

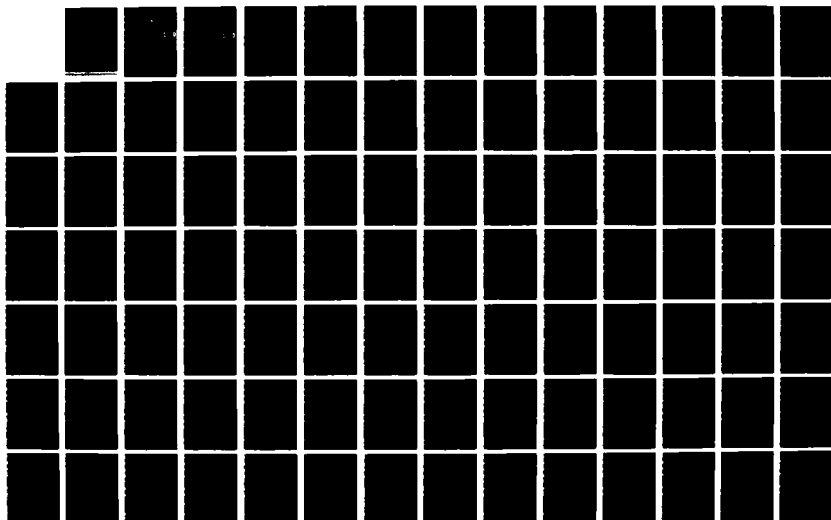
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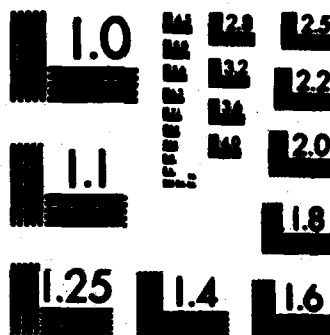
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AN INVESTIGATION OF THE ESSENTIAL
QUALITIES, CHARACTERISTICS,
AND BACKGROUND REQUIREMENTS
FOR A PROFESSIONAL SENIOR
CIVILIAN LOGISTICIAN

THESIS

Donald W. Nancarrow
GS 855-13, USAF

AFIT/GLM/LSM/87S-49

DEPARTMENT OF THE AIR FORCE
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Wright-Patterson Air Force Base, Ohio

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**AN INVESTIGATION OF THE ESSENTIAL QUALITIES
CHARACTERISTICS, AND BACKGROUND REQUIREMENTS
FOR A PROFESSIONAL SENIOR CIVILIAN 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**

Donald W. Nancarrow, BSEE

GS 855-13

September 1987

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Abstract

Department of Defense } (DOD) management has come under increasing scrutiny lately as defense spending is a political issue. Military logistics has received attention because personnel, operations, and support consume over half of the DoD budget. The Assistant Secretary of Defense for Acquisition and Logistics, Dr. Wade, recently stated DOD's logistics management needed improvement and needed senior personnel who can function effectively over many high-level logistics assignments. Air Force officials have made similar statements.

This research is an effort toward defining a normative model of the essential qualities, characteristics, and background of the ideal Air Force senior civilian logistician. Research efforts at the Air Force Institute of Technology } (AFIT) developed an AFIT Model of the senior military logistician. Because this research had the same objective as the military model research, similar procedures were adopted. These included a review of literature, interviews with senior logistics officials about successful logisticians, a Delphi survey, model definition, and weighting the model components. An additional interview set evaluated the applicability of the military model to civilians. This study completed both sets of interviews and

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started the Delphi survey step. Interview results and a draft Delphi questionnaire were produced. (Theses),

The results indicated a descriptive model of the ideal military logistician should be applicable to senior civilian logisticians when the model components are general. The AFIT Model can be applied to its categories level. There were indications that some categories would not apply equally to civilians and that a civilian model would be weighted differently. The research also indicated senior civilians should have bachelors and masters degrees, broad managerial experience, and multifunctional technical competence.

When completed, the model should be useful as a civilian logistician career development guide by individuals, supervisors, and career development program managers. The model can also be used to evaluate present and perspective senior logisticians.

**A INVESTIGATION OF THE ESSENTIAL QUALITIES,
CHARACTERISTICS, AND BACKGROUND REQUIREMENTS
FOR A PROFESSIONAL SENIOR CIVILIAN LOGISTICIAN**

I. Introduction

General Issue

The Assistant Secretary of Defense for Acquisition and Logistics, Dr. James P. Wade Jr., recently stated a need to improve the Defense Department's logistics management. He said the Department of Defense (DOD) must have senior personnel who can function effectively over many high-level logistics assignments. Dr. Wade implied the present system of separate career patterns for the top logistics managers is a problem in properly developing these managers (24:3-4). Lt General Leo Marquez, Air Force Deputy Chief of Staff for Logistics and Engineering, has claimed for several years that our senior logisticians are too specialized in their development to fully handle the complex nature of our logistics system (15:10). Both Dr. Wade and Gen. Marquez have indicated DOD and Air Force must develop less specialized, more system-oriented logisticians to keep pace with the rapidly increasing complexity of the weapon systems that must be supported (24:4; 15:10).

The capability of our top logistics management is critical because of the large cost of supporting weapon systems and because the amount of available resources will diminish. The estimated DOD outlays for fiscal years 1987 and 1988 are \$282,246,000,000 and \$297,550,000,000, respectively. Over half of these amounts (52.5 percent) are for operations and support (O & S), a total of \$304,567,000,000. This includes appropriations for operations and maintenance and military personnel (18:5-20,25-26). The DOD budget considers all personnel costs as part of O & S (23:19). Dr. Wade noted that logistics costs comprise over half the life cycle costs of any weapon system and that DOD can expect to see a decrease in defense resources, even though the needs are increasing (24:3). General James Mullins, former AFLC commander, also predicted a reduction of resources. He said the Air Force must improve its systems and its management to afford the assets it must have to be capable of deterring war and, if deterrence fails, winning war (17). Mr. Oscar Goldfarb, Assistant Secretary of the Air Force for Maintenance and Supply, similarly stated Air Force resources have started to decrease (12).

The idea that the Air Force is not producing the right kind of senior logistician is not new. Much discussion and debate have ensued concerning the desired and possessed attributes of Air Force and DOD logisticians. The

statements by Wade and Marquez presuppose certain areas of weakness, such as too much specialization, relative to their own expectations. The question of whether leadership or managerial ability is more important has been discussed for years. Another long-standing topic has been whether or not there should be differences in the role and make-up of military and civilian leaders and managers, especially in support functions. However, there was no specific data to confirm or deny senior management beliefs about generalist vs specialist, or other opposing characteristics. Detailed information, including one or more models, was needed to describe the needed capabilities of senior logisticians, both military and civilian.

Dr. Wade addressed both military and civilian logistics managers in his critique (24:4). This was appropriate since civilian logistics workers make up a significant portion of Air Force manpower. Approximately 90 percent of the AFLC work force was civilian (25:3). These facts added to the importance of any efforts defining requirements for senior civilian logisticians and, if necessary, improving their development.

Applicable Research

Several theses and reports have addressed these general topics in the last twenty-five years. For the most part, these efforts have not gone into detail concerning what the top logisticians should be. Capt Allan Overbey, in a 1985

thesis, researched this area in detail and developed a model of the qualities, characteristics, and background of the ideal senior military logistician (19:131). In 1986 Capt Adelle Zavada's research determined weights for the components of Overbey's model and measured its validity (26:31). This model has been referred to as the AFIT Model of the qualities, characteristics, and background for a senior military logistician. A 1985 thesis by Ms Dawn Wilson investigated the specialist vs generalist issue for senior civilians, but only addressed one job series (GS/GM-346) (25:104).

Specific Problem

Research had not examined a composite or model, equivalent to Overbey's, for senior civilian logisticians, nor addressed the applicability of a military model to civilians. Wilson recommended a model be developed for civilians (25:112). The Air Force needed to know what types of civilians, in terms of qualifications and characteristics, were needed to properly perform the logistics tasks assigned to them.

Research Objectives

This research had three objectives:

1. Identify the qualities, characteristics, and background required of the professional senior civilian logistician,

2. Develop a model to reflect the findings, and
3. Determine weights for the components of the model to make it usable as a measuring device.

Research Questions

The following questions were proposed to meet the above objectives:

1. Can a model for senior military logisticians be used for their civilian counterparts?
2. What should be the special characteristics and qualities of civilian senior logisticians, if any?
3. What should be the education and experience of senior civilian logisticians?
4. Are there any significant differences between the responsibilities and necessary qualifications of civilian senior logisticians and their military counterparts?
5. What aspects of the civilian model are considered most important for evaluating logisticians and guiding career development of future civilian logisticians?

Definition of Terms

Key terms were defined as applied in this thesis.

1. Characteristics: Distinguishing traits or properties that senior logisticians should have to perform the Air Force mission:

2. Consensus: A measure of agreement considered to be 50% or more of respondents selecting a specific response to a specific question or agreeing on a statement's rating. A percentage higher than 50 percent may be required under special conditions.

3. Delphi: A procedure for soliciting, collating, and refining expert opinions of a group to arrive at an accurate group response (13:1; 2:3).

4. Expert (logistics): An individual with at least ten years of logistics experience who is prominent in the profession as a logistician and familiar with the Air Force logistics system.

5. Interview schedule: A questionnaire used during an in-person or telephone interview, filled out by the interviewer, containing the specific questions to be asked (not a list of interviewees or a time phasing of activities). Also called an interview protocol.

6. Logistician: An individual whose profession or specialty is performing one or more of the prime management functions (planning, organizing, coordinating, directing, and controlling) in a logistics discipline or functional area or who is responsible for ensuring logistics processes are completed in support of an organization's activities.

7. **Logistics Disciplines:** Major groups of related logistics activities, each of which involves many of the logistics functional areas. The main disciplines are:

Retail	Wholesale
Acquisition	Combat
International	

8. **Logistics Functional Areas:** The different types of actions and expertise needed to carry out the full spectrum of military logistics and its disciplines. The list is subject to judgment and varying emphases. For the purposes of this thesis, the following areas are included:

Supply	System, Item, or Program Management
Transportation	Engineering
Maintenance	Logistics Planning
Procurement	

9. **Military Logistics:** A full, integrated system of processes which must be used to support the military operations of an organization, including combat. Although recent logistics doctrine changes suggest this includes all areas which support combat, such as hospital, food, and personnel services, logistics traditionally encompasses the disciplines and functional areas listed above.

10. **Qualities:** Traits or properties that describe an individual and help distinguish him or her from other individuals.

11. Senior civilian: An employee of the U.S. Air Force in the grade of GM-15 or higher, including the Senior Executive Service (SES).

12. Senior officer: A member of the Air Force serving in the grade of O-6 (colonel) or above.

Scope and Limitations

Although the need for the best possible logistics management pertains to the whole DOD, this research was limited to Air Force requirements, as seen by present and former Air Force personnel. The time allotted for this research also limited the size of the samples, restricting the grades and backgrounds of the field of experts contacted.

This subject area was subjective rather than quantitative. Therefore, the sample population was not randomly selected, but was purposively chosen by the researcher to obtain the most expert judgment feasible. A different sample, or different topics or questions in the survey instruments, would be just as valid, and could yield different results.

This type of research was particularly susceptible to bias, mostly by the researcher. Bias can occur in the selection of experts, topics and questions, the wording of questions, the manner of interviewing, and the interpretation of responses (10:299-302). This researcher made every practical effort to be aware of the opportunities

for and avenues of bias, and to minimize its occurrence and effects.

The results of this study are probably not be definitive for Air Force policy or firm development requirements. However, the results were expected to be useful as a guide for what type of people are needed, and for individuals to follow. The outcome may support present Air Force programs for the development of logisticians or it may recommend some changes. This effort is an important step in the dynamic process of defining needs and improving performance in supporting the Air Force mission.

This research was intended to develop a model of what the essential qualities, characteristics, and background should be for the successful Air Force senior civilian logistician. This was to have been done in six phases, described in Chapter III. The time required to complete the first three phases did not allow time to complete the last three phases. Therefore, the products of this effort are the detailed results of two sets of interviews and a recommended draft Delphi questionnaire which can be used in follow-on research.

II. Literature Review

AFIT Model for the Essential Qualities, Characteristics, and Background of a Senior Military Logistician

This model was selected as the baseline for the research to find an equivalent model for senior civilian logisticians. The first research question asked in Chapter I was whether this model was applicable to senior civilians. Familiarity with the AFIT Model is critical to understanding the details of this research.

This model was first developed by Capt Overbey as the result of his 1985 thesis at AFIT. It was the result of extensive literature review, a set of interviews on basic concepts for the senior military logistician, a two-round Delphi questionnaire phase, and detailed analysis. Capt Overbey divided the essential factors into eight components, with varying numbers of subdivisions. He chose to present the model graphically (19:131). Overbey's model is shown in Figure 1.

The AFIT Model was weighted by Capt Zavada in her 1986 AFIT Thesis. Before the weighting exercise, she arranged Overbey's model in a hierarchy to present in the weighting questionnaire. She renamed the eight components as categories and placed them in three "dimensions." The dimensions were experience, education and training, and

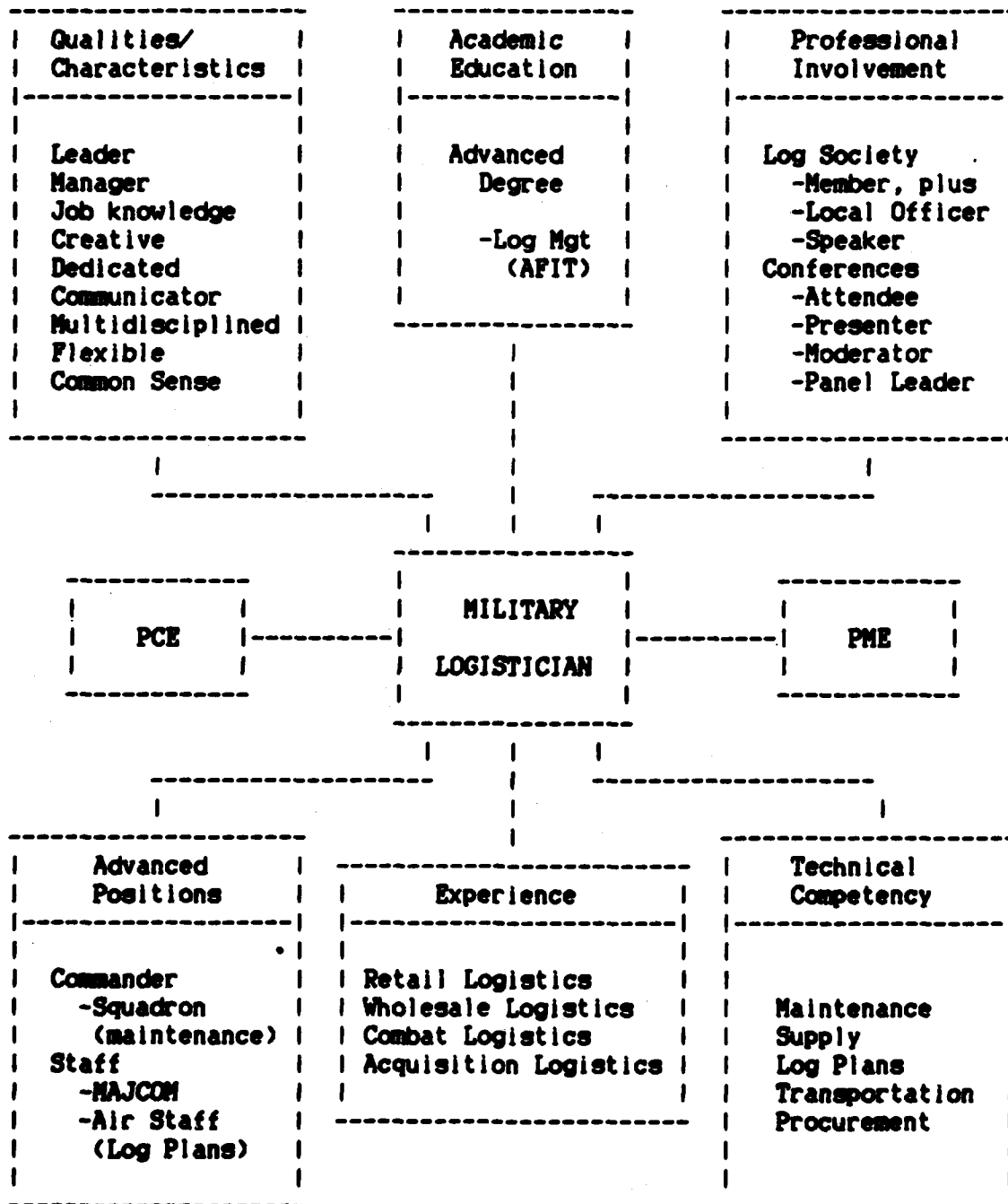


Figure 1. Overbey's Model of the Professional Senior Military Logistician (19:131)

professional attributes. She named the component subdivisions "elements" (26:30).

In simplifying the model for weighting, Capt Zavada changed the names of three of the categories. The "Experience" component became the "Assignments in Logistics" category because there was now a dimension called "Experience." The "Academic Education" component was made the "Advanced Degree" category, reflecting the fact that nearly all officers have a bachelors degree. The "Qualities/Characteristics" component was modified slightly to the "Personal Qualities and Characteristics " category. Minor changes were made to a few elements (26:31). Zavada's hierarchy is shown in Figure 2.

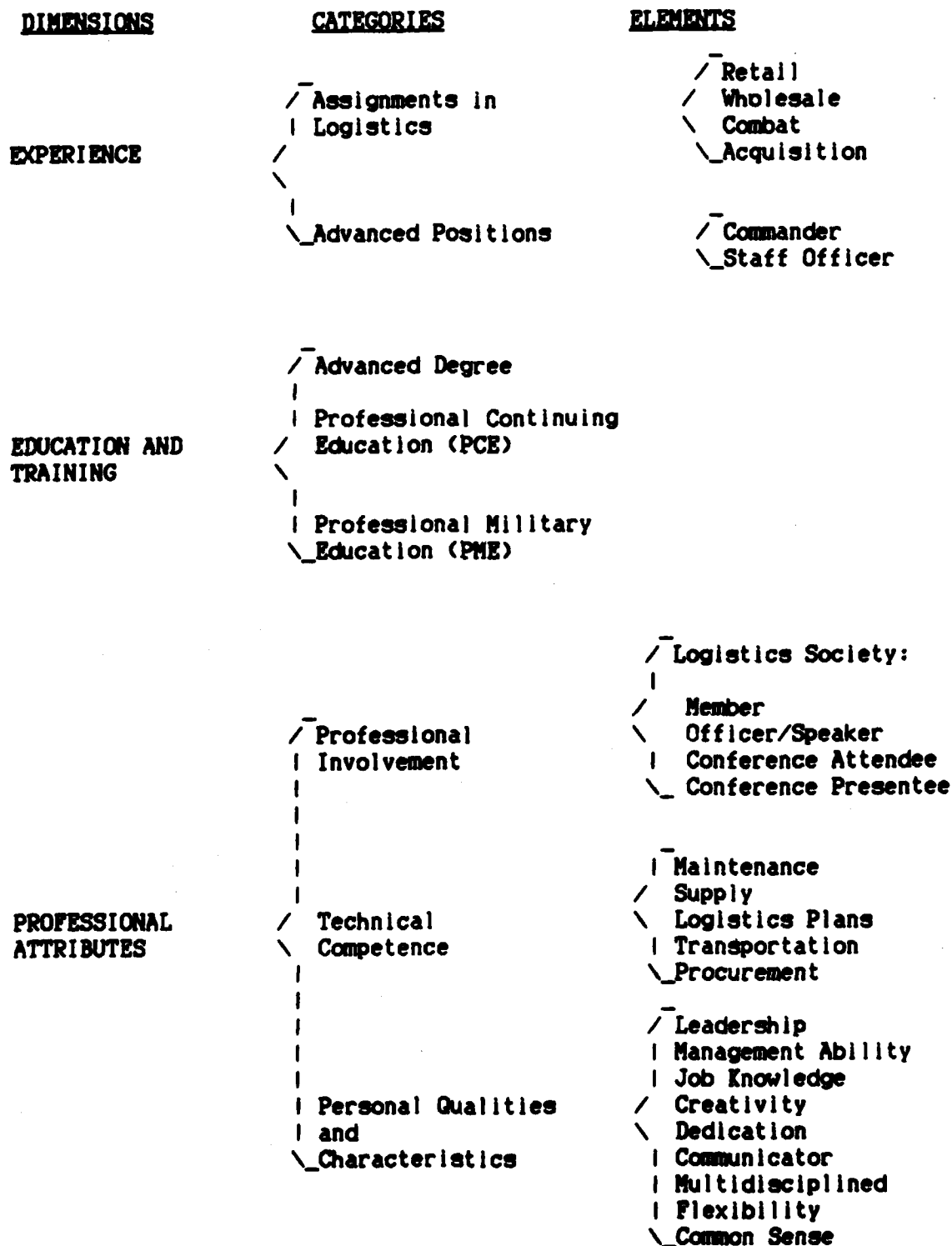


Figure 2. Zavada's Hierarchical Arrangement of Overbey's Model (26:31)

III. Methodology

Overview

To satisfy the objectives and questions stated in Chapter I, a series of purposive judgment samples were used. The series was to have included interviews, a Delphi survey, and a limited questionnaire. Simple statistics, in the forms of mean and determination of consensus, were used.

