maintenance, mobility, engineering, transportation, and program planning" (54:2). Blanchard also supported the concept of a broad-based logistician. Specifically, he advocated individuals who can comprehend the interrelationships between the various elements of logistics. He said logisticians must be able to visualize the logistics process from a total systems perspective (4:340). Masterson echoed similar comments. He charged that logisticians need to be generalists. He based his

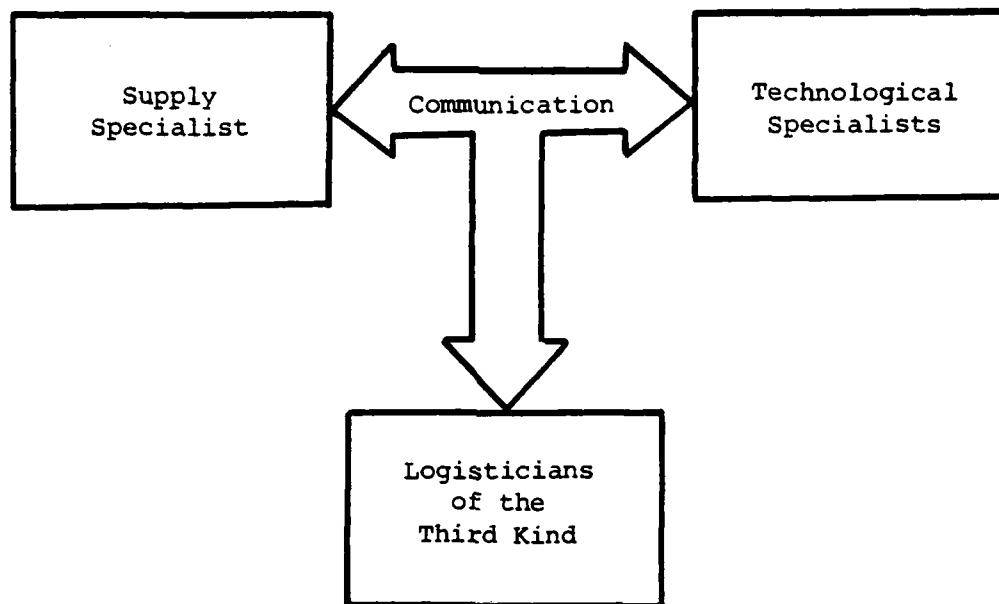


Fig. 1. Logisticians of the Third Kind--The Need for Increased Communication (46:31)

assertions on the grounds that logisticians have to be able to harness new technology and make it perform for the Air Force (41:36). White concluded that the professional logistician should be experienced in at least three "logistics disciplines to be better equipped to cope with the high technology explosion predicted in the 1990s" (63:1). According to Ostrofsky, the logistician should be a "logistician of the third kind" (46:31). See Figure 1. In other words, he or she would represent a blending of the supply-oriented specialist and technological specialist to form a logistician capable of meeting head-on the future demands for high technology. The element that would

bridge the supply and technological specialists, said Ostrofsky, would be communication (46:31).

AFR 36-1 (1 January 1984) similarly endorses the well-rounded military logistician. It requires the Director of Logistics to possess knowledge of supply, procurement, maintenance control, production management, and logistics planning. It also states that acquisition of a master's degree in logistics management, business administration, or engineering plus completion of an "appropriate" course at the Air University Institute for Professional Development are "desirable" (18:A5-9). The regulation does not specify, however, what it considers as an "appropriate" course. In addressing the experience requirements, the regulation says:

Full qualification in a staff officer specialty in one or more utilization fields in the Logistics Career Area or in a staff officer specialty in the Communications-Electronics Career Area is mandatory. In addition, experience is mandatory in the formulation of plans and policies for and monitoring of logistics programs, with emphasis on requirements determination and operating procedures, systems, and policies requiring a factual understanding of all phases of logistics. (18:A5-9)

Conversely, Eccles claimed that specialists are not necessarily bad for an organization, including the military. Citing examples from the public sector, he charged that top management is frequently composed of both generalists and technical specialists. As a result, he said, ". . . in logistics, technical specialization

should be neither a bar to nor a necessary qualification for major responsibility" (23:322).

Methods for Developing Professional
Military Logisticians

Logistics comprises the means and arrangements which work out the plans of strategy and tactics. Strategy decides where to act; logistics brings the troops to this point. (28:175)

— Jomini: *Precis de l'Art
de la Guerre*, 1838

This section reviews the different methods advocated by various authors to enhance the development of professional military logisticians. These methods are shown in Table 2.

Gideon proposed an objective program that would require military logisticians to periodically demonstrate competence in their specialty. Similar to the competency requirements a flying officer must undergo, Gideon recommended that logisticians demonstrate their comprehension of the logistics process through periodic written examinations and practical demonstration of abilities. In defending his suggestion, he stated:

The purpose [of the tests] is to improve executive knowledge and understanding of our profession; to determine areas of weakness and strength in the individual's knowledge; to identify constructively specific areas where improvements are necessary; to improve communications; to improve resource utilization.
(27:21)

Along the same lines as Gideon, Blanchard proposed a more stringent method of identifying logisticians. He

TABLE 2

METHODS FOR DEVELOPING PROFESSIONAL LOGISTICIANS

Recommended Solutions	Authors
Be required to demonstrate competency in logistics through periodic qualification testing	Gideon (27:21)
Be required to take a 4-part written examination for certification	Blanchard (5:11)
Be required to attain professional certification in at least one career specialty	Moening (43:3)
Be required to participate in symposia, write papers, and give speeches	Moening (43:3-4)
Be required to career broaden all logistics officers through the various disciplines through changes in duty assignments	Moening (43:2-3) Hicks (30:2) Quinn (51:1) Dawson & Tierney (14:147)
Be required to career broaden only selected individuals through changes in duty assignments	HQ USAFE (31:1-2) HQ USAF (52:35) Masterson (41:37)
Be required to career broaden all logistics officers through reading forums and education only	Rutenberg (54:3)

suggested individuals be required to take and pass a structured four-part examination with questions directed toward systems management, system design and development, acquisition and production support, and distribution and customer support prior to being certified as a logistician. Figure 2 depicts the logistics certification requirements. In essence, Blanchard stated that this certification program, which was adopted by the Society of Logistics Engineers, would recognize the importance of the life-cycle approach to logistics and would acknowledge individuals "who have acquired the experience and knowledge base" in the logistics framework (5:11).

Similarly, Moening recommended in his report that individuals be required to attain professional certification in the career development of logisticians. He cited such certifications as the National Contract Management Association's Certified Associate Contracts Manager Certificate and the Society of Logistics Engineers Certified Professional Logistician as examples which are well-recognized within the professional ranks. Moening concluded that the military system needs to motivate its personnel other than through Officer Evaluation Reports and that professional certifications are a viable solution (43:3).

Likewise, Masterson supported a selective career development program that would provide a cadre of

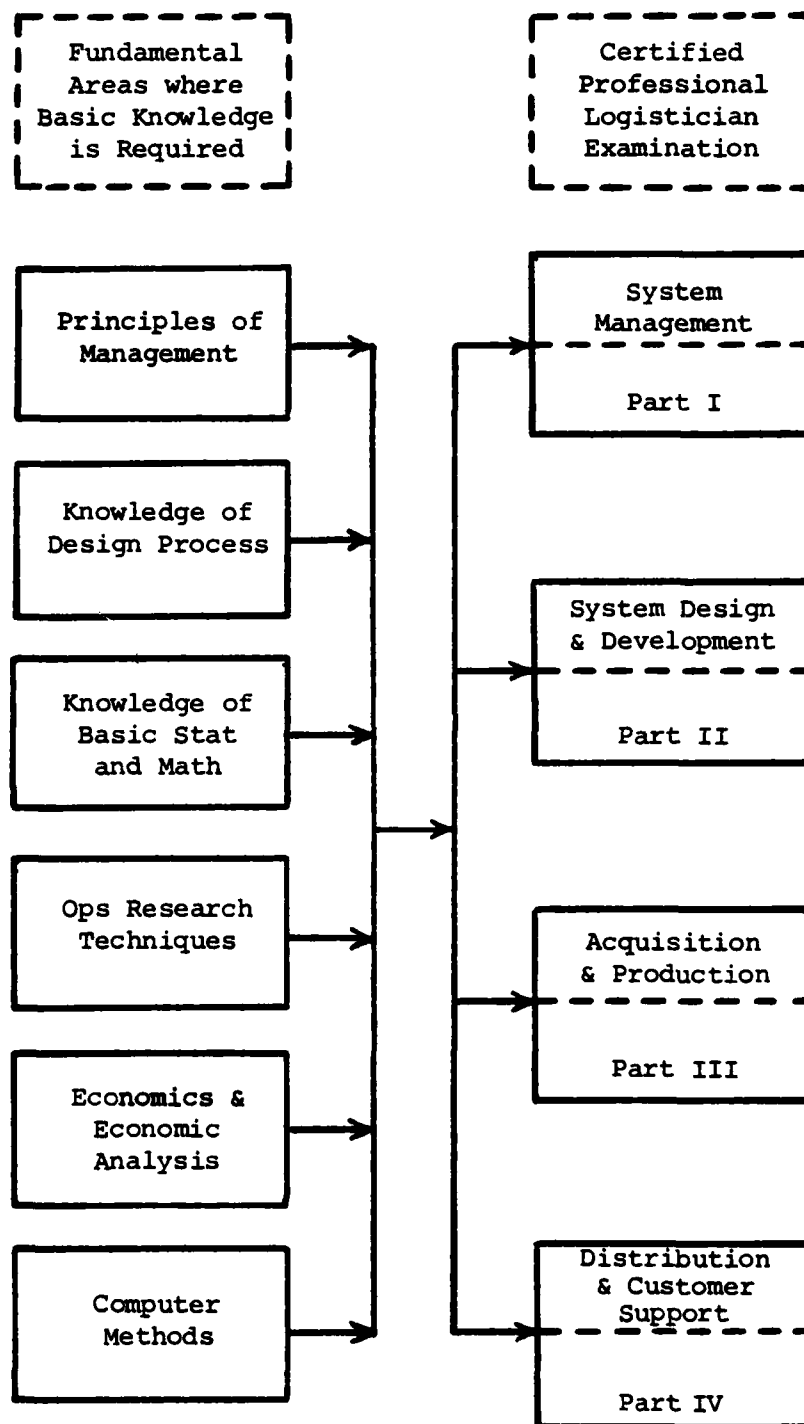


Fig. 2. Logistics Certification Requirements (5:11)

generalist logisticians. Quoting a 1951 Air Force working group of military logisticians, he wrote:

Unfortunately while specialization solved the problem 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 responsibilities of top management. (41:37)

Masterson offered several suggestions to create generalists. First, he said the Air Force should offer the opportunity for full career development of selected officers in every logistics specialty. He asserted that early selection of officers should be based on realistic qualifications and possibly aptitude testing. Second, he believed that logistics officers should possess knowledge in numerous areas of logistics (listed in Table 3). In addition, he prescribed optimal educational requirements (shown in Tables 4 and 5 respectively). Lastly, to achieve a broad base of experience, he recommended that logisticians rotate among various logistics jobs and assignments. His recommendation of experience requirements for logisticians is depicted in Table 6. Masterson also endorsed a balanced mix of both rated and non-rated officers in senior military logistics positions. However, he contended that the rated officer "should not be required to operate with an experience gap or to play catch up" with non-rated logisticians (41:43). He further maintained that only those

TABLE 3

KNOWLEDGE REQUIREMENTS FOR LOGISTICS (41:43-45)

Supply	Computation of Transportation Rates
Procurement	Transportation Contract Negotiations
Maintenance Control	Capabilities of Military Air Transportation
Production Management	Packaging Methods and Specifications
Logistics Planning	Motor Vehicle Resource and Maintenance Management
Maintenance Capabilities	Aerial Port Operations
Employment of Missiles	Internal Combustion Engine
Principles of Rocket Engines	Motor Vehicle Fleet Management
Principles of Reciprocating and Jet Engines	Accounting Principles
Air Frame Construction	Subsistence Technology
Aircraft Installed Systems	Transportation
POL Operational Procedures	Avionics Systems
Employment of Avionics	Maintenance Management Policies
Aerospace Munitions	Inventory Control
Commercial Carriers	Retailing
Passenger, Property, and Freight Scheduling	Statistical Analysis
Food Nutrition and Food Marketing	Merchandising
Fuels Management Systems	Production Management and Control
Receipt Storage and Dispensing Methods	

TABLE 3--Continued

Characteristics of Petroleum Products	Plant Layout
Laboratory Testing Procedures	Quality Control
Supply Data Systems	Trade Practices
Operating Budget Preparation	Reporting and Display Systems
Supply Systems	USAF Supply Policy Doctrine
Government Law	Interrelationships of Elements of the Material Field
	Procurement Management

TABLE 4
DESIRABLE EDUCATIONAL REQUIREMENTS
FOR LOGISTICS (41:46)

Bachelor's Degree	Master's Degree
Logistics Management	Logistics Management
Engineering	Business Administration
Business Administration	Engineering
Electrical, Mechanical Industrial, or Aero- nautical Engineering	Industrial or Mechanical Engineering
Theory of Electricity and Electronics	Transportation
Chemical Engineering	Economics
Nuclear Engineering	
Marketing	
Institutional Management	
Petroleum Refining Engineering	
Political Science	

TABLE 5

TRAINING REQUIREMENTS FOR LOGISTICS (41:47)

Aircraft Maintenance Course	Avionics System Maintenance Course
Aerospace Munitions Course	Explosive Ordnance Disposal
Procurement Courses	Procurement and Production Officer Course
Advanced Logistics Course	Transportation Officer Course
Data Automation	
Supply Staff Officer Course	

TABLE 6

EXPERIENCE REQUIREMENTS FOR LOGISTICS (41:48)

Full qualification in one or more logistics utilization fields	Plans and policies
12 months in missiles	Factual understanding of all phases of logistics
24 months aircraft maintenance	18 months missile maintenance
12 months aerospace maintenance director	24 months in avionics
12 months motor vehicle management	18 months as munitions staff officer
18 months supply services	18 months in transportation assignments
24 months supply operations officer	36 months fuels management
12 months logistics plans and programs	12 months industrial or administrative in procurement

officers who acquire the appropriate credentials should be allowed to fill the top logistics jobs (41:40-48).

Moening made two other recommendations for enhancing the professional military logistician. First, he contended that logisticians should participate in symposia, seminars, and conferences. Moreover, he argued that as attendants, logisticians should be required to participate on panels, prepare papers, and give speeches and lectures (43:3-4).

Secondly, Moening recommended the Air Force develop an active career-broadening program for its logistics officers. He advocated logistics growth through both schooling and duty performance. He further suggested career-broadening assignments of at least two years in each of the specialized logistics disciplines (43:2-3).

Other researchers in the field also endorsed a career-broadening scheme for logisticians. Hicks contended that "the logistics field has not been attractive" primarily because there has not been "a bonafide logistics career ladder" (30:2). He also said, "most Directors of Material Management (DMM) and Deputy Program Managers for Logistics are not logisticians by profession or education" (30:2).

In a message sent to HQ USAF/LEY, HQ USAFE publicized its support for a logistics officer career development program but did not recommend a plan to apply to all

logistics officers. Instead, it proposed establishing a screening process which would identify those officers in the 8-to-11-year category who have shown the greatest potential for developing into future military logisticians. Those candidates selected for career broadening would then be required to undertake various professional educational courses and accept assignments that would expand their military logistics horizon (31:1-2).

Quinn endorsed a logistician progression model geared toward educating the individual about each of the functional areas which comprise the logistics career field. This model called for a combination of technical, professional, and academic schooling, coupled with exhaustive practical experience in at least two of the logistics disciplines (51:1). Quinn's proposed model is shown in Figure 3.

Quinn based his model upon a pyramid structure, with the "L" at the apex of the pyramid supported by the "S," "T," "M," and "X" at the base. Quinn hypothesized that an officer, to be qualified to serve as a logistician (L), should have formal education and/or working experience within several functional areas such as supply (S), transportation (T), maintenance (M), and any other areas (X) which comprise the logistics discipline. The dotted line represents career phasing points in Quinn's progression model (51:3-7).

Industrial College of the Armed
Forces or National War College

-- 18 to 20 years (Colonel)

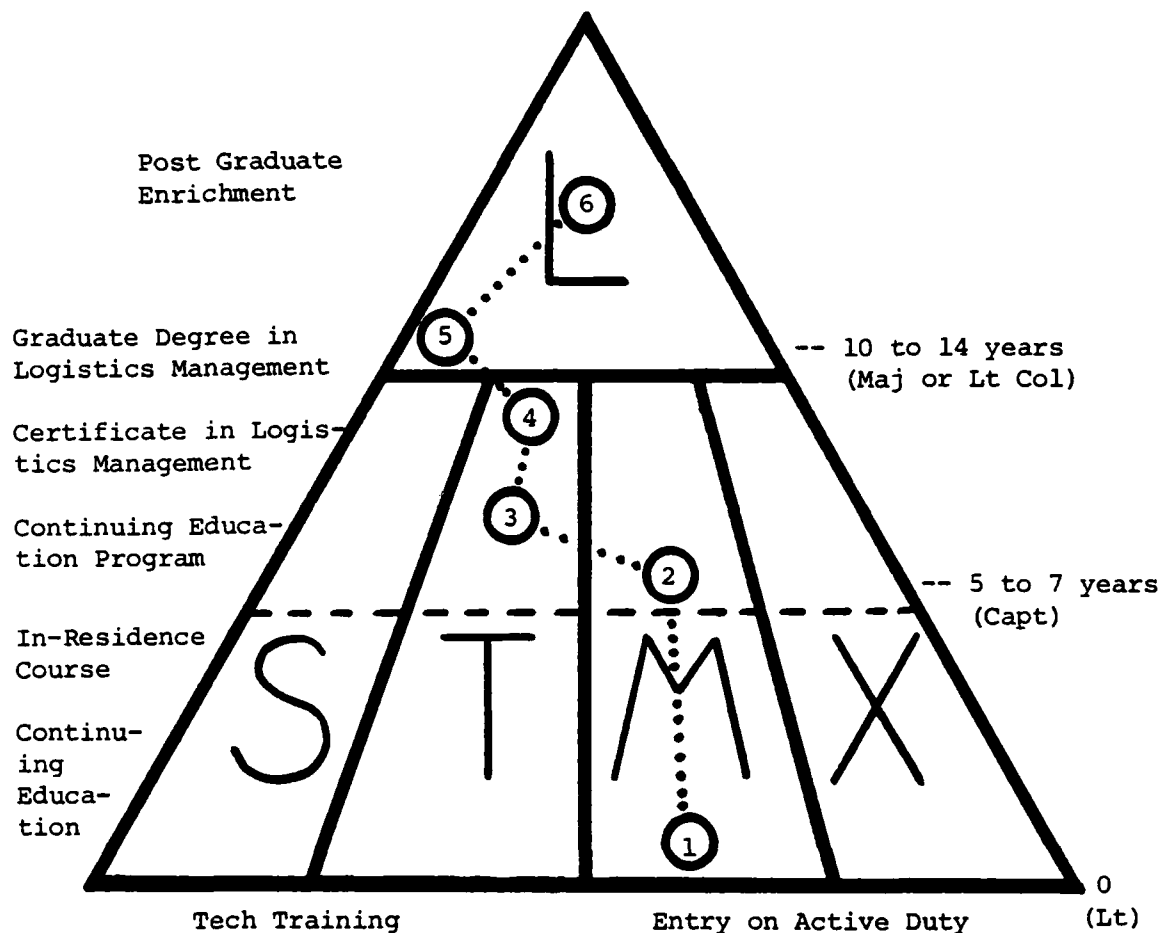


Fig. 3. The Logistician Progression Model (51:7)

In their thesis work completed in 1967, Dawson and Tierney went as far as recommending a new Air Force regulation that not only described a career military logistician program but also established minimum standards for recognition of individuals as "designated logisticians." Their study prescribed, in part, the following minimum standards:

1. Have a minimum seven years experience in logistics-related assignments.
2. Possess, as a minimum, any combination of two fully qualified staff level AFSCs in the logistics career areas of Civil Engineering, Material, Electronic-Maintenance Engineering, System Program Management, or Scientific and Development Engineering.
3. Be recommended for identification as a designated logistician and have award of this title confirmed by DCS/[Logistics and Engineering]. (14:147)

While much had been written about the subject, it was not until the late 1970s that the Air Force took a step toward providing career broadening to a selected number of its officers. A special program was then instituted to provide selected volunteers experience and education in the management of logistics early in their career.

Richardson and Noveroske said this program, called the Logistics Career Broadening Program (LCBP), is comprised of about 100 captains and majors at any given time who are assigned to various directorates (distribution, maintenance, procurement, or material management) at each of AFLC's five Air Logistics Centers. The purpose of the program is to expose these individuals to a broad spectrum of logistics

activities. This career-broadening program, however, is restricted to AFLC and has not been implemented in the operational commands (52:35).

According to Richardson and Noveroske, the LCBP is divided into two phases. In Phase I, each individual spends about five and one-half months in each directorate of the ALC and is provided practical on-the-job experience in all areas of logistics at the ALC. Each individual should receive an overall perspective of "wholesale logistics" and a general understanding of the interrelationships between the functional areas (52:36).

Following the completion of Phase I, the participants are returned to the directorate which originally sponsored them in order to complete the second phase of their program. There they are assigned mid-management responsibilities in their primary career field. The Air Force has contended that the LCBP is not a training program. Rather, it is an educational program that places emphasis on "learning to ask the right questions more than learning the right answers" (52:36).

Other programs, in addition to career broadening, were postulated to foster professional logisticians. One approach, suggested by Rutenberg, would combine the use of professional reading forums and "opportune" education (54:3). Under Rutenberg's plan, logistics officers would be required to read selected publications and take

logistics-oriented courses at designated intervals of the officer's progression. The ultimate goal would be to produce a broad-based logistician without actual job swapping. In fact, Rutenberg asserted that attempting to broaden an officer's experience base by removing him or her from the primary specialties would extract "high prices in advancement and identity within specialty areas" (54:3). Furthermore, he charged that professional education would not provide a "true appreciation" for the other areas of logistics (54:3).

Summary

The professional military logistician has been an important asset to military organizations since the inception of the term. The need to integrate the complex functions of the military logistics arena has been growing and becoming more complicated as more sophisticated systems enter the DOD inventory. Inevitably, the professional military logistician must possess specific qualities and characteristics which will enable him or her to cope with today's military logistics system. But, which qualities and characteristics are really important to the military logistician? Furthermore, how should the Air Force develop its military logisticians?

In response to the first question, many answers have been offered; however, agreement as to which specific

qualities and characteristics are important has been sparse. This has probably been because many of these answers are the opinions of their authors and have never been subjected to a test. This diversity in opinion has also reflected the general pattern which has surrounded the term "logistics." As the literature has shown, there has been no real consensus as to the definition of "logistics." Many definitions have been advanced; however, no one definition has captured the minds of all.

Just as there has been no set definition of "logistics," there has also been no prescribed model setting down the essential qualities important to a military logistician. Nonetheless, a review of the history of the military logistician has indicated that the successful commanders have been great leaders and great logisticians. A few authors have contended that a military logistician must be a good leader to succeed in modern warfare while another author has emphasized that a logistician must be a good manager. Some writers have agreed that a military logistician should be multidisciplined--generalists in their profession. On the other hand, another noted military author has said that specialization should not be viewed as an undesirable characteristic.

Just as perplexing is the question, "How should the Air Force develop its military logisticians?" Many solutions have been proposed. Some advocates have

emphasized developing logisticians through academics and competency tests. Some proponents have encouraged career development through changes in duty assignments for selected officers only, while others have suggested similar development, but for all logistics officers. At least one author recommended development through professional logistics society involvement, plus professional certification, and strong seminar and symposia participation.

These differing opinions and recommendations which have been advanced in the literature are important and require evaluation. This thesis has attempted to test these suggestions and formulate a model for the education, training, and nurturing of the professional senior military logistician. In the next chapter, the plan to formulate this normative model has been detailed.

III. Methodology

The objective of this study was to develop a profile of the professional senior military logistician that would enhance the future management of the Air Force logistics process. The methodological approach used by Carpenter and Collins in 1983 provided the basic framework for the present study. To achieve the research objectives, a two-fold plan for data collection was constructed. Half of the plan consisted of personal and telephone interviews of a selected sample of logistics experts. The information gleaned from interviews was then used to supplement the second method of data collection--the Delphi technique. The combined data were organized and compiled to present a unified view of the senior military logistician.

Scope

The purpose of this study was to determine the essential qualities, characteristics, and background requirements for senior officers serving as Air Force logisticians. Data pertinent to this study was obtained from a predetermined group of experts in the field of logistics. Expert opinion was collected using interviews and a Delphi survey. Only experts with Air Force logistics backgrounds were asked to participate in the research.

Other than those features which characterized an expert, no other demographics were considered in this study.

Limitations

A pioneering study of this nature has its limitations. The sample population from which data were derived was not random but, instead, was purposively selected by the researcher. The number of participants in each category of the Delphi sample (i.e., military, civilian) was selected based upon availability and expertise and was not necessarily proportionately representative of the population at large. No attempt was made to analyze variations in opinion based on demographics. Consequently, a similar study using another sample from the target population could produce different findings. The topics, statements, and questions used in this study were subjective and were selected based upon a comprehensive literature review and studied opinion.

The original intent of this study was to have a mix of experts of various grades and backgrounds. However, research time limitations and scheduling conflicts with the experts precluded a varied representation in the interview process. In addition, the lists of experts which were provided this researcher were predominantly composed of colonels. Therefore, 57 percent of the

interviews and 40 percent of the Delphi participants were active duty or retired colonels.

The data obtained in this study were derived from the personal opinions of experts. Data obtained in this manner could not be isolated or quantitatively verified. In addition, the definition of the term "expert" was subjectively made after extensive discussion with faculty members of the School of Systems and Logistics.

Whenever the technique of interviewing is used as a means of collecting data, there exists the possibility for interjecting bias. This can occur due to errors in sampling and/or errors in response. In addition, the researcher can inject bias into the process by his presence, by the way questions are presented, or by a host of other factors (25:299-302). Although success could not be ascertained, every effort was made to eliminate or reduce bias.

Data Collection

Population and Sample. The first step in developing a profile of the professional military logistician was to identify a target population from which to sample. Because this study was aimed at senior military logisticians, only experts in the field of logistics were asked to participate. Specifically, expert opinion was solicited

from the following groups of individuals in order to secure a broad base of information:

1. Senior Air Force logisticians, active duty and retired, in the grade of O-6 or above, and civilian DOD equivalents.

2. Senior members, either active duty or retired, of the graduate faculty of the School of Systems and Logistics, Air Force Institute of Technology (AFIT), Wright-Patterson AFB, Ohio.

3. Prominent writers in logistics, specifically knowledgeable in Air Force logistics.

Following a request by the researcher, independent lists of experts were received from the AFIT School of Systems and Logistics, the Air Force Logistics Management Center, HQ AFLC, and the Air Force Acquisition Logistics Center. The lists were reviewed and the names were consolidated. From a list of 38 experts, 20 individuals were selected and asked to participate in the Delphi survey; all of whom, on initial contact, volunteered to participate. Seven of the remaining 18 experts on the list were asked to participate in interviews.

The experts who volunteered to participate in the interviews and the Delphi were categorized by background and/or rank. The categorizations are shown in Tables 7 and 8. It should be noted that only the military personnel and civilians were categorized as active duty or retired.

TABLE 7
CATEGORIZATION OF INTERVIEW PARTICIPANTS

Status	Military		Civilian		Writers/ Academics
	0-7+	0-6	GM-16+	GM-15	
Active Duty	0	3	0	1	1
Retired	0	1	0	1	

TABLE 8
CATEGORIZATION OF DELPHI PARTICIPANTS

Status	Military		Civilian		Writers/ Academics
	0-7+	0-6	GM-16+	GM-15	
Active Duty	1	5	2	2	3
Retired	2	3	1	1	

Writers and academicians were not classified as active duty or retired, yet they included both military and civilian participants. It should be further noted that many of the experts who were categorized under military or civilian were also prominent writers or scholars in logistics. Thus, the boundaries between categories were, in many instances, fluid. The military category was further divided into officers in the grades 0-7 (brigadier general) and above, and officers in the grade of 0-6 (colonel). The civilian category was also further divided into experts in the grades of GM-16 and above, and experts in the grade

of GM-15. The highest ranking military participant in this study, including active duty and retired, was a lieutenant general and the highest ranking civilian was a senior executive service 4.

Obtaining data from a population scattered throughout the country was a significant hurdle in this research. To overcome this obstacle, a purposive judgment sample was used. Because the data was not meant to be mutually exclusive nor collectively exhaustive, this sampling technique provided a convenient means of obtaining an adequate cross-section of the target population. Due to the theoretical nature of the questions, interviews and the Delphi technique were selected as the primary methods of data collection.

Interviews

Of all the data collection methods available, Parten said that the interview represents one of the most frequently used instruments for securing information from a population sample. To be successful, however, she stated that the interviewer must establish a friendly rapport with the respondent and assure that all barriers to effective communication are eliminated (48:70).

The interview method was selected for this study because it had the potential to provide greater depth and detail of information about the military logistician than

the Delphi survey. The interview allowed the researcher to do the following: (1) explain the purpose of the study in greater detail, (2) probe for additional information with follow-on questions, and (3) clarify interview questions and respondent comments. In this study, personal and telephone interviews were used to solicit information from the selected sample.

Personal Interviews. Emory defined the personal interview as "a two-way, purposeful conversation initiated by an interviewer to obtain information that is relevant to some research purpose" (25:293). The interviewer dictates the topics and pattern of the discussion whereas the respondent is asked to provide information in the form of facts, opinions, and interpretations. Emory further commented that if the interview is conducted properly, it can be an "excellent" method for collecting data. But, in order to be successful, it must fulfill three requirements. First, respondents must have access to all relevant information so that they can express themselves in terms useful to the study. Second, the respondents must understand their roles and the contributions they are making to the research. Finally, the respondents must be motivated to accept their roles and to fulfill their objectives in the study (25:294-295).

For this research, the requirements identified by Emory were fulfilled at the beginning of each interview session. A brief description of the specific problem was provided to each participant as well as background information pertinent to the study. The purpose of the research was carefully explained to each respondent and the importance of their participation in the study was emphasized to encourage maximum feedback.

In personal interviews, the researcher used an interview schedule which contained specific questions about the data desired. Typically, the interview began with a brief introduction by the interviewer about the purpose and scope of the discussion. Afterwards, the interviewer asked for the information sought by the schedule of questions and recorded the respondent's answers. Two advantages of using an interview schedule were reported by Young. First, it focuses attention on the prominent points in the study; and secondly, it helps to secure the same range of data in different sessions by the same interviewer (64:221). A pretest was conducted to validate the utility of the schedule.

The research methods literature indicated there are significant advantages to the personal interview. In her book, Surveys, Polls, and Samples: Practical Procedures, Parten enumerated the following principal advantages of personal interviews:

1. The participation rate is usually high.
2. The information received is likely to be more accurate than that secured by other techniques since the interviewer can clear up inaccurate responses through further discussion.
3. The interviewer can control the tone of the discussion based on the reactions of the respondent.
4. The interviewer can accumulate supplementary information about the participant's personal attributes and environment which may be valuable in interpreting results later (48:79-80).

Telephone Interviews. The telephone interview possesses some of the same characteristics as the personal interview; however, it differs in its advantages. Unlike personal interviews, the principal advantage of telephone interviews is their low cost. Travel and administrative costs can be reduced since all calls can be made from a single location. Emory also reported that the telephone interview is subject to less interviewer bias because of the absence of face-to-face contact between interviewer and respondent (25:305-306). Another major advantage is the speed with which studies can be carried out. This is significant when the study involves a wide geographic area or a large sample size (48:91). For this study, the telephone interview offered an inexpensive and rapid means

to solicit opinion from three logistics experts who were geographically dispersed and those comments were considered important to the study.

In summary, both personal and telephone interviews can be effective methods of securing information if conducted properly. As used in this research, they provided an effective and efficient means of obtaining expert opinion about the senior military logistician.

Interview Schedule

Interview Pretest. The interview schedule was composed of 15 questions designed to evoke quality judgments from the respondents. Space was provided under each question of the schedule to permit documentation of responses.

Two persons from the AFIT School of Systems and Logistics graduate faculty pretested the schedule. These individuals were excluded from the Delphi pretest and actual exercise. The pretest was used to validate the interview through early identification of inconsistencies, misrepresentations, or faults.

Feedback from the pretest indicated that several changes were required prior to implementation. First, both participants stated that the original interview was too long. More specifically, they said that there were too many questions in the survey and this could create an uncomfortable situation for the respondent, particularly

if the interview exceeded 30 minutes. Furthermore, the participants expressed difficulty in understanding several of the questions. It was suggested that the interview be limited to no more than ten questions and be kept below 30 minutes in duration. Consolidation of similar subjects and elimination of others were recommended by the pretest participants. Another suggestion, relating to the interview schedule itself, was to include an interview checklist to function as a reminder of interview goals and objectives. Finally, it was recommended that "yes," "no," and "no response" answers be included after each question so that responses could be circled during the interview.

Following implementation of the recommended changes, the interview schedule was again tested with the original pretest participants. This time the questions were clearly understood by the participants and the duration of the interview was under 30 minutes. The second pretest confirmed the internal validity of the interview schedule. The pretest interview schedule is shown in Appendix A; Appendix B depicts the actual interview schedule used in this study.

Administration of Interviews. All interviews were initially arranged by telephone at least three days in advance. When time permitted, a copy of the interview schedule was forwarded to the participant to permit early

review of the questions. If interviews were scheduled more than seven days in advance, a telephone call was made to the participant the day before the interview as a reminder of the appointment.

Delphi Technique

The Delphi technique, as reported by Parente et al., has been one of the most widely used and accepted methodological tools in management. It is a qualitative method that relies on the intuition and judgment of individuals to arrive at group opinion in an area of study where knowledge is imprecise (i.e., the likelihood of war in the next 25 years) (47:173). According to Dalkey, its popularity and rationale stem from the old adage, "Two heads are better than one" (10:v).

Although a variety of different Delphi applications have been reported, the conventional technique was advanced by the RAND Corporation in the late 1940s. The Delphi employs a set of procedures that elicits and organizes the opinions of individuals, usually by written questionnaire. In general, a series of questions about a subject is circulated among a group of participants who are asked to make comments. These comments are analyzed by the researcher and resubmitted to the respondents for further clarification of answers. Subsequent iterations then provide a vehicle for communicating additional information, thus

leading to modification of original ideas and, in most cases, convergence of opinion. In practice, Delphi procedures are designed to elicit responses from a panel of experts in one or more specialties (12:1).

The Delphi technique was originally developed as a means to eliminate the psychological problems inherent in face-to-face discussion. Dalkey reported three distinctive features of Delphi which act to reduce the negative effects of discussion. These are: anonymity, controlled feedback, and statistical group response.

Anonymity diminishes the likelihood of influence by a dominant, persuasive individual by controlling the interactions between respondents and by ensuring non-attribution of responses to specific individuals (12:3).

Controlled feedback is a mechanism that prevents irrelevant or biased communications from interfering with the group's goal of problem solving. This control is accomplished through an iterative process of data feedback in subsequent rounds of questioning (12:3).

Finally, the statistical group response helps to reduce pressure for a consensus of opinion by ensuring that the opinion of every member of the panel is represented in the final response (12:3).

The selection of experts is the first step in the application of the Delphi method. Brown reported that this can be a difficult process because the term expert can have

many different meanings, such as a person's status among peers, an individual's years of professional experience, or a person's own self-appraisal of his or her competence (6:3-4). A specific definition of an expert in the field of logistics was used for this reason. Jones and Twiss commented that selection of a panel of experts can be judgmental. An important point, they said, is to ensure selection is not limited to only those experts within an organization. In addition, they recommended that the number of experts should be 10 to 50. Under 10 participants limit the analysis of responses as well as the representation of backgrounds, especially in a wide spectrum study. On the other hand, more than 50 respondents makes the administration of the research too complex (34:229). To avoid the pitfalls identified by Jones and Twiss, 20 experts were used in this study. The 20 experts possessed a wide variety of backgrounds and experiences in both military logistics and operations. This information was ascertained during telephone conversations with each prospective participant prior to the start of the survey.

In developing the questionnaire, Jones and Twiss said that care must be exercised to ensure questions are: (1) unambiguous and similarly interpreted by respondents, (2) unconditional and limited to a specific area of inquiry, (3) probabilistic over time, (4) confined to areas of doubt with some factual information relevant to

an understanding of the question included, and (5) pertinent to the problem or dilemma confronting the organization (34:229-230). A pretest exercise was used to validate the topics and statements in the survey instrument used in this research.

The Delphi process is initiated by presenting a clear description of the problem to each member of the panel. Each member is asked to provide his or her comments on the questionnaire. This was done in a cover letter attached to the questionnaire. Upon receipt of the responses, the researcher computes the median and interquartile ranges (i.e., the middle 50 percent of the responses). The information accumulated in this round then becomes feedback for round two (6:4-5).

In the second round, the participants are asked to rethink the questions and provide additional comments about their answers in round one. Furthermore, panelists are asked to critique the comments provided by other group members. The experts are then allowed to resubmit their original responses or revise them, if desired (6:5-6).

Subsequent iterations follow the same format as in round two until convergence of opinion is achieved (6:6). Jones and Twiss argued that the exercise should not exceed four rounds and, in most exercises, two or three rounds are sufficient (34:231).

The Delphi technique offers several distinct advantages when its procedures are properly applied. First, it provides the best known approach for problem solving when the area of inquiry is inexact and value judgments are more effective than quantitative methods of research (34:241). Second, Dalkey reported that the iterative processing of expert opinion produces improvement in accuracy and reliability. He believed that the final results are just as good as those provided by committees (12:8). Third, its anonymity and group response features permit harbored thoughts to surface; hence, the psychological effects of discussion are avoided (10:17). Finally, Sullivan and Claycombe charged that Delphi offers the advantages of versatility in application and minimal time and effort on the part of participants (58:142).

The Delphi technique does, however, have its critics. Most have leveled their charges against its practical applications rather than its methodology. For example, Jones and Twiss cited inadequate preparation, vague event statements, and inefficient feedback as major causes of failure in previous works (34:240).

The major criticism of Delphi methodology, however, was described by Sackman in a 1974 RAND report. Referring to the advantages of Delphi mentioned earlier, he said

. . . these and related advantages are characteristically obtained by unwarranted assumptions in method and approach and by seriously compromising the

reliability, validity, and integrity of final results. Such advantages are inconsequential if the conventional Delphi concept, method, and results are inherently untrustworthy. (55:31-32)

Sackman contended that the main shortcoming of Delphi is its inability to provide verifiable results. In other words, it does not comply with the doctrine of scientific research. He stated that the results of Delphi would be questionable so long as they could not be linked to "verifiable external validation criteria" (36:v). Furthermore, without supporting scientific evidence, anonymous group opinion could not claim "superiority" over discussion (55:v). On the other hand, in her defense of Delphi, Brown wrote:

Expert judgment can be incorporated into the structure of an investigation and can be made subject to some of the safeguards that are commonly used to assure objectivity in any scientific inquiry. (6:14)

Another major criticism of the Delphi method is that it promotes experimentally uncontrolled procedures. Sackman asserted that in order to produce reliable data, all participants must be subjected to the same environment and time constraints, and this is not enforced in Delphi applications (7:29). Though he was highly critical of Delphi, Sackman admitted that he could not find "seriously critical literature of any depth" on the technique (55:vii).

The Delphi technique possesses the attributes of anonymity, feedback, and statistical group response to arrive at expert opinion that is at least as reliable as

face-to-face discussion when the area of inquiry is difficult to predict. Moreover, in most cases, there is a convergence of opinion with each iteration. The Delphi process is not, however, universally accepted for its methodology because it does not conform to the tenets of scientific investigation. Additionally, poor procedural application can tarnish the effectiveness and reliability of the research effort. The first disadvantage did not apply to this study because the nature of the research was inexact and could not be defined in the same types of specifics used in a scientific investigation. Rather, a convergence of ideas was being sought. The researcher endeavored to avoid the second disadvantage, poor procedural application, by the use of a pretest.

Delphi Questionnaire

Pretest. The Delphi questionnaire developed by Carpenter and Collins provided the foundation for the questionnaire used in this study. A modified version of the conventional Delphi, as implemented by Carpenter and Collins, was designed which incorporated the features of appearance, length, and simplicity to encourage maximum response. In the survey instrument, topics were arranged in sequential order and they were printed on only one side of each page. Responses were to be annotated on the questionnaire itself, directly below each topic statement.

Adequate space was provided below each topic to accommodate any comments (7:30).

During the Carpenter-Collins Delphi pretest, several recommendations were received and used in their questionnaire. Those same recommendations were incorporated into the questionnaire developed for this study. For example, an extract explaining the principles of Delphi was printed on a separate page and enclosed with the questionnaire. Furthermore, instructions were written in outline form to enhance clarity and ease of understanding (7:31).

Three members of the AFIT School of Systems and Logistics graduate faculty pretested the questionnaire to determine the adequacy, clarity, thoroughness, and internal validity of the instrument. The pretest participants were then excluded from the actual implementation of the Delphi exercise.

Feedback from the pretest resulted in several changes in wording and format which enhanced the clarity and readability of the survey instrument. It was suggested, for example, that the survey title be eliminated from the first page and the main topics be relabeled, page centered, and printed in bold face. Another recommendation was to reduce the space available for comments to trim the number of overall pages in the survey. Also, a suggestion to attach a separate comments and

recommendations page to the end of the survey was incorporated to accommodate any final thoughts.

In summary, the responses provided by the pretest participants indicated that the topics were understood correctly and, therefore, confirmed the internal validity of the questionnaire. With the pretest recommendations incorporated, the round one questionnaire was reproduced by base reprographics and mailed to the participating experts. The pretest survey package is displayed in Appendix D while Appendix E contains the round one Delphi questionnaire. A comparison of those appendices will highlight the differences between the pretest package and the package used in the first iteration.

Round One. The round one questionnaire contained 16 topics which the experts were asked to respond to. The participants were asked to rate the degree of importance of each topic to the military logistician and to furnish additional comments, if desired.

In this study, a five-point Likert scale was used. With this scale the expert was asked to respond to each statement in terms of five degrees of agreement (shown in Figure 4). The Likert scale depicted in Figure 4 was, however, not used in Topic 11: Leader vs. Manager. For this topic only, a three-point scale was used. The respondent was asked which role was most important to the

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

Fig. 4. Likert Rating Scale

military logistician: (1) leader, (2) manager, and (3) both are equally important.

The Likert scale was selected for this research project because it possessed several advantages over other methods of scoring. It was easy to construct and simple to interpret, thus ensuring maximum survey participation. Emory also reported that the Likert scale was more reliable and provided a greater volume of data than other scales. The scale was extremely useful in a respondent-centered study such as this because it enhanced respondent comfort, ease, and understanding (25:273).

Round Two. In round two, the respondent's rating, pertinent comments, and statistical group ratings were fed back to all the participants in another questionnaire. The mean and median group ratings and the respondent's rating were entered directly after each pertinent statement. In this way, the experts were afforded the opportunity to evaluate the comments and ratings prior to expressing their individual second round opinions. The mean and median ratings were, however, not computed and fed back for those questions in the survey which asked

the respondent to select or identify from a list of choices. Nor were ratings fed back for those questions which asked the respondent to rank order the choices. It was felt during the preparation of the round two questionnaire that this information would cause confusion in understanding the feedback and would substantially increase the volume of the survey. On the other hand, general comments received in round one were included as feedback and were placed at the beginning of each topic. General topic comments were separated by stars (*) to facilitate easier review and evaluation. Those portions of the questionnaire which required specific response were printed in bold face to distinguish them from round one feedback. Instructions were also included in the round two package which asked the respondents to do the following: (1) evaluate the importance of each topic, (2) provide comments about the responses arrived at in round one, and (3) respond to each item.