The objectives of this thesis were essentially the same as those of Capt Overbey in developing the AFIT model for senior military logisticians and by Capt Zavada in weighting that model. Therefore, the methodology used and planned herein was patterned after, and was quite similar to, their methodologies. Two additional steps were the initial evaluation of the applicability of the military model to civilians and the planned later comparison of the new civilian model to the military model.

Phases of Research. The following six phases were necessary to complete the objectives:

1. A literature review was done in parallel with the other five phases, laying necessary groundwork for each of those phases.

2. The applicability of military models to civilians would determine the extent to which interview questions, survey questionnaires, and the civilian model could be

patterned after the work done by Overbey. This applicability was determined through interviews with acknowledged experts in top-level logistics management.

3. Basic concepts and profile inputs for senior civilian logisticians were obtained using a second set of interviews, with opinion questions guided by phase 2 results.

4. A questionnaire, with questions more specific than those in phase 3, was developed based on phase 3 results. This questionnaire would be used for the Delphi survey, a technique that would provide a more detailed set of inputs for the model. At least one round of feedback and adjustment would be used, more if necessary, to converge on consensus on half or more of the statements.

5. A model would be formed based on the results of the Delphi survey. Differences with Overbey's AFIT military model would be assessed.

6. The new civilian model and a questionnaire would be sent to 50 to 100 experts for prioritizing the components and subcomponents of the model. The respondents' scores for each model element would be averaged to form weights for those elements.

Research Completed. The time required to develop the interview schedules, arrange and complete the interviews, and analyze the results of each interview to apply to the next phase did not allow time to complete further phases in

the overall research time. Therefore, the products of this research were the detailed results of the two sets of interviews and a draft Delphi questionnaire which can be used in follow-on work.

Chapter Outline. The remainder of this chapter addresses the justification for the selected methodology, the selection and assignment of experts, the data analysis and decision criteria, the development of survey instruments and data analysis details, and the model development.

Justification for the Methodology

This research was not quantitative. The subject matter had no numerical values by which it could be measured. Evaluations of performance and estimates of requirements then became dependent on judgment. In such cases, the best possible judgment should be obtained. Decision theory holds that, under uncertainty, the quality of the decision, or the probability of a correct decision, improves as the amount of valid information increases (1:623-624). The subject of this research was theoretical, speculative, and uncertain.

The RAND Corporation's developers of the Delphi technique made several applicable statements in several reports. They noted that the pure scientist tries to learn things for the sake of knowledge, but the operations analyst is charged to reach efficient decisions or solutions even when no sound scientific theory exists. He must still apply

his tools, using whatever intuitive insight he can gain from any experience passed on to him, so that he is dependent on expert judgment (3:1,2). Also, he "should acknowledge the need for intuitive expertise and make the most of it by replacing surreptitious use with explicit and systematic application" (14:3).

Systematic application transfers research from the realm of random probability sampling to the less rigorous realm of non-probability sampling. Of the two types of non-probability sampling, purposive is better than convenience. Within purposive sampling, judgment selection will provide better expertise than quota selection, because the latter requires the sample be representative of the whole population (9).

Two forms of survey research which can be used for purposive judgment are the interview and the questionnaire, and either of these can be used within the Delphi procedure. A questionnaire is a written group of questions designed to obtain specific information. The interview has the same objective but provides the administrator more control, allowing him to probe for deeper or more specialized information. It is one of the most used vehicles for gathering information (21:70). The interview can be unstructured, which is more flexible, or can be structured, which uses a prewritten set of questions, the schedule, and becomes an oral questionnaire (9).

The interview was selected for the earlier phases of this study where greater detail was needed. The structured form was used to insure all questions were asked each time and for overall consistency.

The Delphi procedure, named after a project which developed it at RAND Corporation, grew out of experiments in the late 1940s to enhance forecasting (22:1,3). Several types of group response techniques were tried, based on an adaptation of an old adage "N heads are better than one" (6:3). The studies at RAND indicated three main disadvantages of using group discussion and committee efforts to reach accurate group responses: influence by dominant member(s), noise (extraneous information and superfluous discussion masking the objective), and group pressure for compromise or conformity. In contrast, the Delphi technique offers anonymity, controlled feedback, and statistical group response (6:3).

Early experiments in 1951 were deliberate attempts to avoid the group action disadvantages cited above through "controlled interaction" (8:2). "It should be used with a group of experts or especially knowledgeable individuals" (7:1). "It is applicable whenever policies or plans must be based on informed judgment" (13:1). Experiments into the 1960s showed greater convergence on a group response and greater accuracy of response to almanac-type questions using Delphi than using group interaction (3:8). Factors said by

RAND developers to be "at work" in this process are social pressure (other than confrontation), rethinking, and transfer of information from other experts (7:5). Similar advantages of feedback claimed by RAND include opportunity to correct possible misconceptions and being directed to factors overlooked (8:3) and exposing answers to critique without actual confrontation or identification (14:6).

Not all researchers support the use of the Delphi technique. Experiments in 1968 were less conclusive about its superiority for convergence and accuracy of response. The earlier experiments had used "almanac" questions, but most applications look for value judgments (subjective) (5:21-24,73). The strongest criticism was written by another RAND researcher, Sackman, in 1974, reporting on an Air Force-sponsored assessment of Delphi. Sackman reviewed over 150 accessible Delphi applications and concluded the method "is unreliable and scientifically unvalidated in principle and probably in practice." He attacked all phases of the process from selection and dependence on experts to poor questionnaires to its convergence techniques. His baseline was a series of American Psychological Association's social science standards for research and he explained why he thought Delphi significantly failed to meet each one (22:vi,1,9-27). The accusations of unscientific methodology are also applicable to improperly conducted non-Delphi tests or surveys. Sackman summarized several other writings

critical of Delphi but stated he found critical literature "uneven and sparse." His list of Delphi advantages were all convenience factors: low cost, flexible application, ease of administration, minimal time investment by test director, etc. (22:29-32). In spite of citing Delphi's popularity, Sackman recommended the method be dropped "until its principles, methods, and applications can be established ... scientifically" (22:111). Another assessment of Delphi in 1983 failed to support the contributions of some of the steps of the process, but the report stated the "Delphi methods may be the most widely used set of technical forecasting tools" (20:173,181).

In 1982 the state of Alaska needed a long range forecast of its economical and resource development future. After a review of available techniques, including first-hand experiences, Alaskan officials selected the Delphi process and contracted Alaska Pacific University to conduct the study. The assessment included reviewing critical literature, including Sackman and Parente, et al. Delphi was still chosen as most applicable for their dynamic, judgmental situation. This article cited a survey by Brockhaus and Mickelsen (1977 report) covering 176 Delphi project directors and identifying 598 Delphi projects in 10 industrial countries, in most social, managerial, and technical fields. One and one half years after completion

of the study, Alaskan officials were extremely pleased with the technique, the study, and the report (11:100-109).

Experts

The first step in collecting data was to name the population to be surveyed. Literature is inconclusive concerning the value of experts in reaching accurate group predictions. This is one of the criticisms of the Delphi method (22:33,34). However, for basic information gathering, use of experts is important and experts do not degrade Delphi results (3:1,8;5:21-24). Since this study concerned senior logisticians, that is the population used. The definitions of senior and logistician are such that the population, in essence, consists of experts. To enhance the probability of sampling true experts, agencies involved with the development or management of senior logisticians were asked for lists of experts. These agencies included USAF Headquarters, AFLC Headquarters, the AFIT School of Systems and Logistics, the Air Force Acquisition Logistics Center, the Air Force Civilian Personnel Management Center, the Air Force Logistics Management Center, and many of the individual interviewees.

The population of experts included active duty and retired civilians and military. They were categorized by grade and by active and retired. Grades were GM/GS-15 or higher, including Senior Executive Service (SES), for

civillians, and colonel or above for military. The experts were also categorized as military or civillians.

Table 1 shows the planned assignment of the experts to the various phases of this research. Between 110 and 200 experts were anticipated, depending on the final numbers chosen for each phase and the number that would participate in more than one phase. Table 1 shows the planned allowances and restrictions on multiple phase participation. Table 1 also shows the flow of the research phases and the categories of experts.

Data Analysis

The most difficult aspect of analysis was the merging of the detailed, subjective answers obtained from the two sets of interviews. This was a brute force review of all responses to each question, looking for common ground while retaining as much information as possible. Preparing the feedback packages for round two of the Delphi survey will be similar if subjective or open ended-questions are used.

Statistics. The statistics to be applied to the Delphi and weighting responses are simple. The median of a data set is a number such that half the values fall below this number and half fall above it. If the number of values is odd, the median is the middle number when the values are ranked from smallest to largest. If the number of values in the ranked set is even, the median is the sum of the middle

Table 1. Assignments of Experts

NAME	DEMOG.	MIL MODEL		CONCEPTS		DELPHI > MODEL			WEIGHTING	
(SUB-COLUMNS)	(CIA+)	Pre-test	Inter-view	Pre-test	Inter-view	Pre-round one	round two	Pre-survey test		
(CODE)		L	M	P	Q	C	D1	D2	U	W
(QUANTITY)		2-3	6-10	2-3	20-30	2-3	30-50	30-50	3	50-100
(LIMITS)		-	no L	10-1 L	no P	1 L, P	no C	no C	1 C	no U
					few M		some M	some M	1 L	some D
							ok -D2	ok -D1		

Explanation of Table Terms

Columns

NAME: Names of experts, below the (LIMITS) row

DEMOG.: Demographics

C over M: Civilians or military

A over R: Active or retired

+ over 15: Levels above or below GM-15 or 0-6
(Colonels and GM-15s entered as 0)

MIL MODEL: The military model applicability survey

CONCEPTS: The survey for basic concepts information

DELPHI > MODEL: The Delphi survey for inputs for the model

WEIGHTING: The weighting survey

Rows

(CODE): Arbitrary code for each activity for tracking

(QUANTITY): Number or range of desired participants

(LIMITS): Restrictions on multiple event participation

1 L, P: One from L or P

ok -D2: May be included even if drops from round two

ok -D1: May be included if misses round one

two values divided by two. The median is not affected by the distances of the values from the median. The mean, or average, is the sum of all the values of the data set divided by the number of values in the set. The mean is affected by the distances of the values from the midpoint. If the data is symmetrically distributed, the mean and the median will be the same. If there are more values farther away from the median on a side of the median, those values will pull the mean to that side of the median. This asymmetry is called skew, and its direction is named for the side to which the mean has been pulled. Interquartile range (IQR) defines the middle half of the set of values. IQR is stated in terms of the values at the 25 and 75 percentile points of the ranked data set. The distance of each of these values from the median is a measure of how dispersed the data set is. If the distribution is symmetrical, these values will be equidistant from the median (16:59-66,97).

Decision Criteria. Decisions were anticipated for each phase of the research. A decision had to be made about the set of responses for each question in each interview set and questionnaire. Decisions were necessary after each interview phase concerning whether the next phase was needed or could be deleted. The phase decisions depended on having enough information from the previous phase to not need the next phase. Unanswered questions or unresolved issues after

one phase required that the next phase(s) be done. The key to determining whether each question was answered was the presence or lack of a consensus among its responses. This was not as simple as establishing a simple majority as the consensus criterion. Subjective material must be treated conservatively. Tendencies toward bias must be considered. The more subjective the material and the stronger the tendency toward bias, the more stringent the consensus criteria must be.

At the point of determining the applicability of the AFIT Model for military senior logisticians to senior civilian logisticians, there was significant risk of researcher bias. The more applicable the military model was to senior civilians, the more applicable would be the work done deriving that military model and the less "new or different work" would be needed for the civilian model. Also, if the models were actually the same except for the weighting of the categories, direct comparisons could be made and different weightings discussed. Also, the questions and the responses in this first set of interviews was quite subjective.

In view of the prospective bias toward model applicability, the researcher felt a simple majority of opinions for non-applicability should establish consensus for non-applicability. However, simple majorities of opinion were felt to be insufficient to support

applicability of a model in general, or of suggested categories. Two-thirds majority of opinions, supported by explanations and consistency with other opinions of the same interviewee, was determined to be necessary to establish consensus on applicability. This was applied to the overall response of all interviewees for each question. The civilian and military groups of respondents were each required to support the overall position with a majority.

The interviews on the basic concepts for the senior civilian logistician, the second set of interviews, did not have the same tendency to directly apply the military model that the first interviews had. The material of the second set was probably more subjective than the questions in the first set. The same two-thirds overall plus a majority in each group were required for consensus of responses in the second set of interviews.

The Delphi questionnaire should be a less subjective instrument because its questions should be eliciting more specific responses than the interviews. Those questions intended for consensus should request answers on some scale. Therefore, a simple majority was felt to be sufficient to establish consensus.

The most subjective issue under consideration was determining whether or not to delete one or two phases. That thought was tempting. Therefore, very stringent consensus criteria was necessary to rule that each question

was answered clearly enough to support deleting a phase. A majority of three fourths of the responses overall and two thirds in each of the military and civilian groups was required to cite each response as supporting deletion of a phase.

Interviews

Interviews were used for the second and third phases, the first two phases shown in Table 1, the review of the applicability of a military model to civilians, and the gathering of basic concepts to be used in developing the Delphi questionnaire. Personal (face-to-face) interviews were used when time and location allowed. Most of the interviews were by telephone. The two types have several of the same advantages of high participation rate, interviewer control, accuracy improvement through flexibility, and observation of secondary information. They also share disadvantages of interviewer bias, missing connections due to time incompatibilities, and need for training interviewers. These good and bad features are all stronger for the personal interview, but telephone interviews provide wide geographic capability at low cost and time investment (21:79-92).

The interview schedule for the military model applicability determination was developed based on careful thought, a review of Capt Overbey's interview questions, discussions with advisors, and a review of literature on

military and civilian logisticians. This schedule was expected to have only five or six question topics, proceeding from very general to slightly specific. When developed, it had 15 questions in eight topics. The questions for these interviews were worded and sequenced to minimize leading interviewees to support model applicability. The interview questions covered supporting topics of responsibilities and background in general terms before addressing models. The pre-question explanation described only the general nature of a desired model for civilians without mentioning or presenting any categories. The questions on models started without category titles and then moved from very broad categories to less broad categories. This flow was to elicit opinions on general military-civilian comparability, general model comparability, and model category applicability, in that order. This schedule was pretested with AFIT faculty members and two other persons the faculty recommended.

The basic concepts interview schedule was developed based on the results of the first set of interviews, review of Capt Overbey's interview and Delphi questions, and discussions with the thesis advisor. As expected, this schedule was longer than the first one, 29 questions on eight topics, and had more specific questions. It also was pretested with a group similar to the first schedule pretest.

Delphi Questionnaire

The Delphi technique has been defined and its advantages and disadvantages have been presented earlier in this thesis. A description of this iterative process is now necessary. Delphi starts with an opinion instrument, usually a questionnaire, for its first round. The results are reviewed for the answers, and level of agreement. If the questions asked for preferences on some scale, such as the Likert scale, central tendencies are most properly indicated by the median of each set of responses. The mean can also be used as an indication of skewness (separation of mean and median). Dispersion tendencies are best shown with interquartile range (IQR), which shows the middle 50 percent of the response points. These statistics and possible additional information about the answers are fed back to each of the respondents with an indication of his or her initial response. He can see how each of his own responses compared with the group response and can either change or not change his responses for the second round. There is great flexibility here on how much information is fed back and how much pressure for conformance is applied. The IQR may not be fed back for round two because doing so would increase the pressure for conformance and make the round two package longer and more complicated (4:32-33). Additional iterations after round two usually involve more specific feedback and stronger implications for convergence. Most

experiments and applications of Delphi show the most significant convergence is between rounds one and two (7:4-7).

This Delphi questionnaire was developed based on the information gained from the second set of interviews and using some questions from Capt Overbey's Delphi questionnaire. Five point Likert preference scales and other scales were used for as many questions as appropriate (10:273). Most questions were more specific than those in the interviews. Convergence to consensus of at least 50 percent on half or more of the questions is expected in this application (19:97). This questionnaire will be pretested similarly to the interview schedules.

Weighting Survey

This survey will be a set of priority assignment requests. The model developed from the expert opinions obtained through the Delphi procedure will be furnished to the selected participants along with an explanation of the model. The participants will be asked to allocate 100 points among the top level components of the model, reflecting their decisions on the relative importance of those components. They will then be asked to similarly divide 100 points among the subcomponents in each component. The respondents' scores will be averaged for each allocation. The mean for each component will be multiplied

by the means for each subcomponent within that component to derive second level weightings.

Model Development

The model will be comprised of the features supported or identified by the Delphi survey. The model will reflect some logical grouping of these features. The number of groups (components or categories) and their elements will depend on the Delphi results.

IV. Findings and Analysis

This chapter describes the results of the data gathering phases of this study. The research plan described in Chapter III included two sets of interviews, a Delphi survey, and a weighting questionnaire. The purpose of the first set of interviews was to determine the applicability of a descriptive model of the qualities, characteristics and background of senior military logisticians to senior civilian logisticians. The second set of interviews was required to gather information on basic issues of civilians' background, such as education, experience, and qualities. The objective of the Delphi survey was to survey logistics experts and attempt to reach consensus on the elements that should be included in a normative model of the senior civilian logistician. The final weighting questionnaire was to determine the specific weightings of the model dimensions, categories, and elements.

The time available for this research was limited and the additional unprogrammed time required to conduct and analyze the two sets of interviews precluded completion of all planned phases. A Delphi questionnaire was developed but not used. Therefore, a final model could not be developed or weighted.

Twelve senior logisticians were interviewed in each set of interviews. In each case six civilians and six military officers were questioned. The grades of the civilians varied from the fourth level of the Senior Executive Service (SES), called Distinguished Visitor level four (DV-4), down through General Management level fifteen (GM-15). The officers' ranks covered the equivalent span of lieutenant general down through colonel. The interviewees (listed in Appendix K) were selected from organizations at several levels of command. The combined partitioning of the two sets of interviews is shown in Table 2. The office symbol of each participant has been indicated in Table 2. This table also indicates the number of interviewees of each grade in each agency. The column on the right side of Table 2 indicates which set of interviews applies to the office symbols and quantities. Table 2 shows that five civilians and five officers from AFLC organizations were interviewed, but only three of each group from AFSC were interviewed. This is reasonable because AFLC has a much larger population of senior civilian logisticians. If one preferred to partition along lines of acquisition and operational logistics, the two AFALC participants could be merged with AFSC and the numbers would be equal.

The results of the first set of interviews will be discussed initially. The results of the second set of interviews will follow the first.

Table 2. Partitioning of Interviewees
by Grade, Agency, and Office Symbol

\ GRADE AGENCY \	CIVILIANS					MILITARY OFFICERS					IV No
	DV4	DV5	DV6	GM15	TOT	LtGEN	NGEN	BGEN	COL	TOT	
AirForce	1 1	1 1	0 0	0 0	2 2	0 0	1 1	1 1	0 0	2 2	1 2
SECAF	ALG	ALG			1 1					0 0	1 2
CSAF	LEX	LEY			1 1		LEX LE	LET LEY		2 2	1 2
AFLC	0 0	1 1	0 2	1 0	2 3	0 1	1 1	1 1	0 0	2 3	1 2
HQ		XR NM			1 1			NM		1 1	1 2
AFALC				OAP	1 0		CC			1 0	1 2
AirLCs			WR/MA SM/NM		0 2		SA/CC	SM/CV*		0 2	1 2
AFSC	0 0	0 0	0 0	2 1	2 1	0 0	1 0	1 0	0 1	2 1	1 2
HQ				PLL PLX	1 1		PL	CS**		2 0	1 2
DIVs				E/PLL	1 0				SD/AL	0 1	1 2
SUBTOTAL	1 1	2 2	0 2	3 1	6 6	0 1	3 2	3 2	0 1	6 6	1 2
TOTALS	First Interview: 6 Second Interview: 6 Total: 12					First Interview: 6 Second Interview: 6 Total: 12					1 2 T

* SM/CV had transferred to HQ AFSC/SC shortly before the interview.

** AFSC/CS had transferred to SECAF/AQX shortly before the interview.

IV No = Interview number, indicating first and second sets of interviews
 DV4/5/6 = Distinguished Visitor, grades of Senior Executive Service
 SECAF = Secretary of the Air Force
 CSAF = Chief of Staff of the Air Force, Hq USAF
 AFALC = Air Force Logistics Command
 AFALC = Air Force Acquisition Logistics Center
 AirLCs = Air Logistics Centers of AFALC
 SA/ = San Antonio
 SM/ = Sacramento
 WR/ = Warner Robbins
 AFSC = Air Force Systems Command
 DIVs = Product Divisions of AFSC
 E/ = Electronics System Division
 SD/ = Space Division

Interviews on Applicability of Military Model to Civilians

Interview Questions. The schedule of interview questions appears in Appendices A and B. Appendix A is the pretest version which was modified using the recommendations of three logisticians. The actual questions used for these interviews are contained in Appendix B. The first page of the interview schedule was read to the interviewee at the start of each interview. This interview schedule contained fifteen questions. Thirteen of these called for the interviewee to make a choice, such as yes or no. The last two questions asked for additional inputs. In this interview process only one question was unanswered by one respondent.

General Results. Twelve of the thirteen questions eliciting choices were answered with clear agreement. In eleven cases, this agreement carried through to the subordinate question of how much the particular model category applied. Significant differences between the civilian results and the military responses occurred only twice. These differences are addressed in a summary of this set of interviews, which follows the detailed presentation of the responses for each of the fifteen questions. The results of all the responses involving choices are summarized in Table 18 in that part of the chapter.

Results and Interviewee Comments by Question. While there was consensus on nearly every point, the explanations which accompanied the yes-no answers reflected varied opinions. The explanations and comments elicited by each question are provided in the following subparagraphs. The exact wording for each question will be shown first.

Each question will be followed by a table which contains the comments made to support each yes-no response. Each table will also indicate the number of civilians and officers that made each comment. The tally of the respondents, or "commenters" as they are called in the tables, is intended only to indicate some level of agreement among the interviewees. Since several of the respondents used more than one comment to support their opinions, the total number of comments often exceeds the number of respondents. The first few lines of each table are used to indicate the overall response pattern for the question. These lines have no comments entered. Several comments tended to caveat the opinion stated and these are presented next after the overall status. These comments, and any others for which knowing the stated opinion of the commenter helps understand the comment, start with an indicator of the opinion.

Responsibility Differences. The questions were:

Are there differences in the responsibilities and duties of civilian and military logisticians at the senior levels?

YES _____ NO _____ NO RESPONSE _____

Why, or why not? If so, what are they? If so, are they significant?

Table 3. Comments on Responsibility Differences

COMMENTERS			COMMENTS or EXPLANATIONS
TOT	CIV	MIL	
11	6	5	Yes
1		1	No
1		1	Said "no." The duties are equal at Air Logistics Centers (ALCs). This does not apply to military only positions like Deputy Commander for Maintenance.
2	1	1	Military in major operational commands work daily missions and retail logistics and civilians at ALCs work wholesale logistics, while in Washington DC the differences between military and civilian responsibilities disappear.
7	4	3	The normal arrangement in most organizations is a military director and civilian deputy.
1		1	Command is the obvious distinction.
2		2	Military are really responsible all the way up to the civilian control at the very top.
6	2	4	Military logisticians have combat or operational "user" experience and perspective.

Table 3. Comments on Responsibility Differences, cont.

COMMENTERS			COMMENTS or EXPLANATIONS
TOT	CIV	MIL	
4	1	3	Military bring broader backgrounds to senior positions compared with the narrower, deeper expertise of civilians.
2	1	1	Military are more believable spokespersons for support functions when interfacing with operational people (mostly military).
4	2	2	Responsibilities and background strengths of boss and deputy should not duplicate or over-lap. They complement each other and gain from synergy possible with, and needed from, their broader combined background.
3	2	1	The mix of duties is determined by the relative background strengths and personalities of the director and deputy, and prescribed by the director.
1	1		A common duties split is the military boss for policy, the civilian for administration.
1	1		Military are overall managers and military counselors while civilians run the projects.
3		3	Civilians are technical experts and adept managers, more effective in running day to day logistics functions.

Background Differences. The questions were:

Should there be any differences in the essential background and characteristics of civilian and military senior logisticians?

YES _____ NO _____ NO RESPONSE _____

Why, or why not? If so, what are they? If so, are they significant?

Table 4. Comments on Background Differences

COMMENTERS			COMMENTS or EXPLANATIONS
TOT	CIV	MIL	
7	2	5	Yes
5	4	1	No
1	1		Said no, except that civilians should spend more time in more Journeyman level jobs and learn them in more depth than officers.
1	1		Said no, but it is good for a boss-deputy pair to have different backgrounds so that they have a broader combined background.
1	1		Said yes, but added ideally "no," pragmatically "yes."
1		1	Said no, ideally both should rise through the same "track."
1	1		The two groups have very different tracks, and many jobs held by military cannot legally be done by civilians.
1		1	The entire career structures are different and making them equal would take impossibly large changes.

Table 4. Comments on Background Differences, cont.

COMMENTERS			COMMENTS or EXPLANATIONS
TOT	CIV	MIL	
1	1		The differences are mainly in experiences and not in education or training.
1		1	Military must have command experience, which gives one a different perspective.
1		1	Military must have combat or operational unit experience.
1		1	It is an advantage for logistics organizations to have customer experience like the military have.
2		2	Civilians don't get much opportunity to get operational or retail logistics experiences.
2		2	The military don't have time to learn logistics functions in depth.
5	2	3	Civilians should get some user, operational, or retail logistics experience and broaden their background for senior positions.
1		1	A more narrow background is necessary for civilians but not all in one area.
1	1		Civilian continuity is needed.
1	1		Civilian continuity no longer exists in many areas as younger civilians see mobility as a way to get ahead.

General Model Applicability. The question was:

Without worrying right now about the names of any categories, should a model for the qualities, background, and characteristics of senior military logisticians be applicable, in general, for senior civilian logisticians?

YES _____ NO _____ NO RESPONSE _____

Why, or why not?

Table 5. Comments on Military Model Applicability

COMMENTERS			COMMENTS or EXPLANATIONS
TOT	CIV	MIL	
10	5	5	Yes
2	1	1	No
1	1		Said no, some model categories probably would not apply to civilians. This question can't be answered without knowing the model categories.
1		1	Said no. Civilian and military career processes and their management are different. How would typical civilians be made to move every three years and how would military stay longer in each place and still get all their required experiences?
1	1		Qualities are generic to rise to the top.
1	1		Not all categories will apply equally.
1	1		Subcategories may not all apply.
2		2	Duties are the same in senior level jobs.
2		2	Model should be a guide or an ideal, not a set of mandatory wickets.

Top Three Model Categories Applicability. The

questions were:

If a military model had three top categories of experience, education and training, and professional attributes, would these categories be applicable to senior civilian logisticians?

YES _____ NO _____ NO RESPONSE _____

Would each these categories be as applicable to civilians as to military?

YES _____ NO _____ NO RESPONSE _____

Why, or why not?

Table 6. Comments on Three Model Categories

COMMENTERS			COMMENTS or EXPLANATIONS
TOT	CIV	MIL	
12	6	6	Yes
10	5	5	Yes, equally
2	1	1	No, not equally.
1	1		Said "not equally." Experience should be less applicable for civilians although experience can be gained without mobility.
1		1	Said "not equally." SESs are selected with a different set of conditions than military because they will perform different duties.
1	1		If any schools are made mandatory, civilians should get equal priority or opportunity to make model applicability equal.

Table 6. Comments on Three Model Categories, cont.

COMMENTERS			COMMENTS or EXPLANATIONS
TOT	CIV	MIL	
1	1		Professional Military Education (PME) should be tailored for civilians.
1	1		Civilian degrees can replace military academies for civilians but the goal or result of educated thinkers should be the same.
1		1	These categories will have different subdivisions for civilians and officers.
2	1	1	The experiences of military and civilians will be different.
1		1	Experience, education and training, and professional attributes is the correct order of priority for officers and civilians.
1	1		The order of priority should be professional attributes, experience, and education and training for civilians and officers.
1		1	Civilians and officers are used differently, senior civilians for corporate memory while military are mobile.
1		1	Said "equally applicable." Of course! Civilians are professionals too. "We" just haven't grown them like "we" should.

"Logistics Assignments" Category. The questions

were:

Should a category of "Logistics Assignments," assignments in one or more logistics functions, be applicable, or equally applicable, to senior civilian logisticians?

YES(apply)____ YES(=)____ NO(=)____ NO(apply)____

Why, or why not?

Table 7. Comments on Logistics Assignments

COMMENTERS				COMMENTS or EXPLANATIONS
TOT	CIV	MIL		
12	6	6		Yes
9	5	4		Yes, equally.
3	1	2		No, not equally.
2	1	1		Said "not equally." Logistics assignments apply less to civilians, whose assignments should be more stable than the military's. An officer added civilians should be experts in details to support the mobile military.
1		1		Said "not equally." Civilians and military have different career paths. Civilians should be "broad" in logistics functions, which is difficult for the military to do.
2	2			Civilians should be broadened in different logistics aspects. One said one must have three or more areas to be a logistician. The other said an executive needed a good understanding of how the logistics system operates.

Table 7. Comments on Logistics Assignments, cont.

COMMENTERS			COMMENTS or EXPLANATIONS
TOT	CIV	MIL	
1		1	Specific assignments are not applicable because a broader range is needed for officers.
1	1		Military are expected to have less logistics experience.
1		1	Some general patterns of assignments, good for SESs to have had, could be laid out.
1		1	Civilians should move around and get varied experience when they are young and then have the desired work force stability at the GM-15 and higher levels.

"Advanced or Types of Positions" Category. The questions were:

Should a category for "Advanced Positions" or "Types of Positions," such as staff positions or director/commander/-manager assignments, be applicable, or equally applicable, to senior civilian logisticians?

YES(apply)____ YES(=)____ NO(=)____ NO(apply)____

Why, or why not?

Table 8. Comments on Advanced Positions

COMMENTERS			COMMENTS or EXPLANATIONS
TOT	CIV	MIL	
12	6	6	Yes
10	6	4	Yes, equally.
2		2	No, not equally.
2		2	Said "not equally." Command positions are not applicable to civilians. One said some director slots could just as well be civilian. The other said staff experience was mandatory for civilians and desirable for officers.
2	2		Said "equally." Command positions are not applicable to civilians.
1	1		Civilians and officers both need to be broad-based at senior levels.
1		1	Both need staff and line diversity.
1		1	Both need to know the interfaces between commands and logistics functions to operate.
1	1		The "tie together" of director and deputy pairs blurs differences of types of positions.
1	1		There is no difference in the demands of upper level jobs.
1	1		To excel requires the same attributes for both civilians and officers.

"Advanced Degree(s)" Category. The questions

were:

Should a category of "Advanced Degree(s)" be applicable, or
equally applicable, to senior civilian logisticians?

YES(apply)____ YES(=)____ NO(=)____ NO(apply)____

Why, or why not?

Table 9. Comments on Advanced Degrees

COMMENTERS			COMMENTS or EXPLANATIONS
TOT	CIV	MIL	
11	6	5	Yes
11	6	5	Yes, equally.
1		1	No
1		1	Said "No," this category is equally unapplicable to officers and civilians. However, an advanced degree does reflect an individual's self-discipline and learning potential.
1	1		A requirement for a master's degree for civilians is prohibited by Equal Employment Opportunity (EEO) law or regulations while military need an advanced degree for promotability.
1	1		The classification standard for logisticians does not require civilians to have any degree, but that is a mistake. Senior civilian logisticians need a degree to operate with senior military managers and heads of functional areas like engineering, people who have degrees.

Table 9. Comments on Advanced Degrees, cont.

COMMENTERS			COMMENTS or EXPLANATIONS
TOT	CIV	MIL	
1		1	Advanced degrees are not mandatory for either officers or civilians, but are helpful to both, perhaps more for military.
1		1	Once criteria of adequacy for civilians is established, an advanced degree will be required.
1		1	Senior officers and civilians must do the same things and should get the same education.
1	1		Degrees reflect an ability to think, have a broadening effect, and improve knowledge of "how the world operates." Civilian schools' education can challenge Air Force inputs and thinking with some fresh concepts and solutions.

"Professional Military Education (PME)" Category

The questions were:

Should a category of "Professional Military Education (PME)" be applicable, or equally applicable, to senior civilian logisticians?

YES(apply)____ YES(=)____ NO(=)____ NO(apply)____

Why, or why not?

Table 10. Comments on Professional Military Education (PME)

COMMENTERS			COMMENTS or EXPLANATIONS
TOT	CIV	MIL	
12	6	6	Yes
2		2	Yes, equally.
10	6	4	No, not equally.
1		1	Said "equally." Civilians have less opportunity to participate in residence and must depend on correspondence courses and PME seminars.
1		1	Said "equally." Civilians must "rub shoulders" with their future military co-workers.
1	1		Civilians should be able to "talk the same language" as the military.
3	2	1	PME is mandatory for military for promotion to senior levels, but not for civilians.
4	3	1	Intermediate and senior level schools were applicable to civilians but lower level schools were not.
1		1	Civilians should appreciate the implications and requirements of war, but not to the same extent as officers should. The extent should be set by how closely related each logistics position is to combat support.
1		1	PME addresses many military items not necessary for civilians to know because they are not asked to do those functions.

"Professional Continuing Education (PCE)"

Category. The questions were:

Should a category of "Professional Continuing Education (PCE)," like AFIT short courses, be applicable, or equally applicable, to senior civilian logisticians?

YES(apply)____ YES(=)____ NO(=)____ NO(apply)____

Why, or why not?

Table 11. Comments on Professional Continuing Education (PCE)

COMMENTERS			COMMENTS or EXPLANATIONS
TOT	CIV	MIL	
12	6	6	Yes
11	6	5	Yes, equally.
1		1	No, not equally.
1		1	Said "no, not equally." PCE should have the opposite emphasis from PME; PCE is essential for civilians, who are expected to be technical experts, but this outcome is only secondary for military.
2	2		PCE subdivisions or actual courses should have different applicabilities between civilians and officers.
1		1	PCE should not be a big factor for senior logisticians, civilians or officers.
1	1		PCE is a follow-on to education and experience. It allows one to keep up with what's going on in his profession.

Table 11. Comments on Professional Continuing Education (PCE), cont.

COMMENTERS			COMMENTS or EXPLANATIONS
TOT	CIV	MIL	
1	1		Civilians and officers should be able to "talk the same language."
1		1	Skills should be targeted equally between officers and civilians.
1		1	Both civilians and military should never stop learning.
1		1	The Air Force civil engineering field has a very good model of patterns for educational growth for both military and civilians.

"Professional Involvement" Category. The questions were:

Should a category of "Professional Involvement," in conferences or organizations like SOLE, be applicable, or equally applicable, to senior civilian logisticians?

YES(apply)____ YES(=)____ NO(=)____ NO(apply)____

Why, or why not?

Table 12. Comments on Professional Involvement

COMMENTERS			COMMENTS or EXPLANATIONS
TOT	CIV	MIL	
10	6	4	Yes
10	5	5	Yes, equally.
2	1	1	No, not equally.
2		2	No
2		2	Said "no." This category is equally unapplicable to officers and civilians. One claimed this involvement is nice, but too often it means time away from the real job. The other said its a matter of personal interest, although earning Certified Professional Logistician (CPL) can provide some knowledge edge.
2	1	1	Professional involvement should be more applicable to civilians. The civilian added that this is essential for civilians to be professional logisticians. The officer said civilians need it because they have less chance to excel in day to day work.
2		2	This category should be lower priority than other categories.
1	1		Civilians are more likely to see this as a forum for career advancement than the officers are.
1	1		This is tied to professionalism and provides both civilians and military a chance to work on issues that are broader than their daily tasks.

"Technical Competence" Category. The questions were:

Should a category of "Technical Competence" be applicable, or equally applicable, to senior civilian logisticians?

YES(apply)____ YES(=)____ NO(=)____ NO(apply)____

Why, or why not?

Table 13. Comments on Technical Competence

COMMENTERS			COMMENTS or EXPLANATIONS
TOT	CIV	MIL	
12	6	6	Yes
6	5	1	Yes, equally.
6	1	5	No, not equally.
1		1	Said "equally, definitely!" The Air Force has no time for people without professional standing and technical expertise.
5	1	4	Technical competence is more applicable or essential for civilians.
1	1		Each person owes it to himself to compete with his peers in his career field and those who don't show that attitude are usually poorer workers.
1	1		This is one more case of having the same background to do similar jobs
1	1		There should be no differences between military and civilians per se, but there should be complementary competences in each organization.

Table 13. Comments on Technical Competence, cont.

COMMENTERS			COMMENTS or EXPLANATIONS
TOT	CIV	MIL	
1	1		Technical competence applies more to civilians, but that should be made equal by making more officers more competent in logistics.
2	2		A senior civilian should be broader than being an expert in one specialty. One said "He" should know whole processes. The other added "He" needs to exit his main specialty soon enough to get broader experience.
1		1	Many senior positions need leadership more than technical depth.
1		1	Technical competency can't be determined for civilians or officers. I doubt it is looked at, or is applicable, for military. Civilians often know one facet very well, but as they progress to managers they tend to micromanage their "old" specialty and neglect other areas. This "hole in the system" is like the practice of placing senior pilots in logistics positions such as DCM to "rub a little logistics on them."

"Personal Qualities and Characteristics" Category.

The questions were:

Should a category of "Personal Qualities and Characteristics," such as leadership, initiative, mobility, integrity, etc., be applicable, or equally applicable, to senior civilian logisticians?

YES(apply)____ YES(=)____ NO(=)____ NO(apply)____

Why, or why not?

Do you recommend any other model categories or personal characteristics elements for a model for senior civilian logisticians?

YES ____ NO ____ NO RESPONSE ____

If so, what are they?

The term mobility was included in the examples on purpose, to see what comments it might elicit. Table 14 shows that several interviewees did comment on mobility.

Table 14. Comments on Personal Qualities and Characteristics

COMMENTERS			COMMENTS or EXPLANATIONS
TOT	CIV	MIL	
12	6	6	Yes
12	6	6	Yes, equally.
2	1	1	This is one of the more important areas for senior people.
1	1		Leadership, creativity, flexibility, and ability to "get along" are key attributes.
1	1		Integrity is much more important than leadership or flexibility.
1		1	SESSs need leadership and integrity. Anyone can be a manager.
1	1		Mobility is not as necessary for civilians, who are used for continuity. Quick moves of civilians are counterproductive.
1	1		Officers, SESSs, and GS/GM-15s are under three different sets of mobility requirements. Mobility is not a professional attribute, but is a part of the job, a condition of each position.
1	1		Mobility should be included. To do the job, a person should go where needed.
1		1	Mobility is not as applicable for civilians.
1		1	Mobility for civilians should be within the logistics profession, but should include other professions for military.
1		1	Dedication is a very important additional attribute. Mobility is tied to dedication. Recent efforts by AFLC/CC to get top civilians in AFLC to move around was a form of "dedication check."

Additional Categories or Attributes. The last question of the interview schedule dealt with this topic. All of the responses were characteristics and were included here for continuity with the previous set of responses. The questions were:

Do you recommend any other model categories or personal characteristics elements for a model for senior civilian logisticians?

YES _____ NO _____ NO RESPONSE _____

If so, what are they?

Other characteristics recommended were:

- computer literacy
- thinker
- managerial ability
- knowing analytical and modeling techniques
- ability to "get things done"
- understanding Air Force budgeting and
- financial management
- planning ability
- a problem solving/systems viewpoint.

Subdivisions of the Above Eight Categories. The questions were:

Would subdivisions of the above eight categories of a model for senior military logisticians be likely to be applicable, or equally applicable, to senior civilian logisticians?

YES(apply)____ YES(=)____ NO(=)____ NO(apply)____

Why, or why not?

Table 15. Comments on Subdivisions of Categories

COMMENTERS			COMMENTS or EXPLANATIONS
TOT	CIV	MIL	
10	5	5	Yes
4	2	2	Yes, equally
6	3	3	No, not equally
1	1		No
1		1	No response
1	1		Said "no." Application within each category would be more a matter of stratification than subdivision, and emphasis would vary by grade level. Interpretation: Categories should be divided by levels of responsibility and requirements of grade levels.
3	1	2	Said "not equally." As a model became more detailed (at its lower levels), the applications would become more unequal.
1	1		Applicability depends on what the subdivisions actually would be and on statutory limitations for civilians.

Table 15. Comments on Subdivisions of Categories, cont.

COMMENTERS			COMMENTS or EXPLANATIONS
TOT	CIV	MIL	
1	1		There is no need to train civilians to be imitators of the military.
1		1	Officers and civilians should be different. For example, technical competence in logistics is more germane to civilians.
1		1	If officers and civilians are to do the same jobs, they should prepare the same. Start broadening the civilians "young."
1		1	Command and combat assignments would not apply

The results shown in the top five sections of Table 15 reflect the responses made during the interviews. However, three of these responses were not consistent with comments made on earlier questions. A civilian responding "yes, equally" to this question said, on the category of PCE, that subdivisions of PCE would apply differently. An officer who responded "yes, equally" on this question said command and combat assignments, subdivisions of "Logistics Assignments" and Advanced Positions" categories, would not be applicable to civilians. Another officer who responded "yes, but not equally" to this question, indicated they would not have the same subdivisions on the question (topic 4) about three general categories. The top five sections of Table 15 are repeated in Table 16 to show the adjusted results after

these three responses were modified to be consistent with each respondent's earlier comments. The researcher believes this is a more accurate reflection of the opinions of these three senior officials. These adjusted results are shown in Table 18, the overall summary of responses for this set of interviews. One officer abstained from answering this question on model subdivisions.

Table 16. Adjusted Results on Subdivisions of Categories

COMMENTERS			COMMENTS or EXPLANATIONS
TOT	CIV	MIL	
8	5	3	Yes, category subdivisions would apply to civilians.
2	1	1	Yes, category subdivisions would apply equally to civilians.
6	4	2	No, category subdivisions would not apply equally to civilians.
3	1	2	No, category subdivisions would not apply.
1		1	No response

Additional Thoughts. The question was:

Do you have any other thoughts on the topic of comparability of senior military and civilian logisticians?

YES _____ NO _____ NO RESPONSE _____

If so, what are they?

Most interviewees responded with a reiteration or summary of their main ideas, but several new thoughts surfaced. These comments constitute Table 17. The top part of this table indicates the number of respondents that provided these inputs.