In this research, the mean and median were used as measures of central tendency since the data were collected at the ordinal level. Excluded from the survey was the use of interquartile range (IQR). The IQR was not fed back to the participants for three principal reasons. First, the statistical feedback was simplified without it. Second, as noted by Carpenter and Collins in their study, the mean and median reflect the group's central

tendency without increasing the statistical pressure to conform which the IQR exerts (7:32-33). Finally, the overall length of the round two questionnaire was reduced by excluding the IQR from the feedback.

The mean rating for each relevant statement and question was computed using the following formula (42:57):

$$x = \frac{\sum_{i=1}^n x_i}{n}$$

where

- x = the mean rating for a statement,
- n = the number of responding experts, and
- x_i = the "i"th expert's rating of the statement.

In the survey, mean ratings were rounded off to the nearest tenth of a point. Ratings of .050 and above were rounded up to the nearest tenth and those below .050 were rounded down to the nearest tenth. For example, a mean rating of 3.250 was rounded up to 3.3.

The median rating for each pertinent statement was derived in the following manner:

1. If the number n of responding experts was odd, the median was the middle response when the Likert scale ratings were arranged in ascending order.
2. If the number n of responding experts was even, the median was the mean of the two middle responses

when the Likert scale ratings were arranged in ascending order (42:60).

Consensus and Iteration Criteria

For this research, consensus for a particular statement was defined as being achieved when at least 50 percent of the respondents agreed on a statement's rating. That 50 percent was based on the number of respondents who rated the particular statement and not on the total number of questionnaires received. For example, if 15 questionnaires were received but only 12 experts rated a particular statement, the consensus for that statement was achieved when at least six participants agreed on a rating. The remaining questionnaire statements with pluralities were resolved by consolidating the rating scale into three divisions; i.e., 1 with 2, 3 alone, and 4 with 5. The consensus criteria was then reapplied based on the redesignated scale. Any statements which remained unresolved after this method were considered "no-consensus statements."

Based on an extensive literature search of the Delphi technique, it was decided that at least two iterations would be used in this study. Previous uses of Delphi have demonstrated that the principal convergence of expert opinion occurs between the first and second rounds (11:5). For this study, the Delphi process was

terminated when consensus was reached on at least 50 percent of the statements. In this research instrument, 50 percent of the 35 statements equalled 18 statements.

Administration of Questionnaire

The Delphi surveys were distributed in two ways: the base distribution system and the postal service. Base distribution was used for participants employed on Wright-Patterson AFB. All other participants received their questionnaires through the U.S. Mail. The survey instruments were organized and arranged along the same lines as the Carpenter-Collins survey. Each round one survey package contained a cover letter signed by the Dean of the School of Systems and Logistics followed by a Privacy Act Statement, a one-page explanation of Delphi principles, a set of instructions for completing the questionnaire, and the survey. A pre-addressed and stamped return envelope was included in packages sent through the mail. For those individuals located on Wright-Patterson AFB, only a pre-addressed return envelope was included in the survey package.

The round one cover letter specified a response time of 10 days. However, a 10-day grace period was added to allow for unforeseen delays. A follow-up telephone call was made to those individuals who did not return their questionnaire within the original 10-day time frame.

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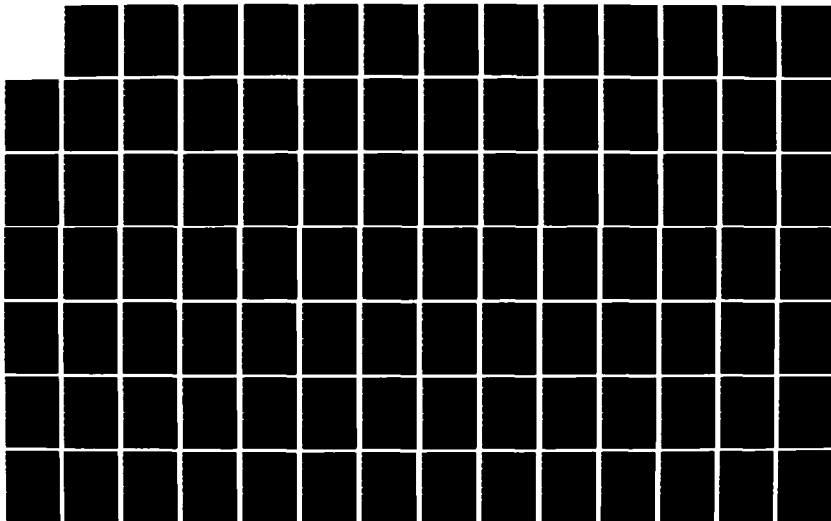
A NORMATIVE MODEL OF THE ESSENTIAL QUALITIES
CHARACTERISTICS AND BACKGROU (U) AIR FORCE INST OF
TECH WRIGHT-PATTERSON AFB OH SCHOOL OF SVST
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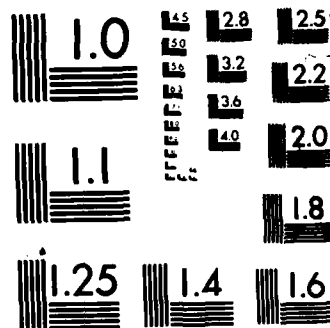
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It was decided that any participant who responded late to the survey or who did not respond at all would not be arbitrarily excluded from subsequent iterations unless it was his or her desire to terminate participation.

Due to the increased length and volume of the round one questionnaire, a response time of two weeks was specified in the instructions; however, an additional 10 days was included for incidental delays which may have resulted from temporary duty assignments and annual leave. Follow-up telephone calls were made to those participants who did not return their survey within the two-week time frame. The round two package contained a new cover letter signed by the Dean, a Privacy Act Statement, an abbreviated set of instructions, the round two survey instrument, and a return envelope. Appendix F contains the round two package.

Summary

This chapter provided a review of the steps that were taken to develop a profile of the professional senior Air Force logistician. A description of the two methods of data collection, interviews and Delphi technique, was provided as well as an analysis of the population and sample. A purposive judgment sample was used because it represented a reasonable cross-section of the target population. Four personal interviews were conducted to elicit

expert opinion from selected persons in the local area. Three more distant individuals were queried by telephone interview. A group of 20 individuals participated in a modified Delphi exercise based on one developed by Carpenter and Collins in which two iterations of questions were administered to arrive at group consensus. The next chapter presents and analyzes the data obtained in the research.

IV. Findings and Analysis

This study dealt with finding the characteristics and qualities of the professional military logistician. The research plan as outlined in Chapter III consisted of interviews and the Delphi technique for data collection. This chapter will focus on the results of this investigation beginning with the findings obtained from personal and telephone interviews, followed by the data obtained using the Delphi technique. Tables have been used to clarify and consolidate the findings. In all tables, percentages have been rounded off to the nearest full percentage point using criteria similar to that used in the previous chapter for mean ratings.

Interviews

Interviews were used to supplement the Delphi survey and to obtain expert opinion that may have been lost in the written half of the research methodology. Seven interviews were conducted: three personal and four telephone. The average duration of each personal interview was 45 minutes while the average duration of each telephone interview was 20 minutes. Significant problems were often encountered in arranging interviews. Rescheduling of interviews and cancellations were common with

personal interviews involving the senior officer participants. This was because they were frequently pressed with higher level commitments. The results of both interview techniques are collectively displayed in Table 9.

Interview Discussion

The following is a recap of the main points for each interview topic, as communicated by the participants.

Topic 1: Academic Education. All the interview participants agreed that academic education was essential in the development of military logisticians. Although all agreed that a specific undergraduate degree was not critical, five participants recommended that the Air Force Academy offer a Logistics Management degree or, at least, explore that possibility. Six of the experts felt that an advanced degree in Logistics Management was beneficial to the military logistician.

Topic 2: Continuing Education. The consensus among the experts who were interviewed was that the Air Force should establish a specific military course of education for senior directors of military logistics. Four respondents emphasized a short course (one to two weeks) tailored to the senior officer level. Course content would be limited to broad logistics concepts, leadership/management principles, and innovations in

TABLE 9
INTERVIEW RESULTS

Topic	No. of Responses (n)			Percentage of YES Responses (n ÷ N) x 100
	YES	NO	NO RESPONSE	
1. Academic Education	7	0	0	100
2. Continuing Education	5	2	0	71
3. Multidisciplined	7	0	0	100
4. Technical Competency				
-Assignments	7	0	0	100
-PCE	7	0	0	100
-Advanced academics	7	0	0	100
5. Air Force Guidance	1	6*	0	14
6. Selection and Development	6	1	0	86
7. Career Development	7	0	0	100

*Note: Consensus favors "NO" response.

military logistics. One expert suggested a 30-day course at Maxwell AFB, Alabama with emphasis on the synergistic nature of the logistics system.

Topic 3: Multidisciplined. The interview respondents unanimously agreed that military logisticians should be experienced in more than one functional area of military logistics. Six respondents commented that not every logistics officer should be a generalist. They further stated that the Air Force required specialists and those logistics officers who were not qualified for career broadening or those who did not want career broadening should be retained as specialists. In other words, the experts maintained that career broadening should be based on both past performance and a willingness to accept new challenges.

Topic 4: Technical Competency. The group of respondents viewed technical competency as an important quality of a military logistician. The consensus was that technical competency should be achieved through professional continuing education (PCE), advanced academics, and a variety of assignments. All participants ranked the importance of these areas in the following order:
(1) assignments, (2) PCE, and (3) advanced academics.

Topic 5: Air Force Guidance. As a whole, Air Force guidance was regarded as inadequate in supporting the appropriate development of military logisticians. Four respondents charged that Air Force policies were too vague and were not being followed. They further asserted that the Air Force needed to establish a specific policy and philosophy toward logistician development and enforce the policy with "logisticians"--not with "inexperienced" logistics officers/manpower personnel. One expert blamed the problem on the "system." This individual commented that until the Air Force defined what "logistics" and "logisticians" were, the ambivalence would continue.

Topic 6: Selection and Development. The consensus of opinion was that the Air Force should conduct early selection of military logistician candidates and groom only those selected officers who demonstrate potential for increased military logistics responsibility. Four experts favored selection at the junior major level (11-12 year point) while two individuals expressed a preference for selection at approximately the 8-year point. Five participants stated that the Air Force needed to provide incentives for its logistics officers (i.e., promotion opportunities, assignment opportunities, job opportunities, etc.) to encourage a career in logistics. Several experts charged that the Air Force did not counsel

its junior officers in career planning nor did the Air Force explain what the long-term career potential was in logistics. Most agreed, however, that selection should be done by Air Force logisticians and that candidates should be volunteers.

Topic 7: Career Development. The experts unanimously agreed that the Air Force should have a specific career development profile for military logisticians. The following general profile was suggested by the participants: (1) two assignments in one specialty at the base level; (2) a career-broadening assignment into another functional area; (3) an education-with-industry (EWI) assignment; (4) an AFIT master's degree in logistics management; (5) a commander's job; (6) several staff-level assignments; and finally (7) throughout the process, in-residence professional military education (PME) and continuing education for each appropriate level.

Delphi

The Delphi technique was also used to obtain expert opinion on the military logistician. Based on the iteration criteria established in the previous chapter, the decision was made to stop the iterations following the second round. In other words, consensus had been reached on at least 50 percent of the statements. A discussion of the findings for each round is presented next.

Round One. Twenty round one surveys were sent out. Fifteen responses were received by the suspense date (20 days from initial distribution) for a response rate of 75 percent. A follow-up call to the five remaining participants revealed that all five were either on temporary duty assignments or annual leave and thus had not received the survey in time to be completed by the suspense date. To wait longer just to include the late respondents' survey data in the round two package would have delayed the second iteration by at least one week. Since one of the chief benefits of the Delphi technique is timely feedback and since administrative support such as typing and reproduction had been coordinated in advance, a decision was made to proceed as scheduled with the round two survey preparation. The researcher contacted the five participants, explained the circumstances, and asked if they would reserve their comments and ratings for the next iteration; all five participants agreed to this request. Telephone calls were also made to eight of the 15 participants to clarify responses made in the survey.

The participants' rating of each Likert scale statement was used to compute the mean and median. Table 10 contains each topic and statement plus the group ratings from round one. The ratings correspond to the various degrees of agreement (1 to 5) in the Likert scale

TABLE 10
ROUND ONE MEAN AND MEDIAN RATINGS

Topic	Mean Rating	Median Rating
1. Academic Education		
--Specific undergraduate degree	2.7	2
--Education beyond bachelor's degree	4.3	4
--Earn MS at AFIT	3.3	4
2. Professional Involvement		
--Active in professional logistics society	3.9	4
--Participate in logistics symposia, conferences, and seminars	4.6	4
3. Multidisciplined	4.2	5
4. Command		
--Commander experience	4.1	4
--Commander experience in logistics functional area	3.7	4
--Commander experience in non- logistics functional area	2.8	3
5. Staff-Level Experience		
--Staff officer experience	4.5	5
--Staff experience in logistics functional area	4.4	4.5
--Staff experience in non- logistics functional area	2.7	3
6. Periodic Testing	2.5	2
7. Career Development	3.6	4
8. Rated Field		
--Rated vs. non-rated logisticians	2.2	2.5
--Rated vs. non-rated command experience	2.4	3
9. Selective Development	3.2	4
10. Senior Level Positions	3.8	4
11. Leader vs. Manager	2.4	3

TABLE 10--Continued

Topic	Mean Rating	Median Rating
12. Continuing Education	3.5	3.5
13. Qualities of a Military Logistician	4.1	4
14. Air Force Guidance	3.5	4
15. Military Logistics Background		
--Retail logistics	4.3	4
--Wholesale logistics	3.9	4
--Combat logistics	4.4	4
--International logistics	3.6	3.5
--Acquisition logistics	3.7	4
16. Technical Competency		
--Transportation	3.7	4
--Supply	3.9	4
--Maintenance	4.1	4
--Procurement	3.6	4
--Logistics planning	4.1	4
--Through professional continuing education	4.1	4
--Through advanced academics	3.9	4
--Through a variety of assignments	4.5	5

with "1" being highly disagree and "5" being highly agree. A rating of "3" means neither agree nor disagree.

In round two, the mean and median ratings for each statement in Table 10 were fed back to each participant along with his personal rating. In addition, the participants were provided mean values for the following four areas: (1) number of ideal functional areas--3, (2) number of realistic functional areas--2.6, (3) ideal number of years of rated experience for a rated military logistician--6.1, and (4) ideal number of years of logistics experience for a rated military logistician--10. This information provided the respondent a baseline for comparison of his opinions about a particular topic or statement with the group's rating. Data obtained from questions such as those which asked the respondent to select from a list of choices, to rank order choices, or to annotate the ideal number of assignments, as in Topic 15, were not returned to the participants and were, therefore, not included in round two.

In addition to rating each statement, the participants were asked to provide any comments which might serve to reinforce their opinion. All comments received in round one are documented in Appendix E.

Several respondents expressed disapproval of some of the topic statements and questions. In some instances, the wording was criticized while in others, comments were

made about the relative value of particular statements or questions to the research. Following a careful review of the pertinent topics as well as a review of all comments, a determination was made that changes to the survey were not warranted. Much of the criticism stemmed from the respondents reading more into the statement or question than was written or intended.

Round Two. A round two survey was sent to each of the 20 experts who initially volunteered to participate in this study. Of those 20, 17 completed the survey and met the suspense date for a response rate of 85 percent. Of the five experts who did not complete the round one survey, four responded in round two. A follow-up telephone call to the three individuals who did not respond revealed that one was on an extended temporary duty assignment and the other two were on annual leave. Since time had become a factor in the completion of this research, a decision was made to compute the round two results based on the 17 surveys received. Telephone calls were also made to four respondents to clarify comments made in the survey.

The mean and median scores for each statement were computed. Table 11 contains the round two mean and median scores for the 35 statements. Appendix H shows the relative frequency distribution of responses for each statement using the five-point Likert scale. A comparison of

TABLE 11
ROUND TWO MEAN AND MEDIAN RATINGS

Topic	Mean Rating	Median Rating
1. Academic Education		
--Specific undergraduate degree	2.4	2
--Education beyond bachelor's degree	4.2	4
--Earn MS at AFIT	3.4	4
2. Professional Involvement		
--Active in professional logistics society	3.9	4
--Participate in logistics symposia, conference, and seminars	4.4	4
3. Multidisciplined	4.3	5
4. Command		
--Commander experience	4.1	4
--Commander experience in logistics functional area	4.1	4
--Commander experience in non- logistics functional area	2.7	3
5. Staff Level Experience		
--Staff officer experience	4.6	5
--Staff experience in logistics functional area	4.7	5
--Staff experience in non- logistics functional area	2.5	3
6. Periodic Testing	2.3	2
7. Career Development	3.8	4
8. Rated Field		
--Rated vs. non-rated logisticians	2.1	2
--Rated vs. non-rated command experience	2.3	2
9. Selective Development	3.7	4
10. Senior Level Positions	3.8	4
11. Leader vs. Manager	2.6	3

TABLE 11--Continued

Topic	Mean Rating	Median Rating
12. Continuing Education	3.6	4
13. Qualities of a Military Logistician	4.4	4
14. Air Force Guidance	3.6	4
15. Military Logistics Background		
--Retail logistics	4.2	4
--Wholesale logistics	4.2	4
--Combat logistics	4.3	4
--International logistics	3.1	3
--Acquisition logistics	3.6	4
16. Technical Competency		
--Transportation	3.6	4
--Supply	3.9	4
--Maintenance	4.2	4
--Procurement	3.6	4
--Logistics planning	4.0	4
--Through professional continuing education	4.1	4
--Through advanced academics	3.9	4
--Through a variety of assignments	4.7	5

Tables 10 and 11 shows that the mean rating increased for 14 statements, decreased for 14, and remained unchanged for seven. For the median rating, 30 statements remained unchanged, two increased in score, and three decreased. Note: the means and medians for round one were computed based on 17 returns. Therefore, no significant statistical conclusions or inferences could be drawn from the change of ratings.

The topic consensus criteria established in Chapter III were applied to the round two ratings. Of the 35 statements, 23 (66 percent) had consensus using the equal to or greater than 50 percent rule. Of those statements remaining, 11 (31 percent) had achieved consensus using the redesignation rule, while only one (3 percent) was classified a "no consensus topic." Table 12 depicts the results for the 35 statements in round two.

Delphi Discussion

Before presenting an overview of the opinions of senior logisticians on each topic in this survey, a discussion of the accompanying tables is necessary.

First, it should be noted that the total number of respondents (N) who answered a question did not always equal the total number of individuals who responded in "agreement" to the corresponding Likert scale statement. This was because not all individuals responded to the

TABLE 12

CONSENSUS CRITERIA RESULTS

Topic	Regular	Redesignation	No Consensus Topic
1. Academic Education			
-- Specific undergraduate degree		X	
-- Education beyond bachelor's degree		X	
-- Earn MS at AFIT		X	
2. Professional Involvement			
-- Active in professional logistics society	X		
-- Participate in logistics symposia, conferences, and seminars	X		
3. Multi-disciplined	X		
4. Command			
-- Commander experience		X	
-- Commander experience in logistics functional area	X		
-- Commander experience in non-logistics functional area	X		

TABLE 12--Continued

Topic	Regular	Redesignation	No Consensus Topic
5. Staff-Level Experience			
-- Staff officer experience	X		
-- Staff experience in logistics functional area	X		
-- Staff experience in non-logistics functional area			X
6. Periodic Testing		X	
7. Career Development	X		
8. Rated Field			
-- Rated vs. non-rated logisticians		X	
-- Rated vs. non-rated command experience		X	
9. Selective Development	X		
10. Senior Level Positions	X		
11. Leader vs. Manager	X		

TABLE 12--Continued

Topic	Regular	Redesignation	No Consensus Topic
12. Continuing Education	. . .	X	. . .
13. Qualities of a Military Logistician	X	. . .	. . .
14. Air Force Guidance	. . .	X	. . .
15. Military Logistics Background			
-- Retail logistics	X	. . .	. . .
-- Wholesale logistics	X	. . .	. . .
-- Combat logistics	X	. . .	. . .
-- International logistics	X	. . .	. . .
-- Acquisition logistics	X	. . .	. . .
16. Technical Competency			
-- Transportation	X	. . .	. . .
-- Supply	X	. . .	. . .
-- Maintenance	X	. . .	. . .
-- Procurement	. . .	X	. . .
-- Logistics planning	. . .	X	. . .

TABLE 12--Continued

Topic	Regular	Redesignation	No Consensus Topic
-- Through professional continuing education	X	. . .	. . .
-- Through advanced academics	X	. . .	. . .
-- Through a variety of assignments	X	. . .	. . .

questions which followed many statements. For example, in the first topic, Academic Education, 15 experts agreed that military logisticians should possess education beyond a bachelor's degree; however, only 14 responded to the question "in which area of study."

Second, the table contains the number of responses (n) received in each category. Since most of the questions permitted the experts to choose more than one answer, the sum of the responses, in many instances, exceeded the total number of respondents (N). To illustrate this point, there were 14 persons who responded to the question which addressed "areas of advanced academic study"; however, a total of 23 responses were received regarding specific field of study (see Table 13).

Finally, percentages were computed by dividing the number of responses (n) in each category by the total number of respondents (N) for that particular question, and then multiplying the quotient by 100. As mentioned in the previous chapter, consensus was attained with a response rate of 50 percent or more.

Topic 1: Academic Education. The consensus of opinion among the panel of experts was that academic education was important to the military logistician. The panel agreed that a specific undergraduate degree was not significant. However, they felt that education beyond a

TABLE 13

ANALYSIS OF THE AREAS OF ADVANCED ACADEMIC STUDY

Area of Study	No. of Responses (n)	Percentage (n ÷ N) x 100
Logistics management	8	57
Degree important--area of study not	4	29
Management	4	29
Business administration	3	21
Engineering	1	7
Liberal arts	1	7
Sciences	1	7
Other	1	7
Total No. of Respondents (N) - 14		

bachelor's degree was important, with logistics management as the preferred area of advanced study. Table 13 depicts the distribution of responses. The group concurred that the military logistician should earn a master's degree at AFIT.

Topic 2: Professional Involvement. Involvement of military logisticians in a professional logistics society and in professional logistics symposia, seminars, and conferences was supported. Of those experts who agreed that military logisticians should be professionally active, all

supported involvement at the membership and attendee level. Tables 14 and 15 show the distribution of the panel members' responses.

Topic 3: Multidisciplined. In the opinion of the experts surveyed, military logisticians should be multidisciplined officers with experience in more than one functional area of military logistics. Group consensus for the ideal number of functional areas was three while consensus for the realistic number of functional areas was two. Analyses of the ideal and realistic number of logistics functional areas are displayed in Tables 16 and 17 respectively.

Based on the mean and median rankings depicted in Tables 18 and 19 for the ideal and realistic functional areas; maintenance, logistics planning, and supply were the top three disciplines in which a logistician should have experience. In this analysis, the lower the rating, the higher the discipline was in importance, in the opinion of the experts. These mean and median rankings were important; however, they provided only a rough prioritized listing of the relative significance of each logistics discipline.

To verify the results of this prioritized list, a more detailed analysis was done. Using the ideal number of logistics functional areas as the baseline, each

TABLE 14

ANALYSIS OF THE LEVEL OF PROFESSIONAL LOGISTICS
SOCIETY INVOLVEMENT

Level of Involvement	No. of Responses (n)	Percentage (n ÷ N) x 100
Member	12	100
Officer, local	7	58
Speaker's bureau participant	7	58
Author	6	50
Officer, national	5	42
Other	1	8
Total No. of Respondents (N) - 12		

TABLE 15

ANALYSIS OF THE LEVEL OF SYMPOSIA, SEMINAR, AND
CONFERENCE INVOLVEMENT

Level of Involvement	No. of Responses (n)	Percentage (n ÷ N) x 100
Attendee	15	100
Presenter	14	93
Moderator	11	73
Panel leader	11	73
Other	2	13
Total No. of Respondents (N) - 15		

TABLE 16
ANALYSIS OF THE IDEAL NUMBER OF LOGISTICS
FUNCTIONAL AREAS

Ideal No. of Functional Areas	No. of Responses (n)	Percentage (n ÷ N) x 100
3	10	77
2	2	15
5	1	8
Mean Rating - 3		
Median Rating - 3		
Total No. of Respondents (N) - 13		

TABLE 17
ANALYSIS OF THE REALISTIC NUMBER OF LOGISTICS
FUNCTIONAL AREAS

Realistic No. of Functional Areas	No. of Responses (n)	Percentage (n ÷ N) x 100
2	7	54
3	5	38
4	1	8
Mean Rating - 2.5		
Median Rating - 2		
Total No. of Respondents (N) - 13		

TABLE 18

ANALYSIS OF THE IDEAL FUNCTIONAL LOGISTICS AREAS

Ideal Functional Areas	No. of Responses (n)	Percentage ($n \div N$) x 100	Mean Rating	Median Rating
Maintenance	13	100	1.9	2
Supply	11	85	2.4	2
Logistics planning	11	85	2.2	2.5
Transportation	8	62	3.5	4
Other	4	31	4.0	4.5
Procurement	10	77	4.7	5
Total No. of Respondents (N) - 13				

TABLE 19

ANALYSIS OF THE REALISTIC FUNCTIONAL LOGISTICS AREAS

Realistic Functional Areas	No. of Responses (n)	Percentage ($n \div N$) x 100	Mean Rating	Median Rating
Maintenance	13	100	1.9	2
Supply	11	85	2.1	2
Logistics planning	9	69	1.8	2
Transportation	5	38	3.0	3
Procurement	4	31	3.0	3
Other	3	23	3.0	3
Total No. of Respondents (N) - 13				

functional area was evaluated by taking the combined number of 1, 2, and 3 rankings it received and dividing the sum by the total number of respondents (N) who answered the question. The quotient, multiplied by 100, represented a percentage of the respondents who thought that that particular discipline should be in the top three in terms of relative importance. The 1, 2, and 3 rankings used to conduct this analysis were taken from the question which had asked the respondents to rank order the realistic functional logistics areas. Table 20 highlights the results of this analysis.

TABLE 20

ANALYSIS OF LOGISTICS DISCIPLINES BY TOP THREE RANKINGS

Discipline	Order of Ranking			Total Responses (n)	Percentage (n ÷ N) x 100
	1	2	3		
	No. of Responses				
Maintenance	5	5	3	13	100
Logistics planning	3	4	3	10	77
Supply	3	3	4	10	77
Procurement	0	0	3	3	23
Transportation	1	1	0	2	15
Other	1	0	0	1	8
Total No. of Respondents (N) - 13					

These analyses confirmed the earlier findings in Tables 18 and 19 that maintenance, logistics planning, and supply were, in the experts' opinions, the top three desired logistics disciplines.

Topic 4. Command. The respondents in this survey agreed that a military logistician should have experience as a commander. The majority felt that this experience should be at the squadron level in a logistics functional area, preferably maintenance. Analyses of the level of command experience and command experience in logistics functional areas are contained in Tables 21 and 22 respectively. The group further agreed that commander experience in a non-logistics functional area was inconsequential in the development of the military logistician.

Topic 5. Staff-Level Experience. There was overwhelming agreement that a military logistician should have staff-level experience. A high proportion of the experts felt that the experience should be in a logistics functional area with logistics planning as the top specialty. Table 23 provides a summary of the analysis. The group maintained that the level of experience should be at the MAJCOM and/or Air Staff levels. Table 24 presents the results of the panel's recommendations regarding staff-level positions. On the other hand, there was no

TABLE 21
ANALYSIS OF THE LEVEL OF COMMAND EXPERIENCE

Level of Command Experience	No. of Responses (n)	Percentage (n ÷ N) x 100
Squadron	9	82
Detached Unit	3	27
Wing	3	27
Group	2	18
Total No. of Respondents (N) - 11		

TABLE 22
ANALYSIS OF COMMAND EXPERIENCE IN LOGISTICS
FUNCTIONAL AREAS

Logistics Functional Area	No. of Responses (n)	Percentage (n ÷ N) x 100
Maintenance	8	73
Supply	5	45
Procurement	2	18
Other (Finance)	2	18
Transportation	1	9
Total No. of Respondents (N) - 11		

TABLE 23

ANALYSIS OF STAFF EXPERIENCE IN LOGISTICS
FUNCTIONAL AREAS

Logistics Functional Areas	No. of Responses (n)	Percentage (n ÷ N) x 100
Logistics planning	12	86
Maintenance	8	57
Supply	6	43
Procurement	4	29
Transportation	2	14
Other	2	14
Total No. of Respondents (N) - 14		

TABLE 24

ANALYSIS OF THE RECOMMENDED STAFF-LEVEL POSITIONS

Level	No. of Responses (n)	Percentage (n ÷ N) x 100
MAJCOM	10	100
Air Staff	9	90
Air Logistics Center	3	30
Numbered Air Force	3	30
Wing	3	30
Base	2	20
Other	2	20
Total No. of Respondents (N) - 10		

agreement as to whether the military logistician should possess staff-level experience in a non-logistics functional area.

Topic 6: Periodic Testing. Periodic testing of military logisticians as a means to demonstrate professional competency was rejected by the Delphi participants. Most thought that Officer Effectiveness Reports were the "true" tests.

Topic 7: Career Development. The consensus of opinion was that every military logistics specialty should offer the opportunity for full career development terminating at the director of logistics level.

Topic 8: Rated Field. The group's opinion was: rated officers did not make better logisticians than non-rated officers and rated command experience was not more beneficial to a military logistician than non-rated command experience. For rated military logisticians, the ideal was six years of rated experience and ten years of military logistics experience. "Gate times" need to be considered, however, when assessing the ideal number of years of flying experience for a rated military logistician. See Tables 25 and 26 for a review of the results.

Topic 9: Selective Development. According to the experts, the Air Force should conduct early screening of

TABLE 25

ANALYSIS OF THE IDEAL NUMBER OF YEARS OF RATED
EXPERIENCE FOR RATED MILITARY LOGISTICIANS

No. of Years Rated Experience	No. of Responses (n)	Percentage (n ÷ N) x 100
6	6	60
5	2	20
4	1	10
10	1	10
Mean Rating - 6 years		
Median Rating - 6 years		
Total No. of Respondents (N) - 10		

TABLE 26

ANALYSIS OF THE IDEAL NUMBER OF YEARS OF LOGISTICS
EXPERIENCE FOR RATED MILITARY LOGISTICIANS

No. of Years Logistics Experience	No. of Responses (n)	Percentage (n ÷ N) x 100
10	6	60
6	1	10
8	1	10
9	1	10
15	1	10
Mean Rating - 9.8 years		
Median Rating - 10 years		
Total No. of Respondents (N) - 10		

military logistician candidates and groom only those selected officers who show potential for increased military logistics responsibilities. A summary of the comments addressing the selective development process is provided below:

1. Four experts suggested selection at the 11- or 12-year point (major) by a board of logisticians.
2. Two participants thought that selection should occur at the 5-10-year point (captain) by a board of logisticians.
3. One individual agreed with the selection process in paragraph (2) above; however, he said that candidates should be volunteers.
4. Two contended that the selection process was, or should be, inherent in the promotion and job selection systems.
5. Three of the respondents who agreed with the statement did not provide specific comments addressing the selective development process.

Topic 10: Senior-Level Positions. There was agreement among the panel members that many military logisticians have entered the military logistics career field at a fairly senior level with little or no background in any of the military logistics specialties. This situation

may have placed more knowledgeable subordinates in awkward positions.

Topic 11: Leader vs. Manager. With three exceptions, the respondents in the survey agreed that the military logistician should be both a good leader and a good manager.

Topic 12: Continuing Education. An analysis of the responses from the committee of experts indicated that the Air Force should establish a specific course of education for senior directors of military logistics. The following extracts from the survey describe the recommended course emphasis and content:

1. Education in business and logistics principles was deemed basic in one suggestion.

2. A series of required courses during the entire career of the military logistician was recommended. Courses would begin with a general logistics course covering logistics concepts, philosophy, and history vice specific procedures and processes.

3. A course covering military doctrine, military history, leadership intra- and inter-functional relationships, and national policy was proposed.

4. A course including force structure development, financial planning, manpower, facility planning, data

management, information processing, and system analysis was suggested.

5. A 45-60-day professional AFIT course was suggested by another expert, concentrating in the following four areas: (1) wholesale logistics, (2) retail/operational logistics, (3) financial management, and (4) acquisition logistics.

6. A short course (one week) in logistics management concepts was recommended by several other participants.

Topic 13: Qualities of a Military Logistician.

There was unanimous agreement among the participants concerning this topic. All agreed that there were identifiable qualities and characteristics which distinguish successful military logisticians from unsuccessful ones. A brief synopsis of the identifiable traits is provided in Table 27. Only those traits which were mentioned by at least 50 percent of the participants were included in the table. Because of the number of traits that were suggested by the experts, similar qualities were grouped together for the sake of simplicity (i.e., "motivation" combined with "initiative"). Appendices E and F contain specific rounds one and two comments regarding traits desirable in a military logistician. Note: Round one and round two comments have been consolidated because

TABLE 27

ANALYSIS OF THE QUALITIES AND CHARACTERISTICS
OF A MILITARY LOGISTICIAN

Traits	No. of Responses (n)	Percentage (n ÷ N) x 100
Leadership	11	69
Job knowledge	11	69
Creative and open-minded	9	56
Strong communicative skills	9	56
Dedicated	9	56
Initiative	8	50
Flexible	8	50
Common sense	8	50
Managerial ability	8	50
Total No. of Respondents (N) - 16		

participants in round two consistently concurred with their round one comments.

Topic 14: Air Force Guidance. The consensus of the group was that current Air Force guidance did not adequately support the development of military logisticians. A more thorough discussion of this topic is provided in the next chapter.

Topic 15: Military Logistics Background. It was felt that military logisticians should possess experience

in the following logistics disciplines: (1) retail logistics, (2) wholesale logistics, (3) combat logistics, and (4) acquisition logistics. International logistics was not regarded as being either important or unimportant. The optimal number of assignments as determined by the group is displayed in Table 28. As a whole, the group of experts recommended two assignments in retail logistics, one assignment each in wholesale logistics, combat logistics, and acquisition logistics, and no assignments in international logistics.

TABLE 28
ANALYSIS OF THE OPTIMAL NUMBER OF ASSIGNMENTS
IN EACH LOGISTICS SPECIALTY

Logistics Specialty	No. of Assignments				Mean Rating	Median Rating
	0	1	2	3		
	No. of Responses					
Retail logistics	0	2	8	1	1.9	2
Wholesale logistics	0	10	1	0	1.1	1
Combat logistics	1	10	1	0	0.9	1
Acquisition logistics	3	8	0	0	0.7	1
International logistics	9	2	0	0	0.2	0
Total No. of Respondents - 11						

Topic 16: Technical Competency. The respondents agreed that military logisticians should be technically competent in transportation, supply, maintenance, procurement, and logistics planning. They further concluded that the military logistician should acquire his or her technical competence through professional continuing education, advanced academics, and a variety of assignments.

Summary

This chapter has reported the results of the research. Interviews were used to solicit expert opinion on seven topics relevant to this study. Consensus was achieved in all seven topics. Comments provided by the respondents offered a perspective into the qualities, characteristics, and development of military logisticians.

In the second part of the research plan, 35 statements were identified as relevant to a discussion of military logisticians. The relative significance of these statements was confirmed using the Delphi technique. The response rate for the first iteration was 75 percent while the response rate in the second iteration was 85 percent. Consensus was attained on 97 percent (34 statements) of the statements after two rounds of questioning. There were additional questions, relating to the original 35 statements, which asked the respondents to select from a list of choices, to rank order choices, or to annotate the

ideal number of assignments. Consensus was achieved on 14 of these questions. Feedback from the participants also provided insight into the following three areas:

- (1) selective development of military logisticians,
- (2) continuing education for senior directors of military logistics, and (3) qualities and characteristics of a military logistician.

In the final chapter, the results of the findings will be presented in a logical pattern to support the normative model and offer recommendations for future research.

V. Conclusions and Recommendations

Review

This research project was aimed at constructing a current perspective on the military logistician. It began with an exhaustive literature review of military logistics and military logisticians. While much has been written about the subject, an authoritative definition of "logistics" has not been universally accepted simply because there has been no general agreement on what it is or what it should be. This ambiguity has also manifested itself in the term "logistician," as there are many different descriptions of the term. History has shown, however, that the great military leaders of the past clearly understood the concept of logistics. The successful commanders were superb logisticians who realized that the synergy of strategy, tactics, and logistics won battles.

Today, however, the means of waging war are far more complex than any single military commander can possibly handle. About \$41.0 billion of the fiscal year 1985 Air Force budget will be spent on logistics. Therefore, military logisticians must have the ability to manage the massive logistics system that has been placed under their control. A number of qualities and characteristics have been proposed as essential for the logistician. Likewise,

many ideas and recommendations have also been suggested for developing logisticians. But, which of these qualities and characteristics are really essential to the military logistician and what avenues should be taken to develop military logisticians? These two questions were the subject of this study.

The objective of this research was to develop a normative model of the essential qualities, characteristics, and background requirements of a professional senior military logistician. To accomplish this objective, a two-point research plan was employed to solicit expert opinion. Interviews were conducted with a variety of military and civilian experts to gain detailed information about the military logistician. Complementing this methodology was a written Delphi survey which sought to confirm the importance of selected topics. When combined, the information obtained from the interviews and the survey resulted in the normative model of the military logistician presented here.

Discussion

After a careful review and analysis of the findings, a concluding discussion is presented that should offer a clear perspective on the military logistician.

The military logistician is a true professional, not just because he or she is an officer, but because

these officers must be skilled in a very complex business called "logistics." The professional military logistician has a formidable responsibility in managing large quantities of material assets, financial resources, and personnel in a profession that involves many specialized disciplines. As such, the military logistician must be a system's integrator. The logistician must be able to capture and employ the synergistic effect of logistics to sustain military capability at any level of combat at any time. Although the military logistician does not fly an airplane, launch a missile, or fire a weapon, the professional logistician must think as one expert said, as a "warrior." With this in mind, what specific qualities and characteristics should the military logistician possess to be a true professional in logistics, while being a "warrior?"

According to the research, a successful military logistician should be both a good leader and a good manager. The military logistician must be able to lead people; he must be able to steer them in the right direction, and he must be able to sell the goals and programs of the organization. The effective military logistician must also be able to manage the goals and resources of the organization and avoid micro-management. Through a proper mix of leadership and management, the military logistician must create and sustain military capability.

Many qualities and characteristics are essential to the successful military logistician; however, this research found the following are considered the most important: strong job knowledge and breadth of knowledge, ability to think and act creatively, convincing writing and speaking abilities, intense dedication to duty, high motivation level, flexible leadership and management qualities, and, above all, common sense. An officer possessing these qualities must develop them and continue to grow throughout his or her military career to become a quality logistician.

The basis of any personal development and growth should be academic education. Academic education, said the experts, provides the foundation from which the logistician can build a career. A specific undergraduate degree is not crucial in the development of military logisticians, but it should not be viewed as a detriment either. In fact, an undergraduate degree program in logistics management at the U.S. Air Force Academy might be beneficial in influencing future logisticians and military leaders to consider logistics from a system's perspective, rather than as a mixture of unrelated disciplines. Perhaps many of the Air Force's problems today stem from the fact that its officers learn about logistics too long after they begin active duty and have identified themselves with a specific function or area.

Above the bachelor's degree level, the military logistician should receive specific advanced academic education in logistics management. The experts said that an advanced degree in logistics management would serve two important goals: (1) Air Force's desire that its personnel be educated, thus ensuring logistics officers equal promotion opportunity with other Air Force officers; and (2) provide future military logisticians with a broad understanding of the concepts, principles, and philosophies which surround logistics management. There is great value in learning about the ideologies of logistics and about the systems approach to management. Advanced academic education in logistics management can be invaluable in supplementing knowledge gained from "the field." For rated and non-rated individuals who wish to cross-flow into logistics, advanced academics in logistics management is an excellent method of learning the basic concepts prior to receiving an assignment in the career field.

To acquire an advanced logistics management degree at AFIT is highly desirable; however, the Air Force should take advantage of opportunities to send some officers to civilian institutions. Academic diversity is important in preventing inbreeding within the military logistician corps. In addition, cross-fertilization with civilian logisticians and students may be of value to the Air Force in providing fresh ideas and new insights into solving

old problems. Note: The Graduate Logistics Academic Faculty are all products of civilian education at the post-graduate level, which provides for cross-fertilization, even at AFIT.

Supplementing the requirement for academic education, military logisticians should attend periodic courses in professional continuing education (PCE) to enhance technical competency. The experts believed that the logistician should attend PCE courses throughout his or her entire career with each course designed to be commensurate with the level and grade of the individual. In the early stages of a military logistician's career, the principal focus of continuing education should be at the "grass roots" level of each functional area. As the individual progresses up the career ladder, the course content should broaden in scope. At the senior level, an executive course should be designed and implemented for individuals serving as Directors of Logistics, similar to the courses currently being taught at Maxwell AFB, Alabama for Deputy Commanders for Maintenance and Resource Management. Since technology and managerial techniques are constantly evolving, PCE can fill the gap between the academic education environment and knowledge gained in the field.

Just as important, professional military education (PME) is an essential requirement for military logisticians.

Military logisticians must understand and appreciate other aspects of the national defense system besides the logistics environment. PME helps to develop the "whole person" concept that is important to the professional military officer and to the "warrior."

In the opinion of the experts, military logisticians should be active in a professional logistics society and should participate in professional logistics symposia, seminars, and conferences. Military logisticians need to discuss their "business" at every opportunity and share their experiences and knowledge with others. The interaction that these activities promotes opens additional avenues in which the logistician can learn new skills and search for answers to unsolved questions. However, military logisticians can gain only what they put into professional involvement. Mere membership is not enough; it must be accompanied by a sincere willingness to learn and to exchange ideas and expertise. The military logistician should use every opportunity to learn and develop professionally. The Air Force should, therefore, insist that its military logisticians be professionally active.

Professional military logisticians should possess a broad understanding of logistics; they should be multidisciplined. The experts asserted that military logisticians cannot be totally effective as system management

integrators unless they have a sound understanding of the different functional areas. The Air Force has called for multidisciplined logisticians and this is what the Air Force should strive for. However, being multidisciplined does not necessarily have to come from specific assignments in many functional areas. While this would be ideal, it may not always be feasible or desirable. The results of this research indicated that the Air Force should develop a multidisciplined logistician in a combination of ways, some of which have already been mentioned: academic education, PCE, and professional involvement. The assignment process should be viewed as one means, in combination with others, of developing a broad-based logistician. It should also be viewed as the most important in the military logistician development process. Realistically, the military logistician should have functional experience in at least two logistics disciplines, at least one of which should be in maintenance, supply, or logistics planning. This experience should be gained early in the logistician's career, preferably before the 11-year point. At least two assignments should be at the wing/base level or lower and perhaps one should be at the wholesale level. These assignments should be of sufficient duration to permit the individual to become a specialist in each functional area. In addition, early career development

should consist of an Education-with-Industry (EWI) assignment.

These assignments at the early stages should allow the logistics officer to acquire a sound understanding of the specific functional areas in which he or she is assigned, while at the same time permitting exposure to other functional areas. Besides experience at the retail and wholesale levels, the military logistician should be required to obtain staff-level experience. Consensus in the research was that staff-level experience should be gained at the MAJCOM level first, followed by an assignment later in the career at the Air Staff. The MAJCOM staff position should be in logistics planning or, if that is not possible, in a functional area in which the individual has specialized. Interaction with other logistics functions within the staff should broaden the logistics officer's understanding of those functional areas. By the time the officer reaches the Air Staff level, he or she should have the background and experience to work in at least two or more logistics disciplines within the Air Staff.

Prior to reaching the Air Staff, however, the military logistician should have acquired experience as a commander. The research determined that any level of command would be helpful, though a squadron commander assignment in a logistics functional area would be the

most beneficial, both to the military logistician and to the Air Force. Command experience is an excellent way of developing a multilevel logistician. Regardless of an organization's mission, a commander must interface with many aspects of military logistics to accomplish organizational objectives. Knowledge gained from interacting with various functional areas would enhance the officer's future ability to successfully integrate the activities of the military logistics system.

The research has developed the normative model of the military logistician that is displayed in Figure 5. The model depicts those qualities, characteristics, and background requirements considered ideal to the military logistician.

In the past, it appears that Air Force guidance has not adequately supported the appropriate development of the military logistician. The experts surmised that the problem has existed for four reasons. First, the Air Force has not adequately defined "logistics" or "logistician." As a result, there has been inadequate logistics doctrine, unsuitable Air Force logistics philosophy, and impractical career development for Air Force logisticians. The Air Force has emphasized the individual specialties to the point that "logistics" has almost become a forgotten profession. Second, according to most experts, the guidance which has been provided is nebulous and lacks meaning.

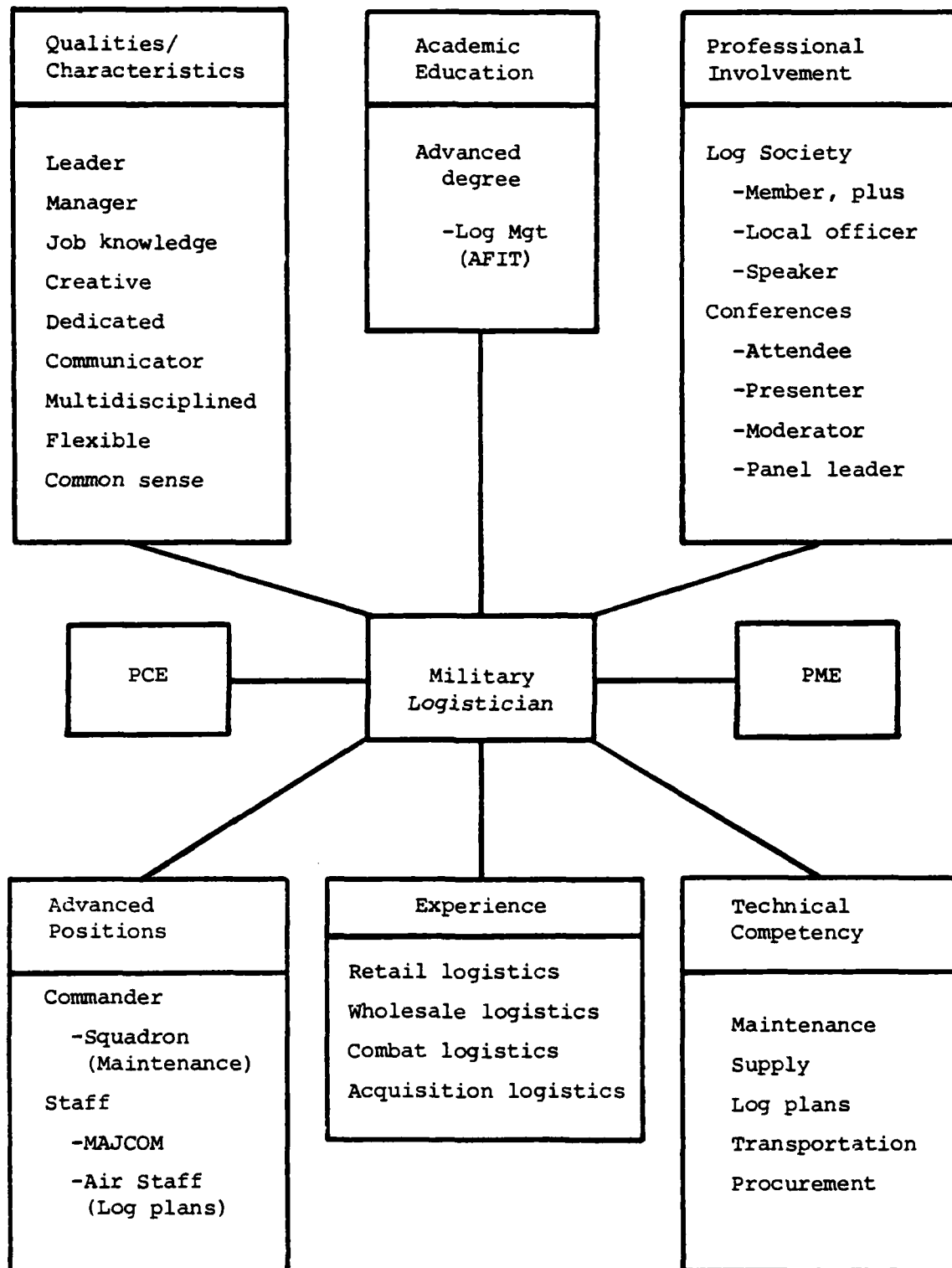


Fig. 5. Normative Model of a Logistician's Essential Qualities, Characteristics, and Background Requirements

The logistics career has not been defined in sufficient detail to specify the exact building blocks that are required for progression to the Director of Logistics. Logistics, ironically, is composed of many specialties, yet not all of these specialties have allowed full career development to Director of Logistics. Third, the Air Force has not made a conscientious effort to screen logistician candidates. The personnel managers at the Air Force Manpower and Personnel Center (AFMPC), for lack of guidance and proper qualifications, have fostered the notion of "stovepiping" because they have had to fill positions with those they think are the most qualified and most available at the time. If the Air Force is to eliminate "stovepiping," said the experts, then military logistician candidates must be screened and selected early in their careers by qualified logisticians. Finally, the Air Force logistician career development model has been the target of considerable criticism by the experts. Specifically, the model has not provided a mandatory set of phase points for the step-by-step development of logisticians. For example, many programs have been provided for career broadening, yet none is compulsory.

The researcher believes that the most recent edition of AFR 36-23 has taken a positive step forward toward the proper development of military logisticians. The regulation supports career broadening at the early and

intermediate development phases. The major functional areas of logistics offer opportunities for cross-flowing and progression to the Director of Logistics level. The regulation provides for a host of other opportunities for developing multidisciplined logisticians, such as the Logistics Career Broadening Plan and EWI. In addition, AFR 36-23 strongly endorses professional involvement by its senior logisticians. However, the researcher feels the regulation still lacks the specific guidance which the experts in this research declared was needed. AFR 36-23 ostensibly encourages career broadening, yet obtaining multidisciplined experience is not mandatory. The required qualifications for Director of Logistics can be as minimal as experience in only one specialty in the systems and logistics area or the completion of a graduate program in logistics or related disciplines. This is exactly why the experts argued that there are "stovepiped" logisticians and why they contended that many senior military logisticians, due to their inexperience, place subordinates in an awkward position. If the Air Force is to eliminate "stovepiped" logisticians, then it must establish firm policy in its logistician career development model. The Air Force needs to establish mandatory criteria for its Director of Logistics position, make these criteria public, screen and select logistician candidates

who are qualified and willing to accept responsibility, and groom these selected officers for the positions.

Recommendations

The magnitude and significance of the task of providing a perspective into the qualities, characteristics, and background requirements for the professional senior military logistician requires more attention than one research project of relatively short duration. This study has provided only one viewpoint. Another study using a different sample of experts should be conducted to revalidate the findings. Nonetheless, this study should provide a solid foundation for future research. Four recommendations present themselves.

1. The Air Force should explore the possibility of establishing an undergraduate degree program in Logistics Management at the U.S. Air Force Academy.

2. Because there is no PCE course that is specifically tailored to Directors of Logistics, it is recommended that the Air Force establish a specific executive short course (approximately one to two weeks) to meet this need. The course should include, as a minimum, logistics history, an overview of the logistics management process, planning, programming, and budgeting, force structure development, and innovations in both system management and logistics technologies.

3. The Air Force should screen military logistician candidates and groom selected officers who show potential for increased military logistics responsibilities. The screening and selection process should be conducted by Air Force logisticians.

4. Specific criteria for Director of Logistics positions should be established. An appropriate career development model should be specifically tailored to fulfill this criteria. Requirements should include as a minimum:

- a. Advanced academic degree in logistics management.
- b. Functional experience in at least two logistics disciplines.
- c. Command experience in a logistics functional area.
- d. Staff experience at the MAJCOM and Air Staff levels in logistics functional areas.

Appendix A: Pretest Interview Schedule

INTERVIEW SCHEDULE

Respondent..... Date of Interview.....

Time of Interview.....

.....
.....

#1 In general, are Air Force senior logisticians adequately prepared to handle logistical responsibilities?

If not, what do you perceive as being wrong with the system?

If so, why?

#2 What are the qualities and characteristics that distinguish successful logisticians from unsuccessful ones?

#3 What educational requirements do you think professional senior logisticians should fulfill?

#4 What experience requirements do you think professional senior logisticians should fulfill?

#5 What training requirements do you think professional senior logisticians should fulfill?

#6 Should the Air Force have a specific career development plan for each of the functional areas of logistics, terminating at the Director of Logistics level?

#7 Should there be a distinction between the career development of rated logistics officers and non-rated logistics officers?

#8 Should the Air Force career develop only selected logistics candidates for increased logistics responsibilities?

#9 Do you believe that operations yields generalists while logistics develops specialists and the top jobs and promotion opportunities go to generalists?

#10 Should the logistician have a mixed background consisting of operational and support experience?

#11 Do you think that logisticians should have commander experience?

If so, at what level(s) and please justify your answer?

#12 Do you think that logisticians should have staff experience?

If so, at what level(s) and please provide your justification?

#13 Do you agree with the requirements outlined in AFR 36-1, Atch 5, concerning the job responsibilities of the Director of Logistics?

If not, what should be changed?

#14 Do you agree with the requirements contained in AFR 36-1, Atch 5, concerning the specialty qualifications of the Director of Logistics?

If not, what should be changed?

#15 What other areas should be changed in AFR 36-1, Atch 5?

Appendix B: Interview Schedule

INTERVIEW SCHEDULE

Respondent _____ **Date of Interview** _____

Time of Interview _____

.....
.....

Interview Checklist

(1) Explain the purpose of the interview and the interview format.

(2) Explain the importance of the respondent's participation in the research.

(3) Encourage honest and open responses and emphasize non-attribution in the final report.

.....
.....

TOPIC 1 ACADEMIC EDUCATION

Is academic education important in the career development of military logisticians?

YES

NO

NO RESPONSE

EXPLANATION _____

TOPIC 2 CONTINUING EDUCATION

Should the Air Force establish a specific military course of education for senior directors of military logistics?

YES

NO

NO RESPONSE

EXPLANATION _____

If yes, what should be the course content and emphasis?

EXPLANATION _____

TOPIC 3 MULTI-DISCIPLINED

Should military logisticians be experienced in more than one functional area of military logistics?

YES

NO

NO RESPONSE

EXPLANATION _____

TOPIC 4 TECHNICAL COMPETENCY

How should the military logistician acquire his or her technical competency?

(1) Through professional continuing education?

YES

NO

NO RESPONSE

(2) Through advanced academics?

YES

NO

NO RESPONSE

(3) Through a variety of assignments?

YES

NO

NO RESPONSE

EXPLANATION _____

How would you rank the importance of each of these areas with '1' being the highest ranking?

PCE _____

Academics _____

Assignments _____

EXPLANATION _____

TOPIC 5 AIR FORCE GUIDANCE

Does current Air Force guidance adequately support the appropriate development of military logisticians?

YES

NO

NO RESPONSE

EXPLANATION _____

TOPIC 6 SELECTION AND DEVELOPMENT

Should the Air Force conduct early selection of military logistician candidates and groom only those selected officers who show potential for increased military logistics responsibility?

YES

NO

NO RESPONSE

EXPLANATION _____

TOPIC 7 CAREER DEVELOPMENT

Should there be a specific career development profile for military logisticians?

YES

NO

NO RESPONSE

EXPLANATION _____

If so, please describe the optimal career development profile for a military logistician.

EXPLANATION _____

Appendix C: Delphi Topics and Statements

1. ACADEMIC EDUCATION:

-- Military logisticians should possess a specific undergraduate degree.

-- Military logisticians should possess education beyond a bachelor's degree.

-- To earn MS, military logisticians should be encouraged to earn a master's degree at the Air Force Institute of Technology.

2. PROFESSIONAL INVOLVEMENT:

-- Military logisticians should be active in a professional logistics society.

-- Military logisticians should participate in professional logistics symposia, seminars, and conferences.

3. **MULTIDISCIPLINED:** Military logisticians should be multidisciplined: that is, experienced in more than one functional area of military logistics.

4. COMMAND:

-- Military logisticians should have experience as a commander.

-- The experience should be in a functional area of logistics.

-- The experience should be in a non-logistics functional area.

5. STAFF-LEVEL EXPERIENCE:

-- Military logisticians should have experience as a staff officer.

-- The staff experience should be in a military logistics functional area.

-- The staff experience should be in a non-logistics functional area.

6. **PERIODIC TESTING:** Military logisticians should demonstrate competency in military logistics through periodic testing.

7. CAREER DEVELOPMENT: Every military logistics specialty (for example, supply, transportation, maintenance, procurement, logistics planning) should offer the opportunity for full career development terminating at the Director of Logistics level.

8. RATED FIELD:

-- Rated officers make better military logisticians than non-rated officers.

-- Rated command experience is more beneficial to a military logistician than non-rated command experience.

9. SELECTIVE DEVELOPMENT: The Air Force should conduct early selection of military logistician candidates and groom only those selected officers who show potential for increased military logistics responsibilities.

10. SENIOR LEVEL POSITIONS: Many senior military logisticians have entered the military logistics career field at a fairly senior level with little or no background in any of the military logistics specialties. This situation places more knowledgeable subordinates in an awkward position.

11. LEADER vs. MANAGER: The military logistician must be a good leader, manager, or both are equally important.

12. CONTINUING EDUCATION: The Air Force should establish a specific course of education for senior directors of military logistics.

13. QUALITIES OF A MILITARY LOGISTICIAN: There are identifiable qualities and characteristics which distinguish successful military logisticians from unsuccessful ones.

14. AIR FORCE GUIDANCE: Current Air Force guidance does not adequately support the appropriate development of military logisticians.

15. MILITARY LOGISTICS BACKGROUND: Air Force military logisticians should possess experience in:

- Retail logistics
- Wholesale logistics
- Combat logistics
- International logistics
- Acquisition logistics
- Other

16. TECHNICAL COMPETENCY:

-- Military logisticians should be technically competent in:

- Transportation
- Supply
- Maintenance
- Procurement
- Logistics planning
- Other

-- How should the military logistician acquire his or her technical competence?

- Through professional continuing education
- Through advanced academics
- Through a variety of assignments



DEPARTMENT OF THE AIR FORCE
AIR FORCE INSTITUTE OF TECHNOLOGY (AU)
WRIGHT-PATTERSON AIR FORCE BASE, OH 45433

Appendix D: Pretest Package

REPLY TO
ATTN OF: LS (Capt Overbey, AUTOVON 785-7212 or (513)255-7212)
SUBJECT: Research Questionnaire

TO: PRETEST PARTICIPANT

1. Please take the time to complete the attached questionnaire and return in the enclosed envelope within 10 working days.
2. This questionnaire is being used to obtain information about the professional military logistician. We want to identify the characteristics and requirements for the Air Force logistician as well as determine what measures, if any, the Air Force could undertake to achieve the desired logistician development. To ascertain more precisely what the Air Force logistician should be, we are asking experts such as yourself to participate in an operations research process called Delphi which samples opinion from experts and incorporates iterative controlled feedback to focus in on a consensus.
3. Your participation is completely voluntary but we would certainly appreciate your help.

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

- 2 Atch
1. Questionnaire
2. Return Envelope

PRIVACY ACT STATEMENT

In accordance with paragraph 8, AFR 12-35, the following information is provided by the Privacy Act of 1974:

a. Authority

- (1) 5 U.S.C. 301, Departmental Regulations, and/or
- (2) 10 U.S.C. 8012, Secretary of the Air Force, Powers, Duties, Delegation by Compensation, and/or
- (3) DOD Instruction 1100.13, 17 Apr 68, Surveys of Department of Defense Personnel, and/or
- (4) AFR 30-23, 22 Sep 76, Air Force Personnel Survey Program.

b. Principal Purpose. The survey is being conducted to collect information to be used in research aimed at illuminating and providing inputs to the solution of problems of interest to the Air Force and/or DOD.

c. Routine Uses. The survey data will be converted to information for use in research of management related problems. Results of the research, based on data provided, will be included in a master's thesis and may also be included in published articles, reports, or texts. Distribution of the results of the research, based on the survey data, whether in written form or presented orally, will be unlimited.

d. Participation in this survey is entirely voluntary.

PRINCIPLES OF DELPHI

The conventional Delphi technique is a widely used research tool in management that serves as a device to elicit and organize expert opinion for a variety of subjects. Originally developed by the RAND Corporation, Delphi employs an iterative process involving theoretical questions to arrive at a group response (i.e., consensus). A series of questions about the subject is circulated among the experts who are asked to provide their responses. Responses provided by the experts are then fed back to all group members during subsequent rounds of questioning. The experts can then revise their answers, if desired, or continue with their original responses. The process continues, as necessary, through two to four iterations, at which time the median response is taken as the group response.

A principal advantage of Delphi is anonymity. Non-attribution to responses is essential in achieving an exchange of information. Therefore, please do not discuss your participation in this study until you have been advised otherwise.

INSTRUCTIONS

1. Survey Objectives:

A. To solicit expert opinion as to what the characteristics and requirements of the professional senior Air Force logistician should be.

B. To determine what measures the Air Force could employ to achieve the desired logistician.

2. Terms Defined:

A. **Logistician:** A senior officer serving in an identified Air Force Specialty Code as Director of Logistics. Principal responsibilities would be defined by an Air Force Regulation directed toward leading and managing the military logistics system which is designed to create and sustain military capability.

B. **Characteristics:** Distinguishing traits, qualities, or properties that military logisticians should possess in order to successfully accomplish the Air Force mission.

C. **Requirements:** Those conditions, necessities, prerequisites, and/or demands considered essential to the existence or development of military logisticians.

D. **Measures:** Specific steps, policies, and/or criteria the Air Force should establish and implement to prepare and develop military logisticians.

3. General Comments:

A. The subject areas covered in the questionnaire are in no way meant to be complete nor exhaustive. It is a partial coverage designed to stimulate your thoughts in a brainstorming manner.

B. Your participation and honest opinions are key to the success of this research project. Please keep in mind that incomplete or "brainstorming" comments or ideas should not be discarded. In subsequent rounds of questioning, these ideas may provide the impetus for additional comments by other participants.

C. At least two rounds of questioning will be needed to arrive at group consensus. Each round should not take more than one (1) hour of your time. After each round, your responses will be compiled, along with everyone else's and given back to you at the start of the next iteration. You will be provided a copy of the final thesis.

D. The number in the upper right-hand corner of the questionnaire is for survey control purposes only. Therefore, you can be assured that complete anonymity will be enforced.

4. Specific Instructions:

A. Please circle the number which, in your judgment, corresponds to the degree of importance of the subject matter. Also, please include:

(1) Wherever possible, your reasons, especially in those areas about which you feel strongly.

(2) Any illustrations, examples, or first-hand experiences which you may have had that will help other respondents to better understand the topic. For multipart questions, please identify which part(s) you are referring to.

(3) Any recommendations or ideas for improving the military logistics system and military logistician development.

B. Please feel free to continue comments or recommendations on the back of the survey sheets.

C. The last page of the survey is for any other comments or recommendations which you feel are pertinent to this investigation.

THANK YOU FOR PARTICIPATING IN THIS SURVEY

DELPHI QUESTIONS

#1 ACADEMIC EDUCATION:

a. Military logisticians should possess a specific undergraduate degree.

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

b. If you agree, please identify in which specific field of study? (please circle)

- (1) Business Administration
- (2) Management
- (3) Engineering
- (4) Sciences
- (5) Liberal Arts
- (6) Other _____

please specify

c. Military logisticians should possess an advanced academic degree.

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

d. If you agree, please identify in which specific area of study should a military logistician possess an advanced academic degree? (please circle)

- (1) Business Administration
- (2) Management
- (3) Engineering
- (4) Sciences
- (5) Liberal Arts
- (6) Transportation
- (7) Logistics Management
- (8) Other _____ please specify
- (9) Degree important but area of study is not

e. Military logisticians should be encouraged to earn a resident advanced academic degree at the Air Force Institute of Technology.

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

QUESTION #1 COMMENTS _____

#2 PROFESSIONAL INVOLVEMENT:

a. Military logisticians should be active in a professional logistics society.

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

b. If you agree, how active should he or she be?
(please circle all which apply)

- (1) Member
- (2) Officer, Local
- (3) Officer, National
- (4) Active participant in speaker's bureau
- (5) Author
- (6) Other _____

please specify

c. Military logisticians should participate in professional logistics symposia, seminars, and conferences.

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

d. If you agree, what should be his or her level of participation? (please circle as many as necessary)

- (1) Attendee
- (2) Presenter
- (3) Panel or Discussion Leader
- (4) Moderator
- (5) Other _____

please specify

QUESTION #2 COMMENTS _____

#3 MULTIDISCIPLINED: Military logisticians should be multidisciplined; that is, experienced in more than one functional area of military logistics.

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

a. If you agree, please identify how many functional areas should they ideally have experience? _____

b. Which functional areas? (In Column A please circle as many as necessary and in Column B rank order your circled choices with 1 being most necessary)

Column A	Column B
(1) Supply	()
(2) Transportation	()
(3) Maintenance	()
(4) Procurement	()
(5) Logistics Planning	()
(6) Other _____	()
please specify	

c. In how many functional areas should they realistically have experience? _____

d. Which functional areas? (In Column A please circle as many as necessary and in Column B rank order your circled choices with 1 being most necessary)

Column A	Column B
(1) Supply	()
(2) Transportation	()
(3) Maintenance	()
(4) Procurement	()
(5) Logistics Planning	()
(6) Other _____	()
please specify	

QUESTION #3 COMMENTS _____

#4 COMMAND: Military logisticians should have experience as a commander.

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

a. If you agree, the command experience should be at what level? (please circle)

- (1) Detached unit
- (2) Squadron
- (3) Group
- (4) Wing
- (5) Other _____
please specify

b. The experience should be in a functional area of logistics.

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

c. If you agree in part (b), which functional area(s)? (Please circle)

- (1) Supply
- (2) Transportation
- (3) Maintenance
- (4) Procurement
- (5) Other _____
please specify

d. The experience should be in a non-logistics functional area.

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

e. If you agree in part (d), which non-logistics functional areas? (Please circle)

- (1) Flying unit
(2) Support unit
(3) Training unit
(4) Other operations unit please specify

[illegible]

#5 STAFF-LEVEL EXPERIENCE: Military logisticians should have experience as a staff officer.

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

a. If you agree, please specify at what level?

b. It should be in a military logistics functional area.

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

c. If you agree in part (b), which one(s)? (Please circle)

- (1) Supply
- (2) Transportation
- (3) Maintenance
- (4) Procurement
- (5) Logistics Planning
- (6) Other _____

please specify

d. It should be in a non-logistics functional area.

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

e. If you agree in part (d), which area(s)? (Please specify)

QUESTION #5 COMMENTS _____

#6 PERIODIC TESTING: Military logisticians should demonstrate competency in military logistics through periodic testing.

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

If you agree, please comment on how that competency might be bested.

QUESTION #6 COMMENTS

#7 CAREER DEVELOPMENT: Every military logistics specialty (for example, supply, transportation, maintenance, procurement, logistics planning) should offer the opportunity for full career development terminating at the Director of Logistics level. (please comment on your response)

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

QUESTION #7 COMMENTS _____

#8 RATED FIELD: Rated officers make better military logisticians than non-rated officers.

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

a. Rated command experience is more beneficial to a military logistician than non-rated command experience.

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

b. For rated military logisticians, how much rated experience would be ideal? _____

c. For rated military logisticians, how much military logistics experience would be ideal? _____

QUESTION #8 COMMENTS _____

#9 SELECTIVE DEVELOPMENT: The Air Force should conduct early selection of military logistician candidates and groom only those selected officers who show potential for increased military logistics responsibilities.

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

If you agree, when in a candidate's career should the selection process be held and please describe how you would perform the selection process.

QUESTION #9 COMMENTS _____

#10 SENIOR LEVEL POSITIONS: Many senior military logisticians have entered the military logistics career field at a fairly senior level with little or no background in any of the military logistics specialties. This situation places more knowledgeable subordinates in an awkward position.

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

QUESTION #10 COMMENTS _____

#11 LEADER vs. MANAGER: First and foremost, the military logistician must be a good: (circle one and please comment on your response)

- a. Leader
- b. Manager

QUESTION #11 COMMENTS _____

#12 TECHNICAL TRAINING: The Air Force should establish a specific course of education for senior directors of military logistics.

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

If you agree, please describe the course emphasis and context and where you think it should be taught.

QUESTION #12 COMMENTS _____

#13 QUALITIES OF A MILITARY LOGISTICIAN: There are identifiable qualities and characteristics which distinguish successful military logisticians from unsuccessful ones.

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

a. If you agree, please describe the qualities and characteristics you think most vital.

QUESTION #13 COMMENTS _____

#14 AIR FORCE GUIDANCE: Current Air Force guidance does not adequately support the appropriate development of military logisticians.

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

QUESTION #14 COMMENTS _____

#15 MILITARY LOGISTICS BACKGROUND: Air Force military logisticians should possess experience in:

a. Retail logistics

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

b. Wholesale logistics

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

c. Combat logistics

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

d. International logistics

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

e. Acquisition logistics

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

f. Other _____
please specify

g. If you agree with any or all parts above, please specify how many assignments would be optimal or ideal.

- (1) Retail logistics_____
 - (2) Wholesale logistics_____
 - (3) Combat logistics_____
 - (4) International logistics_____
 - (5) Acquisition logistics_____
 - (6) Other_____
- please specify

QUESTION #15 COMMENTS_____

#16 TECHNICAL COMPETENCY: Military logisticians should be technically competent in:

a. Transportation

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

b. Supply

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

c. Maintenance

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

d. Procurement

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

e. Logistics planning

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

f. Other _____
please specify

g. If you agree with any of the parts listed above,
how should the military logistician acquire his or her technical competence?

(1) Through professional continuing education.

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

(2) Through advanced academics.

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

(3) Through a variety of assignments. (Please comment on your response)

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

(4) Other (please specify)

h. If you had to select a military logistician for assignment to your unit, what would you look for in terms of breadth of experience and depth of experience?

[illegible]

THANK YOU FOR YOUR HELP. YOU WILL SOON RECEIVE A RECAP ON
THIS INITIAL SURVEY.



DEPARTMENT OF THE AIR FORCE
AIR FORCE INSTITUTE OF TECHNOLOGY (AU)
WRIGHT-PATTERSON AIR FORCE BASE, OH 45433

Appendix E: Round One Package

REPLY TO
ATTN OF

LS (Capt Overbey, AUTOVON 785-7212 or (513)255-7212)

SUBJECT

Research Questionnaire

TO

DELPHI PARTICIPANT

1. Please take the time to complete the attached questionnaire and return in the enclosed envelope within 10 working days.

2. This questionnaire is being used to obtain information about the professional military logistician. We want to identify the characteristics and requirements for the Air Force logistician as well as determine what measures, if any, the Air Force could undertake to achieve the desired logistician development. To ascertain more precisely what the Air Force logistician should be, we are asking experts such as yourself to participate in an operations research process called Delphi which samples opinion from experts and incorporates iterative controlled feedback to focus in on a consensus.

3. Your participation is completely voluntary but we would certainly appreciate your help.

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

2 Atch

1. Questionnaire
2. Return Envelope

PRIVACY ACT STATEMENT

In accordance with paragraph 8, AFR 12-35, the following information is provided by the Privacy Act of 1974:

a. Authority

- (1) 5 U.S.C. 301, Departmental Regulations, and/or
- (2) 10 U.S.C. 8012, Secretary of the Air Force, Powers, Duties, Delegation by Compensation, and/or
- (3) DOD Instruction 1100.13, 17 Apr 68, Surveys of Department of Defense Personnel, and/or
- (4) AFR 30-23, 22 Sep 76, Air Force Personnel Survey Program.

b. Principal Purpose. The survey is being conducted to collect information to be used in research aimed at illuminating and providing inputs to the solution of problems of interest to the Air Force and/or DOD.

c. Routine Uses. The survey data will be converted to information for use in research of management related problems. Results of the research, based on data provided, will be included in a master's thesis and may also be included in published articles, reports, or texts. Distribution of the results of the research, based on the survey data, whether in written form or presented orally, will be unlimited.

d. Participation in this survey is entirely voluntary.

PRINCIPLES OF DELPHI

The conventional Delphi technique is a widely used research tool in management that serves as a device to elicit and organize expert opinion for a variety of subjects. Originally developed by the RAND Corporation, Delphi employs an iterative process involving theoretical questions to arrive at a group response (i.e., consensus). A series of questions about the subject is circulated among the experts who are asked to provide their responses. Responses provided by the experts are then fed back to all group members during subsequent rounds of questioning. The experts can then revise their answers, if desired, or continue with their original responses. The process continues, as necessary, through two to four iterations, at which time the median response is taken as the group response.

A principal advantage of Delphi is anonymity. Non-attribution to responses is essential in achieving an exchange of information. Therefore, please do not discuss your participation in this study until you have been advised otherwise.

AD-A161 442

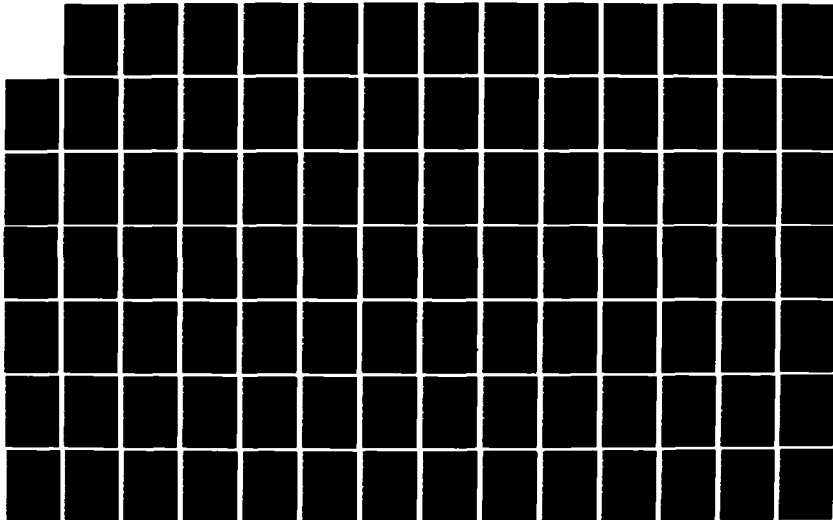
A NORMATIVE MODEL OF THE ESSENTIAL QUALITIES
CHARACTERISTICS AND BACKGROU (U) AIR FORCE INST OF
TECH WRIGHT-PATTERSON AFB OH SCHOOL OF SVST
A D OVERBEY SEP 85 AFIT/GLN/LSM/855-61

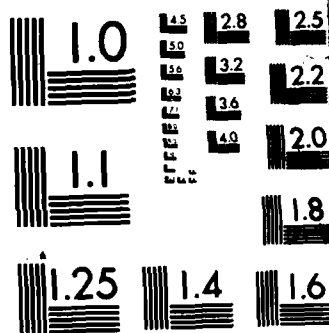
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MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

INSTRUCTIONS

1. Survey Objectives:

A. To solicit expert opinion as to what the characteristics and requirements of the professional senior Air Force logistician should be.

B. To determine what measures the Air Force could employ to achieve the desired logistician.

2. Terms Defined:

A. **Logistician:** A senior officer serving in an identified Air Force Specialty Code as Director of Logistics. Principal responsibilities would be defined by an Air Force Regulation directed toward leading and managing the military logistics system which is designed to create and sustain military capability.

B. **Characteristics:** Distinguishing traits, qualities, or properties that military logisticians should possess in order to successfully accomplish the Air Force mission.

C. **Requirements:** Those conditions, necessities, prerequisites, and/or demands considered essential to the existence or development of military logisticians.

D. **Measures:** Specific steps, policies, and/or criteria the Air Force should establish and implement to prepare and develop military logisticians.

3. General Comments:

A. The subject areas covered in the questionnaire are in no way meant to be complete nor exhaustive. It is a partial coverage designed to stimulate your thoughts in a brainstorming manner.

B. Your participation and honest opinions are key to the success of this research project. Please keep in mind that incomplete or "brainstorming" comments or ideas should not be discarded. In subsequent rounds of questioning, these ideas may provide the impetus for additional comments by other participants.

C. At least two rounds of questioning will be needed to arrive at group consensus. Each round should not take more than one (1) hour of your time. After each round, your responses will be compiled, along with everyone else's and given back to you at the start of the next iteration. You will be provided a copy of the final thesis.

D. The number in the upper right-hand corner of the questionnaire is for survey control purposes only. Therefore, you can be assured that complete anonymity will be enforced.

4. Specific Instructions:

A. Please circle the number which, in your judgment, corresponds to the degree of importance of the subject matter. Also, please include:

(1) Wherever possible, your reasons, especially in those areas about which you feel strongly.

(2) Any illustrations, examples, or first-hand experiences which you may have had that will help other respondents to better understand the topic. For multipart questions, please identify which part(s) you are referring to.

(3) Any recommendations or ideas for improving the military logistics system and military logistician development.

B. Please feel free to continue comments or recommendations on the back of the survey sheets.

C. The last page of the survey is for any other comments or recommendations which you feel are pertinent to this investigation.

THANK YOU FOR PARTICIPATING IN THIS SURVEY

TOPIC 1: ACADEMIC EDUCATION

a. Military logisticians should possess a specific undergraduate degree.

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

b. If you agree, please identify in which specific field of study? (please circle)

- (1) Business Administration
- (2) Engineering
- (3) Liberal Arts
- (4) Management
- (5) Sciences
- (6) Other _____

please specify

c. Military logisticians should possess education beyond a bachelor's degree.

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

d. If you agree, please identify which specific area of study you feel a military logistician should possess advanced academic work? (please circle)

- (1) Business Administration
- (2) Engineering
- (3) Liberal Arts
- (4) Logistics Management
- (5) Management
- (6) Sciences
- (7) Other _____ (please specify)
- (8) Degree important but area of study is not

e. To earn MS, military logisticians should be encouraged to earn a master's degree at the Air Force Institute of Technology.

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

TOPIC 1 COMMENTS _____

TOPIC 2: PROFESSIONAL INVOLVEMENT

a. Military logisticians should be active in a professional logistics society.

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

b. If you agree, how active should he or she be? (please circle all which apply)

- (1) Member
- (2) Officer, Local
- (3) Officer, National
- (4) Active participant in speaker's bureau
- (5) Author
- (6) Other _____
please specify

c. Military logisticians should participate in professional logistics symposia, seminars, and conferences.

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

d. If you agree, what should be his or her level of participation? (please circle as many as necessary)

- (1) Attendee
- (2) Presenter
- (3) Panel or Discussion Leader
- (4) Moderator
- (5) Other _____
please specify

TOPIC 2 COMMENTS _____

TOPIC 3: MULTIDISCIPLINED

Military logisticians should be multidisciplined: that is, experienced in more than one functional area of military logistics.

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

a. If you agree, please identify the number of functional areas in which they should ideally have experience?

b. Which functional areas? (In Column A please circle as many as necessary and in Column B rank order your circled choices with 1 being the most necessary)

Column A

Column B

(1) Supply
(2) Transportation
(3) Maintenance
(4) Procurement
(5) Logistics Planning
(6) Other _____
please specify

()
()
()
()
()
()

c. In what number of functional areas could they realistically have experience?

d. Which functional areas? (In Column A please circle as many as necessary and in Column B rank order your circled choices with 1 being the most necessary)

Column A	Column B
(1) Supply	()
(2) Transportation	()
(3) Maintenance	()
(4) Procurement	()
(5) Logistics Planning	()
(6) Other _____	()
please specify	

TOPIC 3 COMMENTS _____

TOPIC 4: COMMAND

Military logisticians should have experience as a commander.

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

a. If you agree, the command experience should be at what level? (please circle)

(1) Detached unit	
(2) Squadron	
(3) Group	
(4) Wing	
(5) Other _____	(please specify)

b. The experience should be in a functional area of logistics.

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

c. If you agree in part (b), which functional area(s)?
(please circle)

- (1) Supply
- (2) Transportation
- (3) Maintenance
- (4) Procurement
- (5) Other _____

please specify

d. The experience should be in a non-logistics functional area.

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

e. If you agree in part (d), which non-logistics functional areas? (please circle)

- (1) Flying unit
- (2) Support unit
- (3) Training unit
- (4) Other operations unit _____

please specify

TOPIC 4 COMMENTS _____

TOPIC 5: STAFF-LEVEL EXPERIENCE

Military logisticians should have experience as a staff officer.

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

a. If you agree, please specify at what level?

b. The staff experience should be in a military logistics functional area.

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

c. If you agree in part (b), which one(s)? (Please circle)

- (1) Supply
- (2) Transportation
- (3) Maintenance
- (4) Procurement
- (5) Logistics Planning
- (6) Other

_____ please specify

d. The staff experience should be in a non-logistics functional area.

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

e. If you agree in part (d), which area(s)? (Please specify)

TOPIC 5 COMMENTS:

TOPIC 6: PERIODIC TESTING

Military logisticians should demonstrate competency in military logistics through periodic testing.

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

If you agree, please comment on how that competency might be tested.

TOPIC 6 COMMENTS: _____

TOPIC 7: CAREER DEVELOPMENT

Every military logistics specialty (for example, supply, transportation, maintenance, procurement, logistics planning) should offer the opportunity for full career development terminating at the Director of Logistics level.

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

TOPIC 7 COMMENTS: _____

TOPIC 8: RATED FIELD

Rated officers make better military logisticians than non-rated officers.

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

a. Rated command experience is more beneficial to a military logistician than non-rated command experience.

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

b. For rated military logisticians, how much rated experience (in number of years) would be ideal?

c. For rated military logisticians, how much military logistics experience (in number of years) would be ideal?

TOPIC 8 COMMENTS _____

TOPIC 9: SELECTIVE DEVELOPMENT

The Air Force should conduct early selection of military logistician candidates and groom only those selected officers who show potential for increased military logistics responsibilities.

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

If you agree, when in a candidate's career should the selection process be held and please describe how you would perform the selection process.

TOPIC 9 COMMENTS

TOPIC 10: SENIOR LEVEL POSITIONS

Many senior military logisticians have entered the military logistics career field at a fairly senior level with little or no background in any of the military logistics specialities. This situation places more knowledgeable subordinates in an awkward position.

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

TOPIC 10 COMMENTS _____

TOPIC 11: LEADER vs. MANAGER

The military logistician must be a good: (circle one and please comment on your response)

(1) Leader (2) Manager (3) Both are equally important

TOPIC 11 COMMENTS _____

TOPIC 12: CONTINUING EDUCATION

The Air Force should establish a specific course of education for senior directors of military logistics.

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

If you agree, please describe the course emphasis and context and where you think it should be taught.

TOPIC 12 COMMENTS: _____

TOPIC 13: QUALITIES OF A MILITARY LOGISTICIAN

There are identifiable qualities and characteristics which distinguish successful military logisticians from unsuccessful ones.

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

a. If you agree, please describe the qualities and characteristics you think most vital.

TOPIC 13 COMMENTS: _____

TOPIC 14: AIR FORCE GUIDANCE

Current Air Force guidance does not adequately support the appropriate development of military logisticians.

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

TOPIC 14 COMMENTS: _____

TOPIC 15: MILITARY LOGISTICS BACKGROUND

Air Force military logisticians should possess experience in:

a. Retail logistics

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

b. Wholesale logistics

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

c. Combat logistics

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

d. International logistics

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

e. Acquisition logistics

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

f. Other _____ (please specify)

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

g. If you agree with any or all parts above, please specify numerically how many assignments would be optimal or ideal.

- (1) Retail logistics _____
- (2) Wholesale logistics _____
- (3) Combat logistics _____
- (4) International logistics _____
- (5) Acquisition logistics _____
- (6) Other _____ (please specify)

TOPIC 15 COMMENTS _____

TOPIC 16: TECHNICAL COMPETENCY

Military logisticians should be technically competent in:

a. Transportation

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

b. Supply

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

c. Maintenance

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

d. Procurement

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

e. Logistics planning

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

f. Other _____ (please specify)

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

g. If you agree with any of the parts listed above, how should the military logistician acquire his or her technical competence?

(1) Through professional continuing education.

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

(2) Through advanced academics.

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

(3) Through a variety of assignments.

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

(4) Other _____ (please specify)

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

h. If you had to select a military logistician for assignment to your unit, what would you look for in terms of breadth of experience and depth of experience?

TOPIC 16 COMMENTS: _____

ADDITIONAL COMMENTS AND RECOMMENDATIONS

THANK YOU FOR YOUR HELP. YOU WILL SOON RECEIVE A RECAP ON THIS
INITIAL SURVEY.



DEPARTMENT OF THE AIR FORCE
AIR FORCE INSTITUTE OF TECHNOLOGY (AU)
WRIGHT-PATTERSON AIR FORCE BASE, OH 45433

Appendix F: Round Two Package

13 JUN 1985

REPLY TO
ATTN OF

LS (Capt Overbey, AUTOVON 785-7212 or (513)255-7212)

SUBJECT

Research Questionnaire

TO DELPHI PARTICIPANT

1. We are encouraged by the results of the first round of our Delphi process. Thank you for the number and quality of your responses. We are very close to a consensus on some topics; however, we need further inputs to reach consensus on others. Please take the time to complete the attached questionnaire and return in the enclosed envelope within 14 working days.

2. In round one, we asked you to identify the characteristics and requirements for the Air Force logistician as well as determine what measures, if any, the Air Force could undertake to achieve the desired logistician development. In round two, we are asking you to respond to the comments and ratings gathered in round one and provide any suggestions and comments so that we can reach the best possible consensus.

3. Your participation is completely voluntary but we would certainly appreciate your help.

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

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1. Questionnaire
2. Return Envelope

PRIVACY ACT STATEMENT

In accordance with paragraph 8, AFR 12-35, the following information is provided by the Privacy Act of 1974:

a. Authority

- (1) 5 U.S.C. 301, Departmental Regulations, and/or
- (2) 10 U.S.C. 8012, Secretary of the Air Force, Powers, Duties, Delegation by Compensation, and/or
- (3) DOD Instruction 1100.13, 17 Apr 68, Surveys of Department of Defense Personnel, and/or
- (4) AFR 30-23, 22 Sep 76, Air Force Personnel Survey Program.

b. Principal Purpose. The survey is being conducted to collect information to be used in research aimed at illuminating and providing inputs to the solution of problems of interest to the Air Force and/or DOD.

c. Routine Uses. The survey data will be converted to information for use in research of management related problems. Results of the research, based on data provided, will be included in a master's thesis and may also be included in published articles, reports, or texts. Distribution of the results of the research, based on the survey data, whether in written form or presented orally, will be unlimited.

d. Participation in this survey is entirely voluntary.

INSTRUCTIONS

1. Circle the number which best represents your opinion of the importance of the topic.
2. All round one comments and mean/median ratings are provided for your review/comment. All comments are direct quotes. The asterisk by each comment indicates your round one comment.
3. You are free to respond to any comment or rating in the survey. If you wish to address a specific comment, indicate which comment with your own label, i.e. place an a, b, or c next to it.
4. Also, you are free to change your answer or you can maintain the same rating. In any event, please respond to each item.
5. You are encouraged to amplify or comment on any response suggested by other participants.

THANK YOU FOR YOUR CONTINUED PARTICIPATION

TOPIC 1: ACADEMIC EDUCATION

ROUND #1 GENERAL COMMENTS ON ACADEMIC EDUCATION:

"I am not fully convinced a degree is necessary for successful logistics management and leadership but I accept the idea the USAF wants that educational level in its officers. We have not yet hit upon the proper mix of subject matter for the professional logistician's education -- mainly because we do not yet agree on what 'logistics' is and what the 'logistician' ought to do or be responsible for. Your study might be a major step in the resolution of these two problems and, therefore, in the resolution of the education problem, as well. I tend to think we (today's society) place too much emphasis on a college degree and too little on what was studied. Furthermore, we seem to drive our students toward science and mathematics at the expense of the cultural growth possible in the 'softer' studies."