Table 17. Other Comments on Senior Military and Civilian Logisticians

COMMENTERS			COMMENTS or EXPLANATIONS
TOT	CIV	MIL	
6	3	3	Provided the comments included below.
1	1		I am bothered by the tone of the interview questions which seemed to use the military as the standard of reference. (He accepted the explanation that a model already existed for senior military logisticians and this interview was to test its applicability to civilians.) You might better ask what a logistician is, what makes good senior logisticians, or whether military or civilians make better logisticians.
1	1		There is a cultural change occurring for civilians, especially those with less than approximately twenty years of service, who see mobility as a way to get ahead. This change in thinking has not spread to the ALCs yet, where the best younger managers know they can advance in one of the local career broadening programs without moving around geographically.
1		1	Civilians in the ALCs have "horrible" geographic stability, i.e., they never move, but also have "total" job instability or turnover internally.

Table 17. Other Comments on Senior Military and Civilian Logisticians, cont.

COMMENTERS			COMMENTS or EXPLANATIONS
TOT	CIV	MIL	
1	1		The Air Force has Milquetoast civilians who don't express what they know, and has officers who don't know logistics in logistician positions. Neither is right.
2		2	AFLC has people who have never seen a depot shop or an ALC office, but are writing policies at AFLC headquarters. The ALCs have senior managers who don't understand headquarters management or Air Force budgeting because they've never been where those functions are done.
1	1		Too much attention is paid to military-civilian differences, similar to overemphasizing the AFLC and AFSC differences, because, in reality, everybody has the same mission.
2	1	1	The more senior either type of logistician gets, the more generalist and less specialist he or she should be.
1		1	I disagree with prevailing high level opinion that all our senior logisticians need to be more generalistic. A mix of generalists and specialists is necessary.
1	1		There is no single model for success. We need a general guide with alternatives.
1		1	A good career path for either civilians or officers, assuming sufficient intelligence, is: mobile, advanced degree, PME by correspondence, and work hard. People tend to select themselves out of competition for higher jobs by lack of preparation.

Summary of Results of First Set of Interviews. In Chapter III, "a priori" criteria were established that defined consensus of responses for this set of interview questions. Nine of twelve total interviewees, and four of six in each of the civilian and military groups, were required to establish applicability of the military model or any of its categories. The first two questions of the interview schedule might tend to have the interviewees thinking more about differences than similarities. This is preferable to biasing towards the model being accepted as applicable. However, and with some limitations, the responses met the criteria for civilian applicability of a military model.

The results of the thirteen questions eliciting choices are summarized in Table 18. The numbers of interviewees responding to the two questions that requested only information are not included in Table 18. A more detailed record of the responses with choices is in Appendix C.

The concept of a model for senior military logisticians being applicable to senior civilian logisticians was supported. The three top level, very general dimensions of the model, called categories in the interviews, were judged applicable. All eight of the next level, more specific categories also received their own consensus for applicability. Five of these eight categories also met the consensus criteria for equal applicability to senior

Table 18. Summary of Responses on Applicability
of a Military Model to Civilians

QUESTIONS	CHOICES	CIVILIAN RESPONSES	MILITARY RESPONSES	TOTAL
ARE THERE RESPONSIBILITY DIFFERENCES	YES NO	6 0	5 1	11 1
SHOULD THERE BE BACKGROUND DIFFERENCES	YES NO	2 4	5 1	7 5
MILITARY MODEL APPLY IN GENERAL	YES NO	5 1	5 1	10 2
THREE MILITARY MODEL CATEGORIES APPLY TO CIVILIANS	YES EQUALLY NOT EQUAL NO	6 5 1 0	6 5 1 0	12 10 2 0
"LOGISTICS ASSIGNMENTS" CATEGORY APPLY TO CIVILIANS	YES EQUALLY NOT EQUAL NO	6 5 1 0	6 4 2 0	12 9 3 0
"ADVANCED or TYPES OF POSITIONS" CATEGORY APPLY TO CIVILIANS	YES EQUALLY NOT EQUAL NO	6 6 0 0	6 4 2 0	12 10 2 0
"ADVANCED DEGREE(S)" CATEGORY APPLY TO CIVILIANS	YES EQUALLY NOT EQUAL NO	6 6 0 0	5 5 0 1	11 11 0 1
"PROFESSIONAL MILITARY EDUCATION (PME)" CATEGORY APPLY TO CIVILIANS	YES EQUALLY NOT EQUAL NO	6 6 0 0	6 2 4 0	12 2 10 0
"PROFESSIONAL CONTINUING EDUCATION (PCE)" CATEGORY APPLY TO CIVILIANS	YES EQUALLY NOT EQUAL NO	6 6 0 0	6 5 1 0	12 11 1 0
"PROFESSIONAL INVOLVEMENT" CATEGORY APPLY TO CIVILIANS	YES EQUALLY NOT EQUAL NO	6 5 1 0	4 3 1 2	10 8 2 2
"TECHNICAL COMPETENCE" CATEGORY APPLY TO CIVILIANS	YES EQUALLY NOT EQUAL NO	6 5 1 0	6 1 5 0	12 6 6 0
"PERSONAL QUALITIES AND CHARACTERISTICS" CATEGORY APPLY TO CIVILIANS	YES EQUALLY NOT EQUAL NO	6 6 0 0	6 6 0 0	12 12 0 0
SUBDIVISIONS OF ABOVE EIGHT CATEGORIES APPLY TO CIVILIANS	YES EQUALLY NOT EQUAL NO	5 1 4 1	3 1 2 2	8 2 6 3

civillians. A consensus indicated PME was not equally applicable. A consensus also indicated subdivisions of the eight model categories might not all be equally applicable, after the adjustments for consistency. There was no consensus on equal applicability on a model named technical competence, where there was an even six to six split.

Only two questions drew responses with significant differences between the civilian group and the military group. The first difference occurred on the questions of topic 2, which concerned differences in the background between senior military and civilian logisticians, when five officers thought there should be differences, but only two civilians agreed. The overall response to this question was seven yes and five no. The other question registering a significant difference was the seventh question under topic 5 and it concerned the degree of applicability of technical competence. Within an overall equal split of six to six on this issue, the civilians favored equal applicability by five to one, but the officers felt the exact opposite.

A consensus was reached to support applicability of subdivisions of the eight categories. Eight of twelve supported this position, after the adjustments already described. One respondent said the applicability of subdivisions would depend on what the subdivisions actually were. Another stated command and combat positions would not apply to civilians. The participants were not given any of

the subdivision titles. The question was general. Of the eight officials felt to support applicability, six (75 percent) said the subdivisions would not be equally applicable to civilians. A majority of both the military and civilian subgroups of those supporting category applicability supported unequal applicability. This does constitute a consensus that category subdivisions would not all be equally applicable to civilians.

It is clearly the consensus of the twelve senior officials interviewed that the AFIT Model for senior military logisticians should be applicable to their civilians counterparts to the point of applying the eight categories. However, the areas without consensus and the areas with consensus against equal applicability, just described, indicate that some of the category subdivisions may be different for civilians. These results also indicate that the weightings of the categories and subdivisions may be different. Therefore, this research must continue with both the second set of interviews and the Delphi questionnaire.

The lacks of consensus and the equal or nearly equal splits of opinion discovered during this interview process, when combined with several poignant comments, raise many questions. These questions, when combined with the researcher's own list of issues and the questions asked in Capt Overbey's first interviews, created even more

questions. These questions had to be addressed, and hopefully answered, before proceeding with the specific consensus oriented questions of the Delphi survey. Therefore, the Delphi phase of this research demanded a second set of interviews.

Interviews on Basic Concepts for Senior Civilian Logisticians

Interview Questions. The schedule of interview questions appears in Appendices D and E. Appendix D is the pretest version which was modified using the recommendations of three logisticians. The actual questions used for these interviews are contained in Appendix E.

The first three pages of this interview schedule were sent to each interviewee prior to the interview. With one exception, the interviewee read this reference information before the interview and had it available for reference during the interview. In the one case in which the information did not arrive, the lists referred to in questions were read along with each question.

This set of questions was much longer than the first set, consisting of twenty-nine questions instead of fifteen. During these interviews there were six cases in which a question was not answered by an interviewee.

General Results. This interview schedule contained seventeen questions which could be answered with choices such as yes or no, or selecting a category, as well as eliciting supporting comments. Five questions asked for quantitative answers and comments. The remaining seven questions called only for comments.

Answers with Choices. Twelve of these seventeen questions were answered with clear agreement. Three of the five questions not gaining a consensus had significant differences between the civilian and military responses. A detailed record of all choice responses is tabulated in Appendix F. These responses are also summarized in Table 50 later in this chapter.

Quantitative Answers. Averages (means) were calculated for each of these five questions. There were no significant differences between civilian and military responses. The details of this data are recorded in Appendix G. The averages are summarized in Table 51 later in this chapter.

Results and Interviewee Comments by Question. The explanations and comments elicited by each question are provided in the following subparagraphs. The method and sequence of presentation is the same as for the first set of interviews. The exact wording of the question is followed by a table of comments with indicators of how many civilians

and officers made each comment. The first few lines of each table are used to show the overall response tally for that question. In several cases, some comments tended to caveat the respondents stated choice. These comments are usually presented right after the overall tally. When this occurs, or whenever the choice selected helps to interpret the comment, the choice is indicated with the comment. As before, several respondents made multiple comments on many questions.

Having a Bachelors Degree. The introductory remark and questions were:

Higher education is not presently required for many civilian job series prevalent in Air Force logistics functional areas.

Should a senior civilian logistician have a bachelors degree?

YES _____ NO _____ NO OPINION _____

WHY?

Table 19. Comments on Having a Bachelors Degree

COMMENTERS			COMMENTS or EXPLANATIONS
TOT	CIV	MIL	
12	6	6	Yes
2	2		The education broadens a person's outlook.
3		3	Getting a degree is a very good way to organize and discipline one's self. The degree is a sign of dedication and discipline.
3	3		Don't make this a firm requirement or use a lack of a degree as an eliminator for a job. Good, applicable experience and knowledge can offset the need for a degree in some cases. One also said this is the exception.
1		1	Historically, people without degrees have done their jobs well. Future requirements, and dealing with industry, will demand a degree.
1	1		There is a heavy trend among LCCEP registrants toward having a degree.
1		1	One can learn much by experience but must know how to think the experience through and apply it. While earning a degree one learns a logical set of patterns for thought.
4	2	2	This is good for the exposure to, and gaining of, new knowledge.
1	1		A degree improves one's image with subordinates who have a degree.
1		1	Makes one more equivalent to officers.
1		1	Logisticians, especially in acquisition, work with many professionals who have one or more degrees. Without a degree the logistician will have a communications gap.
1		1	One needs to prepare for senior level jobs. A degree is almost mandatory for GM-13s and GM-14s.

When to Have a Bachelors Degree. The question

was:

Are there any civilian grade levels at which possessing the bachelors degree is particularly beneficial, or by which you would expect the civilian to have the degree?

YES ____ LEVEL(S) _____ NO ____

There were no specific comments made. Table 20 shows the averages of the judgments and how many selected each grade.

Table 20. Data on Grade Level for a Bachelors Degree

COMMENTERS			COMMENTS or EXPLANATIONS	

TOT CIVIL				

11	5	6	Average grade was 11.5	

4	2	2	Said grade 13	

4	2	2	Said grade 12	

1		1	Said grade 11	

1	1		Said grade 9	

1		1	Said grade 7	

1	1		Said "Any"	

Having an Advanced Degree. The questions were:

Should a senior civilian logistician have an advanced degree?

YES _____ NO _____ NO OPINION _____

WHY?

The results and comments are included Table 21.

Table 21. Comments on an Advanced Degree

COMMENTERS			COMMENTS or EXPLANATIONS
TOT	CIV	MIL	
9	5	4	Yes
3	1	2	No
1	1		Said "no." There usually is not that much improvement in the person's capability
1		1	Said "no." This degree should not be a general rule. Any requirements should be position specific such as a business degree for jobs in materiel management or graduate logistics for jobs in logistics plans.
1		1	Said "no." This is not essential except in technical fields like engineering. One does learn to study and learns topics that senior jobs call for. Getting the degree "to have one" can be useless, depending on its topic.
3	1	2	As for the bachelors degree, one learns thinking, discipline, and subject matter.
2	2		As for the bachelors degree, this broadens the person's perspective. One added this criteria will weed out many "stiltified" SESs before they get there. Interpretation: narrow thinking, non-innovative people

Table 21. Comments on an Advanced Degree, cont.

COMMENTERS			COMMENTS or EXPLANATIONS
TOT	CIV	MIL	
1	1		This can be most useful. It brings one's education up to date. The university experience is important, as opposed to sometimes questionable night school programs.
1	1		It doesn't matter what the degree is in. The education process is the main thing.
1	1		This degree should not come from AFIT, where they teach logistics. For senior levels one should learn budgeting, art, or something other than logistics.
1		1	Liberal arts degrees are not as applicable as business or engineering, subjects that improve one's ability to understand concepts and manage related efforts.
2		2	This degree makes one more competitive and comparable with peers.
1		1	There are equivalent advanced courses such as the Sloan Program at MIT.

When to Have an Advanced Degree. The question was:

Are there any civilian grade levels at which possessing a masters degree is particularly beneficial, or by which you would expect the civilian to have this degree?

YES ____ LEVEL(S) _____ NO ____

There was only one specific comment made. Table 22 shows the averages of the judgments, how many selected each grade, and the comment.

Table 22. Data on Grade Level for an Advanced Degree

COMMENTERS			COMMENTS or EXPLANATIONS
TOT	CIV	MIL	
11	6	5	Average grade was 14.0
5	2	3	Said grade 15
2	2	0	Said grade 14
3	1	2	Said grade 13
1	1		Said grade 12
1		1	Said "Any"
1	1		If one has not gotten this degree before making GS/GM-13, he should take off a year, and get it on a full time program.

Professional Military Education (PME). The introductory remarks and the question were:

Several senior officials believe that PME is appropriate for the background of senior civilian logisticians. Several reasons have been suggested. (1) Senior civilians should appreciate the implications and requirements of war, and, since they must work and communicate with senior military logisticians, they should have some common education. (2) It is important for logistics

organizations and their civilian leadership to understand the operational requirements they are supporting. This understanding could be enhanced by resident participation in PME at all levels, but resident PME opportunities are limited for civilians. (3) Each PME level has a distinct emphasis that could benefit our career civilians. Squadron Officer's School (SOS) teaches leadership along with problem solving and communication, Intermediate Service Schools (ISS) emphasize staff work, and Senior Service Schools (SSS) stress strategy and policy. As you may suspect, not all senior officials agree with the above statements.

How important is PME to the professional development of a senior civilian logistician?

COMMENTS

The importance categories for these responses were chosen by the researcher just prior to consolidating all the responses for this question. The assignment of each response to one of these categories was dependent on the researcher's interpretation of each response. The tally of these judgments comprises the first three lines of Table 22.

Table 23. Comments on the Importance of PME

COMMENTERS			COMMENTS or EXPLANATIONS
TOT	CIV	MIL	
4	3	1	Very important
4	2	2	Moderately important
4	1	3	Slightly important
2	2		Residency is not so important for civilians.
4	2	2	Squadron Officers School (SOS) has little or no benefit for civilians. One officer included Air Command and Staff College (ACSC).
3	1	2	Civilian selection for PME should be limited to those who show real potential for senior positions.
4		4	PME is valuable for civilians but should not be mandatory or be a selection criteria for promotion or for a specific position.
3	2	1	Air War College (AWC) or Industrial College of the Armed Forces (ICAF) are the most useful for civilians. An officer and a civilian added that Defense Systems Management College (DSMC) is good for those in acquisition agencies.
5	2	3	Opportunities for PME and DSMC are quite limited for civilians in terms of slots.
2	1	1	A good substitute for PME is to have worked at base level or served in the military.
1	1		An equivalent for PME is necessary for civilians, but is lacking.
1	1		Civilians should know about military aspects and many senior civilians do not.
1		1	Senior logisticians dabble in the current wisdom of logistics theories and don't understand wartime support and its difference from commercial operations, like Sears.

Table 23. Comments on the Importance of PME, cont.

COMMENTERS			COMMENTS or EXPLANATIONS
TOT	CIV	MIL	
2	2		Civilians work with military all the time and can learn how the Air Force operates.
1		1	ACSC is a good spot for a few civilians to benefit the officer participants. Senior PME is to "re-blue" the military with history, doctrine, and lessons.
1		1	Many civilian jobs, and many civilian's goals, would not be benefitted by PME. We expect our civilians to be our sustainers, not warriors.
1	1		Civilians have a responsibility to stay educated, including PME.

Leadership, Management, and Supervisory

Experience. The introductory remarks and the question were:

"Command" opportunities are extremely rare for civilians and "director" civilians are the exception. Office chief positions vary widely in level and responsibilities. Therefore, there may be some scarcity in the types of experience available.

Despite that possibility, what leadership, management, and supervisory experience should a senior civilian logistician be expected to have?

COMMENTS

Table 24. Comments on Leadership, Management,
and Supervisory Experience

COMMENTERS			COMMENTS or EXPLANATIONS
TOT	CIV	MIL	
8	3	5	An executive must know how to manage people. A candidate for senior positions should have been a supervisor at several grade and office levels. Two civilians said as first and second level supervisor. An Officer suggested group, branch, and division chief. A civilian and an officer added supervision and management at the GM14 and GM15 levels.
7	4	3	Supervisory and management experience should include a large operation with many people and high value of assets. A civilian said over 150 people. Another added supervision over a variety of job skills.
1	1		Experience is different at different levels. We should look for demonstrated capability in more than one area and performance over time (over the long haul).
1		1	Senior officials must have run some operation dealing in actual resources, moved things and people and been involved in getting the job done, lived with the results of their decisions. We allow people to manage on paper and in narrow areas and they don't see the actual problems.
1	1		It may be important for the civilian to have learned to be the deputy to the director.
1		1	Many deputy directors are really co-directors, they are not in a subservient position and this is similar to command experience.
1	1		Of course a senior civilian logistician must have had supervisory experience. This is so basic that asking the question is "dumb."
1		1	For technical positions one doesn't need to have had many managerial roles. For management in logistics it varies by the position.

Table 24. Comments on Leadership, Management, and Supervisory Experience, cont.

COMMENTERS			COMMENTS or EXPLANATIONS
TOT	CIV	MIL	
1	1		I don't see much evidence of textbook management by military or civilians.
1		1	There are opportunities to get good management experience and typically employees have it when they are considered for the next level job.

Staff Experience. The question was:

What staff experiences should a senior civilian logistician be expected to have?

COMMENTS

Table 25. Comments on Staff Experience

COMMENTERS			COMMENTS or EXPLANATIONS
TOT	CIV	MIL	
12	6	6	Some staff experience is necessary. Each described some combinations of job levels.
3	2	1	Pentagon assignments are very important, almost mandatory for an SES.
3	2	1	It is desirable, but not mandatory, to have some staff experience at Hq AFLC or AFSC or at the Air Staff.

Table 25. Comments on Staff Experience, cont.

COMMENTERS			COMMENTS or EXPLANATIONS
TOT	CIV	MIL	
5	3	2	One should have had a MAJCOM HQ staff job in AFLC or AFSC. One civilian included the operational commands as possibilities.
1		1	Person should have intermediate HQ experience before coming to the Air Staff. In HQ AFLC the staff can be pulled from the ALCs without concern because they are still dealing with a very knowledge intensive and narrow spectrum. At USAF it is different. The staff there needs a broader background.
1	1		Those at levels below SES should have had some staff job before grade GS/GM-13.
1	1		A senior person should have run a major branch or division in a staff organization when at the GM-14 level. He should understand managing people and resources.
1		1	One should have worked in resource management in maintenance or other functional area, at any level.
1		1	Civilians should move in and out of staff and line functions at various levels. The system does not do this well. We tend to develop civilian staffers up through staffs, and line people up through the line. This is poor and needs to be balanced.
1	1		At the ALCs the upper managers should have some staff experience in maintenance, materiel management (a staff organization), and distribution. Plans is another good staff organization for some staff experience.

Management Experience in Logistics. The questions

were:

Should the above managerial/leadership, supervisory, or staff experiences for the senior civilian logistician be in a logistics discipline or functional area?

YES _____ NO _____ NO OPINION _____

WHY?

Table 26. Comments on Management Experience in Logistics

COMMENTERS			COMMENTS or EXPLANATIONS
TOT CIV MIL			
10	5	5	Yes, management experience should be in a logistics area.
3	1	2	No, management experience need not have been in a logistics area.
1		1	Said "yes and no." It depends on the duties of the job. In some disciplines the functional knowledge is absolutely essential for the senior manager. Other disciplines are strictly managerial and a broad base of experience and education is the key.
1	1		Said "no." A senior civilian logistician needs comptroller or acquisition experience.
1		1	Said "no." A manager can come in from another field, but it is not easy. This depends on the person for higher level jobs. A technician is needed for lower level jobs.

Table 26. Comments on Management Experience
in Logistics, cont.

COMMENTERS			COMMENTS or EXPLANATIONS
TOT	CIV	MIL	
1	1		A good manager can manage anywhere but there are advantages to knowing the area being managed. Each job has its major issues that take some time to learn and it's better if the leadership has already learned them at a lower level.
2		2	Those with functional experience in the area being managed are much better managers. One added that anyone at high enough level and with a good staff can get by. The knowledgeable ones will save the staff much work and make quicker decisions.
2	2		A logistics manager will not be fully qualified if he doesn't understand logistics interfaces and implications.
1	1		Ideally, experience in retail and wholesale logistics is important. However, we want the "smart guy" in top positions.
1		1	The mainstream of managers need the functional area knowledge.
1	1		This experience should be multifunctional in the broad area of logistics. Comptroller experience is not really applicable to management in logistics.