"Although the undergraduate degree should not be specified, it should be technical in nature (math, physics, EE, chemistry, etc.). Logisticians must be able to take the technical and engineering aspects of the profession. Too many are not."

"Q a. & c. Being educated is far better than having an education --Billy Minter was a high school graduate. Q b. & d. A SENIOR logistician is a leader and manager (in that order), not a technician."

"If by your definition, [a] logistician is a senior officer, he should have [a] GRADUATE DEGREE. There is no school or course which creates a logistician (especially not Grad Log). If you want to be a maintenance or supply officer, you go to [a] specialized school and upon graduating get the AFSC. To be a logistician, there is nothing except experience in a couple of AFSC's - maybe that's what logistics is?? or ISN'T???"

"The Director of Logistics is at the top of a multidisciplined field. In his early career he may have been a maintenance officer with an engineering degree, supply with a business degree, etc. People in these related, but different, disciplines cross-fertilize each other over the 20 years it takes to become a Director of Logistics. At the graduate level, the logistician should study Business Administration, Logistics Management, Management, or similar area related to his work. However, not all should be educated at AFIT (or in any other one institution). It would be incestuous to have all senior logisticians taught at the same curriculum by the same faculty. A mix of education will continue to provide a variety of ideas - fresh thinking."

"The discipline of formal education is the #1 requirement. The subject area for undergraduate should be/or could be any of the many sciences - broad base. Post graduate in management is mandatory."

"In some specific and narrow aspects of logistics, advanced education is necessary. But, the logistician in charge of large scale operations must not get bogged down in these details."

"Logisticians should be generalists and cross-training to understand various AF career fields is quite beneficial, therefore, a specific technical background at the masters level is unwarranted."

a. Military logisticians should possess a specific undergraduate degree.

MEAN RATING: 2.7 MEDIAN RATING: 2 YOUR ROUND #1 RATING:

ROUND #1 GENERAL COMMENTS:

"However, I feel that a technical degree such as in engineering or the sciences can be helpful in understanding some aspects of a military logistics job."

"You might look at the undergraduate degrees of 'successful' logisticians to see if there is any correlation - I doubt it."

YOUR ROUND #2 RATING:

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

b. If you agree, please identify in which specific field of study? (please circle)

YOUR ROUND #1 RATING:

ROUND #1 GENERAL COMMENTS:

"There are a multiple of disciplines which lend themselves to preparation for being a logistician, however, fields such as psychology, education, liberal arts are not of this nature."

YOUR ROUND #2 RATING:

- (1) Business Administration
- (2) Engineering
- (3) Liberal Arts
- (4) Management
- (5) Sciences
- (6) Other _____
 please specify

c. Military logisticians should possess education beyond a bachelor's degree.

MEAN RATING: 4.3 MEDIAN RATING: 4 YOUR ROUND #1 RATING:

ROUND #1 GENERAL COMMENTS:

"But not just logisticians. Education can help most, if not all, career fields do their jobs better."

YOUR ROUND #2 RATING:

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

d. If you agree, please identify which specific area of study you feel a military logistician should possess advanced academic work? (please circle)

YOUR ROUND #1 RATING:

ROUND #1 GENERAL COMMENTS:

"Anything difficult."

"If an officer has a bachelor's degree in a technical area, it is supplemented nicely with an advanced academic degree in management."

"The problem is that logistics is very diverse. Engineering may be great for acquisition logistics while management may be great for another area."

YOUR ROUND #2 RATING:

- (1) Business Administration
- (2) Engineering
- (3) Liberal Arts
- (4) Logistics Management
- (5) Management
- (6) Sciences
- (7) Other _____ (please specify)
- (8) Degree important but area of study is not

e. To earn MS, military logisticians should be encouraged to earn a master's degree at the Air Force Institute of Technology.

MEAN RATING: 3.3 MEDIAN RATING: 4 YOUR ROUND #1 RATING:

ROUND #1 GENERAL COMMENTS:

"Ms - military specialty or master's of science? There are many other fine programs and institutions that afford the opportunity to become academically prepared."

"If they are pursuing an MS, I would highly recommend AFIT. The supplemental education available by attending classes with other officers at a military base, particularly one with facilities/labs, etc., of Wright-Patterson is tremendous."

"AFIT needs to be substantially improved (i.e. stability of faculty, pertinence of theses and participation of AFIT in mainstream AF logistics) before I could recommend it."

"Rated officers who would be career logisticians are stuck in the cockpit for 9+ years, making AFIT grad log hard to acquire."

YOUR ROUND #2 RATING:

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

TOPIC 1 COMMENTS _____

TOPIC 2: PROFESSIONAL INVOLVEMENT

ROUND #1 GENERAL COMMENTS ON PROFESSIONAL INVOLVEMENT:

"Professionalism stems from more than just doing a job or being identified by a job specialty. It is proper to expect the true professional to share his experience and knowledge with his peers and to ascribe to a code of ethics of a recognized profession--a course to be found generally only through professional associations. But, membership in a society is by itself not enough. The person must expect, and be expected, to actively participate and support that society. A competent performer becomes a professional through teaching and writing and support of the educational programs of the group. We

should expect nothing less from the 'logistician'. In fact, perhaps we should expect even [more] from that person!"

"Topic 2 questions are analogous to: 'should children love their parents?' If yes, how should they show it?"

"Crossfeed of information between services, industry, etc., is important. Avoid the 'not invented here' syndrome."

"As a professional logistician, he/she should be an active participant in as many activities as time allows. This includes civilian as well as military activities. Logistics wins wars and is heavily dependent on the industrial base."

"SOLE and AFA preferable. ADPA is more of a closed senior executive 'club' - as is AIAA."

"Were early logisticians like Admiral Eccles any the worse for not having a professional logistics society in being. What has SOLE provided for a military logistician - hell, even their definition of logistics STINKS. Military logisticians should be active any place where they can learn about military logistics."

"A senior military logistician should lead and set an example of interest and participation, as well as share his experience. However, there are practical limitations on the time he has available, and on funds for heavy rational-level participation."

"Professional crossfeed is absolutely essential to any profession - logistics is not an exception."

"Many symposia, seminars, etc., do not contribute to the logisticians capability growth. TOO many are social gatherings."

"MAJCOM sponsored symposiums [and a] multidisciplined logistics arena have been especially beneficial in 'getting the word out' and often have provided invaluable training for field logisticians."

a. Military logisticians should be active in a professional logistics society.

MEAN RATING: 3.9 MEDIAN RATING: 4 YOUR ROUND #1 RATING:

ROUND #1 GENERAL COMMENTS:

"This is a [expletive deleted] question!!"

YOUR ROUND #2 RATING:

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

b. If you agree, how active should he or she be? (please circle all which apply)

YOUR ROUND #1 RATING:

ROUND #1 GENERAL COMMENTS:

"Recruiter."

YOUR ROUND #2 RATING:

- (1) Member
- (2) Officer, Local
- (3) Officer, National
- (4) Active participant in speaker's bureau
- (5) Author
- (6) Other _____

please specify

c. Military logisticians should participate in professional logistics symposia, seminars, and conferences.

MEAN RATING: 4.6 MEDIAN RATING: 4 YOUR ROUND #1 RATING:

YOUR ROUND #2 RATING:

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

d. If you agree, what should be his or her level of participation?
(please circle as many as necessary)

YOUR ROUND #1 RATING:

ROUND #1 GENERAL COMMENTS:

"All of the above."

"What the hell has this got to do with his function as a military
logistician?"

"At various times, all of the above."

YOUR ROUND #2 RATING:

- (1) Attendee
- (2) Presenter
- (3) Panel or Discussion Leader
- (4) Moderator
- (5) Other please specify

TOPIC 2 COMMENTS _____

TOPIC 3: MULTIDISCIPLINED

**Military logisticians should be multidisciplined: that is, experienced in more
than one functional area of military logistics.**

MEAN RATING: 4.2 MEDIAN RATING: 5 YOUR ROUND #1 RATING:

ROUND #1 GENERAL COMMENTS ON MULTIDISCIPLINED LOGISTICIANS:

"I know your goal but all of this may be foolish unless logistics education is more widely provided - note I said 'education' not 'training'. If we provided log education at the appropriate career points, maybe experience in different specialties would not be so necessary or so vital. But, regardless, I think maintenance is most important because it can bring home the importance and relationship of the other specialties. Maintenance cannot function without supply, of course, and supply cannot exist without procurement and transportation. Then, over all, is the idea of **true** logistics planning;--an area we really do not now work well or cover well in study or teaching or writing."

"I refuse to answer these questions. Of course some logisticians should have multiple functional experience but not all. I don't know which functions are the most important but maintenance, supply, and transportation are the biggest."

"Logistics cannot be bounded by one or even a few career fields or disciplines. A look at the ILS elements shows there are many. Knowledge/experience in three is an absolute minimum."

"A leader requires knowledge in all areas. But specific "experience" is only required of the technician. A true professional will gain knowledge in all during the course of a career without having been assigned to any specific number of disciplines. We tend to credit experience when capability counts. Iacocca was schooled as a draftsman, experienced as a salesman, excelled as the C.O.B."

"The logistics planning AFSC should be top-of-the-line; however, it seems to be populated with civilians with limited background and less experience."

"It is more important that military logisticians understand military logistics (which is more than the sum of understanding each functional activity). It is the integrated management of all those activities which deals with logistics and not the sum of those activities."

"What I'm trying to indicate above is that a company grade officer should specialize in and learn one functional specialty; he should become a staff officer or manager in that discipline as a major. Only then is there time for a broader perspective, such as Log Plans or a joint assignment."

"Maintenance and supply are the heart of logistics. Transportation runs a close third. The log planner should come from these functional areas. Procurement can stand alone."

YOUR ROUND #2 RATING:

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

a. If you agree, please identify the number of functional areas in which they should ideally have experience?

MEAN RATING: 3 YOUR ROUND #1 RATING:

ROUND #1 GENERAL COMMENTS:

"Minimum of 2."

YOUR ROUND #2 RATING: _____ (number of ideal functional areas)

b. Which functional areas? (In Column A please circle as many as necessary and in Column B rank order your circled choices with 1 being the most necessary)

YOUR ROUND #1 RATING:

ROUND #1 GENERAL COMMENTS:

"All important. It would be very difficult to put in any order of preference. Material Management."

"Acquisition Management."

"Financial Management."

YOUR ROUND #2 RATING AND RANKING:

Column A	Column B
(1) Supply	()
(2) Transportation	()
(3) Maintenance	()
(4) Procurement	()
(5) Logistics Planning	()
(6) Other _____	()
please specify	

c. In what number of functional areas could they realistically have experience?

MEAN RATING: 2.6 YOUR ROUND #1 RATING:

YOUR ROUND #2 RATING: _____ (number of realistic functional areas)

d. Which functional areas? (In Column A please circle as many as necessary and in Column B rank order your circled choices with 1 being most necessary)

YOUR ROUND #1 RATING:

ROUND #1 GENERAL COMMENTS:

"Financial Management."

"Logisticians require an indepth understanding of USAF budgeting systems."

"Redundant question."

YOUR ROUND #2 RATING AND RANKING:

Column A	Column B
(1) Supply	()
(2) Transportation	()
(3) Maintenance	()
(4) Procurement	()
(5) Logistics Planning	()
(6) Other _____	()

TOPIC 3 COMMENTS _____

TOPIC 4: COMMAND

Military logisticians should have experience as a commander.

MEAN RATING: 4.1 MEDIAN RATING: 4 YOUR ROUND #1 RATING:

ROUND #1 GENERAL COMMENTS ON COMMAND:

"[Command experience] if possible."

"I think you lead the 'logistician' to military careerism if you insist on him/her having command experience. Do we aim for military officers or military logisticians? I do not see how command experience can be vital. But, I also do not see it as bad for the logistician. However, I do not really believe it necessary. I think, given a choice, I would prefer the logistician to have expansive log experience rather than command experience. But, as before, I think the USAF would want its officers to have command experience--and this may be the base of the problem you are addressing;--the USAF wants officers to have military experience rather than professional experience."

"Some type of 'operational' (i.e. not staff, plans, etc.) [command experience] is a must."

"Where leadership abilities are obtained and displayed."

"But only AFTER he has been a Military Logistician - then he'll understand what it requires to fight wars. Should the Secretary of the Air Force have command experience?"

"Command experience is good leadership and general management training. It doesn't replace functional or staff skills. It has little, if any, direct bearing on being a qualified Director of Logistics."

"Command is important. Any successful commander will be exposed to logistics decision-making. If possible, senior logisticians should have experience in command of logistics units if no other opportunity arises - both logistics and other type units are desirable."

"I do not consider command experience vital to being a successful logistician."

"Command experience is useful but not essential for senior leadership executive positions."

YOUR ROUND #2 RATING:

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

**a. If you agree, the command experience should be at what level?
(please circle)**

YOUR ROUND #1 RATING:

ROUND #1 GENERAL COMMENTS:

"Level not as important as the command experience."

"Depends on rank. Should be as much as possible and as early as possible."

"All of the above."

"Doesn't matter, but lower is probably better."

YOUR ROUND #2 RATING:

(1) Detached unit
(2) Squadron
(3) Group
(4) Wing
(5) Other _____ (please specify)

b. The experience should be in a functional area of logistics.

MEAN RATING: 3.7 MEDIAN RATING: 4 YOUR ROUND #1 RATING:

ROUND #1 GENERAL COMMENTS:

"[Experience in logistics] not necessarily."

YOUR ROUND #2 RATING:

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

c. If you agree in part (b), which functional area(s)? (Please circle)

YOUR ROUND #1 RATING:

ROUND #1 GENERAL COMMENTS:

"Primary career field."

"Any of the above."

"Financial management."

"Whichever he is a functional specialist in."

YOUR ROUND #2 RATING:

- (1) Supply
- (2) Transportation
- (3) Maintenance
- (4) Procurement
- (5) Other

_____ please specify

d. The experience should be in a non-logistics functional area.

MEAN RATING: 2.8

MEDIAN RATING: 3

YOUR ROUND #1 RATING:

YOUR ROUND #2 RATING:

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

e. If you agree in part (d), which non-logistics functional areas?
(Please circle)

YOUR ROUND #1 RATING:

ROUND #1 GENERAL COMMENTS:

"Any of the above."

YOUR ROUND #2 RATING:

- (1) Flying unit
- (2) Support unit
- (3) Training unit
- (4) Other operations unit

_____ please specify

TOPIC 4 COMMENTS

TOPIC 5: STAFF-LEVEL EXPERIENCE

Military logisticians should have experience as a staff officer.

MEAN RATING: 4.5 MEDIAN RATING: 5 YOUR ROUND #1 RATING:

ROUND #1 GENERAL COMMENTS ON STAFF-LEVEL EXPERIENCE:

"The more the better."

"I believe we should be progressing toward a 'military logistician' career area which should include logistics staff duty at wing level and at major command level. Anything beyond that would be gravy but not essential. The problem is--there are only a given number of years in a career and we must resolve the question of how many of those limited years should be spent in other than the logistics area - if any. I do agree that some staff experience is vital if it must be acquired in a non-log area, but I would prefer that not to happen."

"Understanding how a HQ Staff works can be important - especially something like the POM process."

"Staff experience is crucial - where all careers culminate."

"Director of Logistics is a staff job. A senior staff officer can't do it well without having earlier performed staff-type duties. However, they should be in his functional area (or closely related), so he understands the operational basics and can gain the staff perspective. An Air Staff tour (in a logistics function) is essential preparation for a colonel logistician (0046)."

"No senior logistician should have confined his experience to any one functional area - the more the better."

"MAJCOM experience is vital to future success as a senior logistics executive."

YOUR ROUND #2 RATING:

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

a. If you agree, please specify at what level?

YOUR ROUND #1 RESPONSE:

ROUND #1 GENERAL COMMENTS:

"Logistics officer - project manager."

"MAJCOM and at least 2 tours AFLC/AFSC, Air Staff."

"Field, center, command, USAF."

"Action officer, senior staff."

"Any, from wing to Air Staff and beyond."

"Wing, MAJCOM."

"Air Staff, MAJCOM."

"HQ USAF, MAJCOM."

"Numbered AF, MAJCOM (either or both) and HQ USAF (definitely!)."

"Squadron through major command."

"MAJCOM."

"MAJCOM and Air Staff."

YOUR ROUND #2 RESPONSE:

b. The staff experience should be in a military logistics functional area.

MEAN RATING: 4.4 MEDIAN RATING: 4.5 YOUR ROUND #1 RATING:

YOUR ROUND #2 RATING:

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

c. If you agree in part (b), which one(s)? (Please circle)

YOUR ROUND #1 RATING:

ROUND #1 GENERAL COMMENTS:

"Acquisition planning, Plans & Programs, Material Management."

"Any would be helpful."

"Depends on specific career field."

"Any of the above."

"The functional area in which he is a specialist."

"All of the above - rotate."

YOUR ROUND #2 RATING:

- (1) Supply
- (2) Transportation
- (3) Maintenance
- (4) Procurement
- (5) Logistics Planning
- (6) Other _____
 please specify

d. The staff experience should be in a non-logistics functional area.

MEAN RATING: 2.7 MEDIAN RATING: 3 YOUR ROUND #1 RATING:

YOUR ROUND #2 RATING:

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

e. If you agree in part (d), which area(s)? (Please specify)

YOUR ROUND #1 RESPONSE:

ROUND #1 GENERAL COMMENTS:

"Any direct mission or mission support area."

"Finance/budgeting and personnel."

YOUR ROUND #2 RESPONSE:

TOPIC 5 COMMENTS _____

TOPIC 6: PERIODIC TESTING

Military logisticians should demonstrate competency in military logistics through periodic testing.

MEAN RATING: 2.5 MEDIAN RATING: 2 YOUR ROUND #1 RATING:

ROUND #1 GENERAL COMMENTS ON PERIODIC TESTING:

"Certification requirements and periodic testing in at least one speciality. There should be a requirement to get the staff level xx16 rating that one be certified by one professional organization, i.e. Society of Logistics Engineers, National Contract Management Association, etc."

"Field is too broad. OERs are the test."

"Testing is not required. Job performance will quickly demonstrate competency or lack thereof."

"If in a position of any value is tested continuously, the key is not a grade, but demonstrated ability - and recognition thereof."

"I concur with periodic proving of competence and knowledge. I think it could be accomplished through a combination of (1) written knowledge examination, (2) observation of performance in simulations and assessment centers, and (3) evaluation (by a professional group) of his/her accomplishments in this current period. Included would be job performance, professional continuing education, professional military education, professional association activity, writing, speaking, teaching, efforts toward expanded experiences, and so forth. Understand, though, that this would cause considerable disagreement by a majority of the military logistics community who would not wish to undergo this sort of evaluation. But, it can and should be done if we are to ever have a true professional military logistician career group. Some might ask how this would impact the military OER system. I would suggest it could replace the OER for those in the career field."

"OER serves this purpose."

"OER's, if realistic, and written by knowledgeable (non-golfing partners) raters will take care of this. SOLE CPL validates the credential requirement, along with grad work [plus] senior service school."

"There are doers and there are test-takers. Let performance demonstrate competency and performance reports document it."

"Technical competency can be determined through structured testing. I don't know how to test for successful selection of managers. I know one when I see [one] in action."

"Tests are not required for civilian senior executives nor is it practical to expect a test to be developed that would adequately demonstrate executive aptitude. However, company grade officers should take the WAPS tests for logistics required of senior NCU logisticians, but not for competency but for information highlighting deficiencies in training."

"Waste of taxpayers money."

YOUR ROUND #2 RATING:

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

If you agree, please comment on how that competency might be tested.

TOPIC 6 COMMENTS

TOPIC 7: CAREER DEVELOPMENT

Every military logistics specialty (for example, supply, transportation, maintenance, procurement, logistics planning) should offer the opportunity for full career development terminating at the Director of Logistics level.

MEAN RATING: 3.6 MEDIAN RATING: 4 YOUR ROUND #1 RATING:

ROUND #1 GENERAL COMMENTS ON CAREER DEVELOPMENT:

"Provided that one also have a fully qualified 2nd AFSC."

"Definitely NOT! This is what we have now and what we want to escape from. Your research would be unneeded if we adopted this idea as what we want to continue. I would agree that there should be specialty development for those who are not chosen to become 'military logisticians'. But, that development should probably stop at the O-5 level (at the highest) and certainly should NOT result in becoming 'Director of Logistics' - a position to be held only by the designated 'Military Logistician'."

"MPC should (but doesn't) know this."

"However, one cannot expect such a title exists within each functional discipline. I would state the question (response) differently -'Every military logistician should be afforded the opportunity--."

"Give a few logisticians the chance to become general officers, rather than filling the functional area at the top with the ignorant and inexperienced."

"Career development for Air Force should insure logistics development gets individual to operational unit, THEN into AFLC and next into AFSC. Then he should go into a military school that teaches him about 'logistics' not just the same old functional areas (i.e. supply, maintenance, etc.)."

"Log Plans is a specialty that should be 'secondary only'. It builds on others. Log Planners should be diverted from other specialties in mid-career."

"Everyone can't be a major command DCS - Logistics or Deputy Chief of Staff/LE - HQ USAF. However, career development to director level should provide the broad-base essential to higher level assignments."

"It is proper for AFSC 0046 to require at least 2 logistics AFSCs or a full MAJCOM log staff tour prior to acceptance into the AFSC."

YOUR ROUND #2 RATING:

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

TOPIC 7 COMMENTS _____

TOPIC 8: RATED FIELD

Rated officers make better military logisticians than non-rated officers.

MEAN RATING: 2.2 MEDIAN RATING: 2.5 YOUR ROUND #1 RATING:

ROUND #1 GENERAL COMMENTS ON RATED MILITARY LOGISTICIANS:

"Acquiring a military rating in no way increases a person's intelligence or ability to lead or manage. It just as surely does not hurt one's ability and may even add some immeasurable element to the personality. But, it is NOT essential for a person to become a professional military logistician. It should not become a mandatory element of the military logistician background but, neither should the rating prevent a person from entering and qualifying for the professional military logistician career."

"Our mission is to fly and fight. One need not be a flyer to fight - or vice versa. Rated experience is beneficial but not essential."

"There is still a strong bias in the USAF that a guy who can fly an airplane is a cut above and has more credibility. This is crap, of course, but still prevalent. Look at your O-7 promotion list(s) year after year."

"More [expletive deleted]!! Do you really understand what's happening? Pilots are just given other jobs until WAR starts, then they all go BACK to the cockpit - then where will logistics BE???"

"Rated experience is irrelevant to the quality and competence of a logistician. Some expilots learn and do well, others don't. They all could have used the functional experience the nonrated ones got while the rated ones were flying."

"In my opinion, being rated (flying) or nonrated has little or nothing to do with the success or performance of a military logistician. If rating [is] essential it must be difficult for the armored logisticians of the Army or the destroyer/cruiser logisticians of the Navy. Logistics is a profession - all experience is an asset."

"Becoming a logistician after 15/16 years commissioned service will result in a limited future normally."

YOUR ROUND #2 RATING:

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

a. Rated command experience is more beneficial to a military logistician than non-rated command experience.

MEAN RATING: 2.4 MEDIAN RATING: 3 YOUR ROUND #1 RATING:

ROUND #1 GENERAL COMMENTS:

"Rated command experience is more beneficial to getting promoted faster."

YOUR ROUND #2 RATING:

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

b. For rated military logisticians, how much rated experience (in number of years) would be ideal?

MEAN RATING: 6.1 years YOUR ROUND #1 RATING:

ROUND #1 GENERAL COMMENTS:

"Quality not quantity is important."

"[Experience] not applicable."

YOUR ROUND #2 RATING: _____(number of years)

c. For rated military logisticians, how much military logistics experience (in number of years) would be ideal?

MEAN RATING: 10 years YOUR ROUND #1 RATING:

ROUND #1 GENERAL COMMENTS:

"Quality not quantity is important."

"As much as possible."

"A minimum of 6 years before qualification at Director of Logistics level."

YOUR ROUND #2 RATING: _____ (number of years)

TOPIC 8 COMMENTS _____

TOPIC 9: SELECTIVE DEVELOPMENT

The Air Force should conduct early selection of military logistician candidates and groom only those selected officers who show potential for increased military logistics responsibilities.

MEAN RATING: 3.2 MEDIAN RATING: 4 YOUR ROUND #1 RATING:

ROUND #1 GENERAL COMMENTS ON SELECTIVE DEVELOPMENT:

"Not later than 12th year. This should be a combination of experience, academic, professional accomplishments, and potential as reflected through OERS. The 12th year is suggested because I feel a person needs a minimum of 6 years to act in the capacity of a senior logistics manager. If an individual is a fast burner/18 year Colonel - then he needs that start by his 12th year to begin the 'logistics' phase of his total AF career."

"This is a sensitive issue. Unlike the rated force where flying skills can be determined early in training, leadership abilities are developed over time; albeit, certain basic traits exist in each individual. Also, one must be careful not to be premature in an assessment of leadership abilities. Unlike the Peter Principle, a level of incompetence may exist before a level of competence is reached. But, this issue is basic in fostering future leaders. At the junior captain level the identification process should have begun. These officers should be afforded the opportunity, not 'groomed' (a cadre system), to show potential for increased levels of responsibility."

"I think it is done today, by selecting officers for key positions."

"Would be great but unrealistic - all career fields should do this - not enough smart people to go around."

"I would suggest the selection should be first based upon the individual's volunteering for selection at the 5 to 8 year service point. The application for selection should be evaluated, along with full background data (education, experience, and so forth), by a selection committee at each major air command (MAC). Those passed by the MAC would then be evaluated by an Air Staff committee composed of selected senior military logisticians plus a minority group of civilians with comparable status. The volunteer application would have to include all the features of performance, education, continuing education, and so forth applicable to date for the applicant. Further, it should include his/her intentions for the future (career in the USAF, further education, job desires, and so forth). Those who did not volunteer by the 8th year would be restricted to development through a maximum of O-5 as a specialist in his/her particular specialty of logistics."

"This would eliminate crossfeed from other disciplines (sorely needed). Soon, none of the 'good guys' not on the 'list' would have anything to do with logistics."

"11 year point and logistics selection board."

"As a junior major via an EWI-type board selection."

"Some bloom later than others. Let overall AF personnel and promotion policies govern."

"Early selection of candidates is essential for those career logisticians. However, the continuing need to assign noncareer logisticians to certain positions requiring logistic proficiency as a secondary requirement creates a demand for some logistics grooming for other than career logisticians."

"Prior to first assignment in the USAF. I have no suggestions on selection process. Logistics is not a parttime job. We need to identify, assign, train, promote officers as professionally military logisticians - full time."

"When: at selection to Major. How: (1) Review of record indicates better than 50% chance for promotion to Lt Col, (2) Acceptance at MAJCOM/LG staff level position as a field grade officer or before, (3) Masters and PME completed for level of rank as appropriate."

"You are trying too hard to tie it down too tight."

YOUR ROUND #2 RATING:

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

If you agree, when in a candidate's career should the selection process be held and please describe how you would perform the selection process.

TOPIC 9 COMMENTS

TOPIC 10: SENIOR LEVEL POSITIONS

Many senior military logisticians have entered the military logistics career field at a fairly senior level with little or no background in any of the military logistics specialities. This situation places more knowledgeable subordinates in an awkward position.

MEAN RATING: 3.8 MEDIAN RATING: 4 YOUR ROUND #1 RATING:

ROUND #1 GENERAL COMMENTS ON SENIOR LEVEL POSITIONS:

"More so than an awkward position for the junior individual; it places the 'senior logistician' at a disadvantage because he does not have a technical background sufficient to make corporate decisions."

"This depends on the grade."

"This has been a condition over many years. Of course, a whole lot depends upon the individual and his/her personality and ability to learn. But, in general, it has been a problem which should not occur if the USAF goes with the idea of professional military logisticians. Those who acquire high rank in operational fields would then have their growth in disciplines other than the military logistics area. I urge the AF to go with the military logistician development and keep the progression in that field restricted only to those who acquire the prescribed educational and experience background."

"Also places [the] inexperienced senior 'logistician' in an awkward position."

"I do not agree more knowledgeable subordinates are in an awkward position - it is a desirable position. If awkward, you have a people problem. Also, one must ask the question, knowledgeable of what. Does experience in a specific logistics discipline, equating to knowledge of that discipline, result in leadership ability - NO."

"Previous comments apply. NCO's, in particular, dislike the ticket-punchers; officer subordinates try to get the job done inspite of them while they learn the basics."

"It also places the whole system in jeopardy!! Logistics is the basis for all military power - we'd best understand it, and understand what it is logisticians should know and what it is they should be doing. Unfortunately, many current Director of Logistics positions do not conform to what that position should be doing."

"See comments on Topic 8. I believe the senior logistician should be a 'broadened specialist', not an 'unspecialized generalist'."

"While this adds to the burden of subordinates this situation is not unique to the logistics profession."

"We shouldn't do this."

"Although solid leadership and management can often overcome any logistics expertise shortfall, there is no good guaranteed substitute for individual experience in a professional discipline."

"Not to worry. Need good managers in senior jobs - not necessary to have incestuous growth only through loggy career ladder."

YOUR ROUND #2 RATING:

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

TOPIC 10 COMMENTS _____

TOPIC 11: LEADER vs. MANAGER

The military logistician must be a good: (circle one and please comment on your response)

MEAN RATING: 2.4 MEDIAN RATING: 3 YOUR ROUND #1 RATING:

ROUND #1 GENERAL COMMENTS ON LEADER vs. MANAGER:

"I feel both are important, but manager is the more strongly required suit. Logistics is the 'art' of managing resources - getting the right material to the right place at the right time. It requires the multiple synchronization of resources and understanding of multiple disciplines and their interdependency - not the specific leadership talents of an individual. This helps though, because one does gets the job done through people."

"Very difficult! I was tempted to say 'Leader' but then realized the logistics disciplines also require a high degree of management competence. I do believe the USAF suffers now from a shortage of true leadership--far too many 'managers' and politicians--but I also believe there is a happy medium in which both leadership and management are provided the subordinates and that is what I would hope the professional military logistician would provide to military logistics. We certainly must work to assure that the log education process provides for that and that we weed out those persons who do not prove themselves capable of providing the needed combination."

"Of course both are important. Emphasis depends upon the job. Commanders and supervisors must be leaders."

"This may have some correlation with rank/scope of assignment."

"The reply is directed to SENIOR military logisticians. A leader is a guide. A manager controls. No SENIOR logistician should 'exert control over; make submissive to one's authority, discipline, persuasion' - The American Heritage Dictionary."

"Leadership is all encompassing."

"This depends on the grade."

"You have to be both, plus be willing to take chances."

"It is not Logistics Leadership, it is Logistics Management. He does not LEAD the charge, he manages people, resources, and dollars in the creation of military capability."

"You must lead people and manage programs; the latter also involves the former. The successful logistician leads superiors and colleagues as well as subordinates to achieve goals and 'sell' programs. He must also manage the resources."

"You cannot be a successful manager unless you can lead."

YOUR ROUND #2 RATING:

1. Leader 2. Manager 3. Both are equally important

TOPIC 11 COMMENTS _____

TOPIC 12: CONTINUING EDUCATION

The Air Force should establish a specific course of education for senior directors of military logistics.

MEAN RATING: 3.5 MEDIAN RATING: 3.5 YOUR ROUND #1 RATING:

ROUND #1 GENERAL COMMENTS ON CONTINUING EDUCATION:

"First, there are a multitude of possibilities, however, a basic business education with a masters in a specialty area which extends into the logistics area is necessary."

"The emphasis should be on continuing education - a series of required courses during the whole career - a series which does not stop at the 20 year mark or the O-6 level. Where taught? I would suggest it be an AFIT responsibility with classes conducted at W-PAFB. Content? I can't be specific in this short space or time but the courses must begin with a general logistics course and all courses must include some log history and required log history reading/discussion. The emphasis in the courses should be on concept and philosophy vice specific procedures and processes. We should develop logisticians rather than technicians."

"This is where nonexperienced people and 'stovepipe' loggies can improve themselves. Emphasis should be on how the individual functions interrelate and must work together to produce support. ONE WEEK is long enough. Where it is taught is not important."

"Military/Air Force doctrine, history, leadership, intra/interfunctional relationships, policy."

"There are already many kinds of courses available (e.g. AFIT short courses, DSARC, etc.)."

"It's called ICAF in residence."

"By the time they are SENIOR Directors of Logistics, they are TOO old to teach - or make effective use of what is taught. Why doesn't Air Force Academy teach logistics? Why doesn't Grad Log?"

"The variety of duties doesn't lend itself to a specific course of education. 'Short courses' would be more useful. Some, but not all, of such courses could be taught at AFIT - others exist, such as DSMC's 'Executive Refresher Course' in Program Management."

"Logistics planning to include force structure development, financial planning, manpower, facility planning, data management, information processing, and systems analysis."

"45-60 day professional AFIT course at the executive level Lt Col and above. Strong participation by periodic visiting MAJCOM professional logisticians for briefings/discussions. Four areas (1) Wholesale, (2) Retail/operational, (3) Financial management (1/4 each), and (4) Acquisition logistics."

YOUR ROUND #2 RATING:

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

If you agree, please describe the course emphasis and context and where you think it should be taught.

TOPIC 12 COMMENTS

TOPIC 13: QUALITIES OF A MILITARY LOGISTICIAN

There are identifiable qualities and characteristics which distinguish successful military logisticians from unsuccessful ones.

MEAN RATING: 4.1 MEDIAN RATING: 4 YOUR ROUND #1 RATING:

ROUND #1 GENERAL COMMENTS ON QUALITIES OF A MILITARY LOGISTICIAN:

"Drive and common sense."

"An understanding of multiple disciplines - to understand the synergy of the system. To be able to establish priorities and objectives and to think in total overall costs and objectives; i.e. to understand different levels of maintenance and not the principles of forward stockage points, fly-away kits and mobility requirements is again missing the picture."

"The same qualities and characteristics which distinguish successful people in any career field from unsuccessful ones. Motivation, leadership, management ability, job knowledge, etc."

"I hesitatingly agree. I think there has been too much emphasis on the idea of a particular set of traits leading to success. However, I must also agree there are some thoughts which seem to be of real value for logistician's success. I can't identify them all, of course, in this time frame and space but offer the following for examples of desirable traits or characteristics of the professional logistician:

- wide knowledge of the military logistics arena
- strong interest in the future as well as the past
- strong curiosity and eagerness to learn
- understands self and the behavior of others
- intellectual honesty
- integrity
- flexibility
- strong communicative ability
- willingness to listen and analyze dissenting opinions
- ability to identify problems and help to solve them

--able to visualize and set attainable, but demanding, goals
--reliable and dependable
--'street smart' vice 'book smart'"

"Good leader. Good briefer. Wide experience base. Strong technical base."

"Dedication, energetic, sensitive, fair, resourceful, intelligent, common sense."

"Leadership, job knowledge, and initiative."

--credibility - job knowledge
--right senior service school
--Pentagon horse-holder role fulfilled
--right place/right time
--low handicap"

"Functional specialty knowledge, insight, innovativeness, integrity, leadership, management skills, writing, and speaking ability, etc. They are the same qualities, and are identifiable to the same extent, as those that distinguish successful and unsuccessful AF officers or businessmen."

" 1. Dedication
2. Recognized leader
3. Gets things done by leading - not driving."

"Willing to try new ideas. They pay attention to other's ideas. Willing to carry a lot of responsibility. They are not content with status quo in their organization."

"Flexibility, generalist, writer, ability to generate support through leadership, speech, and technical expertise."

"Creativity, innovation, not easily intimidated, adaptability."

YOUR ROUND #2 RATING:

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

a. If you agree, please describe the qualities and characteristics you think most vital.

TOPIC 13 COMMENTS

TOPIC 14: AIR FORCE GUIDANCE

Current Air Force guidance does not adequately support the appropriate development of military logisticians.

MEAN RATING: 3.5 MEDIAN RATING: 4 YOUR ROUND #1 RATING:

ROUND #1 GENERAL COMMENTS ON AIR FORCE GUIDANCE:

"I feel it does through the nonrated career field and even through the rated sup program. However, there is a breakdown when assigning Colonels for the first time into senior logistics positions."

"The USAF has neither defined its intentions for logistics nor its intentions for logisticians. It suffers as a result. There is little or no schooling for 'logisticians' and certainly no real means for effectiveness measurement in logistics operations. There is no adequate logistics doctrine, no suitable USAF logistics philosophy, no pertinent career field for 'logisticians'. The overall impression is 'Well, we won before, we'll win again with what we have!' All in all, the USAF provides practically no guidance for logistics

other than procedural guidance in specialties. Look at 67-1 or 66-1 if you want to see what I mean....a lot of 'help' for centralized specialization but nothing for 'logistics'."

"MPC has no idea of how to manage the career force."

"Guidance is not the problem - administration is. It is a major effort for an individual to break away from a MAJCOM or functional area. Once a SAC supply toad, always a SAC supply toad. Then when the person makes O-6 and is sent to AFLC we wonder why he/she possesses so little knowledge. I think the current term is 'stovepiping'."

"You can make O-6 on merit and job performance. Beyond that it's sponsorship all the way."

"I see nothing wrong."

"Cross-training between logistics functional areas is limited and not institutionalized. Moreover, some AFMPC functional managers are reluctant to allow transfer from one AFSC to another for one tour in logistics."

"MPC fills squares. MPC doesn't develop skilled assets for any career field."

YOUR ROUND #2 RATING:

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

TOPIC 14 COMMENTS

TOPIC 15: MILITARY LOGISTICS BACKGROUND

Air Force military logisticians should possess experience in:

ROUND #1 GENERAL COMMENTS ON MILITARY LOGISTICS BACKGROUND:

"Optimal - would be an assignment in each area. This would place an individual in a highly advantageous viewpoint of the total process at the 15-20 year point. His perspective would be much greater and his overall use would be much more flexible."

"This extremely difficult to respond to. I know what I feel would be best but question the accuracy of my feelings. I have given you what I feel would be a fine career pattern, not in the when but the what, of assignments. Probably with some discussion/argument I would alter this a bit but not enough, I think, to make major change. I have included combat logistics but I don't know how that would be obtained short of war and I certainly do not wish for war. I would be happy if no military logistician ever again had to face combat situations. But, given the way of the world, I must consider it essential for the professional military logistician if the opportunity arises. In fact, I would penalize a professional military logistician, in my scheme of things, who did not volunteer for combat assignments and work hard to get them when the occasion permitted."

"All senior loggies should have one tour on the Air Staff."

"A good mix of retail and wholesale, with combat subsumed in one or the other. International and acquisition are broadening, but in the career mainstream - they should be at mid-career, like Log Plans - after the foundation is laid."

"The broader the experience base the better."

"I firmly believe that our best source of military logisticians is a well rounded hands-on experience at all levels."

"Trying again to build an unnecessary maze."

a. Retail logistics

MEAN RATING: 4.3 MEDIAN RATING: 4 YOUR ROUND #1 RATING:

YOUR ROUND #2 RATING:

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

b. Wholesale logistics

MEAN RATING: 3.9 MEDIAN RATING: 4 YOUR ROUND #1 RATING:

YOUR ROUND #2 RATING:

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

c. Combat logistics

MEAN RATING: 4.4 MEDIAN RATING: 4 YOUR ROUND #1 RATING:

ROUND #1 GENERAL COMMENTS:

"I don't know what combat logistics is!"

"Plus some combat experience. Nothing heightens your perceptions like having someone shoot at you."

YOUR ROUND #2 RATING:

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

d. International logistics

MEAN RATING: 3.6 MEDIAN RATING: 3.5 YOUR ROUND #1 RATING:

ROUND #1 GENERAL COMMENTS:

"If logistics is the extension of military capability, what in the hell is International Logistics?"

YOUR ROUND #2 RATING:

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

e. Acquisition logistics

MEAN RATING: 3.7 MEDIAN RATING: 4 YOUR ROUND #1 RATING:

ROUND #1 GENERAL COMMENTS:

"[Referring to Acquisition Logistics] Another [expletive deleted] term."

YOUR ROUND #2 RATING:

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

f. Other _____

YOUR ROUND #1 RESPONSE:

ROUND #1 GENERAL COMMENTS:

"Any combination of the above."

"Contracting."

"Or any combination of the above."

"Financial management and POM/BES."

"Senior Staff Level Planning."

"Comptroller/Budget."

YOUR ROUND #2 RESPONSE: Other _____ (please specify)

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

g. If you agree with any or all parts above, please specify numerically how many assignments would be optimal or ideal.

YOUR ROUND #1 RATING:

ROUND #1 GENERAL COMMENTS:

"At least one in each."

"Air Staff."

"Pentagon duty. Without a tour in the building, it's autoflush beyond 0-6."

"[Retail and Wholesale Logistics] These are two parts of the same logistics system. [Combat Logistics] This sounds great. [International Logistics] Not logistics but FMS. [Acquisition Logistics] THIS is procurement."

"Comptroller/Budget."

YOUR ROUND #2 RATING:

- (1) Retail logistics _____
- (2) Wholesale logistics _____
- (3) Combat logistics _____
- (4) International logistics _____
- (5) Acquisition logistics _____
- (6) Other _____ (please specify)

TOPIC 15 COMMENTS _____

TOPIC 16: TECHNICAL COMPETENCY

Military logisticians should be technically competent in:

ROUND #1 GENERAL COMMENTS ON TECHNICAL COMPETENCY:

"If possible. It is highly unlikely, however, that an individual will have an opportunity to pursue each discipline."

"At least two of the above!! It doesn't matter which two."

"a - j are mainly 'either, or'. I would expect a Director of Logistics to be technically competent in one of a - d, and perhaps have secondary competence in a - j. At colonel level, he should have some broad exposure to the other fields, but not 'technical competence'."

"Creating senior leaders is not like making cookies. There is no recipe. Education is useful and common sense is essential."

a. Transportation

MEAN RATING: 3.7 MEDIAN RATING: 4 YOUR ROUND #1 RATING:

YOUR ROUND #2 RATING:

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

b. Supply

MEAN RATING: 3.9 MEDIAN RATING: 4 YOUR ROUND #1 RATING:

YOUR ROUND #2 RATING:

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

c. Maintenance

MEAN RATING: 4.1 MEDIAN RATING: 4 YOUR ROUND #1 RATING:

YOUR ROUND #2 RATING:

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

d. Procurement

MEAN RATING: 3.6 MEDIAN RATING: 4 YOUR ROUND #1 RATING:

YOUR ROUND #2 RATING:

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

e. Logistics planning

MEAN RATING: 4.1 MEDIAN RATING: 4 YOUR ROUND #1 RATING:

YOUR ROUND #2 RATING:

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

f. Other _____

YOUR ROUND #1 RESPONSE:

ROUND #1 GENERAL COMMENTS:

"Personnel logistics--to include recruitment, tech training, food service, hospital, medic care, finance, housing, recreation."

"Contracting."

"Financial planning."

"Comptroller/budget."

YOUR ROUND #2 RESPONSE: Other _____ (please specify)

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

g. If you agree with any of the parts listed above, how should the military logistician acquire his or her technical competence?

(1) Through professional continuing education.

MEAN RATING: 4.1 MEDIAN RATING: 4 YOUR ROUND #1 RATING:

YOUR ROUND #2 RATING:

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

(2) Through advanced academics.

MEAN RATING: 3.9 MEDIAN RATING: 4 YOUR ROUND #1 RATING:

YOUR ROUND #2 RATING:

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

(3) Through a variety of assignments.

MEAN RATING: 4.5 MEDIAN RATING: 5 YOUR ROUND #1 RATING:

ROUND #1 GENERAL COMMENTS:

"Supplemented with formal education."

YOUR ROUND #2 RATING:

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

(4) Other _____ YOUR ROUND #1 RESPONSE:

ROUND #1 GENERAL COMMENTS:

"OJT."

"EWI tour plus joint duty."

YOUR ROUND #2 RESPONSE: Other _____ (please specify)

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

h. If you had to select a military logistician for assignment to your unit, what would you look for in terms of breadth of experience and depth of experience?

ROUND #1 GENERAL COMMENTS:

"It would depend on the grade - a captain, for example, should have a good maintenance background in an operational command; a colonel, DCM experience; [a] major, staff position in a command headquarters and/or USAF."

"I would prefer breadth over depth. An individual can pick up the specifics of almost any assignment, but one needs the breadth of where his role fits in and the impact upon other communities."

"The more the better, although experience in the particular career area I need help in would be most important."

"Given you are speaking of a senior officer, I would look for a minimum of 18 years logistics experience with that experience spread over at least 2 specialty areas (one of which would be log planning) and preferably with experience in both retail and wholesale levels of logistics. If available, some background in acquisition logistics would be icing on the cake. I would expect each experience to be of at least 2 years length with military and personal records to support continued growth and development throughout the experience tours. As mentioned earlier, combat logistics experience would be expected if such experience would have been possible through the candidate's career to date."

"I would look for combination of wholesale and retail rather than specific functions although maintenance and supply would also be useful."

"Command/high level manager jobs (one or more jobs - 3 or more years); field/operational experience (2 or more tours); Three or more different MAJCOMS."

"Been in command position(s) where leadership was demonstrated."

--worked at [the] unit level
--master's degree (AFIT) with quantitative skills
--some computer experience
--command experience
--non-golfer and sycophant."

"I would try to discover if he really understood what military logistics was ALL ABOUT - or if he was a guy who once went to Maintenance School, THEN had an assignment in Supply working for his buddy and did a good job as a Supply Officer. Neither the Maintenance School or Supply assignment makes him a logistician."

"Depending on the level of assignment and duties, I always look for a certain (intangible) depth; breadth is secondary, but desirable in some senior people."

"Education and experience that matched the functional area and level of assignment. If I had a promising leader in another functional area I would consider lateral movement to enhance career development."

"[An individual with] well rounded hands-on experience at all levels."

(1) Wing level logistics and MAJCOM staff level experience.
(2) Experience in 2 AFSCs related to logistics.

"I need some below-the-zone people and also have room for a few 'also rans'."

ROUND #2 GENERAL COMMENTS:

TOPIC 16 COMMENTS

ADDITIONAL COMMENTS AND RECOMMENDATIONS

GENERAL COMMENTS FROM ROUND #1:

"The term logistician is relatively new and drawing much attention these days. But, one must be careful in defining a logistician. If the DCM, who is responsible for maintaining our airframes, is a logistician, is the hospital commander? If the POL officer, who is responsible for feeding the 'birds', is the food service officer, who is responsible for feeding the troops? History has proven logistics is a (if not, the) crucial element in winning or losing a war. Senior loggies must be warriors."

"When the military correctly defines logistics and when the DOD evolves a STANDARD concept of military logistics (i.e. what is it, what it does, and what it SEEKS to achieve by doing what it does) - then we can raise military logisticians - until then we will just keep reorganizing and reinventing THE wheel every 5 years."

"Remember that Director of Logistics (0046) is a 'catch all'. The positions are not standard; they require different skills and background. Selection must be individual from the diverse experience gained by logisticians on the way up."

YOUR ROUND #2 COMMENTS AND RECOMMENDATIONS:

THANK YOU FOR YOUR HELP.

Appendix G: Round Two Comments

TOPIC 1: ACADEMIC EDUCATION

ROUND #2 GENERAL COMMENTS ON ACADEMIC EDUCATION:

"We expect too much of the educational institutions. We seem to expect the undergraduate program should prepare a person for a specific job when in fact the program should teach the person how to think and how to adapt to reality. Training can best be done, and should be done, on the job after the person has acquired a sound educational base. Some of the comments on this survey seem to indicate a specific degree program is essential. I can't agree. Some indicate the liberal arts is unqualifying. I can't agree. I do agree we need 'educated' people not merely graduates of schools. My feelings about graduate education follow somewhat the same lines. I have found that many people want the graduate education to train people rather than educate them and I feel that is the cause for much of the dissatisfaction with specific programs. In the case of the AFIT graduate logistics program, I believe it should educate in logistics and not in topical specialties such as maintenance, supply, etc. Further, the program should be educational rather than specific skill training. Why is there nothing in the program about logistics history? Why does the program not have courses in real military logistics vice the heavy quantitative sophisticated courses now offered?

"In much of our education, and training, in the USAF we develop technicians rather than leaders and managers. I agree with this in the training efforts but I heartily disagree in education. As earlier stated, we should educate people to think. We should work on their minds and prepare them for a lifetime of relationships with other humans. We should make them aware of the world of the past, the world of the arts, the world of humanity, and so forth. This does not mean I think there should be no technicians because I most certainly want them, need them, and admire them. But, specialization for technical job performance should be via training programs following education or, if the individual chooses, in lieu of education. In the latter case, the person must recognize he/she may then be constrained in future job and development opportunities. Of course, there is nothing wrong with a professional maintenance technician, or supply technician, or—but the 'logistician' we talk of must be something more than the technician.

"I think our professional logistician should probably have a degree although I also think there should be a means for the non-degree, proven person to also be a professional logistician. But, in general, a degree is appropriate. But, then, what degree? I do not think we should accept 'any degree' but I also do not think the degree must be engineering, or science, or technical. In fact, I believe we would probably be better off in the long run if the degree were in the so-called 'soft' areas of humanities, liberal arts, and the like. The training programs, then, could add to the person those harder disciplines and skills and give the technical skills and competencies for job performance."

"Most AF officers came into service with a degree - so you have very little control of the undergraduate program. On the graduate level you must first determine what a logistician is and what he is responsible for."

"Undergraduate degree - essential. Master's degree - highly desirable. However, it would best serve the Air Force of the future to have logisticians who acquired their education in many institutions. Academic diversity coupled with cross-fertilization that involves future leaders outside the military is very important."

ROUND #2 COMMENTS ON GENERAL COMMENTS MADE IN ROUND #1:

ROUND #1 COMMENT: "I am not fully convinced a degree is necessary for successful logistics management and leadership but I accept the idea the USAF wants that educational level in its officers. We have not yet hit upon the proper mix of subject matter for the professional logistician's education — mainly because we do not yet agree on what 'logistics' is and what the 'logistician' ought to do or be responsible for. Your study might be a major step in the resolution of these two problems and, therefore, in the resolution of the education problem, as well. I tend to think we (today's society) place too much emphasis on a college degree and too little on what was studied. Furthermore, we seem to drive our students toward science and mathematics at the expense of the cultural growth possible in the 'softer' studies."

ROUND #2 COMMENTS:

[Reference "...we do not yet agree on what 'logistics' is..."] "Very true."

[Reference first sentence] "Agree. [Reference the rest of the comment] Somewhat agree."

ROUND #1 COMMENT: "Q a. & c. Being educated is far better than having an education —Billy Minter was a high school graduate. Q b. & d. A SENIOR logistician is a leader and manager (in that order), not a technician."

ROUND #2 COMMENT: "True."

ROUND #1 COMMENT: "If by your definition, [a] logistician is a senior officer, he should have [a] GRADUATE DEGREE. There is no school or course which creates a logistician (especially not Grad Log). If you want to be a maintenance or supply officer, you go to [a] specialized school and upon graduating get the AFSC. To be a logistician, there is nothing except experience in a couple of AFSC's — maybe that's what logistics is?? or ISN'T???"

ROUND #2 COMMENTS:

"Too many people share this opinion. Why doesn't the School listen."

"Somewhat agree."

ROUND #1 COMMENT: "The Director of Logistics is at the top of a multi-disciplined field. In his early career he may have been a maintenance officer with an engineering degree, supply with a business degree, etc. People in these related, but different, disciplines cross-fertilize each other over the 20 years it takes to become a Director of Logistics. At the graduate level, the logistician should study Business Administration, Logistics Management, Management, or similar area related to his work. However, not all should be educated at AFIT (or in any other one institution). It would be incestuous to have all senior logisticians taught at the same curriculum by the same faculty. A mix of education will continue to provide a variety of ideas - fresh thinking."

ROUND #2 COMMENTS:

[Reference statement "However, not all should be educated at AFIT"] "Good point."

"In 20 years a lot of things can spoil!!"

"Agree."

ROUND #1 COMMENT: "The discipline of formal education is the #1 requirement. The subject area for undergraduate should be/or could be any of the many sciences - broad base. Post graduate in management is mandatory."

ROUND #2 COMMENT: "Humm."

ROUND #1 COMMENT: "In some specific and narrow aspects of logistics, advanced education is necessary. But, the logistician in charge of large scale operations must not get bogged down in these details."

ROUND #2 COMMENTS:

[Reference statement "...must not get bogged down in these details."] "Yes!"

[Reference statement "...the logistician...must not get bogged down in these details"] "Is advanced education a negative?"

"Agree."

ROUND #1 COMMENT: "Logisticians should be generalists and cross-training to understand various AF career fields is quite beneficial, therefore, a specific technical background at the masters level is unwarranted."

ROUND #2 COMMENT: "God has spoken!!"

a. Military logisticians should possess a specific undergraduate degree.

ROUND #2 MEAN RATING: 2.4 ROUND #2 MEDIAN RATING: 2

ROUND #2 GENERAL COMMENTS:

"Undergraduate degree - yes, specific degree - no."

"It doesn't really matter what discipline at the undergraduate level."

ROUND #2 COMMENTS ON GENERAL COMMENTS MADE IN ROUND #1:

ROUND #1 COMMENT: "However, I feel that a technical degree such as in engineering or the sciences can be helpful in understanding some aspects of a military logistics job."

ROUND #2 COMMENT: "Agree."

ROUND #1 COMMENT: "You might look at the undergraduate degrees of 'successful' logisticians to see if there is any correlation - I doubt it."

ROUND #2 COMMENTS:

"Good idea - Might be good to suggest this as a thesis for 86-S class?"

"Agree."

b. If you agree, please identify in which specific field of study?

- (1) Business Administration
- (2) Engineering
- (3) Liberal Arts
- (4) Management
- (5) Sciences
- (6) Other

ROUND #2 GENERAL COMMENTS:

"Logistics management."

ROUND #2 COMMENTS ON GENERAL COMMENTS MADE IN ROUND #1:

ROUND #1 COMMENT: "There are a multiple of disciplines which lend themselves to preparation for being a logistician, however, fields such as psychology, education, liberal arts are not of this nature."

ROUND #2 COMMENT: "I understand but I'm not sure I agree."

c. Military logisticians should possess education beyond a bachelor's degree.

ROUND #2 MEAN RATING: 4.2 ROUND #2 MEDIAN RATING: 5

ROUND #2 COMMENTS ON GENERAL COMMENTS MADE IN ROUND #1:

ROUND #1 COMMENT: "But not just logisticians. Education can help most, if not all, career fields do their jobs better."

ROUND #2 COMMENT: "Sure, but this survey is in reference to the logistician."

d. If you agree, please identify which specific area of study you feel a military logistician should possess advanced academic work?

- (1) Business Administration
- (2) Engineering
- (3) Liberal Arts
- (4) Logistics Management
- (5) Management
- (6) Sciences
- (7) Other
- (8) Degree important but area of study is not

ROUND #2 COMMENT:

"Logistics is a broad multi-faceted business - the process of providing or producing the right items, at the right time, at the right place, at the right time. An MBA requires a multi-disciplined study - and tracks exactly with logistics as a practical science."

ROUND #2 COMMENTS ON GENERAL COMMENTS MADE IN ROUND #1:

ROUND #1 COMMENT: "Anything difficult."

ROUND #2 COMMENT: "Cop-out! What's difficult? Same for you as for me?"

ROUND #1 COMMENT: "If an officer has a bachelor's degree in a technical area, it is supplemented nicely with an advanced academic degree in management."

ROUND #2 COMMENT: "Agree."

ROUND #1 COMMENT: "The problem is that logistics is very diverse. Engineering may be great for acquisition logistics while management may be great for another area."

ROUND #2 COMMENTS:

"True, but I believe a grad degree in a tailored logistics program would be helpful to [a] great degree for any 'logistician'."

"Agree."

e. To earn MS, military logisticians should be encouraged to earn a master's degree at the Air Force Institute of Technology.

ROUND #2 MEAN RATING: 3.4 **ROUND #2 MEDIAN RATING:** 4

ROUND #2 GENERAL COMMENTS:

"I'm not an AFIT grad, however, I have yet to meet an AFIT Log grad who would recommend it. Something is wrong there. Moreover, another perception is that few AFIT Log grads remain in logistics after one tour."

"AFIT is still only one source and a good one that specifically caters to the USAF; however, if one views what the education community has done in the last decade - say in contracting, you can see there are other opportunities. (10 years ago there were only one or two degrees in contracting - today there are 15-20 programs and growing)."

"Once I broke the 'cockpit lock' it took 6 years to obtain the graduate training AFIT could have given me in a year! A lot of time wasted, including hundreds of nights and most weekends."

ROUND #2 COMMENTS ON GENERAL COMMENTS MADE IN ROUND #1:

ROUND #1 COMMENT: "MS - military specialty or master's of science? There are many other fine programs and institutions that afford the opportunity to become academically prepared."

ROUND #2 COMMENT: "Agree."

ROUND #1 COMMENT: "If they are pursuing an MS, I would highly recommend AFIT. The supplemental education available by attending classes with other officers at a military base, particularly one with facilities/labs, etc., of Wright-Patterson is tremendous."

ROUND #2 COMMENT: "Agree."

ROUND #1 COMMENT: "AFIT needs to be substantially improved (i.e. stability of faculty, pertinence of theses and participation of AFIT in mainstream AF logistics) before I could recommend it."

ROUND #2 COMMENT: "Is this the same person as on page 1? If not - another indication of [a] problem."

ROUND #1 COMMENT: "Rated officers who would be career logisticians are stuck in the cockpit for 9+ years, making AFIT grad log hard to acquire."

ROUND #2 COMMENT: [Reference "...grad log hard to acquire."] "Very true but [it] can be done and special arrangements could be developed."

TOPIC 2: PROFESSIONAL INVOLVEMENT

ROUND #2 GENERAL COMMENTS ON PROFESSIONAL INVOLVEMENT:

"I am surprised by the general lack of appreciation for professional involvement. It is though the people expect the good knowledge to 'just come to them' without being involved. They seem to feel that professional involvement is not really a part of their continuing education. Perhaps this is partly the fault of our professional associations but perhaps, too, it is part of the reflection of personal failure to have been involved in the past.

"Professional meetings (and seminars, symposia, etc.) are excellent means of professional education. Further, they provide a means for the interaction of peers and opportunity to learn about how other people react to similar problems. This is or can be extremely powerful learning. Additionally, the publications of professional societies offer great potential for learning through the articles and commentary. Also, if a person wishes, authorship is a further means of education and sorely needed in logistics. In sum, I feel the panel may have missed the boat on professional involvement.

"Like most of the rest of man's activity, there is no free lunch in professional association participation. You get out of them what you put into them. If you don't belong, and don't participate then there can be nothing gained. But, if you join and if you actively participate and support, the learning can be extensive and heavily beneficial. I certainly favor professional involvement to a great degree and would urge USAF to encourage it to all logisticians. Let them choose the society they wish to join, or societies they wish to join, but urge them to do it and to actively participate."

"Exposure, experience is the key."

"Each person is different. How many general officers have themselves sat down and written about their experiences so that others could learn?"

"To participate one must contribute. Many attend for 'What can I get out of it' without thinking of 'What can I offer'."

"You need to get out and talk your 'business' at every opportunity. There is a lot of missionary work to be done yet. Why leave the public perception to the marauding media who know less about logistics than you do."

"I generally agree with the other positive comments."

"Logistics societies, and professional seminar, etc., are nice and social - but is not a differentiating factor or contributor to successful logistics leadership."

ROUND #2 COMMENTS ON GENERAL COMMENTS MADE IN ROUND #1:

ROUND #1 COMMENT: "Professionalism stems from more than just doing a job or being identified by a job specialty. It is proper to expect the true professional to share his experience and knowledge with his peers and to ascribe to a code of ethics of a recognized profession—a course to be found generally only through professional associations. But, membership in a society is by itself not enough. The person must expect, and be expected, to actively participate and support that society. A competent performer becomes a professional through teaching and writing and support of the educational

programs of the group. We should expect nothing less from the 'logistician'. In fact, perhaps we should expect even [more] from that person!"

ROUND #2 COMMENTS:

"God has spoken again!"

"Somewhat agree."

ROUND #1 COMMENT: "Topic 2 questions are analogous to: 'Should children love their parents?' If yes, how should they show it?"

ROUND #2 COMMENTS:

"Failed to see the point of the topic. Too bad!"

[And] "How much?"

ROUND #1 COMMENT: "Cross-feed of information between services, industry, etc., is important. Avoid the 'not invented here' syndrome."

ROUND #2 COMMENT: "Agree."

ROUND #1 COMMENT: "SOLE and AFA preferable. ADPA is more of a closed senior executive 'club' - as is AIAA."

ROUND #2 COMMENT: "Somewhat agree."

ROUND #1 COMMENT: "Were early logisticians like Admiral Eccles any the worse for not having a professional logistics society in being. What has SOLE provided for a military logistician - hell, even their definition of logistics STINKS. Military logisticians should be active any place where they can learn about military logistics."

ROUND #2 COMMENTS:

"No, but how much more effective might they have been with professional societies. [Reference "...even their definition of logistics STINKS."] Certainly agree, but that's not the topic now."

"Well said!"

[Reference last sentence] "Agree."

ROUND #1 COMMENT: "A senior military logistician should lead and set an example of interest and participation, as well as share his experience. However, there are practical limitations on the time he has available, and on funds for heavy rational-level participation."

ROUND #2 COMMENTS:

"Obvious."

"Agree."

ROUND #1 COMMENT: "Professional cross-feed is absolutely essential to any profession - logistics is not an exception."

ROUND #2 COMMENTS:

"YES."

"Agree."

ROUND #1 COMMENT: "Many symposia, seminars, etc., do not contribute to the logisticians capability growth. TOO many are social gatherings."

ROUND #2 COMMENTS:

"This is a personal perception. The capability for growth is present but the individual has to want to take advantage of it and use it. They can be 'social' if the individual wants them to be."

"Yes, but they are great fun!"

"Somewhat agree."

a. Military logisticians should be active in a professional logistics society.

ROUND #2 MEAN RATING: 3.9 ROUND #2 MEDIAN RATING: 4

ROUND #2 COMMENTS ON GENERAL COMMENTS MADE IN ROUND #1:

ROUND #1 COMMENT: "This is a [expletive deleted] question!!"

ROUND #2 COMMENTS:

"He/she fails to understand the goal of the question!"

"Disagree."

b. If you agree, how active should he or she be?

- (1) Member
- (2) Officer, Local
- (3) Officer, National
- (4) Active participant in speaker's bureau
- (5) Author
- (6) Other

ROUND #2 GENERAL COMMENTS:

"Recruiter."

"All of the above as time permits."

"All of the above, to limits of available time and energy."

c. Military logisticians should participate in professional logistics symposia, seminars, and conferences.

ROUND #2 MEAN RATING: 4.4 ROUND #2 MEDIAN RATING: 4

d. If you agree, what should be his or her level of participation?

- (1) Attendee
- (2) Presenter
- (3) Panel or Discussion Leader
- (4) Moderator
- (5) Other

ROUND #2 GENERAL COMMENTS:

"All of the above, whenever possible."

"At various times, all of the above."

ROUND #2 COMMENTS ON GENERAL COMMENTS MADE IN ROUND #1:

ROUND #1 COMMENT: "What the hell has this got to do with his function as a military logistician?"

ROUND #2 COMMENT: "Likely the same person failing to see the point."

ROUND #1 COMMENT: "At various times, all of the above."

ROUND #2 COMMENT: "Agree."

TOPIC 3: MULTI-DISCIPLINED

Military logisticians should be multi-disciplined: that is, experienced in more than one functional area of military logistics.

ROUND #2 MEAN RATING: 4.3 ROUND #2 MEDIAN RATING: 5

ROUND #2 GENERAL COMMENTS ON MULTI-DISCIPLINED LOGISTICIANS:

"I don't see how a person could truly become a 'logistician' without knowledge backing in several disciplines of the field. I do not necessarily see it mandatory the person have 600 years field experience in each area, but surely he/she must, absolutely must, acquire sound understanding of those areas. This could be done with job assignments, to some degree, but assignment to a job doesn't always lead to understanding of that job or professional discipline. The person has to have curiosity and the ambition to satisfy that curiosity through questioning, reading, talking, observing, evaluating, and so forth. Therefore, I think a lot of the base for a professional logistician might very well be obtained through courses of instruction, reading, correspondence courses, and so forth.

"But, no matter how done, the spread of knowledge is essential. This is one of my reasons for feeling so strongly about the USAF need for a prescribed flow of Professional Continuing Education for the designated logistician or the person being groomed to become one. Currently, the AF provides nothing like this for the logistics career fields. Actually, once the basic technical course is completed (i.e. supply, maintenance, etc.) there is no other required PCE (and no other voluntary PCE for many) although there is highly desired PME for all officers.

"The same condition exists for the NCO corps, as well. They, too, have no PCE program and they should have one because they, too, ought to have some opportunity to progress beyond the single skill technician. The civil service employees are equally neglected although for some there is a career enhancement effort. The point, though, is that most of this is hit and miss with no evident concern by the AF for logical and intelligent career selection, development, and progression. Anytime the progression system depends upon the OER and the signature level of the OER endorsement, we are in bad trouble—and that's the case today!

"We do need multi-disciplined people to progress upward to the designated professional military logistician."

"Let's face it, the more exposure one has early in one's career is of prime importance. We all get locked in at the 10-12 year point!"

"As long as people think that logistics is the sum of the functional activities and not the integrated management of them - we'll not improve."

"Once you get beyond chasing parts around the supply system or humping sorties, the golden rule takes over, viz: 'He who has the gold makes the rules'. Also recommend a lot of golf with senior officials to qualify as a 'good ole boy'."

"I still think as I did. You have to be a specialist before you can become an effective generalist."

"A logistics officer should spend his career trying to excel in his own career field - and if he's good he'll learn enough about the other disciplines merely by working his problems within the system. Better to be a highly successful producer - than one that's 'always in training'. We must attend enough schools, and learn new jobs as it is."

ROUND #2 COMMENTS ON GENERAL COMMENTS MADE IN ROUND #1:

ROUND #1 COMMENT: "I know your goal but all of this may be foolish unless logistics education is more widely provided - note I said 'education' not 'training'. If we provided log education at the appropriate career points, maybe experience in different specialties would not be so necessary or so vital. But, regardless, I think maintenance is most important because it can

bring home the importance and relationship of the other specialties. Maintenance cannot function without supply, of course, and supply cannot exist without procurement and transportation. Then, over all, is the idea of true logistics planning;—an area we really do not now work well or cover well in study or teaching or writing."

ROUND #2 COMMENT: "Somewhat agree."

ROUND #1 COMMENT: "I refuse to answer these questions. Of course some logisticians should have multiple functional experience but not all. I don't know which functions are the most important but maintenance, supply, and transportation are the biggest."

ROUND #2 COMMENT: [Reference "I refuse to answer these questions."]
"Arrogant."

ROUND #1 COMMENT: "Logistics cannot be bounded by one or even a few career fields or disciplines. A look at the ILS elements shows there are many. Knowledge/experience in three is an absolute minimum."

ROUND #2 COMMENT: "Disagree."

ROUND #1 COMMENT: "A leader requires knowledge in all areas. But specific "experience" is only required of the technician. A true professional will gain knowledge in all during the course of a career without having been assigned to any specific number of disciplines. We tend to credit experience when capability counts. Iacocca was schooled as a draftsman, experienced as a salesman, excelled as the C.O.B."

ROUND #2 COMMENT: "Good!"

ROUND #1 COMMENT: "The logistics planning AFSC should be top-of-the-line; however, it seems to be populated with civilians with limited background and less experience."

ROUND #2 COMMENTS:

"Disagree."

"Agree with comment."

"This touches on a major problem, I believe."

ROUND #1 COMMENT: "It is more important that military logisticians understand military logistics (which is more than the sum of understanding each functional activity). It is the integrated management of all those activities which deals with logistics and not the sum of those activities."

ROUND #2 COMMENTS:

"Yea! A man after my own heart!"

"Agree."

ROUND #1 COMMENT: "What I'm trying to indicate above is that a company grade officer should specialize in and learn one functional specialty; he should become a staff officer or manager in that discipline as a major. Only then is there time for a broader perspective, such as Log Plans or a joint assignment."

ROUND #2 COMMENT: "God has spoken again!"

ROUND #1 COMMENT: "Maintenance and supply are the heart of logistics. Transportation runs a close third. The log planner should come from these functional areas. Procurement can stand alone."

ROUND #2 COMMENTS:

"Somewhat agree."

"Agree with [the] above statement, too!"

a. If you agree, please identify the number of functional areas in which they should ideally have experience?

ROUND #2 MEAN RATING: 3 areas **ROUND #2 MEDIAN RATING:** 3 areas

ROUND #2 GENERAL COMMENTS:

"Minimum of 2."

"Three or more."

"Sorry, but there are too many factors involved to permit a specific number."

b. Which functional areas?

Column A	Column B
(1) Supply	()
(2) Transportation	()
(3) Maintenance	()
(4) Procurement	()
(5) Logistics Planning	()
(6) Other	()

ROUND #2 GENERAL COMMENTS:

"Comptroller."

"Engineer, SPO management, etc."

"Financial Management."

"[Other] related fields, [such as] accounting and finance, ADP, etc."

ROUND #2 COMMENTS ON GENERAL COMMENTS MADE IN ROUND #1:

ROUND #1 COMMENT: "All important. It would be very difficult to put in any order of preference. Material Management."

ROUND #2 COMMENT: "Agree."

c. In what number of functional areas could they realistically have experience?

ROUND #2 MEAN RATING: 2.5 areas ROUND #2 MEDIAN RATING: 2 areas

d. Which functional areas?

Column A	Column B
(1) Supply	()
(2) Transportation	()
(3) Maintenance	()
(4) Procurement	()
(5) Logistics Planning	()
(6) Other	()

ROUND #2 GENERAL COMMENTS:

"Acquisition management, SPO management. At least two with one of the two being supply or maintenance."

"Financial Management. To be a successful logistics manager it is essential that financial management and analysis be a part of each functional area."

"Financial Management."

ROUND #2 COMMENTS ON GENERAL COMMENTS MADE IN ROUND #1:

ROUND #1 COMMENT: "Logisticians require an in-depth understanding of USAF budgeting systems."

ROUND #2 COMMENT: "Agree."

TOPIC 4: COMMAND

Military logisticians should have experience as a commander.

ROUND #2 MEAN RATING: 4.1 ROUND #2 MEDIAN RATING: 4

ROUND #2 GENERAL COMMENTS ON COMMAND:

"As I have stated, I don't necessarily think command experience is essential for the designated logistician. But, of course, I don't see how that experience would necessarily hurt, either. If the person is going to get command experience, I think it probably would be best in a logistics area such as a maintenance squadron, supply squadron, etc., or in an operational billet. But, that means the opportunity would be limited and I don't believe those who don't get it should be career penalized. Our goal should be to develop military logistics officers not military officers in this program. The more or less pure military career should probably be in the operational side of the house."

"In many organizations, I would rather have a logistician as a commander than a rated weenie - like for instance a loggie running Headquarters AFLC."

"Command experience broadens the ability to lead. A superb logistician is a superb leader (first). If one cannot lead, one should not be in charge."

"This thing called 'experience' is somewhat nebulous. It all depends on the individual and circumstances. I've known senior logisticians with extensive experience who were ineffective because they micro-managed. On the other hand, I've known those who were easily 'snowed' because they didn't know the operation. But, this latter individual(s) lacked leadership and had an insubordinate staff."

"Airplanes are what it's all about. If you can support a fleet and fly the FHP, you can manage/lead most other logistics operations (except procurement - where the snakes live)."

"One must demonstrate the required leadership qualities as a squadron commander prior to assuming more senior logistics positions. People are 98% of what logistics is - we must call out those that can and cannot lead - and to what degree of effectiveness."

ROUND #2 COMMENTS ON GENERAL COMMENTS MADE IN ROUND #1:

ROUND #1 COMMENT: "I think you lead the 'logistician' to military careerism if you insist on him/her having command experience. Do we aim for military officers or military logisticians? I do not see how command experience can be vital. But, I also do not see it as bad for the logistician. However, I do not really believe it necessary. I think, given a choice, I would prefer the logistician to have expansive log experience rather than command experience. But, as before, I think the USAF would want its officers to have command experience—and this may be the base of the problem you are addressing;—the USAF wants officers to have military experience rather than professional experience."

ROUND #2 COMMENT: "Contradictory."

ROUND #1 COMMENT: "Some type of 'operational' (i.e. not staff, plans, etc.) [command experience] is a must."

ROUND #2 COMMENT: "Agree."

ROUND #1 COMMENT: "Where leadership abilities are obtained and displayed."

ROUND #2 COMMENT: "Not true! It can be one such area, but..."

ROUND #1 COMMENT: "But only AFTER he has been a Military Logistician - then he'll understand what it requires to fight wars. Should the Secretary of the Air Force have command experience?"

ROUND #2 COMMENTS:

"OK."

"Agree. [Reference last sentence] YES."

ROUND #1 COMMENT: "Command experience is good leadership and general management training. It doesn't replace functional or staff skills. It has little, if any, direct bearing on being a qualified Director of Logistics."

ROUND #2 COMMENTS:

"Agree."

[Reference first sentence] "Agree. [Reference last sentence] Disagree."

ROUND #1 COMMENT: "Command is important. Any successful commander will be exposed to logistics decision-making. If possible, senior logisticians should have experience in command of logistics units if no other opportunity arises - both logistics and other type units are desirable."

ROUND #2 COMMENT: "Agree."

ROUND #1 COMMENT: "I do not consider command experience vital to being a successful logistician."

ROUND #2 COMMENTS:

"I tend to agree."

"Disagree."

ROUND #1 COMMENT: "Command experience is useful but not essential for senior leadership executive positions."

ROUND #2 COMMENTS:

"Agree."

"Disagree."

a. If you agree, the command experience should be at what level?

- (1) Detached unit
- (2) Squadron
- (3) Group
- (4) Wing
- (5) Other

ROUND #2 GENERAL COMMENTS:

"I still don't agree [command experience] is necessary - nor do I disagree it would be helpful. I think it is just one more experience which might/might not aid."

"As many and as varied as possible."

"All of the above."

ROUND #2 COMMENTS ON GENERAL COMMENTS MADE IN ROUND #1:

ROUND #1 COMMENT: "Level not as important as the command experience."

ROUND #2 COMMENT: "Agree."

ROUND #1 COMMENT: "Depends on rank. Should be as much as possible and as early as possible."

ROUND #2 COMMENTS:

"Why?"

"Agree."

b. The experience should be in a functional area of logistics.

ROUND #2 MEAN RATING: 3.8 ROUND #2 MEDIAN RATING: 4

c. If you agree in part (b), which functional area(s)?

- (1) Supply
- (2) Transportation
- (3) Maintenance
- (4) Procurement
- (5) Other

ROUND #2 GENERAL COMMENTS:

"As many as possible."

"Any of the above."

"Logistics planning."

"Whichever he is a functional specialist in."

d. The experience should be in a non-logistics functional area.

ROUND #2 MEAN RATING: 2.7 ROUND #2 MEDIAN RATING: 3

e. If you agree in part (d), which non-logistics functional areas?

- (1) Flying unit**
- (2) Support unit**
- (3) Training unit**
- (4) Other operations unit**

ROUND #2 GENERAL COMMENTS:

"Any of the above."

"Any or all of these."

TOPIC 5: STAFF-LEVEL EXPERIENCE

Military logisticians should have experience as a staff officer.

ROUND #2 MEAN RATING: 4.6 ROUND #2 MEDIAN RATING: 5

ROUND #2 GENERAL COMMENTS ON STAFF-LEVEL EXPERIENCE:

"Staff experience should be mandatory for approximately 3 years, minimum, in the developmental stages of the career. But, the experience should not come until after 7 to 10 years of field experience in at least two sub specialties of logistics. In other words, let's make the staff consist of people who know and understand the business - not learners! If the desire is to develop a specialized cadre of staff officers who will spend the greater part of their careers in staff billets, perhaps the AF needs to create a General Staff Corps."

"I don't right now recommend that action, though. I think a GSC would not now be a service to the USAF but would, instead, add to the already overdone bureaucracy. We need staff and logisticians who will challenge requirements and work to simplify and to reduce paper work, to simplify and reduce procedures, to check policies for effectiveness and need and ensure those policies help to create cohesion and belief in the military mission. I am afraid the young and inexperienced person, put in [a] staff role, does not know how to do what I suggest and therefore probably adds to the problem albeit innocently."

"The key to a successful logistics operation is the ability to manage all of the available resources in support of a defined objective. To manage successfully one must know the source of the essential resources; [one must know] how to assist in justifying the need for those resources; and [one must know] how to demonstrate the effective use of logistics resources in the terms used by those in control of resource availability."

"Looking at who makes the breaks, you need to get both exposure, some pocket goodies, and learn how the DOD works and how it competes for cash. O&M has no constituency; it's a salad bar for Congress."

"One does not work a staff job without a fully qualified logistics type AFSC - and clearly not work outside of his AFSC. Staff is not the place to try 'one's hand at something different'. We have enough of a problem getting staffs to be supportive, understanding, and productive!"

ROUND #2 COMMENTS ON GENERAL COMMENTS MADE IN ROUND #1:

ROUND #1 COMMENT: "The more the better."

ROUND #2 COMMENT: "Agree."

ROUND #1 COMMENT: "I believe we should be progressing toward a 'military logistician' career area which should include logistics staff duty at wing level and at major command level. Anything beyond that would be gravy but not essential. The problem is—there are only a given number of years in a career and we must resolve the question of how many of those limited years should be spent in other than the logistics area - if any. I do agree that some staff experience is vital if it must be acquired in a non-log area, but I would prefer that not to happen."

ROUND #2 COMMENT: "Agree."

ROUND #1 COMMENT: "Understanding how a HQ Staff works can be important - especially something like the POM process."

ROUND #2 COMMENT: "Agree."

ROUND #1 COMMENT: "Director of Logistics is a staff job. A senior staff officer can't do it well without having earlier performed staff-type duties. However, they should be in his functional area (or closely related), so he understands the operational basics and can gain the staff perspective. An Air Staff tour (in a logistics function) is essential preparation for a colonel logistician (0046)."

ROUND #2 COMMENT: "Agree."

ROUND #1 COMMENT: "No senior logistician should have confined his experience to any one functional area - the more the better."

ROUND #2 COMMENT: "Agree."

ROUND #1 COMMENT: "MAJCOM experience is vital to future success as a senior logistics executive."

ROUND #2 COMMENT: "Agree."

a. If you agree, please specify at what level?

ROUND #2 GENERAL COMMENTS:

"Air Staff, MAJCOM."

"MAJCOM or Air Staff, preferably. Wing should be more or less automatic, may or may not be valuable."

"MAJCOM and Air Staff."

"MAJCOM and at least one tour each AFLC/AFSC, plus Air Staff and an operational unit TAC, SAC, PACAF, USAFE, MAC."

"As many levels as possible."

"MAJCOM."

"Field, center, MAJCOM, USAF."

"Any, from wing to Air Staff and beyond."

"MAJCOM - understand how they prioritize and function bureaucratically.

HQ USAF - if you don't fill this square, you make not make O-6 and won't even be considered for O-7. More GDB."

"Numbered AF, MAJCOM (either or both) and HQ USAF (definitely!)."

b. The staff experience should be in a military logistics functional area.

ROUND #2 MEAN RATING: 4.7 ROUND #2 MEDIAN RATING: 5

c. If you agree in part (b), which one(s)?

- (1) Supply
- (2) Transportation
- (3) Maintenance
- (4) Procurement
- (5) Logistics Planning
- (6) Other

ROUND #2 GENERAL COMMENTS:

"Acquisition planning, Plans & Programs, Material Management."

"All of the above - rotate."

"Any of the above."

"Financial management. OSD if you can get it."

"The functional area in which he is a specialist."

"His/her specific career field."

ROUND #2 COMMENTS ON GENERAL COMMENTS MADE IN ROUND #1:

ROUND #1 COMMENT: "All of the above - rotate."

ROUND #2 COMMENT: "Unrealistic - not enough time."

d. The staff experience should be in a non-logistics functional area.

ROUND #2 MEAN RATING: 2.5 ROUND #2 MEDIAN RATING: 3

e. If you agree in part (d), which area(s)?

ROUND #2 GENERAL COMMENTS:

"If choice - perhaps intelligence."

"Finance/budgeting and personnel."

"Any direct mission or mission support area."

TOPIC 6: PERIODIC TESTING

Military logisticians should demonstrate competency in military logistics through periodic testing.

ROUND #2 MEAN RATING: 2.3 ROUND #2 MEDIAN RATING: 2

ROUND #2 GENERAL COMMENTS ON PERIODIC TESTING:

"As I stated in Round One, I favor periodic testing. I can't see why anyone should object if the testing process is reasonable and realistic. After all, we are supposed to know our profession and we should be able to pass general examination in it. Given, of course, that the testing process is not nit-pick and stupid detail and remembering of dates, and the like.

"In the civilian world there are many testing requirements. The medical profession, for example, tests for licensing and certification and then must periodically prove involvement in continuing education which, in itself, is a form of testing. The same is true of the legal profession, the accountants, and so forth. Those who aspire to leadership in their field cannot by-pass that testing and cannot avoid for long the requirement to periodically prove themselves. We should expect no less of our senior logisticians. After all, they very well may have the fate of our society, our world, in their hands as they work to create and sustain that essential military capability for our survival. Should that be left to the unproven? Should it be left to a national emergency to learn that our senior loggies are senior only in grade and age but not able to produce what must be produced?

"I don't plea for testing as the end-all because it obviously isn't. But, testing will cause people to at least periodically spend some time boning-up for the test process. If it did nothing else, it would get many of our people off their duffs for educational purposes.

"I note several have said the OER does this. It doesn't! The OER is man's current great fable. Records show 93 to 97% of all line OERS are maximum ratings with the signature of the endorser the only qualifying difference. How horrible! How dumb! How misleading! The OER is in many cases written by the individual himself/herself and cannot then be expected to be much less than marginally magnificent. Further, the way we have permitted the system to degrade, if a boss doesn't give each subordinate the max, that subordinate with less than superman rating is likely career destroyed. So, the average performer is highly overrated in order to keep him/her in the system and competitive while the truly outstanding is insulted with the same rating because you can do more for him/her. How lousy a system we have grown! It doesn't do the job and won't do the job unless or until AF leadership finds the guts to say people must be evaluated with integrity and honesty so promotions and retention actions can be concentrated on the truly deserving."

"The OER covers this area quite well."

"As stated previously, I do not know how to ascertain proficiency in such a broad field through structured testing. Also, I do not know how to test one to see if he/she would make a successful Chief of Staff."

"What you do in a theater of war - that's what [it] is all about in [the] final assessment. Very few logisticians today served in Vietnam; many worked hard to avoid it."

"Absolutely asinine! We're looking for dynamic leaders who believe in and practice the theorem 'non carborundum illegitimi' - not professional test takers. Anybody can ace an SKT test - leading and producing is an entirely different subject and can only be tested on the job."

ROUND #2 COMMENTS ON GENERAL COMMENTS MADE IN ROUND #1:

ROUND #1 COMMENT: "Certification requirements and periodic testing in at least one speciality. There should be a requirement to get the staff level xxl6 rating that one be certified by one professional organization, i.e. Society of Logistics Engineers, National Contract Management Association, etc."

ROUND #2 COMMENT: "Disagree."

ROUND #1 COMMENT: "Field is too broad. OERS are the test."

ROUND #2 COMMENTS:

[Reference "OERS.."] "BULL!"

[Reference "OERS.."] "That's what I like, a non-subjective test!!"

"Somewhat agree. But, the OER system has its problems also."

"Agree with comment."

ROUND #1 COMMENT: "Testing is not required. Job performance will quickly demonstrate competency or lack thereof."

ROUND #2 COMMENTS:

"Agree!!"

"Agree with comment."

ROUND #1 COMMENT: "I concur with periodic proving of competence and knowledge. I think it could be accomplished through a combination of (1) written knowledge examination, (2) observation of performance in simulations and assessment centers, and (3) evaluation (by a professional group) of his/her accomplishments in this current period. Included would be job performance, professional continuing education, professional military education, professional association activity, writing, speaking, teaching, efforts toward expanded experiences, and so forth. Understand, though, that this would cause considerable disagreement by a majority of the military logistics community who would not wish to undergo this sort of evaluation. But, it can and should be done if we are to ever have a true professional military logistician career group. Some might ask how this would impact the military OER system. I would suggest it could replace the OER for those in the career field."

ROUND #2 COMMENT: "Humm."

ROUND #1 COMMENT: "OER serves this purpose."

ROUND #2 COMMENT: "Agree with comment."

ROUND #1 COMMENT: "OER's, if realistic, and written by knowledgeable (non-golfing partners) raters will take care of this. SOLE CPL validates the credential requirement, along with grad work [plus] senior service school."

ROUND #2 COMMENT: [Reference "OER's..."] "Not today!"

ROUND #1 COMMENT: "There are doers and there are test-takers. Let performance demonstrate competency and performance reports document it."

ROUND #2 COMMENT: "Agree."

ROUND #1 COMMENT: "Technical competency can be determined through structured testing. I don't know how to test for successful selection of managers. I know one when I see [one] in action."

ROUND #2 COMMENT: "Agree."

ROUND #1 COMMENT: "Tests are not required for civilian senior executives nor is it practical to expect a test to be developed that would adequately demonstrate executive aptitude. However, company grade officers should take the WAPS tests for logistics required of senior NCO logisticians, but not for competency but for information highlighting deficiencies in training."

ROUND #2 COMMENT: "Interesting."

ROUND #1 COMMENT: "Waste of taxpayers money."

ROUND #2 COMMENTS:

"Short-sighted."

"Agree with comment."

TOPIC 7: CAREER DEVELOPMENT

Every military logistics specialty (for example, supply, transportation, maintenance, procurement, logistics planning) should offer the opportunity for full career development terminating at the Director of Logistics level.

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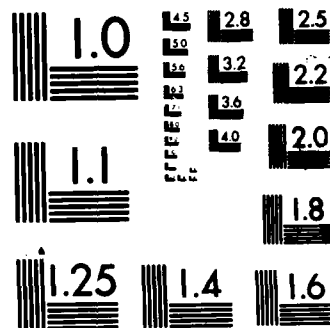
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NATIONAL BUREAU OF STANDARDS 1963-A

ROUND #2 MEAN RATING: 3.8 ROUND #2 MEDIAN RATING: 4

ROUND #2 GENERAL COMMENTS ON CAREER DEVELOPMENT:

"Only if a second logistics AFSC, one of which is [a] fully qualified field grade level (xxl6) AFSC prior to acceptance into AFSC 0046/0096."

"Narrowly defined functional area knowledge is a weak foundation. You need experience leading troops, 'meeting the (FHP) payroll' and being responsible for a unit's performance."

"We already have this - here at SA-ALC - as Directors we have a maintenance, munitions, transportation, procurement, fuels, and finance officer. We have the system now - maybe the positions aren't widely known.?"

ROUND #2 COMMENTS ON GENERAL COMMENTS MADE IN ROUND #1:

ROUND #1 COMMENT: "Provided that one also have a fully qualified 2nd AFSC."

ROUND #2 COMMENTS:

"Somewhat agree."

"Agree with comment."

ROUND #1 COMMENT: "MPC should (but doesn't) know this."

ROUND #2 COMMENT: "Agree."

ROUND #1 COMMENT: "However, one cannot expect such a title exists within each functional discipline. I would state the question (response) differently - 'Every military logistician should be afforded the opportunity--'."

ROUND #2 COMMENT: "Agree with comment."