Experience by Logistics Disciplines. The questions are preceded here by the definition and list of disciplines sent to the interviewees before the interview.

Logistics Disciplines: Major groups of related logistics activities, each of which involves many of the logistics functional areas. The main disciplines are:

Retail	Wholesale
Acquisition	Combat
International	

For this question, you might want to refer to the first list, near the top of the reference sheet. In how many logistics disciplines should the senior civilian logistician have experience? (reasonable expectation rather than ideal)

ONE ____ TWO ____ THREE ____ FOUR ____

WHY?

The average of the number of disciplines stated by interviewees and their comments are included in Table 27.

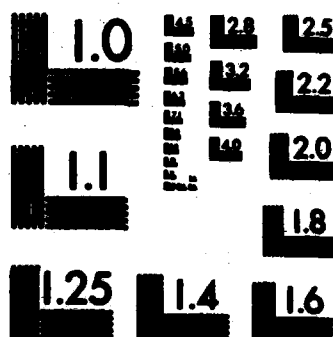
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MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

**Table 27. Results and Comments on Number
of Logistics Disciplines for Experience**

COMMENTERS			COMMENTS or EXPLANATIONS
TOT	CIV	MIL	
12	6	6	The average was 2.2.
2	2		Said 3.
3		3	Said 2 or 3, or 2 minimum and 3 preferred.
6	3	3	Said 2.
1	1		Said 1. More is helpful, but not necessary.
3	3		Retail and wholesale are the heart and acquisition is important in many agencies.
1		1	Optimum is all five disciplines, but we can realistically expect only two. I recommend acquisition and wholesale, or retail and wholesale.
2	1	1	Wholesale and acquisition are a must. The officer added that retail is important.
1	1		The priority is retail, wholesale, acquisition, international, and combat. However, combat is most important in wartime. Combat experience would be very useful but the opportunity is low for civilians.
1	1		Which disciplines are best varies by the responsibilities of each specific job.

What is Technical Competence? The introductory remark and the question were:

Several senior logistics officials feel senior logisticians, both civilian and military, should have some degree of technical competence in logistics.

What does technical competence mean to you?

COMMENTS

Table 28. Comments on Technical Competence

COMMENTERS			COMMENTS or EXPLANATIONS
TOT	CIV	MIL	
12	6	6	All hesitated before trying to answer this.
4	3	1	One must know logistics systems, the whole overall process, and be experienced in some areas. The officer added that otherwise one will be mediocre in any job in any one area.
3	3		This is very hard to answer for all of logistics. Two said it was easier for technical fields like engineering or physics.
3	1	2	Knows requirements determination and acquisition and understands the flow of the subsequent operations like distribution and maintenance.
2	2		This does not mean a detailed technical knowledge of the processes in the areas.

Table 28. Comments on Technical Competence, cont.

COMMENTERS			COMMENTS or EXPLANATIONS
TOT	CIV	MIL	
1		1	Knowing details of how a functional area really works such as for supply, knowing the role, requirements, and interplay of NSNs (national stock numbers), requirements, requisitions, and codes. This requirement does not decrease as one goes higher because the knowledge forces subordinates to do their homework.
1	1		Technical competence is not really necessary at senior levels.
1		1	One ought to understand the technical aspects and requirements of an area and know the degree of complexity and level of involvement between that area and other areas.
4	1	3	Must have experience through, and show expertise in, the technical areas of logistics that the job will oversee.
1		1	In logistics, must understand any one functional area very well. In engineering, must understand how a system works well enough to alter the design to improve supportability.
1	1		It's important to have some experience in more than one area. It's a mistake to bring someone in from a non-logistics area and try to make him a "loggie."
1		1	One must be seen by subordinates as a leader in knowledge of the overall job they do. He should be a counselor in that area.
1	1		Knowing enough to ask the right questions and recognize the right answers.
1		1	The ability to assess various alternatives and then articulate the choice. The ability to listen to, or oversee, subordinates and judge when they are right or wrong.

Technical Competence by Logistics Functional Area.

The questions are preceded here by the definition and list of functional areas sent to the interviewees before the interview.

Logistics Functional Areas: The different types of actions and expertise needed to carry out the full spectrum of military logistics and its disciplines. The list is subject to judgment and varying emphases. For the purposes of this thesis, the following areas are included:

Supply	System, Item, or Program Management
Transportation	Engineering
Maintenance	Logistics Planning
Procurement	

Considering the second list on the reference sheet, in how many functional areas should the senior civilian logistician be technically competent?

ONE___ TWO___ THREE___ FOUR___ FIVE___

WHY?

The average number of functional areas stated by interviewees and their comments are included in Table 29.

Table 29. Results and Comments on Number of Logistics Functional Areas for Technical Competence

COMMENTERS			COMMENTS or EXPLANATIONS
TOT	CIV	MIL	
11	5	6	The average was 2.4.
1		1	Said 4.
3	3		Said 3.
2	1	1	Said 2 or 3, or 2 minimum and 3 preferred.
3	1	2	Said 2.
2		2	Said 1.
1	1		Did not answer. Asked where are programming and budgeting? Resources are the key for the senior civilian logistician.
3		3	The senior manager needs a core of understanding, a "cutting edge" in one area, and some knowledge about other areas "his" function works with. One said the knowledge in other areas can be picked up on the job, except for engineering. Another likened the other knowledge to the Certified Professional Logistician (CPL) exam.
1	1		At high levels, being really competent in one area hurts the person. He needs general knowledge plus some specific knowledge in several areas.
1		1	The senior manager needs to be competent in the three main areas of plans, procurement, and system/item/program management, and in one of the "channeled" areas. An SES must also be competent in the channeled area his job is in. Interpretation: channeled areas are the less general ones, the other four on the list.

Table 29. Results and Comments on Number of Logistics Functional Areas for Technical Competence, cont.

COMMENTERS			COMMENTS or EXPLANATIONS
TOT	CIV	MIL	
1	1		This depends on the job. Competence in maintenance is not important in materiel management, while procurement and system/-item/program management are less important in maintenance.
2	2		System/item/program management, engineering, and maintenance are most essential in day-to-day work.
1	1		The senior civilian should have worked some in each of the main three areas: supply maintenance, and transportation.
1		1	Two areas is a tough standard, which is not met by many senior civilian logisticians.

Qualities and Characteristics for Success. The introductory comment and question were:

Research has suggested there may be identifiable qualities and characteristics which distinguish successful civilian logisticians from unsuccessful ones.

Do you agree with this premise?

YES _____ NO _____ NO OPINION _____

Table 30. Comments on Qualities for Success

COMMENTERS				COMMENTS or EXPLANATIONS
TOT	CIV	MIL		
12	6	6	11	Yes
2	1	1	11	The premise is true for any profession, not just for logisticians.

Qualities Important for Success. The question is preceded here by the definition and list of qualities sent to the interviewees before the interview.

Qualities for success: Traits and properties possessed by persons considered successful and frequently judged to be reasons for that success. Qualities for successful logisticians suggested by literature and this research include:

Manager	Integrity
Leader	Dedicated
Intelligent	Job knowledge
Thinker	Can "get things done"
Communicator	Creative
Multidisciplined	Flexible
Initiative	Common sense
Visionary/Forward looking	Computer literate
Planning ability	Can "get along"
Analytical techniques	Understands federal budget
Problem-solving/Systems viewpoint	

Please refer to the list of prospective qualities near the bottom of the reference sheet. Which qualities do you think are relevant/important for successful senior civilian logisticians? Pick as many as you think right.

Manager ____	Integrity ____
Leader ____	Dedicated ____
Intelligent ____	Job knowledge ____
Thinker ____	Can "get things done" ____
Communicator ____	Creative ____
Multidisciplined ____	Flexible ____
Initiative ____	Common sense ____
Analytical techniques ____	Computer literate ____
Planning ability ____	Can "get along" ____
Visionary/Forward looking ____	
Understands federal budget ____	
Problem-solving/Systems viewpoint ____	

A summary of how many respondents selected which qualities follows in Table 31. A more detailed record of these selections can be found in Appendix H. The first line in Table 31 reflects that two respondents actually said "all." All the other numbers in the table include these "all" responses and, therefore, reflect the total numbers that selected each quality in each group. The sequence of qualities has been changed to list them in order of decreasing popularity.

Table 31. Summary of Selection of Qualities from a List

QUALITIES	CIVILIAN RESPONSES	MILITARY RESPONSES	TOTAL RESPONSES
ALL - THE WHOLE LIST	1	1	2
INTEGRITY	5	5	10
MANAGER	4	4	8
LEADER	4	3	7
COMMUNICATOR	5	2	7
VISIONARY/FWRD LOOKING	4	3	7
MULTIDISCIPLINED	3	3	6
INITIATIVE	2	4	6
DEDICATED	2	4	6
COMMON SENSE	3	3	6
PLANNING ABILITY	2	3	5
PROB-SOLVE/SYST VIEWPT	2	3	5
CAN "GET THINGS DONE"	3	2	5
INTELLIGENT	2	2	4
JOB KNOWLEDGE	2	2	4
KNOW FEDERAL BUDGETING	3	1	4
THINKER	2	1	3
CREATIVE	2	1	3
FLEXIBLE	2	1	3
COMPUTER LITERATE	1	2	3
ANALYTICAL TECHNIQUES	1	1	2
CAN "GET ALONG"	2	0	2

Quantities shown are the net of all selection indicators minus all "NO" statements for each quality.

Although no comments were elicited with this question, the interviewees made several comments, shown in Table 32.

Table 32. Comments on Importance of Qualities

COMMENTERS			COMMENTS or EXPLANATIONS
TOT	CIV	MIL	
4	1	3	Several of these could be considered skill more than qualities.
5	3	2	There is duplication in this list. Many of the qualities are tied to each other. One civilian said "leader" is part of "communicator." Another said "communicator" is especially true for briefing and writing, and "can get along" goes with "manager" and "can get things done."
3	2	1	The importance of "can get along" depends on situations. A manager must vary the degrees of authoritative and participative management. This can be a detriment if made important.
1	1		Logisticians need to understand planning more than professionals in other fields. One can be successful in any field if he can manage people.
1		1	No particular combination, or lack of, these qualities assures one of success, nor dooms one to failure. The combinations are tied with the individual's personality to allow him to get other people to do things.
1		1	The relative importance of these qualities will differ as management style or grade level changes.
1	1		Senior civilian logisticians don't need computer literacy, or computers, or spending time at computers.

Additional Personal Qualities. The questions

were:

Do you recommend any other personal qualities senior civilian
logisticians should have?

YES _____ NO _____ NO OPINION _____

IF SO, WHAT ARE THEY?

A summary of how many respondents selected which additional
qualities follows in Table 33. A more detailed record of
these selections can be found in Appendix I.

Table 33. Summary of Additional Qualities for a Model

QUALITIES	CIVILIAN RESPONSES	MILITARY RESPONSES	TOTAL RESPONSES
PERSEVERANCE	1	1	2
WISDOM	1	0	1
TEAM PLAYER/CORP. VIEW	1	0	1
EMPATHY	1	0	1
HANDLE GRIEVANCES	1	0	1
MOBILITY	0	1	1
HAS A SENSE OF HUMOR	0	1	1
DO COMPLETE STAFF WORK	0	1	1
KNOWS SCHEDULING	0	1	1
HAS OBJECTIVES	0	1	1

A few unsolicited comments were also provided with these
responses and are shown in Table 34.

Table 34. Comments on Additional Qualities

COMMENTERS			COMMENTS or EXPLANATIONS
TOT	CIV	MIL	
1	1		"Wisdom" is the application of intelligence.
2	1	1	The civilian said "perseverance" could be the same as dedication. The officer added that hard workers do not always get credit or advancement but we need those who stay after quitting time.
1	1		"Empathy" could be part of "can get along." Aggressive supervisors need to realize not everyone is a "workaholic."

Mobility History. The questions were:

Mobility is mandatory for military personnel but is more optional for civilians. Should a senior civilian's history on mobility be a factor in selection for and performance of senior logistician duties?

YES _____ NO _____ NO OPINION _____

WHY?

Table 35. Comments on Mobility History

COMMENTERS			COMMENTS or EXPLANATIONS
TOT	CIV	MIL	
10	5	5	Yes
2	1	1	No
1	1		Said "no." It is helpful to have been functionally mobile.
1		1	We have lately become enamored with mobility. We could lose our backbone, our continuity. For example, we could have a real racial problem in some places if we move in someone who doesn't know the local situation.
4	3	1	Geographic and functional mobility broadens logisticians to be multifunctioned and multidisciplined, better persons and managers.
4	2	2	Absolutely, mandatory, essential for senior workforce.
1		1	I don't like the present nomination and selection for senior civilian positions. For the military, all are considered for general, not just volunteers. The best are selected, then told to move. For civilians, the selection is the best of only those who apply. An SES should expect to be moved, and should look forward to it. However, for stability, there should not be a rotation requirement for civilians.
1	1		GS/GM-13s should have SES capability. At about that grade they should realize that advancement may require some sacrifices such as moving or a development program.
1	1		This should be optional. It is not a big factor if an applicant has the capability and experience needed for the job.

Table 35. Comments on Mobility History, cont.

COMMENTERS			COMMENTS or EXPLANATIONS
TOT	CIV	MIL	
1	1	1	Mobility is primarily a reflection of a person's knowledge base. However, I don't like those who keep job hopping every two years.
1	1	1	Geographic mobility should not be required for its own sake. It will come naturally during career broadening. Some civilians are looking for promotion based more on mobility than for a job well done.
1	1		Moves should be a two party decision where the employee has a voice, not just upper management moving people at random, even without regard for the person's best development.
1	1		AFLC has gone overboard in not announcing the location of advertized jobs.

Categorization of Mobility. The questions were:

Should a senior civilian's mobility history be considered a personal quality or part of his/her experience?

QUALITY ____ EXPERIENCE ____ NO OPINION ____

WHY?

The results at the top of Table 36 are expanded to show the selection of both answers by four respondents. The net tally is shown in Table 50 later in this chapter.

Table 36. Comments on Mobility Categorization

COMMENTERS			COMMENTS or EXPLANATIONS
TOT	CIV	MIL	
7	5	2	Said mobility is related to experience.
4	1	3	Said mobility is experience and a quality.
0	0	0	Said mobility is a quality only.
1		1	Had no opinion.
3		3	Mobility history is a collection of the facts of a person's experience, a reflection of their experience.
1		1	Experience with mobility broadens a person's perspective. Mobility history, as a quality, demonstrates dedication and a willingness to go above minimum performance.
1	1		The quality aspect is that mobility shows flexibility and being a team player.
1		1	As a quality, just as important as the experience, mobility reflects an attitude toward learning and broadening.

Present Attitude on Moving. The questions were:

Should a senior civilian's present attitude toward moving be a factor in selection for and performance of senior logistician duties?

YES _____ NO _____ NO OPINION _____

WHY?

Table 37. Comments on Present Mobility Attitude

COMMENTERS			COMMENTS or EXPLANATIONS
TOT	CIV	MIL	
12	6	6	Yes
2	2		One said this depends on how mobile a person was in the past. Interpretation: History may be a truer picture than present statements. The other added that attitudes can be temporary, and should be evaluated on their longevity, expected duration, and why.
1	1		Things change in people's lives, and can increase or decrease willingness to move. Still, when one accepts a GS/GM-13, one must accept all the responsibilities.
3	1	2	The SES must be willing to go where the job is, a commitment is needed. One officer felt this so strongly he suggested this question is trivial. The civilian took exception to being willing to enter a "pool" to go wherever some one else decides.
1		1	I don't want an SES in that rank if he is not willing to go where the need is, if he is the best person for a requirement.
1	1		Yes, if necessary to put certain skills in a certain place. Don't just move people to prove a point.
1	1		This is a weak factor. It should be weighed with the person's career objectives. Supervisors should discuss objectives with employees. This can be job and grade dependent. For a division chief job, it doesn't matter. For a SES, not moving can be a problem.
1	1		This is a weak factor. It should be related to the position. It could be a detriment. Sometimes we need, or expect, to keep a person in a position for a while.

Job Series Progression to SES. The introductory remarks and questions were:

The military logistics disciplines and functional areas listed in the introductory reference sheet cut across each other in matrix style. Some civilian job series align with the functional areas while others cut across functional areas and disciplines. Some job series continue up to the GS/GM-15 and Senior Executive Service (SES) ranks while others stop at lower grades.

Should every, or most, logistics job series offer full career development for civilians up into the SES ranks?

YES _____ NO _____ NO OPINION _____

WHY?

Table 38. Comments on Job Series to SES

COMMENTERS			COMMENTS or EXPLANATIONS

TOT	CIV	MIL	

1	1		Yes

11	5	6	No

1	1		Said "yes." Supply, maintenance, and competition advocates have this now. So do acquisition (346 series) and procurement.
			We need experts in both areas.

Table 38. Comments on Job Series to SES, cont.

COMMENTERS			COMMENTS or EXPLANATIONS
TOT	CIV	MIL	
6	3	3	The top grade in each area reflects the relative importance of the respective functional areas and the complexity and location of its jobs. It would be a mistake to establish SES slots in job classifications where they are not needed. A civilian said the Air Force emphasizes maintenance and thinks this best supports their mission. There are no SESs in distribution or packaging. Others added there is no need for a SES in procurement, production management, or 1670 series.
7	4	3	We don't need to facilitate stovepiping. Broadening of logisticians is essential during development. The present system forces good people to be functionally mobile and to move to paths that go up. The "topped out" series feed into the ones that go up. Two civilians mentioned the 346 series as one to convert to, as it requires multifunctioned background. Another said the Navy has good paths, with crossover points.

Logistician Job Series. The questions were:

Should there be a "logistician" job series, perhaps with shreds, to facilitate development and progression of highly qualified civilian logisticians to senior ranks and greater responsibilities?

YES _____ NO _____ NO OPINION _____

WHY?

Table 39. Comments on a Logistician Job Series

COMMENTERS			COMMENTS or EXPLANATIONS
TOT	CIV	MIL	
6	5	1	Yes
6	1	5	No
5	5		We already have this logistician job series. It's 346, Logistics Management Specialist. It covers most positions above GS/GM-13 except engineering (801 series).
1	1		Said "yes." This would probably require a new series, or maybe 346 could be used.
1		1	Said "yes," but only at the highest levels of the structure. If done lower it could block out much experience in each functional area. What present specialty will assume this role?
1		1	This would cause loss of much of the present capability to broaden people.
1		1	We do need to get away from stovepiping. One job series could do this, but I don't think we need it.
1		1	If there were one job series, how would people get into it from the specialties in a workable manner? We don't have this on the military side.
1		1	The military tried this unsuccessfully with the "Log Plans" specialty, AFSC 66XX, which required qualification in two separate AFSCs for entry. Officers didn't want to give up their specialty. The Air Force is now putting second lieutenants into AFSC 66XX. We need the civilian specialties, and can pull them together at higher levels.
1		1	I'm not sure this would be any gain over the present system. Don't fix what isn't broken.

Should Employees be Selected and Groomed? The questions were:

Should the Air Force select and groom promising civilian logistician candidates for senior logistician responsibilities?

YES _____ NO _____ NO OPINION _____

WHY?

Table 40. Comments on Selecting and Grooming

COMMENTERS			COMMENTS or EXPLANATIONS
TOT	CIV	MIL	
9	5	4	Yes
3	1	2	No
3	1	2	Said "no." This sounds like too early a selection and too much assurance of success. This forms an elitist group and does not weed out the incapable and takes initiative away from the remaining employees.
4	1	3	Three said "no." If this is done, it should be done iteratively with selectees reviewed each year and poorer performers replaced. Don't make this an elite corps.
1		1	In the military this is done informally. If done formally it forms an elite group. The civilians have the Logistics Civilian Career Enhancement Program (LCCEP).
1	1		This is done up through GM-15 by LCCEP and it is done very well there. The Air Force has no SES candidate program but one should be set up by extending LCCEP.

Table 40. Comments on Selecting and Grooming, cont.

COMMENTERS			COMMENTS or EXPLANATIONS
TOT	CIV	MIL	
1	1		The LCCEP cadre sort of does this. There is much informal monitoring of promising careers. Each ALC has its internal broadening program. AFLC has a steering group to groom outstanding GM-15s. SAF/ALG, following a July 1987 LCCEP meeting, is starting a similar program Air Force wide.
1		1	We tried this with LCCEP with mixed results. We are doing as much as we practically can.
1	1		The Air Force does not "grow" good SESs. LCCEP tried broadening civilians and failed.
1		1	The ones with real potential will rise on their own.
1	1		This idea is consistent with practices in industry.

How and When to Select and Groom. The question was:

If some selection and grooming were to be done, how and when should it be done, with respect to grade levels and broadening assignments?