ROUND #1 COMMENT: "Give a few logisticians the chance to become general officers, rather than filling the functional area at the top with the ignorant and inexperienced."

ROUND #2 COMMENT: "That's the aim."

ROUND #1 COMMENT: "Career development for Air Force should insure logistics development gets individual to operational unit, THEN into AFLC and next into AFSC. Then he should go into a military school that teaches him about 'logistics' not just the same old functional areas (i.e. supply, maintenance, etc.)."

ROUND #2 COMMENT: "OK."

ROUND #1 COMMENT: "Everyone can't be a major command DCS - Logistics or Deputy Chief of Staff/LE - HQ USAF. However, career development to director level should provide the broad-base essential to higher level assignments."

ROUND #2 COMMENTS:

"Agree."

"Agree with comment."

ROUND #1 COMMENT: It is proper for AFSC 0046 to require at least 2 logistics AFSCs or a full MAJCOM log staff tour prior to acceptance into the AFSC."

ROUND #2 COMMENTS:

"Agree."

"Agree with comment."

TOPIC 8: RATED FIELD

Rated officers make better military logisticians than non-rated officers.

ROUND #2 MEAN RATING: 2.1 **ROUND #2 MEDIAN RATING:** 2

ROUND #2 GENERAL COMMENTS ON RATED MILITARY LOGISTICIANS:

"An aviation rating is not, repeat NOT, necessary for the career logistician or for the senior military logistician you are talking about. But, at the same time, a rating in no way decreases the capability or capacity of the logistician. Therefore, I don't see where it has any position in the discussion provided the rated person must meet the same criteria as the non-rated for entry into and development in the military logistics career field. In fact, we probably should encourage some of the rated people to compete for logistics careers since we could use their rated experience in logistics determinations. It never pays to become myopic - a major danger to those who

get little exposure to a world outside their own. I certainly hope the logistics career which develops, perhaps as a result of action you have begun, has arrangements for the logistics people to obtain intelligence about and from the operational side of the USAF.

"Those who say rated people have greater promotion potential are working on the basis of the past, and perhaps the current, AF. Certainly, the 'fly and fight' idea has been overdone and has created a sense among the non-rated of being, in their terms, 'second class'. But, the AF is changing and will change more. Probably more requirements exist today for non-rated people than for rated and the promotion and advancement rolls should be showing that ultimately. I know we now have a fairly large number of non-rated general officers so the road is there. Now, we must ensure in the career development of logisticians that this continues and I would urge the AF to eliminate consideration of 'rated' or 'non-rated' from personnel decisions other than for flying positions."

"I believe rated experience is an asset to any logistician particularly when related to one of the functional areas (i.e. maintenance). However, I do not see it as an essential requirement for the successful logistician. If the objective is attainment of senior USAF command position then I would say it is essential."

"Being rated is just another 'experience'. But, I'm forced to comment further. Pilot training is a screening process that tests aptitude. Initial pilot experience tests leadership and common sense. Therefore, the mid-career pilot has been through the rigors of a required discipline unlike the normal person off the street. One may say: 'Well, so does the non-rated'. But my experience shows this not to be the case - generally so sorry, but most (and I have to emphasize most - not all) rated officers are a cut above the norm."

"P.S. A non-rated Lt Col (maintenance) reviewed this survey and felt offended by the above statement. So, to prevent misunderstanding, I am not making a direct correlation and saying ALL rated officers are a 'cut above' all non-rated officers. What I am saying is, because of the selection process, training, and early year experiences/requirements, they are cut above the normal person on the street. The rated profession requires unique talents and the system is designed to recognize this."

"5 years, 5 miles up gets you used to betting your life on machinery others support/maintain = that's enough. It takes a decade (including AFIT, unit command, headquarters tour) to be ready to step into directing logistics. Otherwise, you are squinting at the big picture."

"A professional logistician (a good one) will learn a lot more about operations in 20 years - than operator will learn in logistics even if leaving the cockpit after 10 years. This is an outdated question. We have plenty of professional logisticians now - we must just perform."

ROUND #2 COMMENTS ON GENERAL COMMENTS MADE IN ROUND #1:

ROUND #1 COMMENT: "Acquiring a military rating in no way increases a person's intelligence or ability to lead or manage. It just as surely does not hurt one's ability and may even add some immeasurable element to the personality. But, it is NOT essential for a person to become a professional military logistician. It should not become a mandatory element of the military logistician background but, neither should the rating prevent a person from entering and qualifying for the professional military logistician career."

ROUND #2 COMMENTS:

"Agree."

"Agree with comment."

ROUND #1 COMMENT: "There is still a strong bias in the USAF that a guy who can fly an airplane is a cut above and has more credibility. This is crap, of course, but still prevalent. Look at your O-7 promotion list(s) year after year."

ROUND #2 COMMENTS:

"Probably true because the top people have historically been rated - was a different world, though."

"Have to agree but then I'm somewhat bias also."

"Agree with comment."

ROUND #1 COMMENT: "More [expletive deleted]!! Do you really understand what's happening? Pilots are just given other jobs until WAR starts, then they all go BACK to the cockpit - then where will logistics BE???"

ROUND #2 COMMENTS:

"Really not very astute - unless the AF makes great changes in personnel, it will never have rated people only doing 'flying' jobs - only non-rated doing 'support'. We've got to know some rated will not 'go-back to [the] cockpit.' Many rated in WWII, in Korea, and in Vietnam stayed in support jobs."

"Not necessarily."

"Agree with comment."

ROUND #1 COMMENT: "Rated experience is irrelevant to the quality and competence of a logistician. Some ex-pilots learn and do well, others don't. They all could have used the functional experience the non-rated ones got while the rated ones were flying."

ROUND #2 COMMENTS:

"OK."

"Agree."

ROUND #1 COMMENT: "In my opinion, being rated (flying) or non-rated has little or nothing to do with the success or performance of a military logistician. If rating [is] essential it must be difficult for the armored logisticians of the Army or the destroyer/cruiser logisticians of the Navy. Logistics is a profession - all experience is an asset."

ROUND #2 COMMENTS:

"TRUE - good point!"

"Agree."

"Agree with comment."

ROUND #1 COMMENT: "Becoming a logistician after 15/16 years commissioned service will result in a limited future normally."

ROUND #2 COMMENTS:

"Sure, but we've got to provide for some of this. We need people with crew experience to speak-up in logistics."

"Somewhat agree."

"Agree with comment."

a. Rated command experience is more beneficial to a military logistician than non-rated command experience.

ROUND #2 MEAN RATING: 2.3 ROUND #2 MEDIAN RATING: 2

ROUND #2 COMMENTS ON GENERAL COMMENTS MADE IN ROUND #1:

ROUND #1 COMMENT: "Rated command experience is more beneficial to getting promoted faster."

ROUND #2 COMMENTS:

"This has nothing to do with logistics. It reflects bitterness (and perhaps jealousy)!"

"Humm."

b. For rated military logisticians, how much rated experience (in number of years) would be ideal?

ROUND #2 MEAN RATING: 6 years ROUND #2 MEDIAN RATING: 6 years

ROUND #2 GENERAL COMMENTS:

"6 years is about right."

"No rating. Still bad question."

ROUND #2 COMMENTS ON GENERAL COMMENTS MADE IN ROUND #1:

ROUND #1 COMMENT: "Quality not quantity is important."

ROUND #2 COMMENTS:

"True, but quality is actually an after-the-fact measurement in this respect. What may seem low quality at the time might well be the most beneficial later."

"[Experience] not applicable."

"Agree."

c. For rated military logisticians, how much military logistics experience (in number of years) would be ideal?

ROUND #2 MEAN RATING: 9.8 years ROUND #2 MEDIAN RATING: 10 years

ROUND #2 GENERAL COMMENTS:

"Two tours back to back in logistics at two levels (wing and MAJCOM)."

TOPIC 9: SELECTIVE DEVELOPMENT

The Air Force should conduct early selection of military logistician candidates and groom only those selected officers who show potential for increased military logistics responsibilities.

ROUND #2 MEAN RATING: 3.7 ROUND #2 MEDIAN RATING: 4

ROUND #2 GENERAL COMMENTS ON SELECTIVE DEVELOPMENT:

"If there is going to be a military logistician career field with career development there must, MUST, be selective development. For too long, the AF has relied upon the fortunes of chance for the selection and development of logistics people. When they wished they merely applied bodies to logistics positions and assumed and hoped the bodies would produce. They often did, to our great relief and often amazement. But, that's a hell of a way to run an Air Force. It displays a poor rationale for success and leaves everything to expected success without providing consciously for that success.

"Those who say the current promotion and selection system does this are probably thinking particularly of the flag level positions. The selection process certainly is not a worthy one for the junior officer or the field grade! Today's efforts depend almost solely on the inflated OER and seniority. Both have [a] reasonable place for consideration, of course, but neither should be predominate in selection of senior logisticians for career development or key positions. We need to ensure that true ability is more recognized rather than depend upon the rather luck-based category of seniority. And, of course, the OER as I have stated earlier, is far from being of any value for this purpose.

"The selective development process should be tuned to our best ideas of what is required. Your thesis is probably a very good start in this process. Developing such a process cannot be done overnight yet the normal AF impatience and urge for speed would tend to make one think it could be. I hope the AF will take this process with care and caution. It is obvious we should have a target date for implementation but that date should be realistic. If the program is to be intelligently developed it will require the long time assignment of highly respected human resources, experienced in logistics, and the necessary material and fiscal resources to allow them to do a proper job. Further, and I think this extremely important, the development and ultimate implementation of the log career development program should not, repeat NOT, repeat again NOT, be in the hands of the Air Force personnel or manpower people. They should have nothing to do with it or it will again be a screwed up mess. The AF has proven incapable its personnel and manpower

policies and operations. Both systems provide a numbers racket of doubtful integrity but neither provides a true 'people' program. If our logistics career program is to succeed and become real, it must be done by logisticians and the resultant system must be run by logisticians NOT by personnel/manpower!"

"11 year point - selected by a Board."

"The OER system is doing this now. However, some feedback to the individual that their records and performance has been good/bad and advice as to the probability of promotion."

"When he becomes eligible for promotion to field grade, it must be voluntary - and career-wise rewarding. [The Air Force should conduct early selection of military logistician candidates] and grooming for senior level!"

"O-4, PME behind you for that level, board selection for AFIT masters with [a] direct duty assignment following into AFIC (wholesale), then un. command (retail), thence senior service school and 0046 billet."

"Most prologs are self-selecting."

"I thought we were already doing that through promotions and challenging positions."

ROUND #2 COMMENTS ON GENERAL COMMENTS MADE IN ROUND #1:

ROUND #1 COMMENT: "Not later than 12th year. This should be a combination of experience, academic, professional accomplishments, and potential as reflected through OERS. The 12th year is suggested because I feel a person needs a minimum of 6 years to act in the capacity of a senior logistics manager. If an individual is a fast burner/18 year Colonel - then he needs that start by his 12th year to begin the 'logistics' phase of his total AF career."

ROUND #2 COMMENT: "Somewhat agree."

ROUND #1 COMMENT: "This is a sensitive issue. Unlike the rated force where flying skills can be determined early in training, leadership abilities are developed over time; albeit, certain basic traits exist in each individual. Also, one must be careful not to be premature in an assessment of leadership abilities. Unlike the Peter Principle, a level of incompetence may exist before a level of competence is reached. But, this issue is basic in fostering future leaders. At the junior captain level the identification process should have begun. These officers should be afforded the opportunity, not 'groomed' (a cadre system), to show potential for increased levels of responsibility."

ROUND #2 COMMENT:

"Stand on my original comment."

"Agree with comment."

ROUND #1 COMMENT: "I think it is done today, by selecting officers for key positions."

ROUND #2 COMMENTS:

"Bull! Lot of today is based on seniority and the inflated OERS. People then succeed, but often at great expense to their subordinates."

"Agree with comment."

ROUND #1 COMMENT: "Would be great but unrealistic - all career fields should do this - not enough smart people to go around."

ROUND #2 COMMENT: "OK, let's pick our best!"

ROUND #1 COMMENT: "I would suggest the selection should be first based upon the individual's volunteering for selection at the 5 to 8 year service point. The application for selection should be evaluated, along with full background data (education, experience, and so forth), by a selection committee at each major air command (MAC). Those passed by the MAC would then be evaluated by an Air Staff committee composed of selected senior military logisticians plus a minority group of civilians with comparable status. The volunteer application would have to include all the features of performance, education, continuing education, and so forth applicable to date for the applicant. Further, it should include his/her intentions for the future (career in the USAF, further education, job desires, and so forth). Those who did not volunteer by the 8th year would be restricted to development through a maximum of O-5 as a specialist in his/her particular specialty of logistics."

ROUND #2 COMMENT: "Somewhat agree - but bias must be filtered. Curtis LeMay said all his combat aircrews were 9s - regardless."

ROUND #1 COMMENT: "This would eliminate cross-feed from other disciplines (sorely needed). Soon, none of the 'good guys' not on the 'list' would have anything to do with logistics."

ROUND #2 COMMENTS:

"No - they could get on [the] 'list' as time goes along."

"Somewhat agree."

ROUND #1 COMMENT: "Some bloom later than others. Let overall AF personnel and promotion policies govern."

ROUND #2 COMMENTS:

[Reference "...AF personnel and promotion..."] "These don't work adequately - they are too 'universal'."

"Somewhat agree."

ROUND #1 COMMENT: "Early selection of candidates is essential for those career logisticians. However, the continuing need to assign non-career logisticians to certain positions requiring logistic proficiency as a secondary requirement creates a demand for some logistics grooming for other than career logisticians."

ROUND #2 COMMENTS:

"OK."

"Agree."

ROUND #1 COMMENT: "When: at selection to Major. How: (1) Review of record indicates better than 50% chance for promotion to Lt Col, (2) Acceptance at MAJCOM/LG staff level position as a field grade officer or before, (3) Masters and PME completed for level of rank as appropriate."

ROUND #2 COMMENT: [Reference "...50% chance for promotion to Lt Col..."] "This is NOT the basis for a logistician! Promotion potential does NOT reflect competence, necessarily, nor logistics experience."

ROUND #1 COMMENT: "You are trying too hard to tie it down too tight."

ROUND #2 COMMENT: "Agree."

TOPIC 18: SENIOR LEVEL POSITIONS

Many senior military logisticians have entered the military logistics career field at a fairly senior level with little or no background in any of the military logistics specialities. This situation places more knowledgeable subordinates in an awkward position.

ROUND #2 MEAN RATING: 3.8 ROUND #2 MEDIAN RATING: 4

ROUND #2 GENERAL COMMENTS ON SENIOR LEVEL POSITIONS:

"My comments of Round One still apply. It is more a function of the individual than the condition. The right personality, the right approach to others, can do a lot to solve the problem you pose. I can't condemn the process of the past because, in many instances, it was probably needed because we had not truly developed the more senior people with sufficient credibility and recognized ability to meet the need at the location at the time. Most of these impressed people performed reasonably well because they knew their personal limitations and used their subordinates properly as they learned and grew in the job. Would have been better for a career loggie to move up, of course, but we often did not have them available. But, my earlier comments still apply."

"AFMPC should hold tight on the rule to require two fully qualified logistics AFSCs prior to acceptance into AFSC 0046 or 0096."

"Having helped a number of losers make BG I can attest to the validity of this observation. They complicate matters unnecessarily and make their organizations look dumb. Things get done because prologs care about their jobs and doing them professionally."

"It should be viewed as an opportunity to excel."

ROUND #2 COMMENTS ON GENERAL COMMENTS MADE IN ROUND #1:

ROUND #1 COMMENT: "More so than an awkward position for the junior individual; it places the 'senior logistician' at a disadvantage because he does not have a technical background sufficient to make corporate decisions."

ROUND #2 COMMENTS:

"Yes, but the impact on juniors is greater."

"Agree with comment."

ROUND #1 COMMENT: "This depends on the grade."

ROUND #2 COMMENT: "Somewhat agree."

ROUND #1 COMMENT: "Also places [the] inexperienced senior 'logistician' in an awkward position."

ROUND #2 COMMENTS:

"Could."

"Agree with comment."

ROUND #1 COMMENT: "I do not agree more knowledgeable subordinates are in an awkward position - it is a desirable position. If awkward, you have a people problem. Also, one must ask the question, knowledgeable of what. Does experience in a specific logistics discipline, equating to knowledge of that discipline, result in leadership ability - NO."

ROUND #2 COMMENT: "Yes. This just emphasizes it is a function of the individual rather than a set rule."

ROUND #1 COMMENT: "It also places the whole system in jeopardy!! Logistics is the basis for all military power - we'd best understand it, and understand what it is logisticians should know and what it is they should be doing. Unfortunately, many current Director of Logistics positions do not conform to what that position should be doing."

ROUND #2 COMMENTS:

"Agree! Many are really gatherers of nit!"

"My former comment is still valid."

ROUND #1 COMMENT: "See comments on Topic 8. I believe the senior logistician should be a 'generalized specialist', not an 'unspecialized generalist'."

ROUND #2 COMMENT: "Good point! But, I'd say it more strongly."

ROUND #1 COMMENT: "While this adds to the burden of subordinates this situation is not unique to the logistics profession."

ROUND #2 COMMENTS:

"True!"

"Somewhat agree."

"Agree with comment."

ROUND #1 COMMENT: "We shouldn't do this."

ROUND #2 COMMENT: "Agree with comment."

ROUND #1 COMMENT: "Although solid leadership and management can often overcome any logistics expertise shortfall, there is no good guaranteed substitute for individual experience in a professional discipline."

ROUND #2 COMMENTS:

"OK."

"Agree."

"Agree with comment."

ROUND #1 COMMENT: "Not to worry. Need good managers in senior jobs - not necessary to have incestuous growth only through loggie career ladder."

ROUND #2 COMMENT: "Agree. [Need good] leaders [in senior jobs]."

TOPIC 11: LEADER vs. MANAGER

The military logistician must be a good: (circle one and please comment on your response)

1. Leader 2. Manager 3. Both are equally important

ROUND #2 MEAN RATING: 2.6 ROUND #2 MEDIAN RATING: 3

ROUND #2 GENERAL COMMENTS ON LEADER vs. MANAGER:

"I could write a book on this topic and in fact may do that some day soon. But, my Round One comments apply.

"I was surprised to note some Round One comments indicating a sense there are no people considerations in logistics hence no leadership required! WOW! The need for leadership is almost beyond describing at the lower levels of logistics as well as the senior level. Certainly, the bulk of logistics is management (of processes, systems, funds, and so forth) but there are thousands of people involved and they silently cry out for real leadership and a few 'heroes'. It is sad they have received so little - particularly of the latter. Management is essential but leadership is even more so in the military logistics world. We need the model of inspired leadership, the model of true effectiveness, for our success. It won't come from a manager who doesn't inspire followers for his/her leadership."

"In the logistics field, leadership assumes management!"

"But, I'd repeat my first round comments! I suspect we will need in logistics an evaluation process separate from/additional to the general AF process."

"A subordinate in the chain of command can lead if he/she is a very good manager. Both attributes are needed."

"I'll switch but the definition is important here."

"Leader (#1)
Manager (#2)
Politician (#3)
Golfer/racquet baller/tennis player (#4)"

"We are leaders first - we have staffs to help manage - but ultimately the responsibility, execution, and motivation must come from the leader."

ROUND #2 COMMENTS ON GENERAL COMMENTS MADE IN ROUND #1:

ROUND #1 COMMENT: "Very difficult! I was tempted to say 'Leader' but then realized the logistics disciplines also require a high degree of management competence. I do believe the USAF suffers now from a shortage of true leadership—far too many 'managers' and politicians—but I also believe there is a happy medium in which both leadership and management are provided the subordinates and that is what I would hope the professional military logistician would provide to military logistics. We certainly must work to assure that the log education process provides for that and that we weed out those persons who do not prove themselves capable of providing the needed combination."

ROUND #2 COMMENTS:

"Agree."

"Agree with comment."

ROUND #1 COMMENT: "Of course both are important. Emphasis depends upon the job. Commanders and supervisors must be leaders."

ROUND #2 COMMENTS:

"Agree."

"Agree with comment."

ROUND #1 COMMENT: "This may have some correlation with rank/scope of assignment."

ROUND #2 COMMENTS:

"Doubt it!"

"Agree with comment."

ROUND #1 COMMENT: "You have to be both, plus be willing to take chances."

ROUND #2 COMMENTS:

"Agree."

"Agree with comment."

ROUND #1 COMMENT: "It is not Logistics Leadership, it is Logistics Management. He does not LEAD the charge, he manages people, resources, and dollars in the creation of military capability."

ROUND #2 COMMENTS:

"He talks as though there are no people in logistics - no coordination required with humans, etc."

"Disagree."

ROUND #1 COMMENT: "You must lead people and manage programs; the latter also involves the former. The successful logistician leads superiors and colleagues as well as subordinates to achieve goals and 'sell' programs. He must also manage the resources."

ROUND #2 COMMENT: "Agree."

ROUND #1 COMMENT: "You cannot be a successful manager unless you can lead."

ROUND #2 COMMENT: "Agree."

TOPIC 12: CONTINUING EDUCATION

The Air Force should establish a specific course of education for senior directors of military logistics.

ROUND #2 MEAN RATING: 3.6 ROUND #2 MEDIAN RATING: 4

ROUND #2 GENERAL COMMENTS ON CONTINUING EDUCATION:

"My Round One comments apply but I would add this: The AF is currently, as in past years, showing its disdain for continuing education. It does not provide assured funding for it and leaves it all pretty much up to chance. Yet, at the same time, it continues to develop and support degree education. I do not speak against education because I truly believe it necessary. But, given a choice of continued support of degree education, I would with little hesitation choose the PCE because that's where our career development education resides."

"Senior logistics courses are available at AFIT."

"AFIT grad log - get them thinking analytically.
PMCC - teach 'em POM.
ICAF - in residence, for senior service school.
Cornell senior managers course (not just the FHP's and ex-aides)."

"We could make better use of grad schools outside those run by the military. Why not put a few logisticians through Harvard Business School or Stanford instead of considering them 'dirty fingernail folks'."

"Logistics excellence can't be taught."

ROUND #2 COMMENTS ON GENERAL COMMENTS MADE IN ROUND #1:

ROUND #1 COMMENT: "First, there are a multitude of possibilities, however, a basic business education with a masters in a specialty area which extends into the logistics area is necessary."

ROUND #2 COMMENT: "Somewhat agree."

ROUND #1 COMMENT: "The emphasis should be on continuing education - a series of required courses during the whole career - a series which does not stop at the 20 year mark or the O-6 level. Where taught? I would suggest it be an AFIT responsibility with classes conducted at W-PAFB. Content? I can't be specific in this short space or time but the courses must begin with a general logistics course and all courses must include some log history and required log history reading/discussion. The emphasis in the courses should be on concept and philosophy vice specific procedures and processes. We should develop logisticians rather than technicians."

ROUND #2 COMMENTS:

"Somewhat agree. [Reference last sentence] Agree."

"Agree with comment."

ROUND #1 COMMENT: "This is where non-experienced people and 'stovepipe' loggies can improve themselves. Emphasis should be on how the individual functions interrelate and must work together to produce support. ONE WEEK is long enough. Where it is taught is not important."

ROUND #2 COMMENTS:

[Reference "ONE WEEK..."] "One week in a whole career?"

"Somewhat agree."

ROUND #1 COMMENT: "There are already many kinds of courses available (i.e.. AFIT short courses, DSARC, etc.)."

ROUND #2 COMMENT: "True, but not many 'logisticians' continue to attend."

ROUND #1 COMMENT: "It's called ICAF in residence."

ROUND #2 COMMENT: "Only one shot!"

ROUND #1 COMMENT: "By the time they are SENIOR Directors of Logistics, they are TOO old to teach - or make effective use of what is taught. Why doesn't Air Force Academy teach logistics? Why doesn't Grad Log?"

ROUND #2 COMMENTS:

"Bull! Who's too old to learn? Some choose not to, but...!"

"I'm 50 so [I] won't comment."

ROUND #1 COMMENT: "The variety of duties doesn't lend itself to a specific course of education. 'Short courses' would be more useful. Some, but not all, of such courses could be taught at AFIT - others exist, such as DSMC's 'Executive Refresher Course' in Program Management."

ROUND #2 COMMENT: "Agree."

ROUND #1 COMMENT: "Logistics planning to include force structure development, financial planning, manpower, facility planning, data management, information processing, and systems analysis."

ROUND #2 COMMENTS:

"Agree."

"Agree with comment."

ROUND #1 COMMENT: "45-60 day professional AFIT course at the executive level Lt Col and above. Strong participation by periodic visiting MAJCOM professional logisticians for briefings/discussions. Four areas (1) Wholesale, (2) Retail/operational, (3) Financial management (1/4 each), and (4) Acquisition logistics."

ROUND #2 COMMENT: "Agree."

TOPIC 13: QUALITIES OF A MILITARY LOGISTICIAN

There are identifiable qualities and characteristics which distinguish successful military logisticians from unsuccessful ones.

ROUND #2 MEAN RATING: 4.4 **ROUND #2 MEDIAN RATING:** 4

ROUND #2 GENERAL COMMENTS ON QUALITIES OF A MILITARY LOGISTICIAN:

"Round One comments apply. I doubt we can, at this time, do this subject service. We haven't enough time for the interaction required to argue through the 'qualities' we would prefer in senior military logisticians. It would be an interesting and frustrating exercise but we haven't the time or opportunity to work it now. Too bad, really, because it might be very beneficial. The danger in such a listing, though, is the tendency for folks to accept it as mandatory and the 'key' to success. In other words, have the qualifications and you succeed - with then no attention given to situational variables. It has happened before in a range of efforts including a lot of WWII pilot training selection, for example."

"Any handicap helps!"

"Loyalty, integrity, duty, and common sense."

"-ability to think things through, based on facts, not prejudices.
-willingness to take blame along with credit.
-thick skin, hard head, not seriously injured falling on sword.
-sense of politics and timing.

"Must be credible to subordinates and know a bit about gamesmanship. Be aware, and inured, to [the] fact the he is going to be left out of policy making due to the age old perception that he is in a continuous 'support' role."

"Don't pin it down too much."

"Perseverance, knowledge, ability to relate to and lead people, and ability to sort out priorities for the organization."

ROUND #2 COMMENTS ON GENERAL COMMENTS MADE IN ROUND #1:

ROUND #1 COMMENT: "Drive and common sense."

ROUND #1 COMMENT: "An understanding of multiple disciplines - to understand the synergy of the system. To be able to establish priorities and objectives and to think in total overall costs and objectives; i.e. to understand different levels of maintenance and not the principles of forward stockage points, fly-away kits and mobility requirements is again missing the picture."

ROUND #1 COMMENT: "The same qualities and characteristics which distinguish successful people in any career field from unsuccessful ones. Motivation, leadership, management ability, job knowledge, etc."

ROUND #1 COMMENT: "I hesitatingly agree. I think there has been too much emphasis on the idea of a particular set of traits leading to success. However, I must also agree there are some thoughts which seem to be of real value for logistician's success. I can't identify them all, of course, in this time frame and space but offer the following for examples of desirable traits or characteristics of the professional logistician:

- wide knowledge of the military logistics arena
- strong interest in the future as well as the past
- strong curiosity and eagerness to learn
- understands self and the behavior of others
- intellectual honesty
- integrity
- flexibility
- strong communicative ability
- willingness to listen and analyze dissenting opinions
- ability to identify problems and help to solve them
- able to visualize and set attainable, but demanding, goals
- reliable and dependable
- 'street smart' vice 'book smart'"

ROUND #1 COMMENT: "Good leader. Good briefer. Wide experience base. Strong technical base."

ROUND #1 COMMENT: "Dedication, energetic, sensitive, fair, resourceful, intelligent, common sense."

ROUND #1 COMMENT: "Leadership, job knowledge, and initiative."

ROUND #1 COMMENT:

- "—credibility - job knowledge
- right senior service school
- Pentagon horse-holder role fulfilled
- right place/right time
- low handicap"

ROUND #2 COMMENTS:

"A nasty and not very helpful response! We're trying to establish a development program and he says this sort of junk is 'desirable'. I'm surprised!"

"Humm."

ROUND #1 COMMENT: "Functional specialty knowledge, insight, innovativeness, integrity, leadership, management skills, writing, and speaking ability, etc. They are the same qualities, and are identifiable to the same extent, as those that distinguish successful and unsuccessful AF officers or businessmen."

ROUND #1 COMMENT:

- " 1. Dedication
2. Recognized leader
3. Gets things done by leading - not driving."

ROUND #1 COMMENT: "Willing to try new ideas. They pay attention to other's ideas. Willing to carry a lot of responsibility. They are not content with status quo in their organization."

ROUND #1 COMMENT: "Flexibility, generalist, writer, ability to generate support through leadership, speech, and technical expertise."

ROUND #1 COMMENT: "Creativity, innovation, not easily intimidated, adaptability."

ROUND #2 COMMENT: [Reference all Round One comments on qualities of a military logistician] "Agree - as you can see, there are many - now you are faced with ranking them, right? Don't try - sensus communis."

TOPIC 14: AIR FORCE GUIDANCE

Current Air Force guidance does not adequately support the appropriate development of military logisticians.

ROUND #2 MEAN RATING: 3.6 ROUND #2 MEDIAN RATING: 4

ROUND #2 GENERAL COMMENTS ON AIR FORCE GUIDANCE:

"My comments thus far should certainly reveal my bias in this subject area. My Round One comments reflect that bias, as well, and those comments still apply. The AF has neither defined logistics nor logistician. Result? No development program, little or no education, no career to speak of, and so forth. The control of personnel policies and programs in the MPC and ME

communities has destroyed the concern of senior people for their career members. Lip service is given to people programs which ultimately turn into number games of little meat or value. No effort is evident to develop career progression or career rewards in the logistics arena. People who succeed in the current scheme then tend to think (rightfully in their situation) there is nothing wrong with the current process therefore no change is needed. Too bad! Wish they could have been asked about the same thing 15 or 20 years back! Yet, it takes these senior people to get the ball started for program development. If they don't think it needed, it won't happen. And, unfortunately, many of them probably don't think change necessary since they have done so well. But, we do need significant change or AF military logistics is going to fail to meet this country's needs and unstated expectations!"

"Stovepiping is the problem coupled with AFMPC assigning unqualified O-6s to 0046/0096 positions."

"If you haven't defined the career in sufficient detail to specify the building blocks it is fair to say a properly structured development program is lacking. Maybe we should explore other worlds such as industry, academia, other military organizations (U.S. and foreign) before attempting to be definitive. Until that is done I suggest we opt for the broad base approach to leadership and management development."

"If we can eliminate humanism with guidance - OK. But I doubt you can. This whole issue centers around attitudes. I hate to say it but believe General Marquez' attack on 'stovepiping' will die with his departure because its bigger than one man or one effort can solve. I think Secretary Orr's push for more non-rated generals will help. On the civilian side we need more mobility. Bringing in young 'whiz kids' at the top is a disaster. How long have Moseman and Goldfarb been in their jobs and how much longer will they stay. Moving D.K. Jones was a good stroke."

"MPC needs a major fire, starting up under the roof, fueled by palace logs. The younger officers coming up can see no clear path, and get the message early that they are going to be excluded from significant decision-making later in their careers. Why is there no logistics major at Colorado Springs? Why don't we get 'the best and brightest' for seasoning early in their careers?"

"Sometimes it works; sometimes it doesn't."

"Don't believe there is a problem. Look at who's in the senior positions now. If not a professional logistician then examine the number of eligibles to start with."

ROUND #2 COMMENTS ON GENERAL COMMENTS MADE IN ROUND #1:

ROUND #1 COMMENT: "I feel it does through the non-rated career field and even through the rated sup program. However, there is a breakdown when assigning Colonels for the first time into senior logistics positions."

ROUND #2 COMMENT: "Agree with comment."

ROUND #1 COMMENT: "The USAF has neither defined its intentions for logistics nor its intentions for logisticians. It suffers as a result. There is little or no schooling for 'logisticians' and certainly no real means for effectiveness measurement in logistics operations. There is no adequate logistics doctrine, no suitable USAF logistics philosophy, no pertinent career field for 'logisticians'. The overall impression is 'Well, we won before, we'll win again with what we have!' All in all, the USAF provides practically no guidance for logistics other than procedural guidance in specialties. Look at 67-1 or 66-1 if you want to see what I mean....a lot of 'help' for centralized specialization but nothing for 'logistics'."

ROUND #2 COMMENT: "Somewhat agree."

ROUND #1 COMMENT: "MPC has no idea of how to manage the career force."

ROUND #2 COMMENTS:

"I agree!"

"Somewhat agree."

ROUND #1 COMMENT: "Guidance is not the problem - administration is. It is a major effort for an individual to break away from a MAJCOM or functional area. Once a SAC supply toad, always a SAC supply toad. Then when the person makes O-6 and is sent to AFIC we wonder why he/she possesses so little knowledge. I think the current term is 'stovepiping'."

ROUND #2 COMMENT: "Yes."

ROUND #1 COMMENT: "You can make O-6 on merit and job performance. Beyond that it's sponsorship all the way."

ROUND #2 COMMENT: "Somewhat agree."

ROUND #1 COMMENT: "I see nothing wrong."

ROUND #2 COMMENT: Well, this probably because he/she has done well. But, the correct system doesn't 'develop intentionally' in logistics."

ROUND #1 COMMENT: "Cross-training between logistics functional areas is limited and not institutionalized. Moreover, some AFMPC functional managers are reluctant to allow transfer from one AFSC to another for one tour in logistics."

ROUND #2 COMMENT: "Agree."

ROUND #1 COMMENT: "MPC fills squares. MPC doesn't develop skilled assets for any career field."

ROUND #2 COMMENTS:

"OK."

"AGREE!" [two respondents].

TOPIC 15: MILITARY LOGISTICS BACKGROUND

Air Force military logisticians should possess experience in:

ROUND #2 GENERAL COMMENTS ON MILITARY LOGISTICS BACKGROUND:

"A good logistician is a generalist who has some technical expertise in one or more of the basic logistics disciplines."

ROUND #2 COMMENTS ON GENERAL COMMENTS MADE IN ROUND #1:

ROUND #1 COMMENT: "Optimal - would be an assignment in each area. This would place an individual in a highly advantageous viewpoint of the total process at

the 15-20 year point. His perspective would be much greater and his overall use would be much more flexible."

ROUND #2 COMMENT: "Agree."

ROUND #1 COMMENT: "This extremely difficult to respond to. I know what I feel would be best but question the accuracy of my feelings. I have given you what I feel would be a fine career pattern, not in the when but the what, of assignments. Probably with some discussion/argument I would alter this a bit but not enough, I think, to make major change. I have included combat logistics but I don't know how that would be obtained short of war and I certainly do not wish for war. I would be happy if no military logistician ever again had to face combat situations. But, given the way of the world, I must consider it essential for the professional military logistician if the opportunity arises. In fact, I would penalize a professional military logistician, in my scheme of things, who did not volunteer for combat assignments and work hard to get them when the occasion permitted."

ROUND #2 COMMENT: "Agree."

ROUND #1 COMMENT: "A good mix of retail and wholesale, with combat subsumed in one or the other. International and acquisition are broadening, but in the career mainstream - they should be at mid-career, like Log Plans - after the foundation is laid."

ROUND #2 COMMENT: "Agree."

ROUND #1 COMMENT: "The broader the experience base the better."

ROUND #2 COMMENT: "Agree."

ROUND #1 COMMENT: "I firmly believe that our best source of military logisticians is a well rounded hands-on experience at all levels."

ROUND #2 COMMENT: "Agree."

a. Retail logistics

ROUND #2 MEAN RATING: 4.2 ROUND #2 MEDIAN RATING: 4

b. Wholesale logistics

ROUND #2 MEAN RATING: 4.2 ROUND #2 MEDIAN RATING: 4

c. Combat logistics

ROUND #2 MEAN RATING: 4.3 ROUND #2 MEDIAN RATING: 4

ROUND #2 COMMENTS ON GENERAL COMMENTS MADE IN ROUND #1:

ROUND #1 COMMENT: "Plus some combat experience. Nothing heightens your perceptions like having someone shoot at you."

ROUND #2 COMMENT: "Agree."

d. International logistics

ROUND #2 MEAN RATING: 3.1 ROUND #2 MEDIAN RATING: 3

e. Acquisition logistics

ROUND #2 MEAN RATING: 3.6 ROUND #2 MEDIAN RATING: 4

f. Other

ROUND #2 GENERAL COMMENTS:

"Procurement." [two responses]

"Financial management and POM/BES."

"Comptroller/Budget."

"Contracting."

"Takes 5 years to really be useful above base level."

"Senior Staff Level Planning."

"Any combination of the above."

"Education-with-industry."

g. If you agree with any or all parts above, please specify numerically how many assignments would be optimal or ideal.

	ROUND #2 MEAN RATING	ROUND #2 MEDIAN RATING
(1) Retail logistics	1.9	2
(2) Wholesale logistics	1.1	1
(3) Combat logistics	0.9	1
(4) International logistics	0.2	0
(5) Acquisition logistics	0.7	1
(6) Other		

ROUND #2 GENERAL COMMENTS:

"Combat plans and exercises."

"The spectrum is key not the number of assignments at each."

"Program control in a SPO is an eye opener."

"Can't quantify and can't design it. An exceptional officer will be moved and challenged and will gain some expertise in all areas."

TOPIC 16: TECHNICAL COMPETENCY

Military logisticians should be technically competent in:

a. Transportation

ROUND #2 MEAN RATING: 3.6 ROUND #2 MEDIAN RATING: 4

b. Supply

ROUND #2 MEAN RATING: 3.9 ROUND #2 MEDIAN RATING: 4

c. Maintenance

ROUND #2 MEAN RATING: 4.2 ROUND #2 MEDIAN RATING: 4

d. Procurement

ROUND #2 MEAN RATING: 3.5 ROUND #2 MEDIAN RATING: 4

ROUND #2 GENERAL COMMENT:

"Takes about five years to really be useful above base level."

e. Logistics planning

ROUND #2 MEAN RATING: 4.0 ROUND #2 MEDIAN RATING: 4

f. Other

ROUND #2 GENERAL COMMENTS:

"Comptroller/budget."

"Contracting."

"Financial planning."

"Combat plans and exercises."

g. If you agree with any of the parts listed above, how should the military logistician acquire his or her technical competence?

(1) Through professional continuing education.

ROUND #2 MEAN RATING: 4.1 ROUND #2 MEDIAN RATING: 4

ROUND #2 GENERAL COMMENTS:

"There must be a prescribed continuing education requirement much as there is today in law, medicine, CPA, etc."

(2) Through advanced academics.

ROUND #2 MEAN RATING: 3.9 ROUND #2 MEDIAN RATING: 4

(3) Through a variety of assignments.

ROUND #2 MEAN RATING: 4.7 ROUND #2 MEDIAN RATING: 5

ROUND #2 COMMENTS ON GENERAL COMMENTS MADE IN ROUND #1:

ROUND #1 COMMENT: "Supplemented with formal education."

ROUND #2 COMMENT: "Agree."

(4) Other

ROUND #2 GENERAL COMMENTS:

"OJT."

"No response because the question is too broad to be specific."

h. If you had to select a military logistician for assignment to your unit, what would you look for in terms of breadth of experience and depth of experience?

ROUND #2 GENERAL COMMENTS:

"Breadth is important and levels of assignment are a key. I look for leadership and initiative - being able to effectively deal with people is overriding!"

"Check you pass over rate(s) in support skills and see the quality field grader MPC/Palace log has to deal with. Should have a good track record in getting things done, on time and budget, understand and support NCOs, and able to relate and motivate civilians (if you have one, clone him)."

"Horrible question! I believe I answered [the question for the] most part and expressed my views earlier - [reference] 'technical competence' and 'formal education'."

ROUND #2 COMMENTS ON GENERAL COMMENTS MADE IN ROUND #1:

ROUND #1 COMMENT: "It would depend on the grade - a captain, for example, should have a good maintenance background in an operational command; a colonel, DCM experience; [a] major, staff position in a command headquarters and/or USAF."

ROUND #2 COMMENT: "Agree."

ROUND #1 COMMENT: "I would prefer breadth over depth. An individual can pick up the specifics of almost any assignment, but one needs the breadth of where his role fits in and the impact upon other communities."

ROUND #2 COMMENT: "Agree."

ROUND #1 COMMENT: "The more the better, although experience in the particular career area I need help in would be most important."

ROUND #2 COMMENT: "Agree."

ROUND #1 COMMENT: "Given you are speaking of a senior officer, I would look for a minimum of 18 years logistics experience with that experience spread over at least 2 specialty areas (one of which would be log planning) and preferably with experience in both retail and wholesale levels of logistics. If available, some background in acquisition logistics would be icing on the cake. I would expect each experience to be of at least 2 years length with military and personal records to support continued growth and development throughout the experience tours. As mentioned earlier, combat logistics experience would be expected if such experience would have been possible through the candidate's career to date."

ROUND #2 COMMENT: "Somewhat agree."

ROUND #1 COMMENT: "I would look for combination of wholesale and retail rather than specific functions although maintenance and supply would also be useful."

ROUND #2 COMMENT: "Somewhat agree."

ROUND #1 COMMENT: "Command/high level manager jobs (one or more jobs - 3 or more years); field/operational experience (2 or more tours); Three or more different MAJCOMS."

ROUND #2 COMMENT: "Somewhat agree."

ROUND #1 COMMENT: "I would try to discover if he really understood what military logistics was ALL ABOUT - or if he was a guy who once went to Maintenance School, THEN had an assignment in Supply working for his buddy and did a good job as a Supply Officer. Neither the Maintenance School or Supply assignment makes him a logistician."

ROUND #2 COMMENT: "Agree."

ROUND #1 COMMENT: "Depending on the level of assignment and duties, I always look for a certain (intangible) depth; breadth is secondary, but desirable in some senior people."

ROUND #2 COMMENT: "Somewhat agree."

ROUND #1 COMMENT: "Education and experience that matched the functional area and level of assignment. If I had a promising leader in another functional area I would consider lateral movement to enhance career development."

ROUND #2 COMMENT: "Agree."

ROUND #1 COMMENT: "[An individual with] well rounded hands-on experience at all levels."

ROUND #2 COMMENT: "Agree."

ROUND #1 COMMENT:

- "(1) Wing level logistics and MAJCOM staff level experience.
- (2) Experience in 2 AFSCs related to logistics."

ROUND #2 COMMENT: "Agree."

ADDITIONAL COMMENTS AND RECOMMENDATIONS

GENERAL COMMENTS FROM ROUND #2:

"Thanks for allowing me to participate. I have enjoyed the exercise thus far and I hope your thesis is successful in creating the initiative to do something about the AF logistician and AF logistics. We have too long depended on things 'just happening'. For too long we have been reactionary people waiting for events so we could react rather than helping to make happen what we want to happen. We need a logistics effort in the AF which is purposeful, forward looking, and determined. Will we get it?"

"We've conducted a lot of steering groups, committee's, and seminars on how to better the plight of the loggie - some have developed a few good insights. Most have not. I believe we should start concerning ourselves with doing our jobs and not being worried about making general or tracking into positions that lead to stars. Lets face it, two out of 100 loggies make it!"

"Seldom does a non-rated logistician become a general officer. Then we ask why the AF acquisition systems are screwed up and why we have unsupportable weapon systems in the field? The JAG, medics, weather people, etc., all have a few selected general officer slots designated - so why not for the professional logistician?"

"I see the need for selecting and educating those who will become the leaders and managers of Air Force activities. However, the term military logistician is a bit troublesome to me. The basics of logistics management applies to all fields of endeavor (airlines, railroad operations, shipping, retail merchandising, construction, and all other industries). The difference with the military logistician is the breadth of conditions he must work under, the importance of being successful (victory vs. defeat) and the lack of choice with respect to time and place of activity. I suggest we provide the basic training to one who has been schooled formally and see that proper career development provides the opportunity for professional growth."

"I see two basic threads running through this survey: (1) there is no 'pat' answer (2) definition of terms is a problem. The rated discipline has a better 'handle' on this. I think we can all agree on what we perceive a fighter pilot is and what it takes to become one - albeit a good one in war (maverick) has problems in peacetime. This thing called 'logistics', although everyone wants some, needs to be better described. And, terms such as supervisor, manager, leader, etc., tend to blend together. The responsibilities, requirements, traits fog bank needs clearing. And finally, as I said before (and will repeat again and again) having an education does not mean one is educated."

"I've been a military logistician/commander for 20 years, and have had numerous opportunities not generally available to most folks in this career area...three MAJCOM assignments, an outstanding senior service school, a Wing command, international logistics experience, including negotiating with senior foreign officials, plus an eye-opening combat tour. At the same time, I've been in 9 different commands, and spent 10 years overseas in a wide variety of jobs. Insight, based on experience, is to find one MAJCOM, get in it, stay in it, and come back to it, so that you are progressing along with a peer group that knows your capabilities. Somewhere along the line, if you're good enough, you will find the sponsorship you need to progress beyond Colonel. If you can't fill the Pentagon square, pick a nice retirement location and get your wife a good job."

ROUND #2 COMMENTS ON GENERAL COMMENTS MADE IN ROUND #1:

ROUND #1 COMMENT: "The term logistician is relatively new and drawing much attention these days. But, one must be careful in defining a logistician. If the DCM, who is responsible for maintaining our air frames, is a logistician, is the hospital commander? If the POL officer, who is responsible for feeding the 'birds', is the food service officer, who is responsible for feeding the troops? History has proven logistics is a (if not, the) crucial element in winning or losing a war. Senior loggies must be warriors."

ROUND #2 COMMENTS:

"OK."

"Agree."

ROUND #1 COMMENT: "When the military correctly defines logistics and when the DOD evolves a STANDARD concept of military logistics (i.e. what is it, what it does, and what it SEEKS to achieve by doing what it does) - then we can raise military logisticians - until then we will just keep reorganizing and re-inventing THE wheel every 5 years."

ROUND #2 COMMENTS:

"OK."

"Agree."

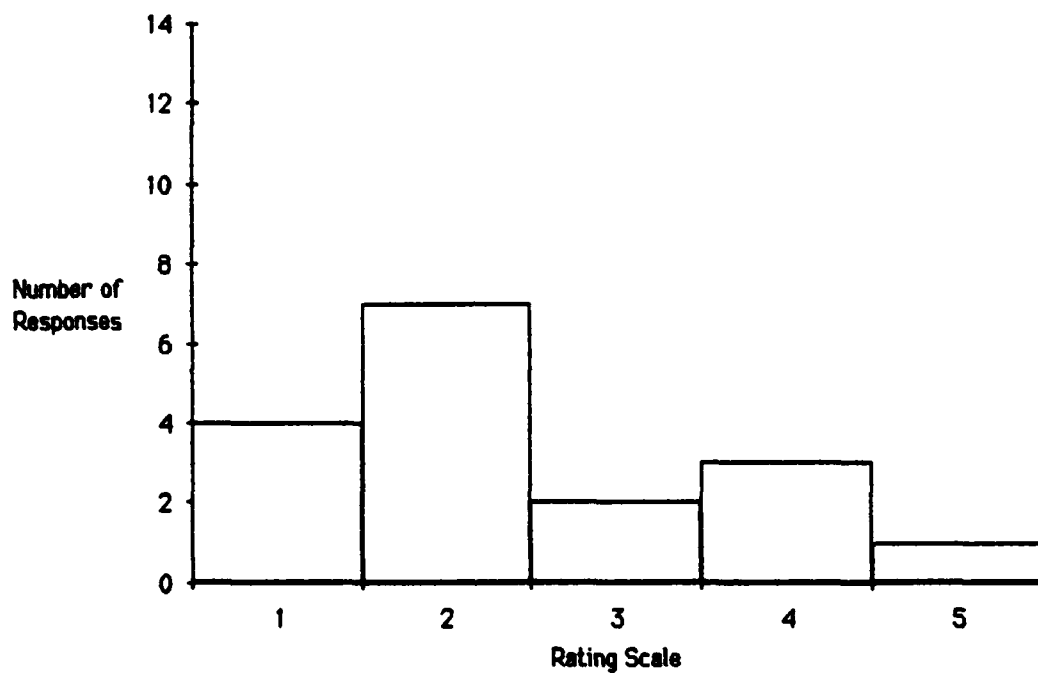
ROUND #1 COMMENT: "Remember that Director of Logistics (0046) is a 'catch all'. The positions are not standard; they require different skills and background. Selection must be individual from the diverse experience gained by logisticians on the way up."

ROUND #2 COMMENTS:

"OK."

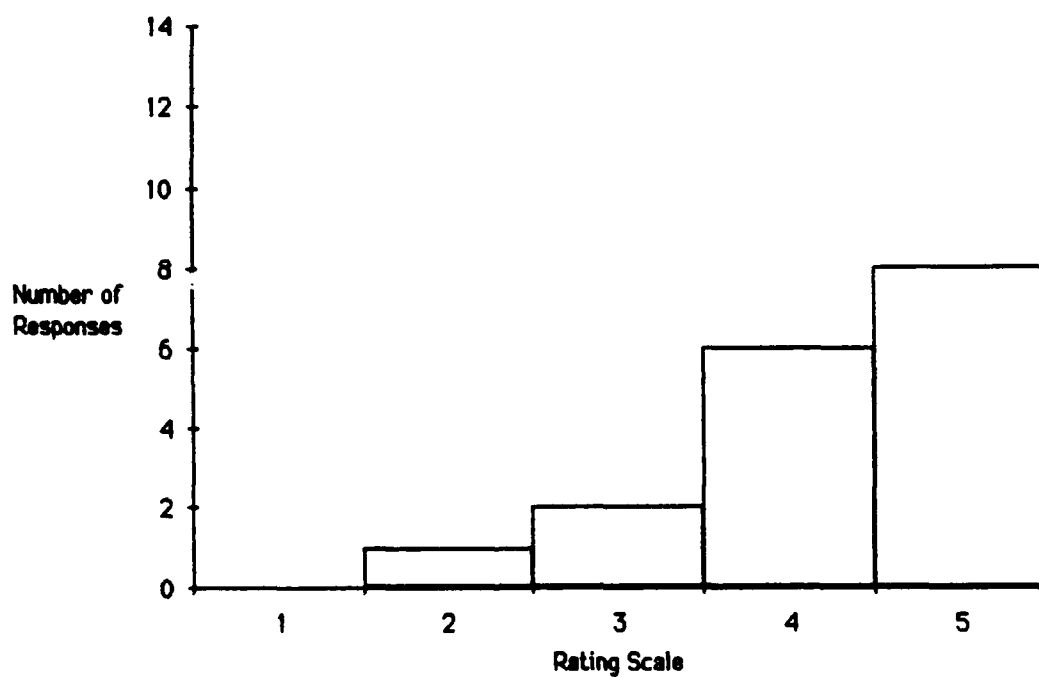
"Agree."

Appendix H: Relative Distribution of Likert
Scale Responses



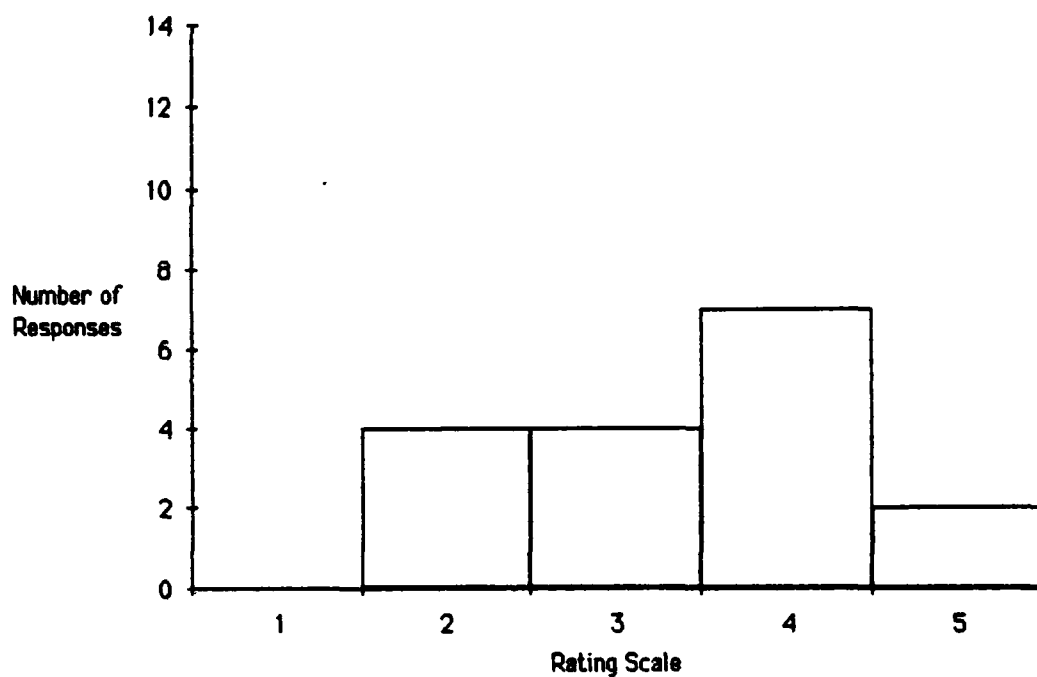
TOPIC 1. ACADEMIC EDUCATION

Military logisticians should possess a specific undergraduate degree.



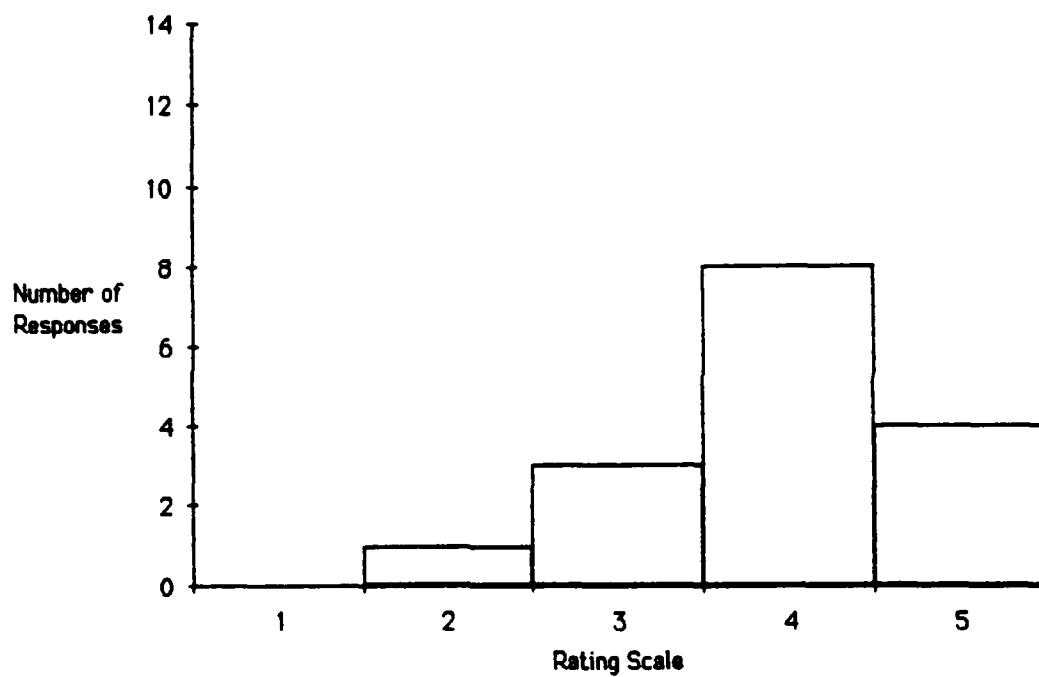
TOPIC 1. ACADEMIC EDUCATION

Military logisticians should possess education beyond a bachelor's degree.



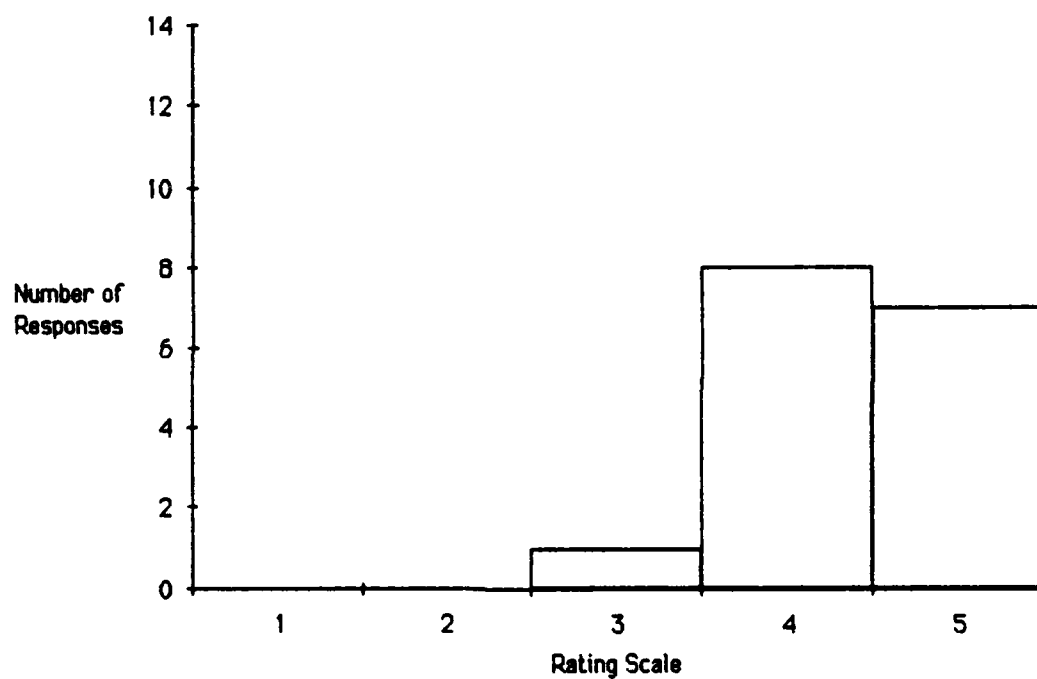
TOPIC 1. ACADEMIC EDUCATION

To earn MS, military logisticians should be encouraged to earn a master's degree at the Air Force Institute of Technology.



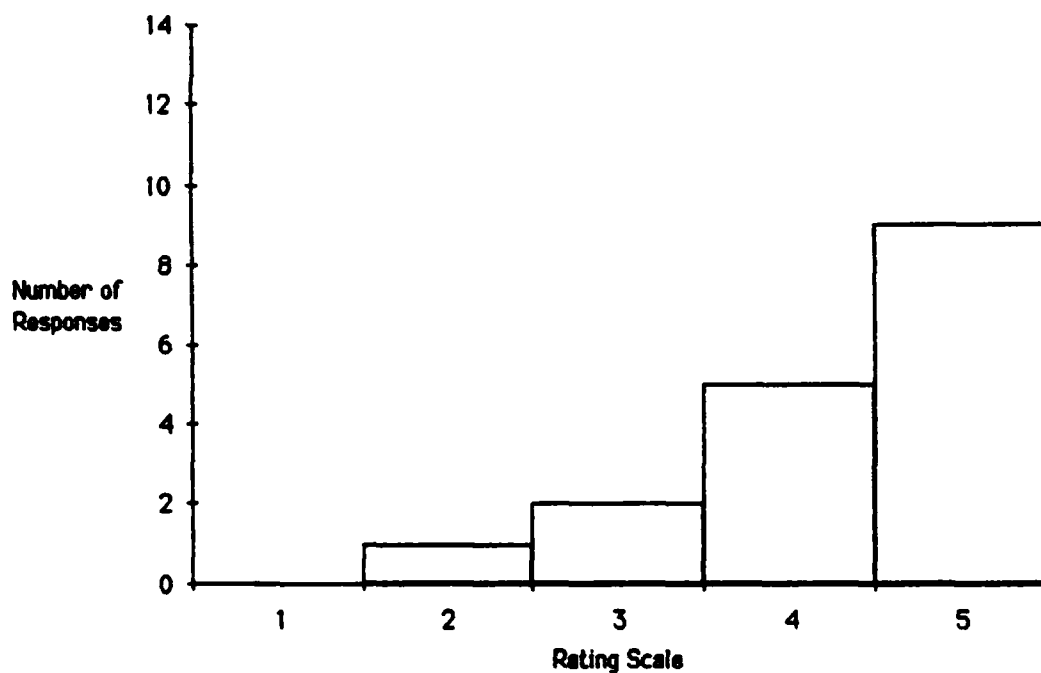
TOPIC 2. PROFESSIONAL INVOLVEMENT

Military logisticians should be active in a professional logistics society.



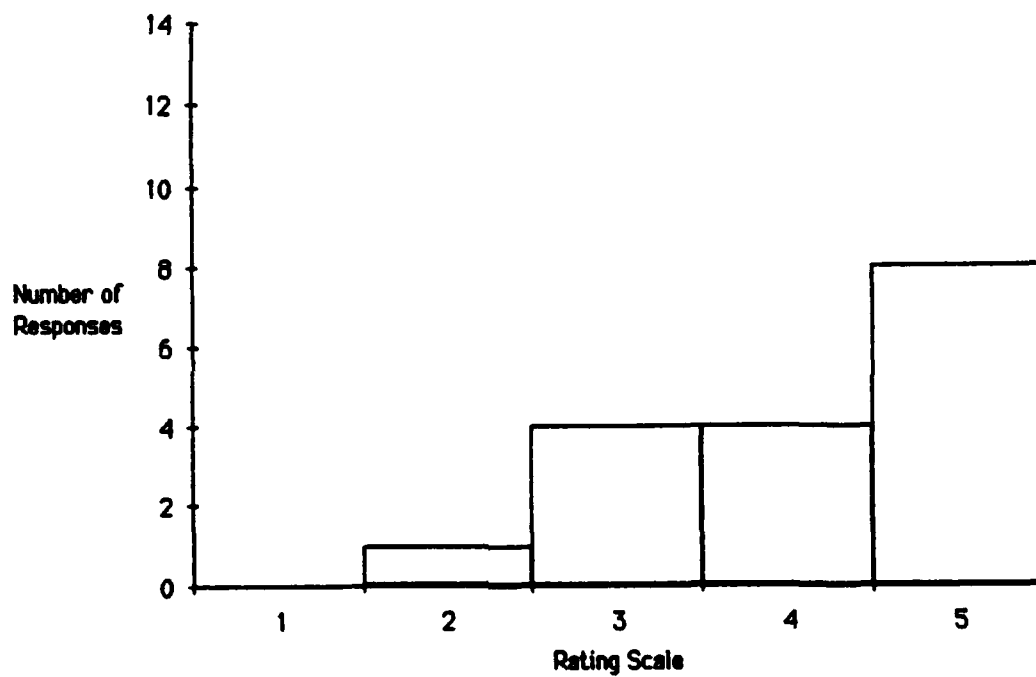
TOPIC 2. PROFESSIONAL INVOLVEMENT

Military logisticians should participate in professional logistics symposia, seminars, and conferences.



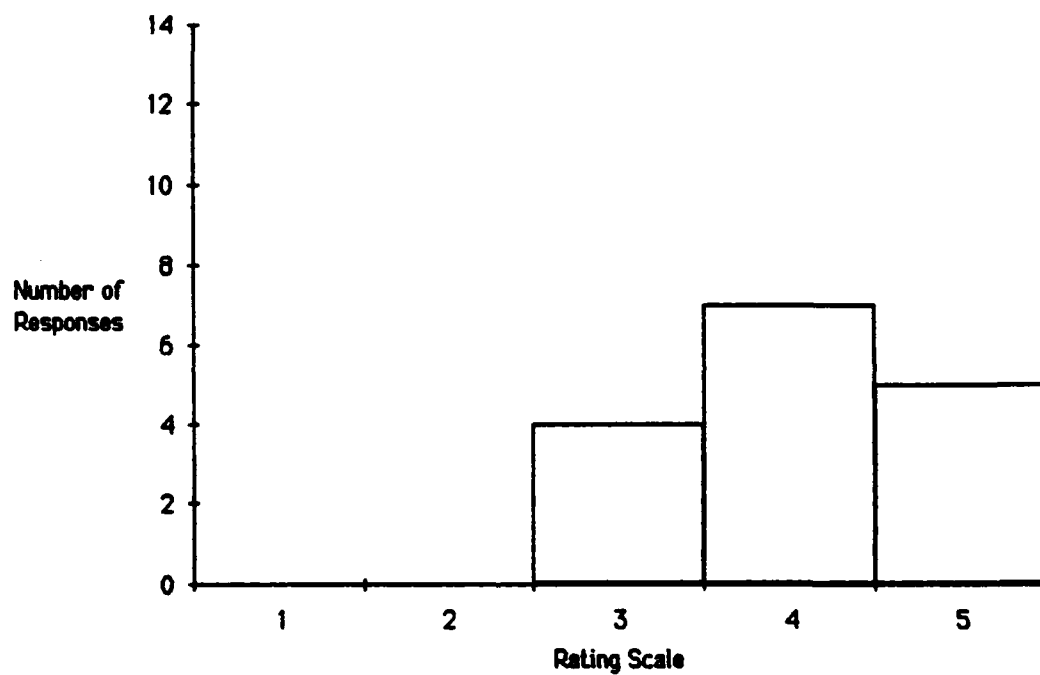
TOPIC 3. MULTIDISCIPLINED

Military logisticians should be multidisciplined; that is, experienced in more than one functional area of military logistics.



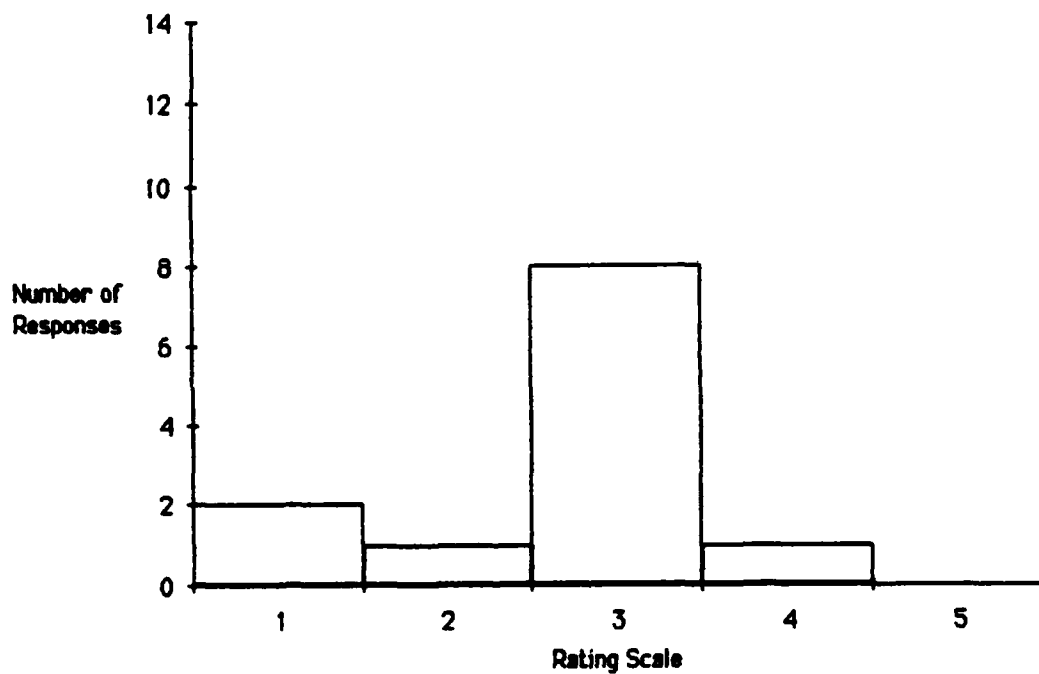
TOPIC 4. COMMAND

Military logisticians should have experience as a commander.



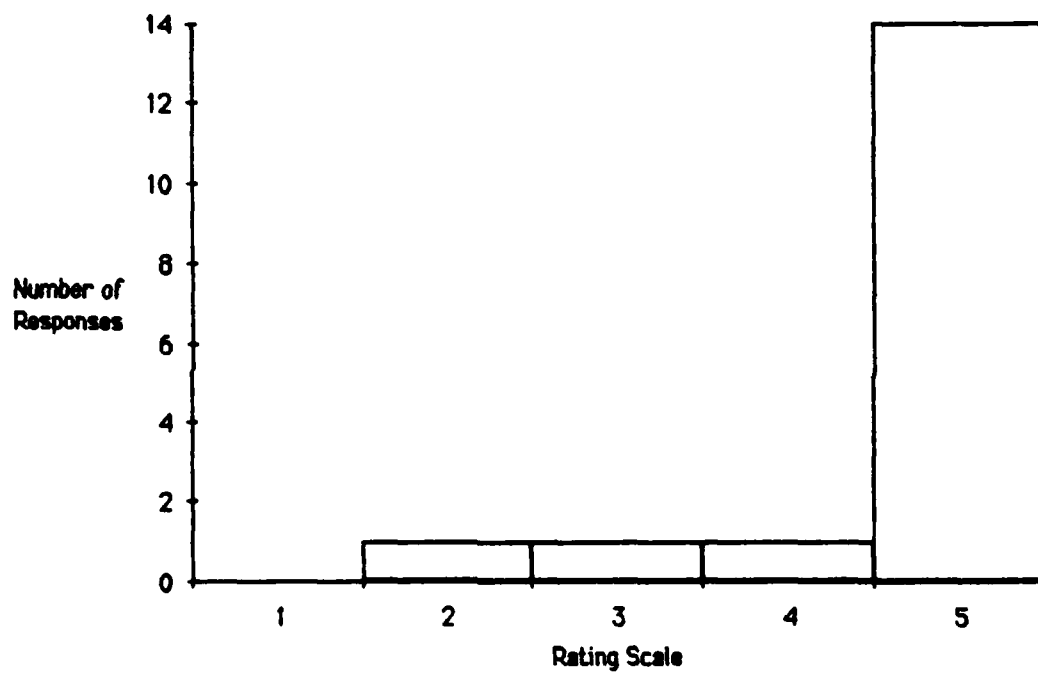
TOPIC 4. COMMAND

The experience should be in a functional area of logistics.



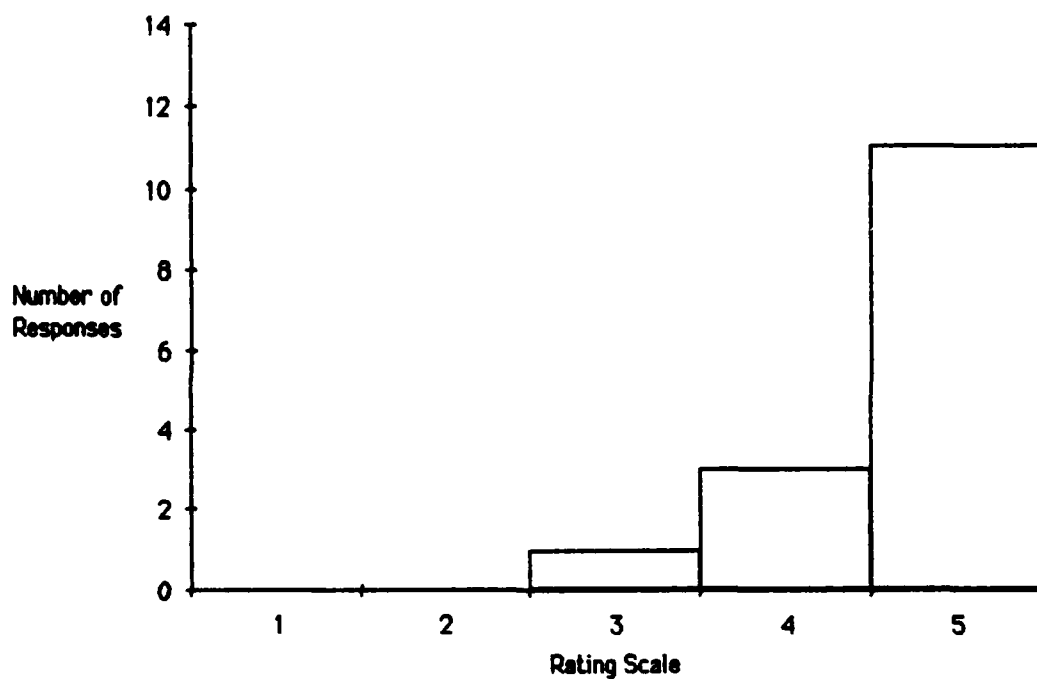
TOPIC 4. COMMAND

The experience should be in a non-logistics functional area.



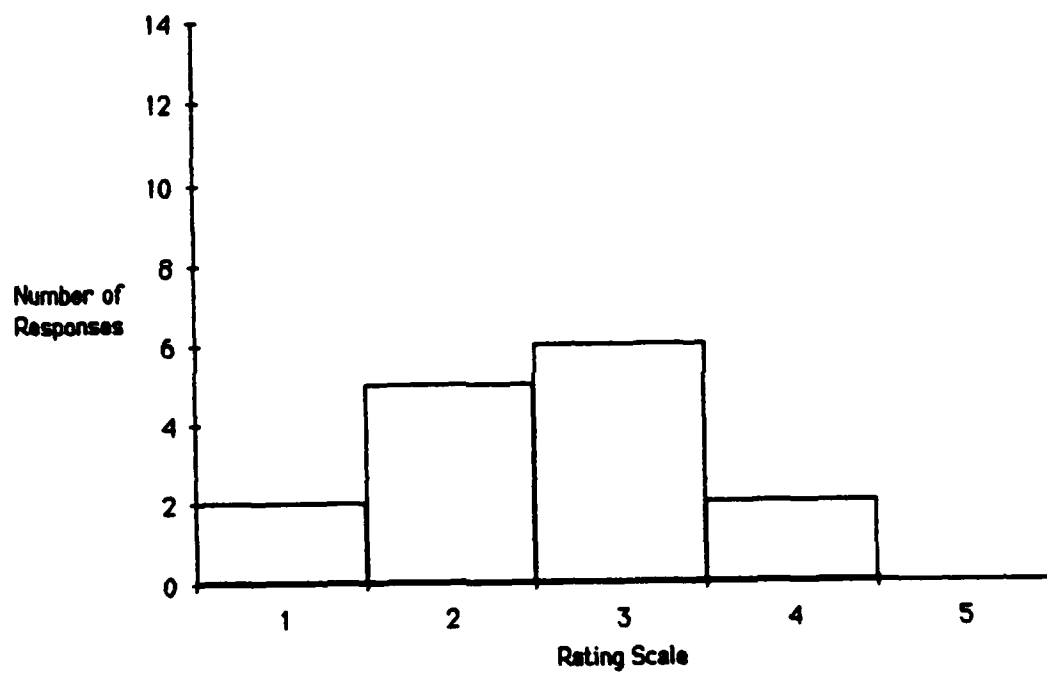
TOPIC 5. STAFF-LEVEL EXPERIENCE

Military logisticians should have experience as a staff officer.



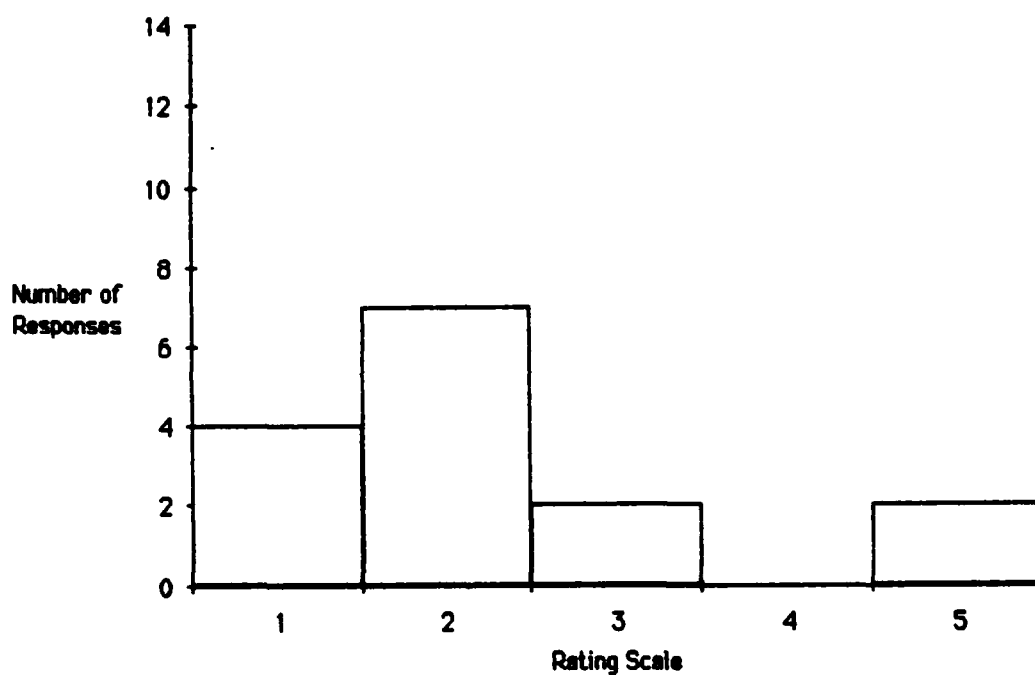
TOPIC 5. STAFF-LEVEL EXPERIENCE

The staff experience should be in a military logistics functional area.



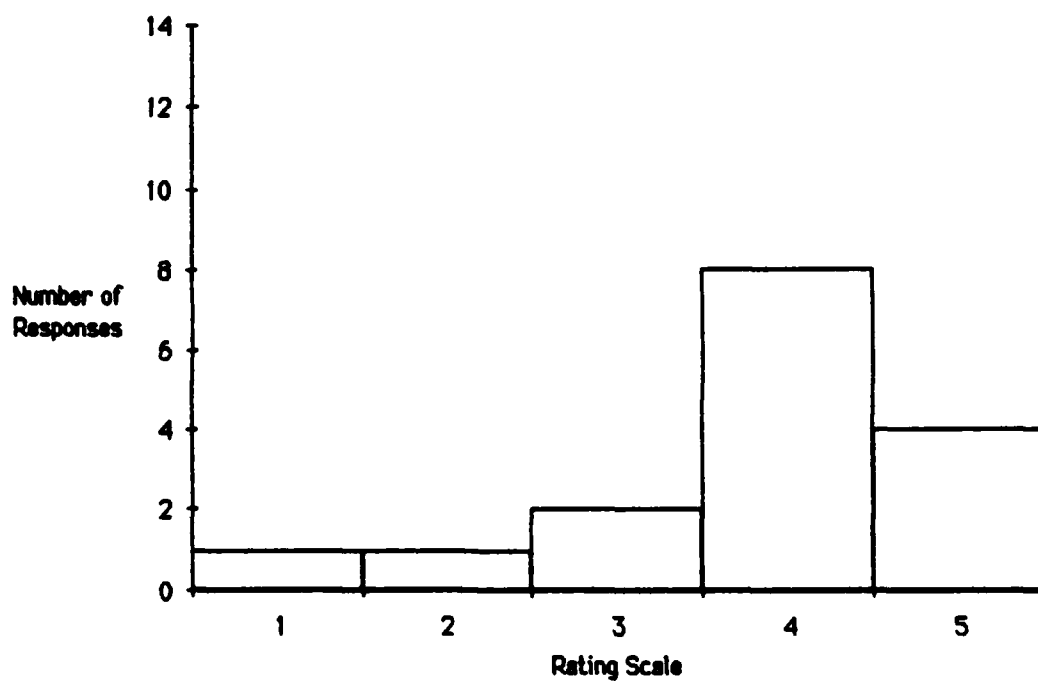
TOPIC 5. STAFF-LEVEL EXPERIENCE

The staff experience should be in a non-logistics functional area.



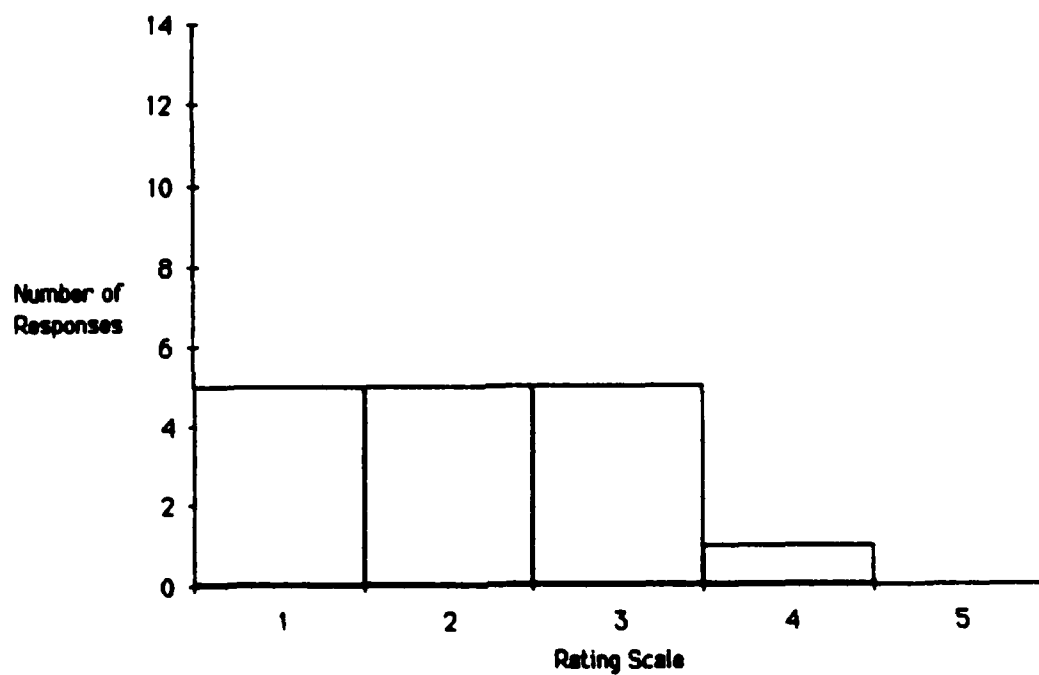
TOPIC 6. PERIODIC TESTING

Military logisticians should demonstrate competency in military logistics through periodic testing.



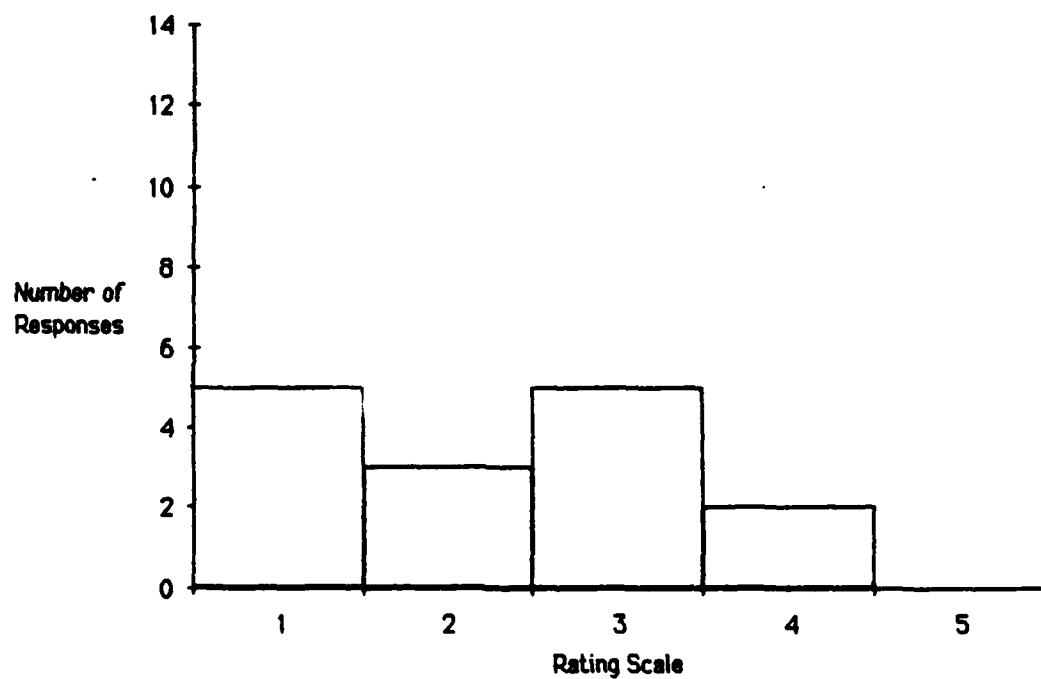
TOPIC 7. CAREER DEVELOPMENT

Every military logistics specialty (for example, supply, transportation, maintenance, procurement, logistics planning) should offer the opportunity for full career development terminating at the Director of Logistics level.



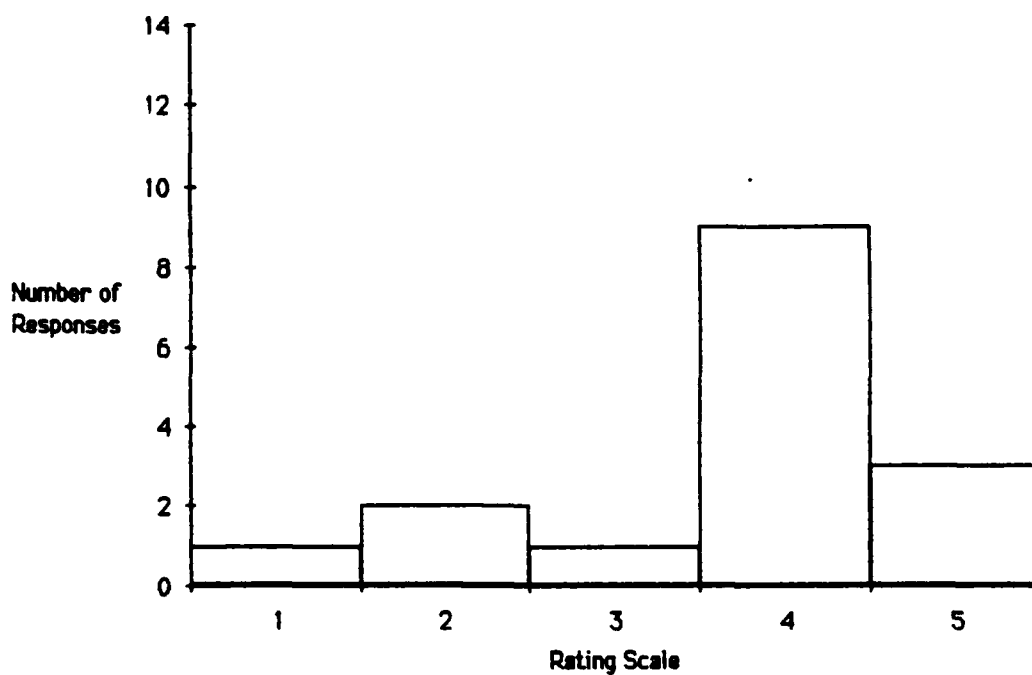
TOPIC 8. RATED FIELD

Rated officers make better military logisticians than non-rated officers.