COMMENTS

**Table 41. Results and Comments on How and When
to Groom and Select Employees**

COMMENTERS			COMMENTS or EXPLANATIONS
TOT	CIV	MIL	
10	6	4	The average grade was 11.5.
1		1	Said GS/GM-13.
4	2	2	Said GS-12.
3	3		Said GS-11
2	1	1	Said GS-9
2		2	Gave no opinion
1	1		This should be planned better than it is now and must start earlier in the careers. GM-15s are in line for SES jobs so they should be already groomed at that point.
4	3	1	Grooming needs to be a mix of broadening and performance. Those who continue to perform well should be further broadened through more areas and higher management levels. Two civilians said to include supervision at the GM-14 and 15 levels, where traits to excel and experience received are different.
3	2	1	Broaden candidates through maintenance, materiel management, and other directorates such as distribution.
4	3	1	Assignments at a base in SAC, TAC, or MAC at GS-7-9 or their headquarters at GS-11-12 can provide good operational/retail or staff/resources experience. One civilian added Hq AFLC at GS-13 for staff work and said his ALC usually has five or more people away on these broadening tours at any given time.
3	2	1	LCCEP is the foundation, with career broadening and long-term, full-time training.

Table 41. Results and Comments on How and When to Groom and Select Employees, cont.

COMMENTERS			COMMENTS or EXPLANATIONS
TOT	CIV	MIL	
1	1		Specific jobs and broadening depend on what area the employee is being groomed for.
			There should be several specific plans in an overall plan. LCCEP enhances selection for SES, and keeping current, but is not set up to groom for SES. That should be done at the person's home ALC, above LCCEP programs.
1	1		Don't eliminate people too early as is being done now. Don't block reasonable assignments by "LCCEP Cadre only" requirements.
1	1		LCCEP tried this grooming but the mobility requirement killed that.
1	1		The real smart achievers will groom themselves but the Air Force should provide the opportunities. There is some point before SES level at which each employee either has what it takes for SES, or he does not.

Background Differences. The questions follow.

The main question is a repeat of the second question in the first interview set. This question was repeated to compare the first group of twelve respondents to the second group of twelve respondents. Different group responses might indicate differences between groups, which could help explain differences in other topics where the same question was not asked in both sets of interviews. Similar or identical group responses could support projections that

either group would have answered questions asked only of the other group in a similar manner to the response received.

Should there be any differences in the essential background and characteristics of civilian and military senior logisticians?

YES _____ NO _____ NO OPINION _____

WHY?

If "yes," what should these differences be?

EXPLANATION

Table 42. More Comments on Background Differences

COMMENTERS			COMMENTS or EXPLANATIONS
TOT	CIV	MIL	
7	4	3	Yes
5	2	3	No
4	2	2	Said "no." Even though there shouldn't be differences, there will be in our present system because the military will be in command assignments, and do "Lt" jobs, and none of those are for civilians. Both civilians felt there is no choice in this situation, but an officer said it doesn't have to be that way. The other officer said the differences are transparent in acquisition but there are military in retail logistics and civilians in wholesale.

Table 42. More Comments on Background Differences, cont.

COMMENTERS			COMMENTS or EXPLANATIONS
TOT	CIV	MIL	
1		1	It does not matter whether there should be differences - there are! People select one path or the other. All need generally the same characteristics, the qualities for success are the same.
1		1	If both civilians and military understood supporting war, the answer would be no. We need people not bothered by factors of military life, so the answer is yes.
1	1		There are no civilians in combat and few in operations. If the military "grew up" in logistics, maybe they would all be the same.
4	3	1	Military have operational and retail experience and bring a "user" appreciation to the Pentagon. Civilians have intensive functional expertise and provide knowledge of how the logistics system works. Two civilians said this was an ideal system that allowed good synergism. The other civilian added that the military, being poised for war, have a different mission than civilians. Their time in the "civilian sector" is a reward for their time spent maintaining the peace.

Past Validity of Traditional View. The introductory remarks and questions were:

Traditional views of the civilian/military relationship suggest that military personnel provide an organization with (1) broad experience and perspective, (2) spokespersons that military members of operational commands believe because "they have been there," and (3) leadership. On the other hand,

civilians are felt to provide logistics functional expertise, corporate memory, and continuity.

Was this division of capabilities and responsibilities valid in the past?

YES _____ NO _____ NO OPINION _____

WHY?

Table 43. Comments on Traditional View's Past Validity

COMMENTERS			COMMENTS or EXPLANATIONS
TOT	CIV	MIL	
11	6	5	Yes
1		1	No
1		1	Said "no." Valid or not, this is the common perception, due to career paths. The system drove civilians into this box and into subordinate positions because the military have accountability.
1	1		The civilians let it happen.
1	1		This view has been the perception.
1		1	This may have been valid, but there is no evidence to support it.
3	1	2	This is valid except the civilians provide just as much leadership as the military. The civilian also said no part of a senior level job is all military or all civilian. One or the other is gone 50 percent of the time so each must be able to run all aspects of the directorate.

Table 43. Comments on Traditional View's
Past Validity, cont.

COMMENTERS			COMMENTS or EXPLANATIONS
TOT	CIV	MIL	
2		2	Disagreed with the part of the military description about military spokespersons being believed more. One said civilians are as good as "GIs" if trained and educated.
1	1		This is especially true during war. Also it is true at senior levels.
		1	It's a reflection of reality. Only recently have people thought there is some inter-changeability of officers and civilians.

Present Validity of Traditional View. The questions were:

Is this division of capabilities and responsibilities valid now?

YES _____ NO _____ NO OPINION _____

WHY?

Table 44. Comments on Traditional View's
Present Validity

COMMENTERS				COMMENTS or EXPLANATIONS
TOT	CIV	MIL		
10	6	4		Yes
2		2		No
1		1		Said "no." We now expect civilians to be leaders and have accountability. Some of the leaders are wearing different clothes.
1	1			It is valid except for leadership being stated as all military. This system is a good blend.
1	1			It is valid at senior levels.
5	2	3		This view is less valid now than in the past. One civilian said the valid perception is weakening. One officer stated this is less clear now because there is more military involvement in old "senior civilian" areas. In the last five to seven years more officers have moved into AFLC, moved out, then moved back in. This is good because their role becomes more than just a senior military presence while civilians run the operation. Another officer said the view is still true for those civilians who "stay put."

Future Validity of Traditional View. The questions were:

Should this division of capabilities and responsibilities be continued in the future?

YES _____ NO _____ NO OPINION _____

WHY?

Table 45. Comments on Traditional View's
Future Validity

COMMENTERS			COMMENTS or EXPLANATIONS
TOT	CIV	MIL	
7	4	3	Yes
5	2	3	No
1		1	Said "no," but in a military outfit there must always be military in the top positions, command positions, ready to "go to war." The accountable in war must be experienced at leadership and in working command problems. (Actually, we do need civilians with these same capabilities.) But, if this situation changes, the next question is whether defense is really a government function, or do we contract for it.
1		1	Said "no." I'm not sure we can continue this split if we try - it's only perception.
1	1		Said "no." Civilians are no longer a continuity at the micro level, but still are at higher levels. However, higher management is purposefully killing that continuity.
1		1	Said "yes." We need the civilian continuity and corporate memory. We all need to be more flexible.
2	1	1	Said "yes." This is not a hard and fast division of labor. We must not assume no crossovers in roles occur from group to group.
1	1		Said "yes," to some extent. There would be some advantages to leaving the military in logistics jobs longer, the ALC directorates would do better, but I'm not sure the Air Force can do this.
2	2		Said "yes." By and large the relationship should stay valid. One added it describes nature. The other said the system works like it is.

Table 45. Comments on Traditional View's
Future Validity, cont.

COMMENTERS			COMMENTS or EXPLANATIONS
TOT	CIV	MIL	
1	1	1	Said "yes," it's important.
1	1	1	Said "yes," but said "no" for present validity. Yes is based on much discussion with many civilians at many levels throughout AFLC over the past ten years.

Civilian and Military Technical Competence. The questions were:

Should senior civilian logisticians be more technically competent than their military counterparts in terms of either competence in more functional areas or more depth of competence in one area?

MORE ____ DEEPER ____ NEITHER ____ NO OPINION ____

WHY?

The results of the responses to this question are more complex than for most questions in this interview due to the choices given to the respondent. An opinion of either more areas or deeper in any one area is an agreement that civilians should have more technical competence than military. The comments made by the officer who said neither still reflect this same agreement. The results section at the top of Table 46 is expanded to tabulate these results in

detail. The first row of the table shows the "net" sum of the three types of responses that all imply an overall "yes." The "net" does not equal the arithmetic sum of the three rows below the "net" row because several of the interviewees answered both "more" and "deeper."

Table 46. Results and Comments on Civilians Being More Technically Competent Than Military

COMMENTERS			COMMENTS or EXPLANATIONS
TOT	CIV	MIL	
11	6	5	Yes, civilians should be more technically competent. This is the "net" tally of the next three lines of results.
7	5	2	Yes, in more areas.
6	2	4	Yes, deeper in any one area.
1		1	Neither more nor deeper over the other.
0	0	0	No, civilians should not be more competent.
1		1	No opinion.
1		1	Said "neither." If a civilian can't be more competent in more areas, then he should have more depth of competence in an area. Below GM-14, a narrow but expert competence is good. Above GM/GS-13, where management and resource decisions are more important, competence in more than one area is better.
3	1	2	The system depends on civilians for continuity, corporate memory, and knowing how the logistics functions work. This is what they bring to senior management positions.

Table 46. Results and Comments on Civilians Being More Technically Competent Than Military, cont.

COMMENTERS			COMMENTS or EXPLANATIONS
TOT	CIV	MIL	
1	1		The system requires civilians to be competent in more areas to support the mobile military, and complement them. The subordinate civilians should have more depth in the functional area they work in.
1	1		Civilians' expertise should be deeper in the job they are holding. In a major directorate the senior civilian logistician should have the corporate experience in that area.
1	1		The military want civilians to have more depth of functional knowledge, and in more areas, than the military have.
1		1	I expect the civilians working for me to know more about logistics systems than I do in at least one area.

Career Time for Experience. The introductory remarks and questions were:

Earlier research suggests Air Force logistics organizations should have leaders with "customer experience" such as retail logistics, operations, and combat, as well as expertise in logistics functional areas and disciplines such as wholesale logistics.

Do civilians have enough time in their careers to adequately gain all the desired experience?

YES _____ NO _____ NO OPINION _____

WHY?

Table 47. Comments on Career Time to Get Experience

COMMENTERS			COMMENTS or EXPLANATIONS
TOT	CIV	MIL	
4	2	2	Yes
7	4	3	No
1		1	No opinion.
2	2		Said "no." Absolutely not enough time.
4	2	2	(from all three types of responses) Civilians don't need all this experience. The "no opinion" officer said all this is not needed in any one person, especially in a civilian. He added we need a team that fits the relationship described in the traditional viewpoint addressed in the three previous questions. Civilians need detailed functional knowledge and a cross section of knowledge of logistics areas.
2	1	1	Opportunity is more a limiter for operational experience than is time. There are too few of those jobs, especially above GS-13.
2	2		A civilian has time to get it all, wholesale and retail. One said if he plans his career from GS-12 on, to plan around constraints.
2	1	1	A civilian should take care of getting the wholesale experience, he will be exposed to retail through complementing those with retail experience.
1	1		Said "no." One can learn two functions and get career broadening with a staff. At the outside, he do a short stint in an operational command at GS-11 or 12. He also needs long-term, full-time (LTFT) training.
1		1	A civilian can get all this if he really wants it. He can't "career" in any one job. He must be willing to transfer laterally in some cases to broaden his experience.

Changes to Lists or Definitions. The question

was:

Do you recommend any changes to any of the definitions or lists on the introductory reference sheet?

YES _____ NO _____ NO OPINION _____

COMMENTS

The comments in Table 48 include comments made to other questions which were more applicable to this question.

Table 48. Comments on the Lists and Definitions

COMMENTERS			COMMENTS or EXPLANATIONS
TOT	CIV	MIL	
6	3	3	Provided comments, some in answers to other questions, but more applicable here.
6	3	3	Did not provide comments.
1	1		(Disciplines) "Operations Logistics" includes retail, wholesale and combat. Acquisition logistics precedes Program Management Responsibility Transfer (PMRT) and operation logistics follows PMRT. International logistics crosses acquisition and operations logistics.

Table 48. Comments on the Lists and Definitions, cont.

COMMENTERS			COMMENTS or EXPLANATIONS
TOT	CIV	MIL	
1	1		(Disciplines) Wholesale covers the other disciplines. It has the most resource efforts and dollars. Some acquisition (requirements, engineering, and general procurement) is a subset of wholesale. Combat pervades all others, they all support combat. An Air Force logistician should think in terms of combat capability, the only reason we all exist. AFLC is for the surge required by combat.
2	2		(Disciplines) Combat logistics does not fit in the disciplines. It is a subset of retail logistics. If civilians know retail they can handle combat, but that is for the blue suiters. The Air Force has a system it uses day-to-day and for combat and it works.
1	1		(Functional areas) Management is the most valuable area, it covers the other areas. Logistics planning also covers the others. Transportation and supply are narrow fields and should be combined within the more general area called distribution for this list.
1	1		(Functional areas) The list needs programming, budgeting, and resourcing, or a combination of these. Without these efforts, the other things on this list can't be done.

Additional Comments and Model Inputs. The question was:

Do you have any other comments on senior civilian logisticians or inputs for a model of their desired background?

YES _____ NO _____ NO OPINION _____

COMMENTS

Some respondents answered this question with additional ideas and some summarized their thoughts over the whole interview. Both are included in Table 49.

Table 49. Additional Comments and Model Inputs, cont.

COMMENTERS			COMMENTS or EXPLANATIONS
TOT	CIV	MIL	
7	3	4	Provided new comments or a summary included in this table.
5	3	2	Did not provide new comments or a summary.
1	1		A model should stress leadership, cooperation, and willingness to take risks. Emphasize interpersonal relationships, as needed in each job.
1		1	The traits that stand out for successful people are experience at a number of levels and technical competence in two or three areas, with some geographic and functional mobility.
1	1		The purpose of senior managers is to provide leadership and create the best environment for the people to do their jobs the best they can through getting the needed resources.
1		1	We tend to view a 45 year old civilian as too young to be a SES. At 45 years old, an officer is starting to be considered too old to move up to general. We give more responsibility to officers much younger than to civilians. Other federal departments have young SESs, like 32 years old.

Table 49. Additional Comments and Model Inputs, cont.

COMMENTERS			COMMENTS or EXPLANATIONS
TOT	CIV	MIL	
1	1		I like to see variety in a person's background and a demonstration of success and output. He or she should have a solid base in academics, training, and PCE. I'm suspicious of those who did not get this varied background.
1	1		I think we need more creativity, risk taking, and innovation, but these come in the person, not in the experience. I am basically satisfied with our systems. I think we are doing pretty well. Are we dissatisfied with what we have? If not, what is the problem? What are we trying to fix?
1	1		The mission of the CSAF is not just to provide policy - that's just 15 percent. 75 percent of the mission is to acquire resources for the Air Force, and civilians can successfully do this for the needs of war. The other 10 percent is day-to-day miscellaneous brushfires.
1	1		At this ALC there is an executive development program for all civilians GS/GM-13 and higher. It coordinates job opportunities, schools, and awards.
1		1	Set up ways to broaden the candidates, the way AFLC career broadens them into staff jobs, except do it earlier and by switching them back and forth between staff and line positions. The ones interested in broadening opportunities are the ones who tend to rise anyway. They prepare themselves in a permissive state of opportunities.
1	1		Every SES should know how to handle grievances. He is responsible to take care of 98 percent of the grievances within his organization.

Table 49. Additional Comments and Model Inputs, cont.

COMMENTERS			COMMENTS or EXPLANATIONS
TOT	CIV	MIL	
1	1		I am not sure the military is really looking for truly aggressive civilians.
1		1	You are barking up the wrong tree. There is something beyond all this work, an intangible, similar to the separation of managerial ability and leadership. I don't think you can build a model, or train good managers, until you can define leadership. A model can help define the poor candidate.

Summary of Results of Second Set of Interviews.

Earlier in this chapter the "a priori" consensus criteria established in Chapter III were reviewed. Those criteria were quite stringent because they were for the questions about a model established for one group, senior military logisticians, being applied to a second group, senior civilian logisticians. The stringency was to guard against probable bias towards this applicability. Because the questions in this second set of interviews were more about basic concepts rather than model categories, the same potential predisposition did not exist. Therefore, less stringent criteria for consensus were felt to be satisfactory for responses to these questions. Eight of twelve total interviewees and at least three of six in each of the civilian and military groups were required to

establish a consensus for each of these responses. At least 67 percent of the respondents must support an opinion, and each group must meet or exceed 50 percent to constitute each consensus.

This interview schedule contained seventeen questions which could be answered with choices such as "yes" or "no," or selecting a category, as well as eliciting supporting comments. Five questions asked for quantitative answers and comments. The remaining seven questions called only for comments.

Answers with Choices. The above discussion about less stringent consensus criteria for this second set of interviews was made academic by the results. The responses either satisfied both sets of criteria, or they did not satisfy even the less stringent. These responses are summarized in Table 50. A more detailed record of all responses with choices is tabulated in Appendix F.

Twelve of these seventeen questions were answered with clear agreement. Three of the five questions not gaining a consensus also had significant differences between the civilian and military responses.

The responses on the importance of Professional Military Education (PME) were evenly split with four each stating "very," "moderately," and "slightly." The civilians favored very important, but the officers favored slightly important.

Table 50. Summary of Choice Responses on Basic Concepts for Senior Civilian Logisticians

QUESTIONS	CHOICES	CIVILIAN RESPONSES	MILITARY RESPONSES	TOTAL
SHOULD CIVILIANS HAVE A BACHELORS DEGREE	YES NO	6 0	6 0	12 0
SHOULD CIVILIANS HAVE AN ADVANCED DEGREE	YES NO	5 1	4 2	9 3
HOW IMPORTANT IS PROFESSIONAL MILITARY EDUCATION (PME)	VERY * MODERATELY SLIGHTLY	3 2 1	1 2 3	4 4 4
SHOULD MGR EXPERIENCE BE IN LOGISTICS	YES NO	5 1	5 2	10 3
AGREE THERE ARE QUALITIES FOR SUCCESS	YES NO	6 0	6 0	12 0
SHOULD MOBILITY HISTORY BE A FACTOR	YES NO	5 1	5 1	10 2
IS MOBILITY HISTORY A QUALITY OR EXPER'NC	QUALITY EXPERIENCE	1 6	3 5	4 11
PRESENT ATTITUDE ON MOVING BE A FACTOR	YES NO	6 0	6 0	12 0
SHOULD ALL JOB SERIES GO UP INTO SES	YES NO	1 5	0 6	1 11
SHOULD HAVE A "LOGISTICIAN" JOB SERIES	YES NO	5 1	1 5	6 6
AP SELECT AND GROOM PROMISING CANDIDATE	YES NO	5 1	4 2	9 3
SHOULD THERE BE BACKGROUND DIFFERENCES	YES NO	4 2	3 3	7 5
WAS TRADITIONAL VIEW OF DUTIES VALID	YES NO	6 0	5 1	11 1
IS TRADITIONAL VIEW OF DUTIES VALID NOW	YES NO	6 0	4 2	10 2
IS TRADITIONAL VIEW VALID FOR FUTURE	YES NO	4 2	3 3	7 5
SHOULD CIVILIANS HAVE MORE TECHNICAL COMPETENCE THAN MILITARY DO IN LOGISTICS AREAS	YES ** MORE AREAS DEEPER IN 1 NEITHER NO OPINION	6 5 2 0 0	5 2 4 1 1	11 7 6 1 1
CIVILIANS HAVE TIME TO GET EXPERIENCE	YES NO	2 4	2 3	4 7

* These three response categories were assigned to the comments. Respondents were not offered these terms as choices.

** This choice was not specifically offered to respondents, but was implied by their selection of one or more applications.

Responses were six "yes" and six "no" concerning a logistician job series. The civilians had a five to one consensus yes, while the officers were the opposite, but the comments indicated their positions were not as different as their choices indicated.

Two questions, one addressing background differences between senior civilian and military logisticians and the other concerning future validity of a traditional view of senior logistician duties, each received seven "yes" and five "no" responses. There were no major differences between officers and civilians on either of these questions.

Eleven of twelve responses said civilians should have more technical competence than their military counterparts, but there was no consensus on whether that additional expertise should be applied to more logistics functional areas or with deeper competence in one area. Civilians and officers did favor different allocations of competence; civilians supporting more areas and officers preferring more depth in one area.

Quantitative Answers. Averages were calculated for each of these five responses. There were differences between civilian and military averages for four of the five responses. No significance was seen in these differences because the small sample size of six for each group did not support a meaningful statistical analysis. The averages were used to establish approximate midpoints for questions in the

Delphi questionnaire. The details of this data are recorded in Appendix G. The averages are summarized in Table 51.

Table 51. Summary of Value Responses on Basic Concepts for Senior Civilian Logisticians

QUESTIONS	CIVILIAN AVERAGES	MILITARY AVERAGES	OVERALL AVERAGES
GRADE BY WHICH ONE SHOULD HAVE A BACHELORS DEGREE	11.8	11.3	11.5
GRADE BY WHICH ONE SHOULD HAVE AN ADVANCED DEGREE	13.8	14.2	14.0
SHOULD HAVE EXPERIENCE IN HOW MANY LOG DISCIPLINES	2.2	2.2	2.2
BE TECHNICALLY COMPETENT IN HOW MANY FUNCTIONAL AREAS	2.8	2.0	2.4
GRADE AT WHICH TO SELECT AND START GROOMING	11.0	11.5	11.2

"Comments Only" Answers. There are no summary tables for these answers. The subparagraph headings under which these seven "comments only" responses are reviewed earlier in this chapter are listed here for reference.

Leadership, Management, and Supervisory Experience.

Staff Experience.

What is Technical Competence?

Qualities Important for Success.

Additional Personal Qualities.

Changes to Lists or Definitions.

Additional Comments and Model Inputs.

Related Questions. All of the questions were related in the sense they all dealt with some aspect of the background of civilian logisticians. Several of the questions addressed similar aspects of this background. These were reviewed for consistency with each other. The reader is referred to either Table 50 or Appendix F for ease of following the observations in the next several subparagraphs.

A trend was obvious with the three questions concerning the traditional view of dividing responsibilities and capabilities between military and civilians. An eleven to one consensus said this view was valid in the past. A ten to two consensus said it is valid now, but there were several comments saying it is less valid now. Although a seven to five preference supported this view being valid in the future, this was not a consensus. Also, it was the four to two preference of civilians that provided the small margin in favor of that future validity.

The seven to five margin that supported the traditional view being valid in the future was the same non-consensus margin that said there should be differences in the backgrounds of civilian and military senior logisticians. The civilian and military group responses were identical for each of these two questions. However, two civilians and two officers made opposite selections in responding to these two questions.

All eleven respondents that ventured an opinion on the question of civilians having more technical competence than their military counterparts indicated this should be the case. Technical competence is a part of a civilian logistician's background. This result could be considered inconsistent with the seven to five non-consensus margin for the background differences question.

There was a margin of seven to four saying civilians do not have time in their careers to get all the experience, including operations and retail logistics, that some experts felt was desirable. Had the sixth officer expressed an opinion, and had it agreed with the majority, this would have been a consensus under the less stringent criteria.

Comparisons of Both Sets of Interviews.

Most of the questions in each set of interviews addressed the same areas. For most of these areas the results were generally the same. Of particular interest were the responses without consensus and those with differences between civilians and officers.

Background Differences. This same question was asked in both sets of interviews. The overall result was the same both times, a seven to five non-consensus margin favoring the position that there should be differences. However, the margins within the civilian and military groups of respond-

ents was different between interview sets. Table 52 is included to show the differences and the combined results.

Table 52. Combined Results for Question on Background Differences Between Officers and Civilians

INTERVIEW SET	CHOICES	CIVILIAN RESPONSES	MILITARY RESPONSES	TOTAL
FIRST	YES	2	5	7
	NO	4	1	5
SECOND	YES	4	3	7
	NO	2	3	5
BOTH	YES	6	8	14
	NO	6	4	10

Professional Military Education (PME). The lack of consensus on the importance of PME for civilians in the second interview set was consistent with the consensus in the first interview set for a model category of PME not being equally applicable to civilians.

Some comments that Squadron Officers School (SOS) has little value for civilians were made in both sets of interviews.

Technical Competence. In the second interview set, a consensus favored more technical competence for civilians, along with a subordinate lack of consensus on how that greater competence should be applied to logistics functional areas. This appeared to be consistent with the lack of

consensus on equal applicability of this model category in the first set.

Five of six officers supported more technical competence for civilians in the second set of interviews and a like proportion of officers said this category was not equally applicable to civilians in the first set. However, five of six civilians also favored more technical competence in the second set, but the same ratio supported equal applicability of the model category in the first set.

Civilian Career Time for Desired Experience. The preference in the second interview set, although not a consensus, that there is not enough time on a civilian's career, is consistent with two comments made in responses in the first set.

Summary.

The first set of interviews produced clear consensus for all but two categories of the AFIT Model for senior military logisticians and how it might be applied to civilian counterparts. The topics of background differences between the two groups and the relative applicability of technical competence were left unsettled. The second set of interviews shed some light on both of those topics. The continuing margin favoring background differences and future validity of the traditional view of dividing responsibilities indicate a potential resolution of that question.

The consensus supporting more technical competence for civilians helped clarify that question, but the application of that competence was unclear. Both of these results are inconclusive. Issues about the importance of PME to civilians and the creation of a logistician job series were addressed and not resolved.

With these several issues still unsettled, the next step in this research toward a model for senior civilian logisticians must be a consensus-focusing technique such as the Delphi questionnaire. The results of the two sets of interviews provided the foundation for the questions to be used in the future Delphi phase.

V. Conclusions and Recommendations

Review

This research was conducted to define the essential qualities, characteristics, and background of senior civilian logisticians in the Air Force. The logistics portion of the Air Force has an ever-expanding task to support personnel and weapons systems around the world. As the complexity of those systems increases and the allowable reaction times shrinks, the logistics support system also becomes more complex. The DOD budgets for personnel, operations, and support for fiscal years 1987 and 1988 combined is over \$300 billion. Air Force budgets have started to decrease, which compounds the problems of providing necessary support. Better management of all resources is needed to counteract these effects.

Approximately 90 percent of the work force in the Air Force's largest logistics agency, AFLC, is civilian. Civilians also hold key positions at Air Force headquarters and on the Secretary of the Air Force's staff. It is critical that the Air Force have the best possible civilians in the senior logistics positions for the Air Force to meet these growing management challenges.

Many people, some from within the Air Force, have criticized DOD and the Air Force logistics and logisticians.

As stated in Chapter I, a common complaint is that there are not enough military or civilian logisticians that really understand the overall logistics system well enough to properly manage it. Some officials say the Air Force has too many specialists and not enough generalists to optimize the overall logistics system (24:4; 15:10). Many officials feel the problem is caused by the career paths and development that are available to the civilian and military logisticians (24:4). Adequate backgrounds of experience and education would be only one side of what is needed to have the best possible logisticians. The people must also possess the right characteristics and qualities to assimilate education and use their experience to perform the needed tasks.

This research was intended to develop a model of what the essential qualities, characteristics, and background should be for the successful senior civilian logistician. Prior research under AFIT sponsorship had developed such a model for senior military logisticians. The civilian model was to be developed through six phases. The first phase was a review of pertinent literature on logistics, logisticians, successful manager and career development programs, and problems in these areas. The second phase was to ascertain the applicability of the AFIT military model to senior civilian logisticians employing interviews with senior logistician experts. The next phase, if needed after

the second phase, was to use more interviews to determine basic concepts of education, experience, and traits for the senior civilian logisticians. The fourth phase was to seek final consensus on those concepts and issues through a Delphi questionnaire. Those results would be used to define the senior civilian model in the fifth phase. In phase six the components of the new model would be weighted by sending the model and one more questionnaire to a different sampling of logisticians and averaging the returned prioritizations.

The time required to develop the interview schedules, arrange and complete the interviews, and process the interview results for phases two and three did not allow sufficient time to complete further phases in the research. Therefore, the products of this effort are the results of the two sets of interviews and a draft Delphi questionnaire which can be used in follow-on research.

The research objectives and questions stated in Chapter I form a reasonable framework to review the results of the interviews. The next two sections of this chapter will address the results in terms of those research objectives and questions. Those sections will be followed by the introduction of the draft Delphi questionnaire (Appendix J). The chapter will close with a summary and recommendations.

Research Objectives

This research had three objectives. (1) Identify the qualities, characteristics, and background required of the

professional senior civilian logistician. (2) Develop a model to reflect the findings. (3) Determine weights for the components of the model to make it useable as a measuring device.

These objectives will be addressed briefly. More details will be discussed when the research questions are addressed.

Objective 1. The qualities, characteristics, and background required of the senior civilian logistician were tentatively identified. The Delphi questionnaire may add some elements to those identified in this research. The Delphi results could also determine that some elements supported through the interviews are not essential. This objective will be specifically addressed by the second and third research questions. Detailed findings will be presented under each of those questions.

Objective 2. A civilian model could not be developed due to the constraints of limited research time. The researcher has ideas of what the model should be at this stage of the research, but these can be only tentative without the consensus support of the Delphi questionnaire. These ideas are in terms of changes to the the AFIT Model for military senior logisticians. They will be stated during reviews of findings while addressing the research questions.

Objective 3. Weights for the model components could not be determined because the civilian model was not developed. There were strong indications that the weightings will be different than those of the military model. A few aspects of indicated importance will be presented as the fifth research question is addressed.

Research Questions

The following questions were proposed to meet the research objectives:

1. Can a model for senior military logisticians be used for their civilian counterparts?
2. What should be the special characteristics and qualities of civilian senior logisticians, if any?
3. What should be the education and experience of senior civilian logisticians?
4. Are there any significant differences between the responsibilities and necessary qualifications of civilian senior logisticians and their military counterparts?
5. What aspects of the civilian model are considered most important for evaluating logisticians and guiding career development of future civilian logisticians?

Discussions with officials outside AFIT and the thesis advisor during development of the first interview schedule introduced two other factors for consideration. Most senior civilian logisticians are in deputy positions, working for a military director or commander. There could be two

different perceptions, one by the civilians and the other by the military, of the civilian responsibilities and of the characteristics and background best suited for meeting those responsibilities. An official also suggested that there might be value in keeping separate accounts of responses to this research to see if there were any differences between the military and civilian responses. Therefore, the number of interviewees planned for the first set of interviews shown in Table 1 was increased to twelve, half to be from each respondent group. The number of subjects for the second set of interviews was reduced from the earlier twenty to thirty to twelve. This manipulation of sample size was deemed necessary to keep the combined effort for both interviews reasonable and allow more practical comparisons between results of the two interview sets. The reader is referred to Table 2 for the quantities and partitioning of experts for both sets of interviews. The consultants' suggestions were adopted as the following additional research question:

6. Are there any significant differences in how senior military and senior civilian logisticians perceive the responsibilities and required qualities and background of senior civilian logisticians?

These six questions will be answered based on the results of the two sets of interviews.

Applicability of a Military Model to Civilians. The AFIT Model for senior military logisticians was found to be applicable to senior civilian logisticians at the level of the eight categories. The details of the responses supporting this conclusion are contained in Table 18 and in Appendix C. In the first interview the participants were asked if a general military model should be applicable to civilians. The "yes" response was selected by ten of the twelve participants.

The participants were next asked whether three certain categories of a military model would apply to civilians. The three categories specified were the three model dimensions in the AFIT Model: experience, education and training, and professional attributes. The twelve respondents unanimously supported applicability, and ten of the twelve felt the three categories would be just as applicable to civilians as to military.

Next the interviewees were asked, category by category, if each of eight model categories would be applicable to civilians, and if each category would be equally applicable. The respondents were not told that these eight categories were the eight categories of the AFIT Military Model. Each of the eight categories was judged applicable by a consensus of at least ten to two or better. Six of the eight categories also met the stringent consensus criteria established for the first set of interviews for equal

applicability to civilians. Professional Military Education (PME) received a consensus of ten to two that PME would not be equally applicable. Technical competence responses were evenly split concerning equal applicability.

Finally, participants were asked if subdivisions of the eight categories would be applicable, and equally applicable, to civilians. As can be seen in Tables 15 and 16, eight of the eleven responding officials indicated "yes" for applicability. Six of those eight selected "no" for equal applicability of subdivisions. One respondent said the applicability of subdivisions would depend on what the subdivisions were. Another stated command and combat positions would not apply to civilians. Both points were valid. Since the participants were not given any subdivision titles, they had to be answering in general terms. Although the consensus indicates many subdivisions should be applicable to civilians, there may very well be subdivisions of the military model that cannot apply to civilians.

Responses to several questions in the second interview schedule, summarized in Table 50, were consistent with the applicability of the eight categories. Several comments in both sets of interviews indicated unequal applicability of subdivisions of a few categories. Four respondents said lower level PME schools were less applicable to civilians, as shown in Table 10. Majorities of seven to five, although

non-consensus, supported differences in background and need for technical competence between military and civilians. These responses were consistent with the need for different subdivisions in some categories

Any decisions about subdivisions for the categories of the civilian model should be made after the Delphi phase.

Special Characteristics and Qualities. Participants in the second set of interviews unanimously confirmed there are identifiable qualities and characteristics that distinguish successful civilian logisticians from unsuccessful ones. This is consistent with the unanimous support for applicability and equal applicability of a model category for personal qualities and characteristics indicated in the first interview set.

Determination of which qualities are essential is incomplete. Four examples were given in the question on qualities in the first interview. Several additional qualities were suggested by participants in that phase. These qualities were all included, along with all the qualities listed in the AFIT Model, in the reference information sent to all participants in the second interview. A question in the second set of interviews asked respondents to select the important qualities from that list. The results are summarized in Table 31, with more details in Appendix H. The next question asked these respondents to suggest additional qualities. The top twelve

qualities selected from the list and all ten additional suggestions are listed here.

Top Twelve Qualities

Integrity
Manager
Leader
Communicator
Visionary/Forward Looking
Multidisciplined
Initiative
Dedicated
Common Sense
Planning Ability
Can "Get Things Done"
Problem Solving/System Viewpoint

Ten "New" Qualities

Perserverance
Wisdom
Team Player
Empathy
Handle Grievances
Mobility
Sense of Humor
Does Complete Staff Work
Knows Scheduling
Has Objectives

Four respondents in the second interviews commented that several of the qualities listed were really learned skills or were only needed for some jobs. This separation seemed reasonable enough to explore during the Delphi phase. The researcher suggests the following list be targeted for a possible separate category called "General Skills" under the professional attributes dimension. The items recommended to be moved to that new category are listed here:

Knows Federal Budgeting	Handles Grievances
Computer Literate	Does Complete Staff Work
Job Knowledge	Knows Scheduling

Planning Ability

Analytical Techniques

Problem Solving/System Viewpoint

The term "mobility" was deliberately included in the four examples in the qualities question in the first set of interviews to see if it would draw comments. The last six comments in Table 14 addressed mobility. Three participants indicated the application of mobility should be different for civilians than for military. Another commented that mobility was a part of "the job," a condition of each position rather than being a professional attribute. Mobility was deliberately left off the list of attributes in the second set of interviews to see if it would get "re-nominated" and because there were several other questions addressing mobility. As the list above shows, one respondent did suggest mobility as a quality. Another question asked if mobility history should be considered a quality or part of experience. The results are listed in Table 36. Seven of twelve respondents selected experience. Four said mobility was both a quality and experience. No respondent selected mobility as only a quality. Therefore, mobility or mobility attitude should be explored as a quality in the Delphi phase.

Education and Experience. Much information was gathered on each of these two aspects of logisticians' background. They have been presented separately.

Education. Responses in both sets of interviews indicate the senior civilian logistician should have a masters degree. However, this is not as clear a situation as for the military logistician. In the first set of interviews, eleven of twelve responded that a model category of "advanced degree" applied, and applied equally, to civilians. One of those respondents pointed out that no degree is required for logistics jobs (researcher's note: engineering job series not included). Therefore, the second interview schedule asked first if a senior civilian logistician should have a bachelors degree, even though it is not required. The response was unanimous that he should. A subsequent question about an advanced degree received a "yes" consensus of nine to three.

The lack of a degree requirement for civilian logisticians is different than for their military counterpart since a bachelors degree has been a commissioning requirement for many years. As a result, one of the categories, named "Advanced Degree" in Capt Zavada's weighted AFIT Model, must be modified for civilians. The name of the category in Capt Overbey's version of the AFIT Model before weighting was "Academic Education". This category title would allow category elements of "Bachelors Degree" and "Advanced Degree" and would be more applicable to a civilian model.

The responses contained in Tables 20 and 22 indicate a civilian logistician should have the first degree as a GS-11 and get the advanced degree by the GM-14 point. Appendix G includes the actual responses that yielded those average grade levels. The subject matter for these degrees was not addressed in either interview set. Three comments provided in the second set of interviews were inconclusive on this subject. This matter should be addressed in the Delphi phase.

Experience. The senior civilian logistician should have experience as both a manager and a supervisor at several levels and over a large operation in terms of people supervised and resources managed. He or she should have had at least one staff job, preferably at AFLC or AFSC Headquarters or the Pentagon. His or her experience should be broad enough to include two logistics disciplines and two or three logistics functional areas. These statements are based primarily on the responses to the second set of interviews.

The interviewees were asked what leadership, management, and supervisory experience the senior civilian should have. Eight respondents indicated he or she must know how to manage people and provided various combinations of levels and breadth of this experience. In response to the next question, about what staff experiences the senior civilians should have, all twelve interviewees indicated

some amount or level. Five suggested AFLC or AFSC Headquarters.

The participants were asked how many logistics disciplines should be included in the senior civilian logistician's experience. The average of the responses was 2.2 disciplines. The interviewees were similarly asked in how many functional areas should this ideal civilian have technical competence. The average response was 2.4 areas. Several comments made in responding to other questions on career development, technical competence, and general additional comments supported the idea that the broadened logistician was better prepared for senior level positions.

Differences in Responsibilities and Qualifications.

Indications were clear that there are differences in the responsibilities of the senior civilian and military logistician. Several marginal indications also supported differences in qualifications for these two types of senior logisticians..

The first question in the first set of interviews asked if there are responsibility differences. The response was "yes" by eleven to one. Seven of these respondents cited the normal military director and civilian deputy relationship, and two noted that the military are held accountable. Six mentioned the combat and user experience and perspective as differences.

The second question in the first set of interviews asked whether there should be differences in the essential background and characteristics of civilian and military senior logisticians. Respondents favored "yes" by a seven to five margin. The same question was repeated in the second set of interviews and the overall response was the same. In both cases there were some comments that seemed to answer as though the question asked "are there differences" instead of "should there be differences."

Stronger support for background differences came from responses to other questions. A ten to two consensus said PME was not equally applicable to civilians. A seven to five margin agreed that the traditional view of military bringing a broader background and a user perspective to senior logistician positions and civilians bringing functional knowledge and continuity to those positions should continue to be valid in the future. Eleven of the twelve respondents suggested the senior civilians should have more technical competence than their military counterparts. Several comments throughout the interviews mentioned the need or advantage of the "boss - deputy" pair complementing each other in skills and background to form a more complete team.

Other comments added to the feeling of differences. There are positions held by the military that civilians cannot legally occupy. Command experience, common for

officers but rare for civilians, changes the perspective of senior logisticians. Thus, officers usually bring a different viewpoint to logistics positions. Officers and civilians have two different career structures, and these cannot be changed quickly, even if they should be.

Another area of difference is mobility. This is a matter of little choice for the senior officers. Several interviewees commented that traditionally the civilian has shown very little geographic mobility, and probably not enough functional mobility. In the last several years, several organizational changes and career broadening programs that have encouraged functional and geographic mobility for civilians. Many civilians have taken advantage of these opportunities for quick advancement. Most interview participants, both civilians and officers, favored the broader experience and perspective civilians gain through mobility. However, several cautions or "should notes" were voiced by officers and civilians. Two of these concerns were that too much mobility of senior logisticians would destroy the top level corporate memory and that moving indiscriminately would not provide the best development and motivation for senior civilians.

Important Aspects of the Civilian Model. This area cannot really be addressed until the model is developed and weighted. It appears at this point in the research that the career broadening of multidisciplined, multifunctioned,

experienced managers and supervisors is important. Several personal qualities were selected by at least half of the respondents. Academic education through at least the bachelors degree also appear important. The Delphi survey and the model weighting should probably support these estimates, but they must be completed to find out.

Differences of Opinion Between Officers and Civilians.

For the most part these officer and civilian interviewees responded similarly, but they did differ on several issues. With the small sample size of six of each group for each set of interviews, the differences may reflect true disagreement between civilians and officers, or may be due to the nature of that particular sample.

Background Differences. Within the seven to five margin favoring differences in the first set of interviews, four of six civilians said there should not be differences, while five of six officers said there should. The comments in Table 4 show two of the civilians caveated their "no" responses and that the officers seemed to dwell more on what "is" than "should be." This question was repeated in the second interviews, with the same overall result, four of these six civilians now said that there should be differences, and these six officers were evenly split. These separate tallies are shown in Table 52, along with a combined response tally. These apparent respondent differences do not seem to be significant, since a switch of

the two caveated civilian responses would have made the combined tallies the same for officers and civilians and because of the "is - should" ambiguity.

Technical Competence. In the first set of interviews all twelve respondents said that the AFIT Model category of technical competence was applicable to senior civilians. However, five of the six civilians said this category should be equally applicable to civilians, while a like ratio of officers said exactly the opposite. This consensus does seem consistent with the same respondents four to two position favoring no background differences. This civilian group may have been more idealistic than the other officer and civilian interview groups.

In the second set of interviews, all six of the civilians and all of the five officers who voiced an opinion indicated civilians should have more technical competence than officers. However, the two groups differed on how the additional competence should be applied. Four of five civilians felt senior civilian logisticians should be competent in more functional areas. Three of four officers said civilians should have more depth of competence in one area than the military. One officer and one civilian said both "more" and "deeper." Several officers seemed to want civilians to have better knowledge of the overall logistics system and deeper understanding of their functional area than they themselves had. They seemed to apply this desire

in selecting the "deeper in one area" choice instead of the "more area" choice. The civilians seemed to emphasize the logistics system by selecting the "more areas" choice. The civilian consensus was the opposite of the civilian consensus in the first interview..

Civilians and military apparently differed in the number of functional areas in which the senior civilian should have competence (Table 51). The average of the civilian responses was 2.8 areas while the average of the officer responses was 2.0. A review of Appendix G shows that one civilian and one officer each responded "two or three." For overall balancing, one was credited with a "two" and one with a "three." Partly based on the tone of the comments, but mostly arbitrarily, the civilian was credited with the "three." Had this been reversed, the averages would have been 2.6 for civilians and 2.2 for officers. This is an example of the problems associated with attempted statistical analyses of small sample sizes. The standard deviations were calculated for the civilian responses and the military responses. With the small sample sizes, the deviations were large enough that the 0.8 difference was not significant. Not only did the deviations extend past each other, the deviation of the 2.0 average was wider than the difference from the 2.8 average. The higher average for civilians was consistent with their response favoring competence in more functional areas.