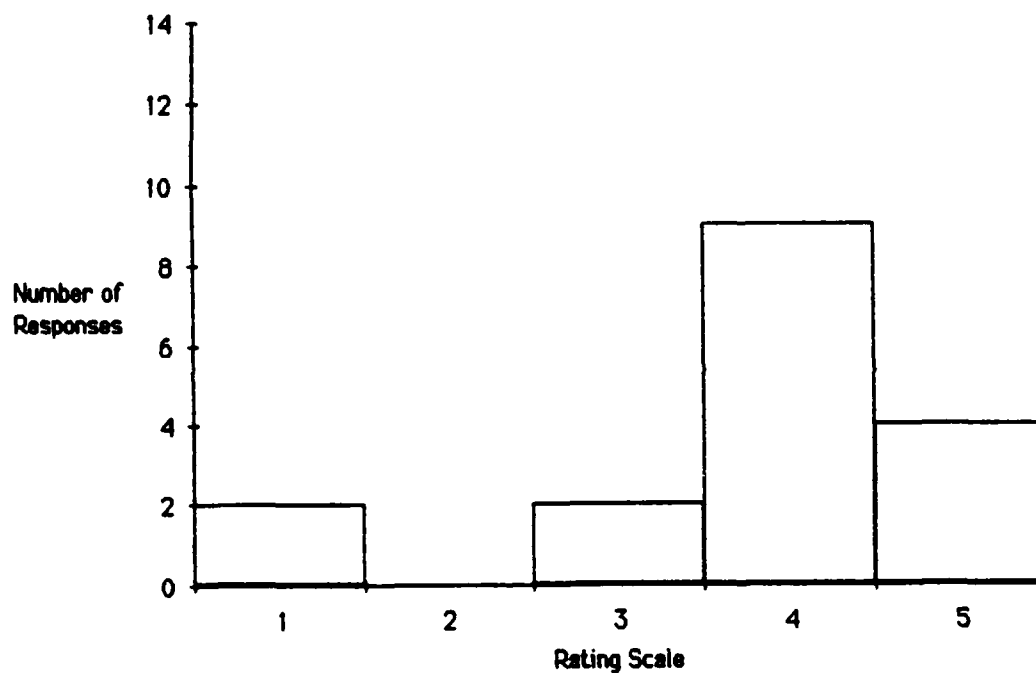
TOPIC 8. RATED FIELD

Rated command experience is more beneficial to a military logistician than non-rated command experience.



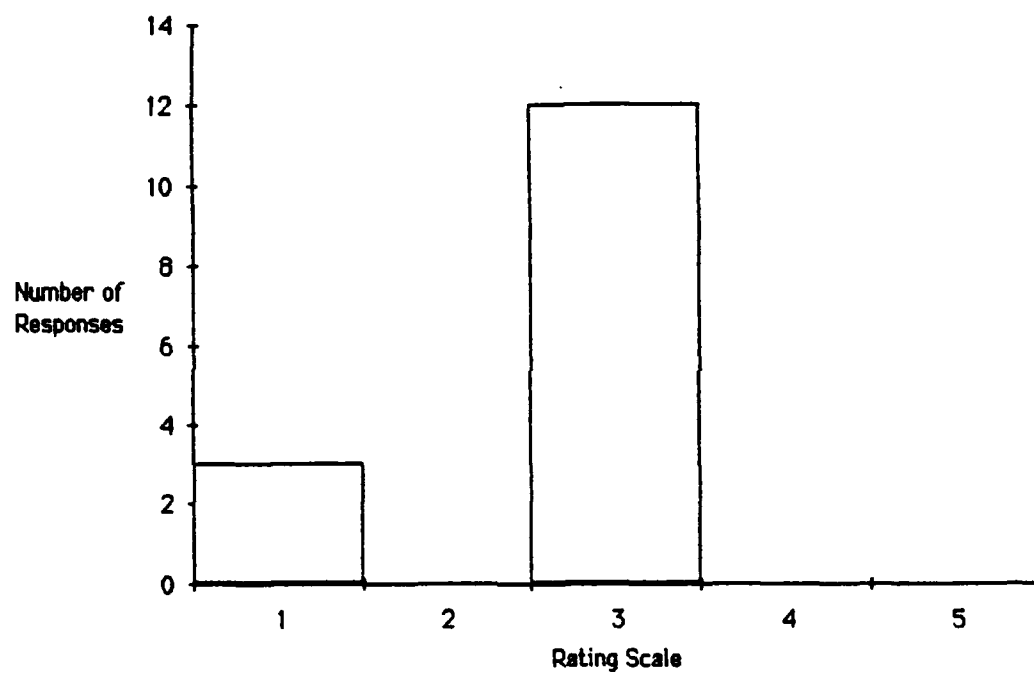
TOPIC 9. SELECTIVE DEVELOPMENT

The Air Force should conduct early selection of military logistician candidates and groom only those selected officers who show potential for increased military logistics responsibilities.



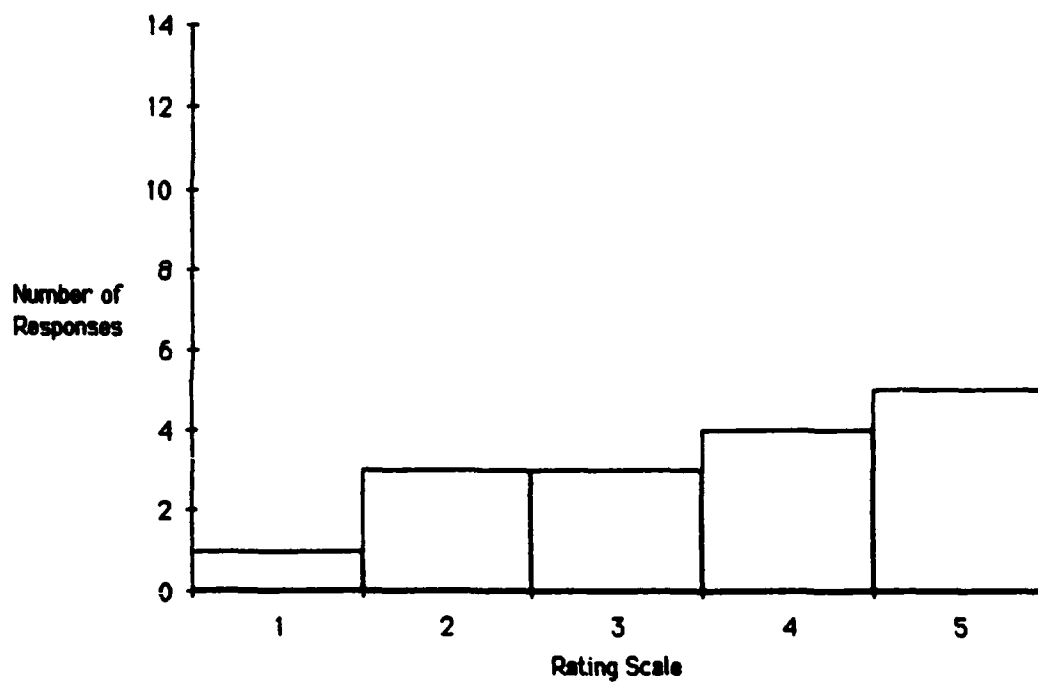
TOPIC 10. SENIOR LEVEL POSITIONS

Many senior military logisticians have entered the military logistics career field at a fairly senior level with little or no background in any of the military logistics specialties. This situation places more knowledgeable subordinates in an awkward position.



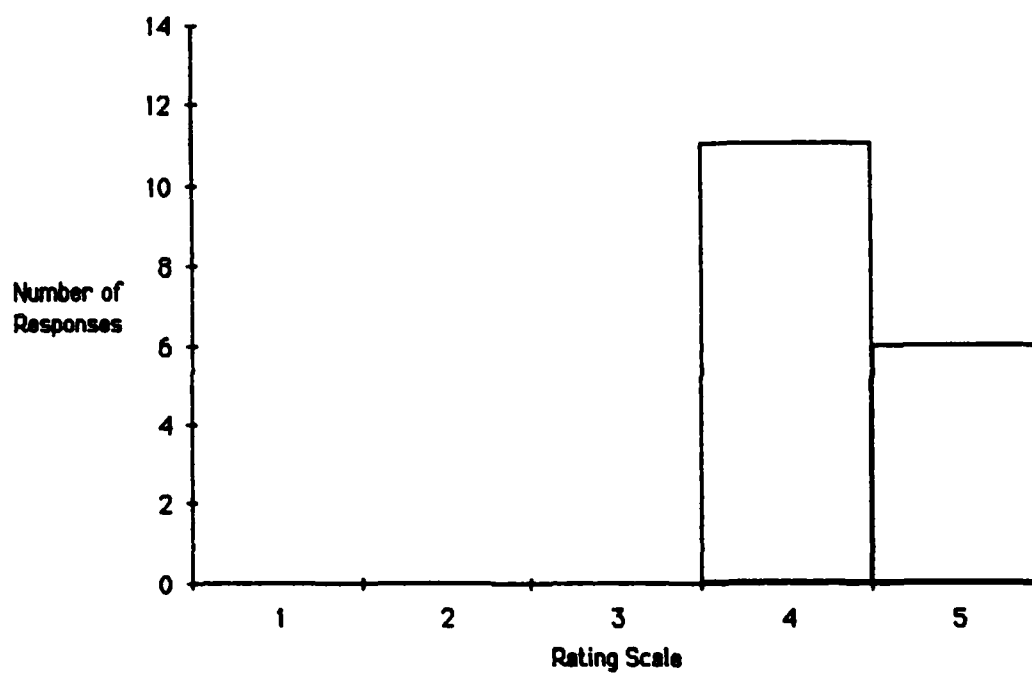
TOPIC 11. LEADER VS. MANAGER

The military logistician must be a good leader, manager, or both are equally important.



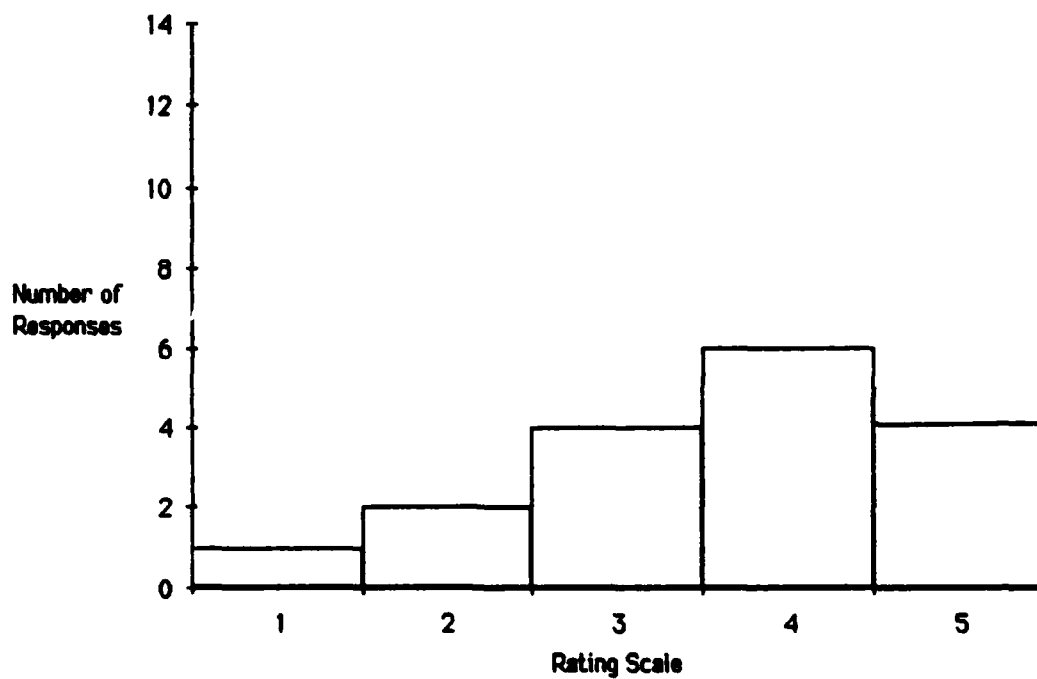
TOPIC 12. CONTINUING EDUCATION

The Air Force should establish a specific course of education for senior directors of military logistics.



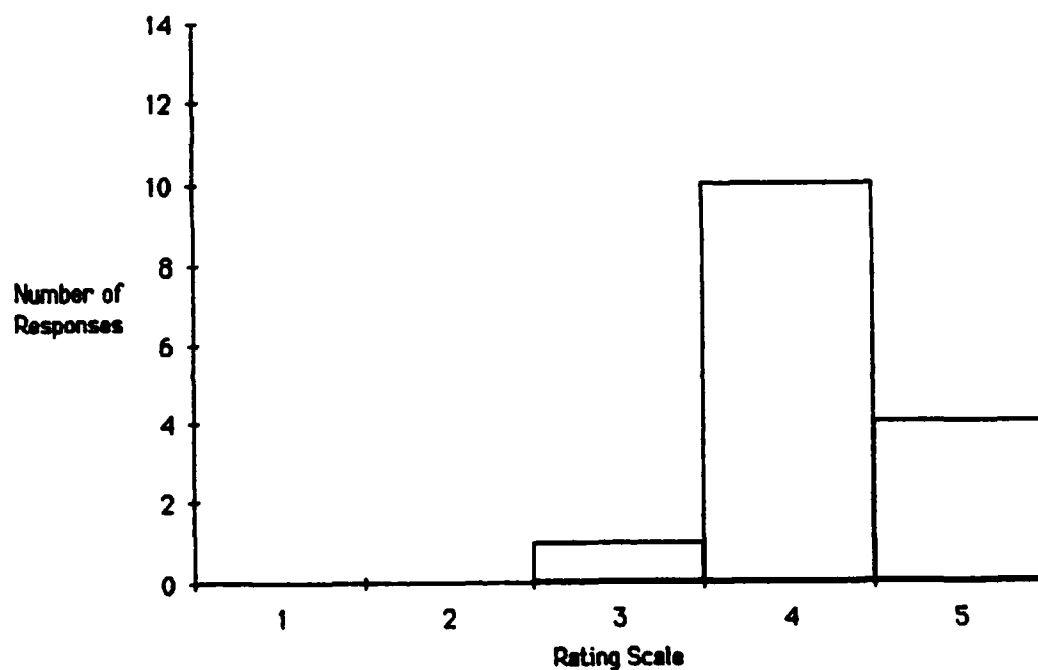
TOPIC 13. QUALITIES OF A MILITARY LOGISTICIAN

There are identifiable qualities and characteristics which distinguish successful military logisticians from unsuccessful ones.



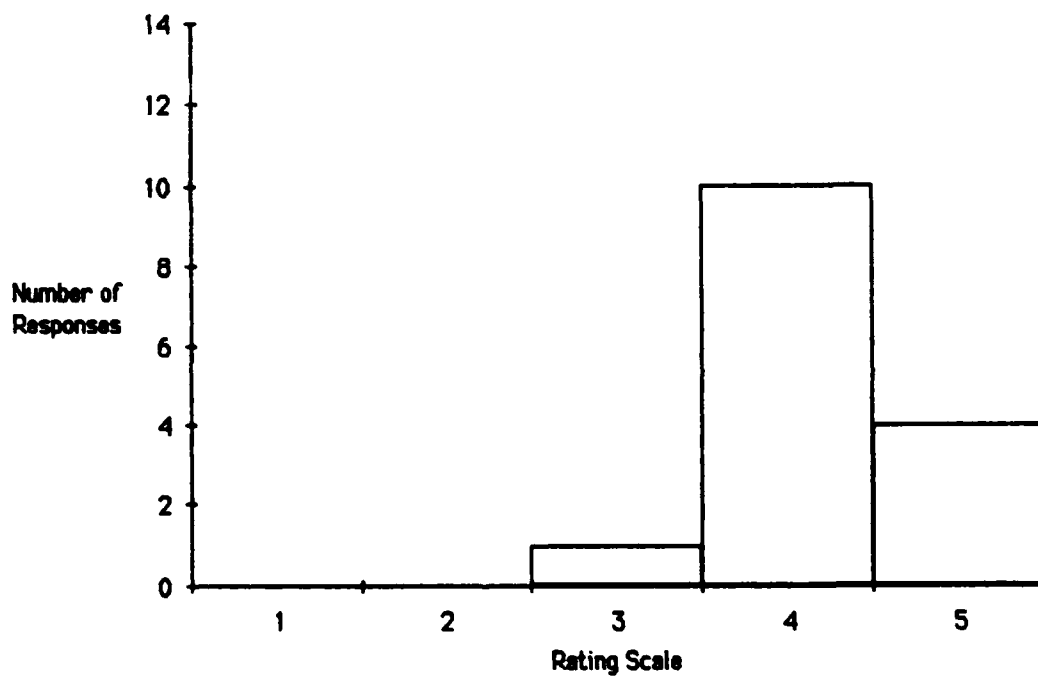
TOPIC 14. AIR FORCE GUIDANCE

Current Air Force guidance does not adequately support the appropriate development of military logisticians.



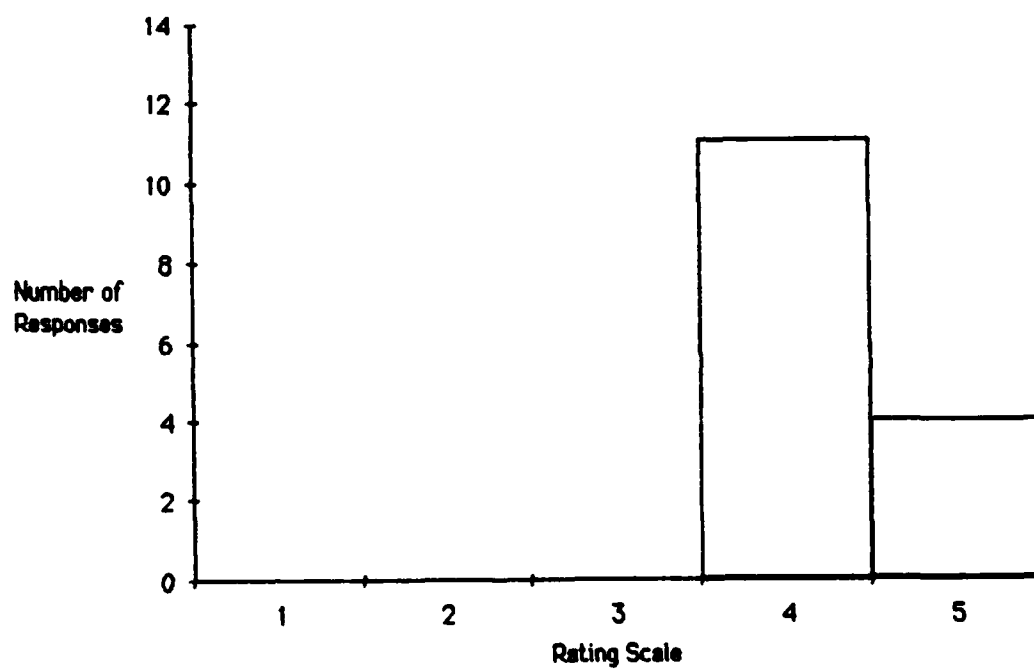
TOPIC 15. MILITARY LOGISTICS BACKGROUND

Air Force military logisticians should possess experience in retail logistics.



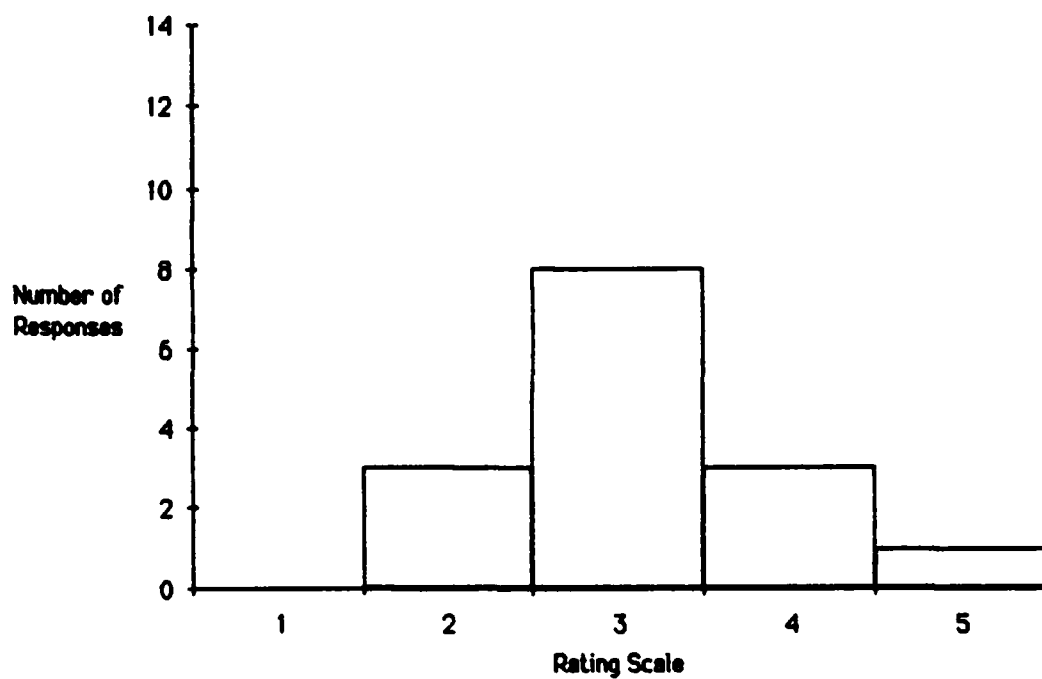
TOPIC 15. MILITARY LOGISTICS BACKGROUND

Air Force military logisticians should possess experience in wholesale logistics.



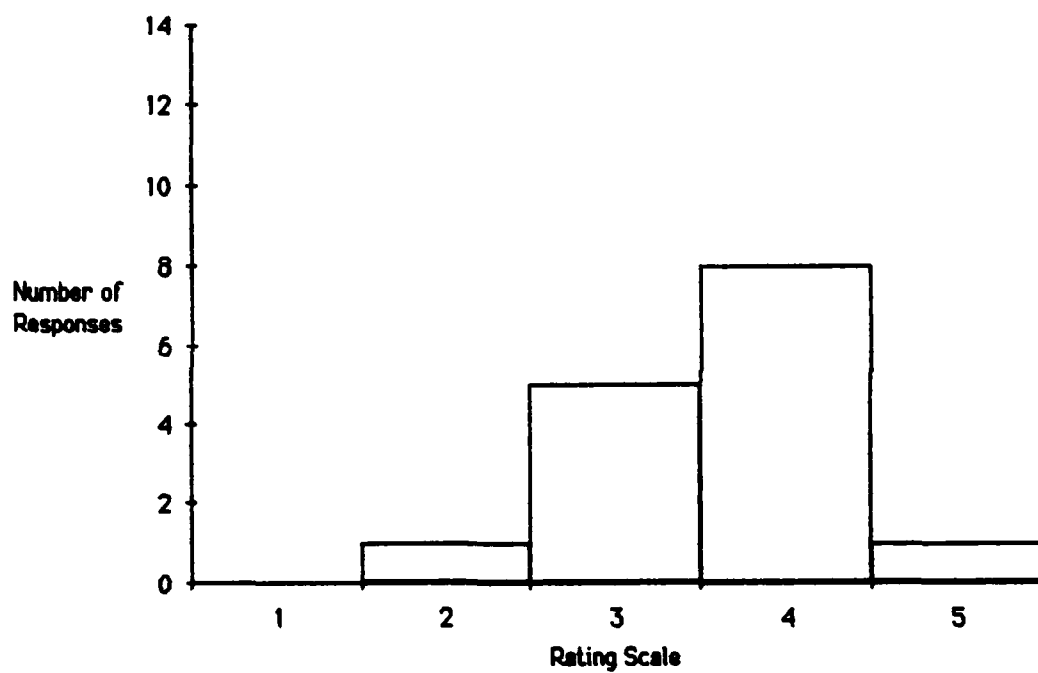
TOPIC 15. MILITARY LOGISTICS BACKGROUND

Air Force military logisticians should possess experience in combat logistics.



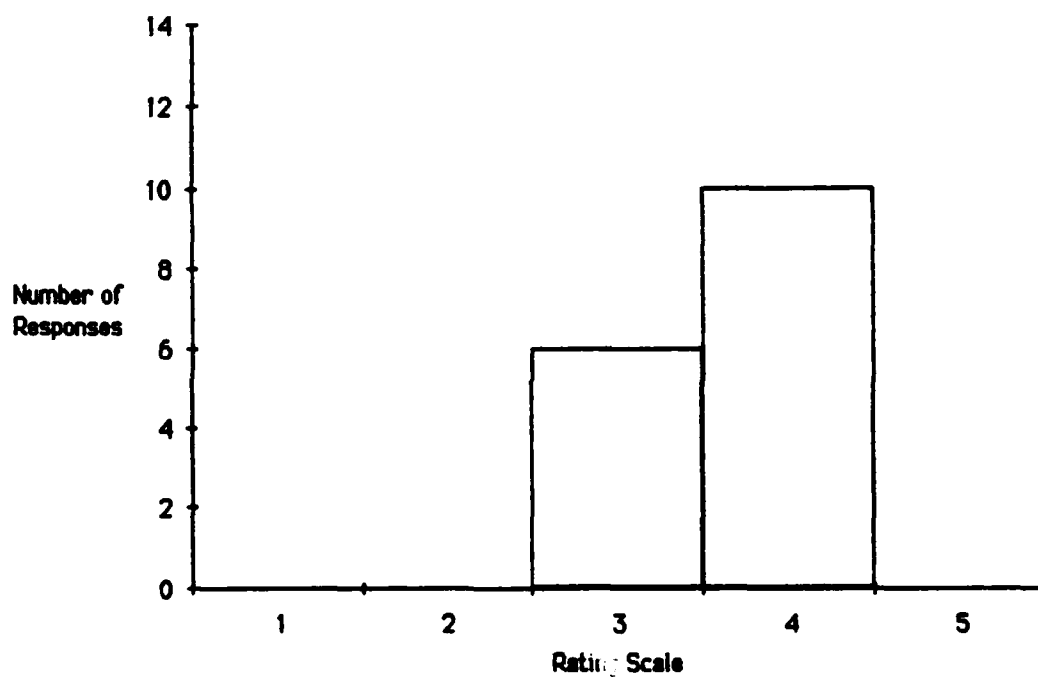
TOPIC 15. MILITARY LOGISTICS BACKGROUND

Air Force military logisticians should possess experience in international logistics.



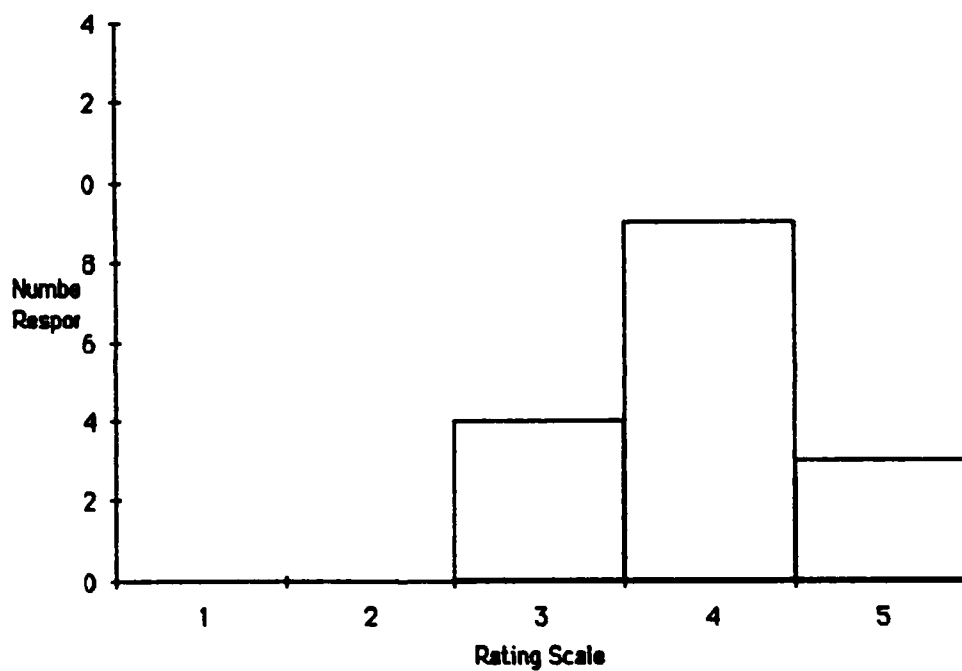
TOPIC 15. MILITARY LOGISTICS BACKGROUND

Air Force military logisticians should possess experience in acquisition logistics.



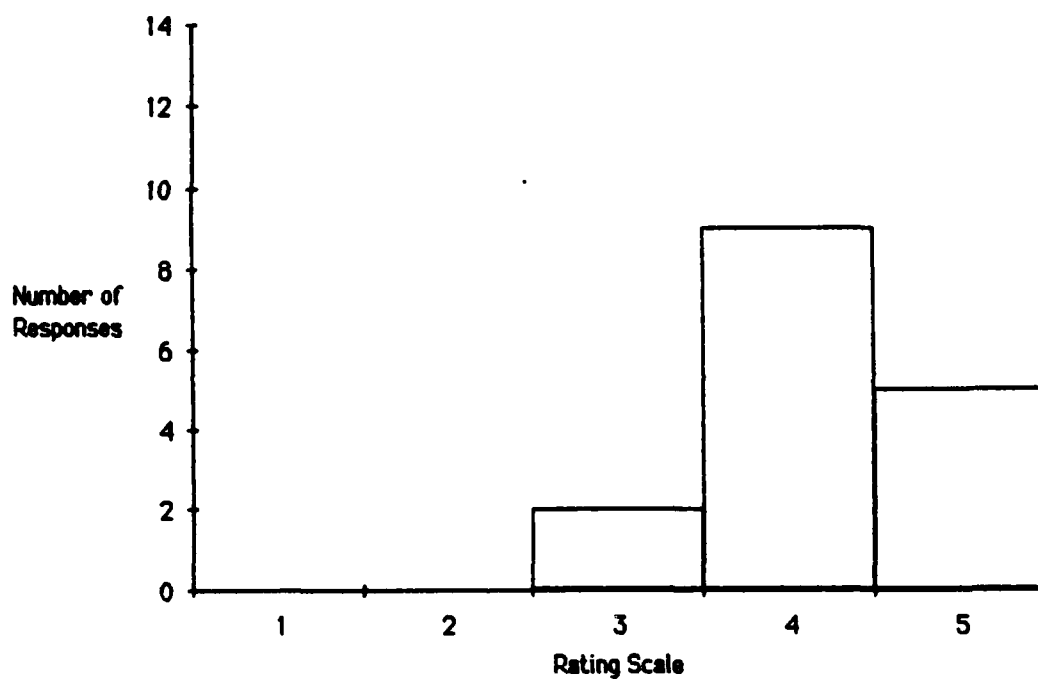
TOPIC 16. TECHNICAL COMPETENCY

Military logisticians should be technically competent in transportation.



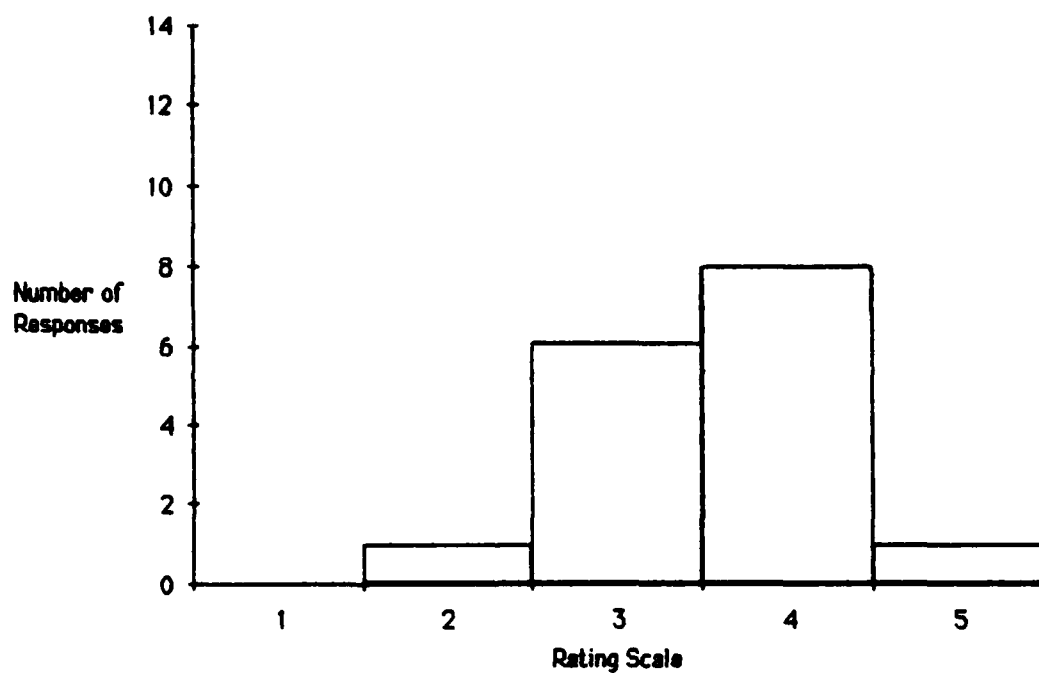
TOPIC 16. TECHNICAL COMPETENCY

Military gesticians should be technically competent in supply.



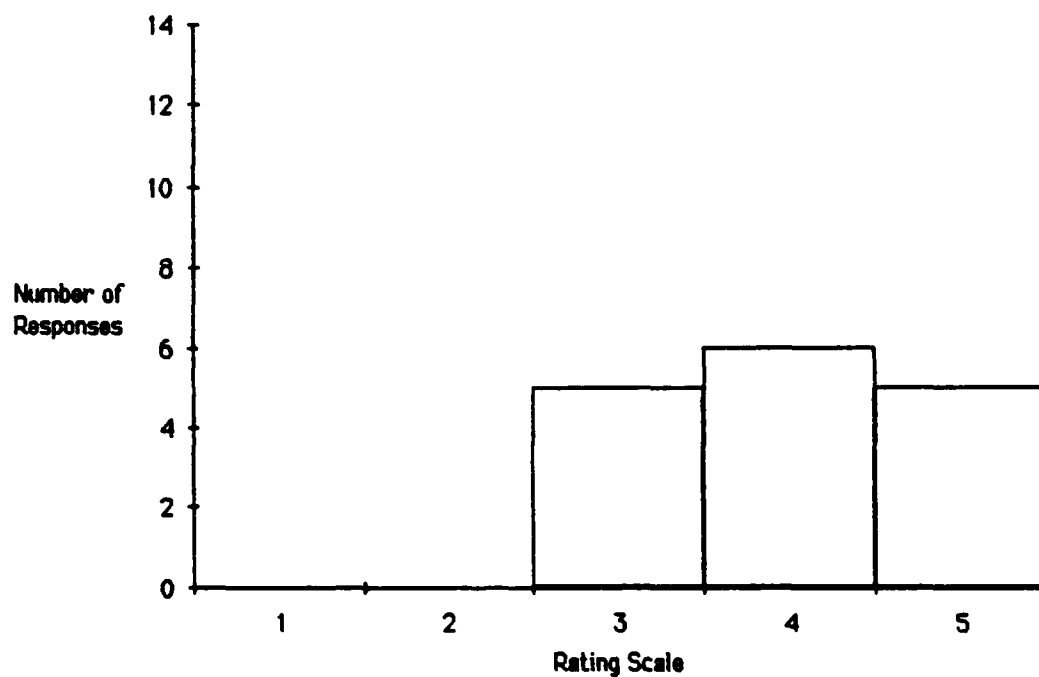
TOPIC 16. TECHNICAL COMPETENCY

Military logisticians should be technically competent in maintenance.



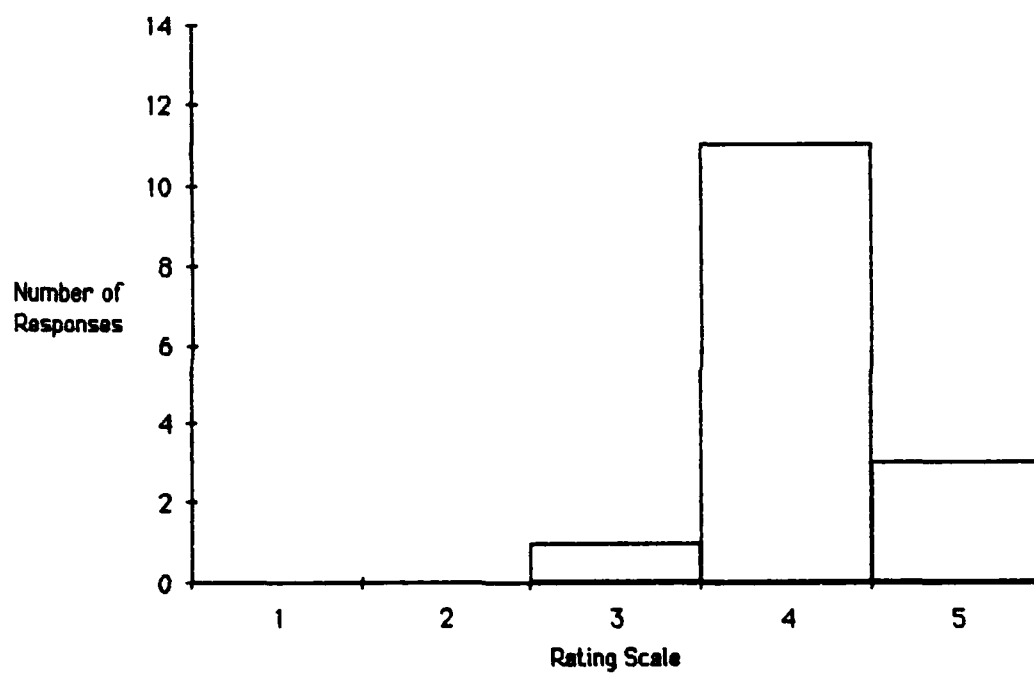
TOPIC 16. TECHNICAL COMPETENCY

Military logisticians should be technically competent in procurement.



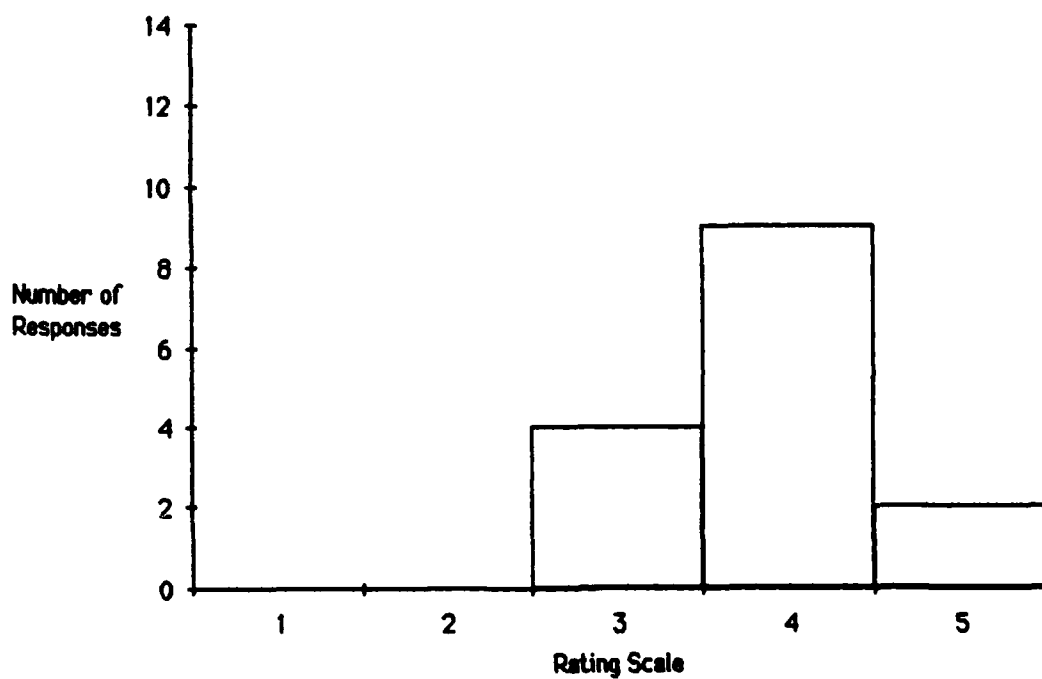
TOPIC 16. TECHNICAL COMPETENCY

Military logisticians should be technically competent in logistics planning.



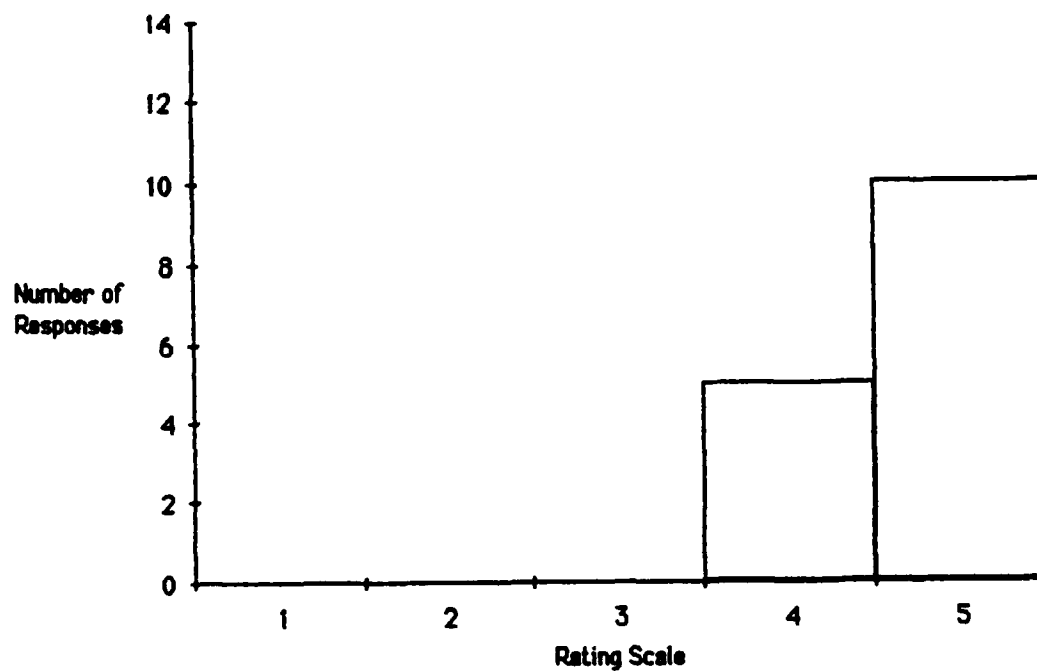
TOPIC 16. TECHNICAL COMPETENCY

Military logisticians should acquire their technical competency through professional continuing education.



TOPIC 16. TECHNICAL COMPETENCY

Military logisticians should acquire their technical competency through advanced academics.



TOPIC 16. TECHNICAL COMPETENCY

Military logisticians should acquire their technical competency through a variety of assignments.

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Capt Allan D. Overbey was born on 12 November 1952 in Waco TX. He graduated from Radford High School in Honolulu HI in 1970. From August 1970 to December 1974, he attended the University of Oklahoma at Norman OK and received a Bachelor of Science degree in zoology. Following graduation, he was commissioned a second lieutenant in the U.S. Air Force through the ROTC program. In August 1975, he completed the air traffic control (ATC) officer technical school at Kessler AFB MS and was assigned to the 1901st Communications Squadron (CS) at Travis AFB CA for follow-on ATC training. One year later, he was transferred to the 2192nd CS at Loring AFB ME where he served as the chief controller, radar approach control facility. In July 1979, he was assigned to Lajes Field, Azores, Portugal and performed duties as the chief, ATC operations (CATCO) and squadron section commander for the 1936th CS. Afterwards, he was transferred to the 1881st CS at Hill AFB UT where he served as the CATCO. In May 1984, 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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Thesis Chairman: David E. Lloyd, Lt Col, USAF Assistant Professor of Logistics Management					
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Logisticians must play a more central role in the planning and employment of air power in the future, according to the deputy chief of staff for USAF Logistics and Engineering. Lt Gen Leo Marquez said, however, that Air Force senior logisticians are currently unprepared to fill a central role in creating and sustaining combat operations because they do not possess the proper qualifications and background requirements. This thesis was therefore an effort to develop a normative model of the essential qualities, characteristics, and background requirements for a professional senior military logistician. A thorough review of the existing literature offered an insight into the terms "logistics" and "logistician" as well as an historical perspective of the military logistician. In addition, the relevant literature coupled with extensive studied opinion were used to develop a research plan which consisted of interviews and a Delphi survey. The research plan was then used to obtain expert opinion from selected individuals in the logistics profession. From an analysis of the experts' opinions, a normative model was constructed and topics for further research were suggested. The model identified intrinsic qualities and characteristics, and specific requirements for academic education, professional involvement, advanced career positions, logistics experience, and technical competency. The research also suggested ideas and programs which could be implemented in the future to assist the development of senior military logisticians. The thesis consolidated some of the best, currently available thinking about who the senior military logistician should be.

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