The significance of these differences between civilian and military responses on the breadth of civilian technical competence appears questionable.

Professional Military Education (PME). An interesting difference between military and civilian responses was exhibited in the area of PME. The twelve responses were equally divided between PME being "very," "moderately," and "slightly" important for civilians. This can be seen in Table 50 and in the first three rows of Table 23. The six civilians responded with three for "very," two for "moderately," and one for "slightly" important. The officers' tally was symmetrically opposite with one for "very," two for "moderately," and three for "slightly" important. The tone of some of the comments seems to indicate some of these officers feel it is more important for all officers to participate in PME than for any significant number of civilians to participate. This tone was consistent with some strong officer comments about technical competence, background differences, and traditional splits of responsibilities. For example, one individual stated that "blue suiters: would handle combat and PME was to "re-blue" the military.

"Logistician" Job Series. The question about a general logistician job series elicited an even split of the twelve responses. In an apparent dichotomy, five of six civilians favored such a job series, while a like proportion

of officers did not. However, five civilians felt the Air Force already had a logistician job series in GS/GM 346, Logistics Management Specialist. None of the officers mentioned this job series. The researcher's impression during some of those interviews was that those officers didn't know about the job series. Civilian job series may be one of the areas the officers are not often concerned with, as they each let their civilian deputies handle the civilian details.

This question about a logistician job series followed one which asked if every job series should offer development up into the SES ranks. The response to that was an eleven to one "no," with the officers responding a unanimous "no." The logistician job series question may have seemed like the same question repeated, especially to those who may not be frequently involved with civilian job series. Without additional information, this split between civilian and military responses cannot be discounted or accepted as significant.

Delphi Questionnaire

The Delphi questionnaire will be the key instrument to elicit the consensus necessary to develop the descriptive model of the senior civilian logistician. It should address each factor that the two sets of interviews have found to be important and any factor whose importance was not determined, or whose effect was not clear. One possible

exception would be for those factors whose importance and effect were clearly established in the interviews.

The first set of interviews clearly supported the applicability of the AFIT Model of the senior military logistician to senior civilian logisticians, down to the category level, and with different weightings possible. This applicability also established the applicability of the questions used by Captains Overbey and Zavada in gathering inputs for the model. Several of the questions from Overbey's interview schedule were used in the second set of interviews in this research. Many of the questions in his Delphi questionnaire will be appropriate in the Delphi phase of this research.

Appendix J is the draft Delphi questionnaire recommended for the next step of this effort. Every question in Capt Overbey's questionnaire was reviewed for inclusion in this draft instrument. Several were not applicable because they addressed issues such as command positions and experience. Others, such as having a bachelors degree, were felt to have been clearly determined in the interviews. Additional questions were developed to address other topics not resolved during the interviews. The topics in the questionnaire are: Academic Education, PME, Experience, Technical Competence, Career Development, Mobility, and Qualities and Characteristics.

Summary

Increasing attention has been focused on how the Department of Defense and the Air Force manage their resources to support their mission of deterring war through strength and being able to win war if it strikes. Logistics, the aspects of supporting all operations that constitute the mission just stated, use over half of those resources. The senior logisticians must be the best leaders and managers possible to stretch the resources to meet the mission needs. Several officials have claimed that both civilian and military senior logisticians as a group have shortcomings in managing the logistics system. Sufficient data do not exist to define what the senior civilian logistician should be like, or to guide the development of more capable successors, or even to be sure the shortcomings are real.

The intent of this research was to develop a descriptive model of the essential qualities, characteristics, and background of the senior civilian logistician. Once the various segments of this model were weighted, the model could be used to evaluate existing logisticians. This normative model was to have been developed through six phases summarized as: literature review, interviews on applicability of a military model to civilians, interviews on basic concepts for civilians, a Delphi survey, model definition, and model weighting. Time

limitations truncated the effort after the second set of interviews. The products of this research were the results of two sets of interviews and a draft questionnaire for the Delphi survey.

This research laid important foundations for developing the normative model for senior civilian logisticians. The areas needing the most additional research were identified. The specific results gained through this research are summarized below.

A descriptive model of the ideal senior military logistician, and particularly the AFIT Model of the essential qualities, characteristics, and background of the person, can be applied to senior civilian logisticians. The AFIT Model can be applied to the level of its eight categories and many of the subordinate elements of those categories should also apply. The model for senior civilians, when completed, will probably have different weights for the components and may have some different elements or categories, but the civilian model will quite likely be very similar to the AFIT Military Model.

The special characteristics and qualities of the successful senior civilian logistician need more verification in follow-on research. The nine leading candidates at the completion of this research are, in descending order: integrity, manager, leader, communicator, visionary/forward looking, multifunctional/multidisciplined,

initiative, dedicated, and common sense. These qualities were selected by at least half of the officials interviewed.

The educational background of the senior civilian logistician should be a bachelors and a masters degree. No degree is presently required in most logistics job series. There were comments that neither degree should be a firm requirement but the consensus was that both degrees are highly advisable.

The experience background of the senior civilian logistician should be varied across two or more logistics disciplines and at least two logistics functional areas. The senior civilian should have extensive management and supervisory experience at several levels of grade and organization echelons, including, at some point, managing people and expensive resources. Functional and geographic mobility are recognized as an excellent method to broaden the experience base of senior civilians. There should be some practical limits in the requirements for mobility. There are several career development plans and opportunities available which appear beneficial to the Air Force and the employees. The Logistics Civilian Career Enhancement Program (LCCEP) is the best known of these programs. The aspiring logistician should actively plan and pursue his or her development.

Senior military and civilian logisticians have different responsibilities. These differences are most

apparent in the ramifications of the very prevalent military director and civilian deputy relationship. The military also have command, combat, and operational responsibilities not given to the civilians. A consistent majority of respondents felt that there should also be differences in the background of the civilian and military logisticians. The military logistician will bring the operations and use perspective to the position. The senior civilian should complement the military officer with greater technical competence, corporate memory, and continuity. The relative importance of different aspects of a model for senior civilian logisticians will be determined through definition and weight of the model. Until that effort is completed, the previous parts of this summary are a good approximation of this important aspect.

There were several differences in the group opinions of the civilians and officers interviewed. These differences were in the appropriateness of background differences of military and civilians, the application of greater civilian technical competence across function areas or in the area employed, the importance of PME for civilians, and the benefits of a logistician job series. None of these differences were extreme, nor did they appear to be significant.

The areas where civilian and military opinion differed need further resolution before the civilian model can be

defined. Each of the topics in the draft Delphi questionnaire needs more information to support development of the model for senior civilian logisticians.

Recommendations

Many good comments and ideas are brought to the attention of a researcher during an effort like this research. Some are heard only once and others are more common. Several are supported by a majority of opinions or other evidence; many are not. Those ideas and thoughts that stand above the rest are recommended for further attention.

1. Development of a normative model for the essential qualities, characteristics and background of a senior civilian logistician should be completed. A review of this research and the efforts that developed and weighted the AFIT Model for the senior military logistician should be the first step. The Delphi survey should be the second step. The draft Delphi questionnaire produced by this research is available for refinement or use.

2. The definition of the model for senior civilians should be sufficiently open through the Delphi survey and its assessment that the model can be different from the AFIT Military Model as the research so directs. In that vein, a category named academic education should be considered for the education and training dimension, and a category named general skills should be considered for the professional attributes dimension.

3. The Air Force should continue and extend programs, such as LCCEP and ALC civilian broadening programs, which identify exceptional logistics employees and groom them for greater responsibilities. The programs should allow for periodic entry and exit, based on performance, so the best development opportunities are available to the best candidates, even as employees' abilities and attitudes change. These programs should be neither a long term assurance of reaching GM-15 or SES rank, nor a barrier to good personnel getting good jobs.

Appendix A: Pretest Interview Schedule

CIVILIAN - MILITARY INTERVIEW SCHEDULE

Respondent_____ Date of Interview_____

Time of Interview_____

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Interview Checklist

(1) Introduce myself: I am Don Nancarrow, a civilian in the AFALC at WPAFB. Right now I am in the GradLog Program at AFIT/LS for LTFT training. My thesis is to develop a normative model, a categorized description, of the essential qualities, background, and characteristics of senior civilian logisticians. I may very well never be in that group but defining the model is important.

(2) Explain purpose of the research: Interest and opinions continue about the adequacy of Air Force senior logisticians, both military and civilians. My research can help define what senior civilian logisticians should be.

(3) Explain purpose of interview: Differences, or lack thereof, between civilian and military senior logisticians will determine much of the course of the research.

(4) Explain importance of respondents' participation: The expert judgment of senior logisticians, like you, familiar with the roles of both civilian and military logisticians, is necessary to determine if there are differences.

(5) Request responsiveness, explain non-attribution: There are no right or wrong answers for my questions. I need your open and honest opinions to accurately determine this issue. Your responses will be merged with many others for an overall picture. You will not be tied to your responses in the thesis. I do plan to list all interviews in my bibliography. Do you agree for this interview?

(6) Explain format and term "senior logistician": I am considering senior logisticians to be Senior Executive Service (SES) and GM/GS-15 and higher civilians and colonels and general officers. I will ask 36 questions in eight groups. 18 questions will be quick YES-NO type, followed by one or more comment type questions. I will note your responses and I may read my notes back to be sure I

accurately captured your intent. I estimate this interview will take about 45 minutes more.

.....
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TOPIC 1 RESPONSIBILITIES

Are there differences in the responsibilities and duties of civilian and military logisticians at the senior levels?

YES _____ NO _____ NO RESPONSE _____

Why, or why not?

EXPLANATION _____

If so, what are they?

EXPLANATION _____

If so, are they significant?

EXPLANATION _____

TOPIC 2 BACKGROUND

Should there be any differences in the essential background and characteristics of civilian and military senior logisticians?

YES _____ NO _____ NO RESPONSE _____

Why, or why not?

EXPLANATION _____

If so, what are they?

EXPLANATION _____

If so, are they significant?

EXPLANATION _____

TOPIC 3 GENERAL MILITARY MODEL APPLICABILITY

Should a normative model for the qualities, background, and characteristics of senior military logisticians be applicable, in general, for senior civilian logisticians?

YES _____ NO _____ NO RESPONSE _____

Why, or why not?

EXPLANATION _____

TOPIC 4 MODEL TOP CATEGORIES APPLICABILITY

If a military model had three top categories of experience, education and training, and professional attributes, would these categories be applicable to senior civilian logisticians?

YES _____ NO _____ NO RESPONSE _____

Would each these categories be as applicable to civilians as to military?

YES _____ NO _____ NO RESPONSE _____

Why, or why not?

EXPLANATION _____

TOPIC 5 MODEL CATEGORIES APPLICABILITY

I would like to address the applicability of eight, more detailed, prospective model categories.

Should a category of "Logistics Assignments," assignments in one or more logistics functions, including contracting, be applicable, or equally applicable, to senior civilian logisticians?

YES _____ NO _____ NO RESPONSE _____

Why, or why not?

EXPLANATION _____

Should a category of "Advanced Positions," managerial or command assignments in, or not in, logistics functions, be applicable, or equally applicable, to senior civilian logisticians?

YES _____ NO _____ NO RESPONSE _____

Why, or why not?

EXPLANATION _____

Should a category of "Advanced Degree(s)" be applicable, or equally applicable, to senior civilian logisticians?

YES _____ NO _____ NO RESPONSE _____

Why, or why not?

EXPLANATION _____

Should a category of "Professional Continuing Education (PCE)" be applicable, or equally applicable, to senior civilian logisticians?

YES _____ NO _____ NO RESPONSE _____

Why, or why not?

EXPLANATION _____

Should a category of "Professional Military Education (PME)" be applicable, or equally applicable, to senior civilian logisticians?

YES _____ NO _____ NO RESPONSE _____

Why, or why not?

EXPLANATION _____

Should a category of "Professional Involvement," in conferences or organizations like SOLE, be applicable, or equally applicable, to senior civilian logisticians?

YES _____ NO _____ NO RESPONSE _____

Why, or why not?

EXPLANATION _____

Should a category of "Technical Competence" be applicable, or equally applicable, to senior civilian logisticians?

YES _____ NO _____ NO RESPONSE _____

Why, or why not?

EXPLANATION _____

Should a category of "Personal Qualities and Characteristics," such as leadership or flexibility be applicable, or equally applicable, to senior civilian logisticians?

YES _____ NO _____ NO RESPONSE _____

Why, or why not?

EXPLANATION _____

TOPIC 6 MODEL LOWER CATEGORIES APPLICABILITY

Would subdivisions of the above eight categories of a model for senior military logisticians be likely to be applicable, or equally applicable, to senior civilian logisticians?

YES _____ NO _____ NO RESPONSE _____

Why, or why not?

EXPLANATION _____

TOPIC 7 ADDITIONAL COMMENTS

Do you have any other thoughts on the topic of comparability of senior military and civilian logisticians?

YES _____ NO _____ NO RESPONSE _____

If so, what are they?

EXPLANATION _____

TOPIC 8 CONTINUING PARTICIPATION

Would you be interested in participating in one or more later phases of this research?

YES _____ NO _____ NO RESPONSE _____

Would you care to provide me with names of other experts you feel would be good contributors to this research?

YES _____ NO _____ NO RESPONSE _____

Would you like to receive an executive summary of this research?

YES _____ NO _____ NO RESPONSE _____

.....
.....

Thank you very much for all your time, and thank you especially for this valuable information.

Appendix B: Interview Schedule

CIVILIAN - MILITARY INTERVIEW SCHEDULE

Respondent_____ Date of Interview_____

Office, Grade_____ Time of Interview_____

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Interview Checklist

(1) Introduce myself and thesis: I am Don Nancarrow, a civilian in the APALC at WPAPB. Right now I am in the GradLog Program at AFIT/LS for LTFT training. My thesis is to develop a general, theoretical model, a categorized description, of the essential qualities, background, and characteristics of senior civilian logisticians. Please picture a sheet of paper with some number of boxes, with whatever appropriate labels, scattered around and all connected to the center. I am considering senior logisticians to be Senior Executive Service (SES) and GM/GS-15 and higher civilians and colonels and general officers. I may very well never be in that group but defining the model is important.

(2) Explain purpose of the research: There continues to be much interest in developing better Air Force senior logisticians, both military and civilians. My research can help define what senior civilian logisticians should be.

(3) Explain purpose of interview: Differences, or lack thereof, between civilian and military senior logisticians will determine much of the course of the research.

(4) Explain importance of respondents' participation: The expert judgment of senior logisticians, like you, familiar with the roles of both civilian and military logisticians, is necessary to determine if there are differences.

(5) Request responsiveness, explain non-attribution: There are no right or wrong answers for my questions. I need your open and honest opinions to accurately determine this issue. Your responses will be merged with many others for an overall picture. You will not be tied to your responses in the thesis. I do plan to list all interviews in my bibliography. Do you agree for this interview? (YES or NO)

(6) Explain format: I will ask 38 questions in nine groups. 19 questions will be quick YES-NO type, most of them followed by one or more comment type questions. I will note your responses and I may read my notes back to be sure I accurately captured your intent. Pretests indicate this interview will take about 30 minutes more.

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TOPIC 1 RESPONSIBILITIES

Are there differences in the responsibilities and duties of civilian and military logisticians at the senior levels?

YES _____ NO _____ NO RESPONSE _____

Why, or why not?

EXPLANATION _____

If so, what are they?

EXPLANATION _____

If so, are they significant?

EXPLANATION _____

TOPIC 2 BACKGROUND

Should there be any differences in the essential background and characteristics of civilian and military senior logisticians?

YES _____ NO _____ NO RESPONSE _____

Why, or why not?

EXPLANATION _____

If so, what are they?

EXPLANATION _____

If so, are they significant?

EXPLANATION _____

TOPIC 3 GENERAL MILITARY MODEL APPLICABILITY

Without worrying right now about the names of any categories, should a model for the qualities, background, and characteristics of senior military logisticians be applicable, in general, for senior civilian logisticians?

YES _____ NO _____ NO RESPONSE _____

Why, or why not?

EXPLANATION _____

TOPIC 4 MODEL TOP CATEGORIES APPLICABILITY

If a military model had three top categories of experience, education and training, and professional attributes, would these categories be applicable to senior civilian logisticians?

YES _____ NO _____ NO RESPONSE _____

Would each these categories be as applicable to civilians as to military?

YES _____ NO _____ NO RESPONSE _____

Why, or why not?

EXPLANATION _____

TOPIC 5 MODEL CATEGORIES APPLICABILITY

I would like to next address the applicability of eight, more detailed, prospective military model categories.

Should a category of "Logistics Assignments," assignments in one or more logistics functions, be applicable, or equally applicable, to senior civilian logisticians?

YES(apply)____ YES(=)____ NO(=)____ NO(apply)____

Why, or why not?

EXPLANATION _____

Should a category for "Advanced Positions" or "Types of Positions," such as staff positions or director/commander/-manager assignments, be applicable, or equally applicable, to senior civilian logisticians?

YES(apply)____ YES(=)____ NO(=)____ NO(apply)____

Why, or why not?

EXPLANATION _____

Should a category of "Advanced Degree(s)" be applicable, or equally applicable, to senior civilian logisticians?

YES(apply)____ YES(=)____ NO(=)____ NO(apply)____

Why, or why not?

EXPLANATION _____

Should a category of "Professional Military Education (PME)" be applicable, or equally applicable, to senior civilian logisticians?

YES(apply)____ YES(=)____ NO(=)____ NO(apply)____

Why, or why not?

EXPLANATION _____

Should a category of "Professional Continuing Education (PCE)," like AFIT short courses, be applicable, or equally applicable, to senior civilian logisticians?

YES(apply)____ YES(=)____ NO(=)____ NO(apply)____

Why, or why not?

EXPLANATION _____

Should a category of "Professional Involvement," in conferences or organizations like SOLE, be applicable, or equally applicable, to senior civilian logisticians?

YES(apply)____ YES(=)____ NO(=)____ NO(apply)____

Why, or why not?

EXPLANATION _____

Should a category of "Technical Competence" be applicable, or equally applicable, to senior civilian logisticians?

YES(apply)____ YES(=)____ NO(=)____ NO(apply)____

Why, or why not?

EXPLANATION _____

Should a category of "Personal Qualities and Characteristics," such as leadership, initiative, mobility, integrity, etc., be applicable, or equally applicable, to senior civilian logisticians?

YES(apply)____ YES(=)____ NO(=)____ NO(apply)____

Why, or why not?

EXPLANATION _____

TOPIC 6 MODEL LOWER CATEGORIES APPLICABILITY

Would subdivisions of the above eight categories of a model for senior military logisticians be likely to be applicable, or equally applicable, to senior civilian logisticians?

YES(apply)____ YES(=)____ NO(=)____ NO(apply)____

Why, or why not?

EXPLANATION _____

TOPIC 7 ADDITIONAL COMMENTS

Do you have any other thoughts on the topic of comparability of senior military and civilian logisticians?

YES _____ NO _____ NO RESPONSE _____

If so, what are they?

EXPLANATION _____

TOPIC 8 ADDITIONAL CATEGORIES OR ATTRIBUTES

Do you recommend any other model categories or personal characteristics elements for a model for senior civilian logisticians?

YES _____ NO _____ NO RESPONSE _____

If so, what are they?

EXPLANATION _____

TOPIC 9 CONTINUING PARTICIPATION

Would you be interested in participating in one or more later phases of this research?

YES _____ NO _____ NO RESPONSE _____

Can you provide me any names of other experts you feel would be good contributors to this research?

YES _____ NO _____ NO RESPONSE _____

Would you like to receive an executive summary of this research?

YES _____ NO _____ NO RESPONSE _____

.....
.....

Thank you very much for all your time, and thank you especially for this valuable information.

**Appendix C. Record of Responses on Military
Model Applicability to Civilians**

QUESTIONS	CHOICES	INTERVIEWEE RESPONSES														TOTAL	TOTAL
		C1	C2	C3	C4	C5	C6	TOT	M1	M2	M3	M4	M5	M6	TOT		
RESPONSIBILITY DIFFERENCES	YES	Y	Y	Y	Y	Y	Y	6	Y	Y	Y	Y	Y		5	11	
	NO							0						N	1	1	
BACKGROUND DIFFERENCES	YES	Y		Y				2	Y	Y		Y	Y	Y	5	7	
	NO		N		N	N	N	4			N				1	5	
MODEL APPLY IN GENERAL	YES	Y	Y	Y	Y		Y	5	Y		Y	Y	Y	Y	5	10	
	NO					N		1		N					1	2	
3 MODEL CATEGORIES APPLY	YES	Y	Y	Y	Y	Y	Y	6	Y	Y	Y	Y	Y	Y	6	12	
	EQUALLY	E	E	E		E	E	5	E		E	E	E	E	5	10	
	NOT EQUAL				NE			1		NE					1	2	
"LOGISTICS ASSIGNMENTS" CATEGORY APPLY	YES	Y	Y	Y	Y	Y	Y	6	Y	Y	Y	Y	Y	Y	6	12	
	EQUALLY	E		E	E	E	E	5	E			E	E	E	4	9	
	NOT EQUAL		NE					1		NE	NE				2	3	
"ADVANCED or TYPES OF POSITIONS" APPLY	YES	Y	Y	Y	Y	Y	Y	6	Y	Y	Y	Y	Y	Y	6	12	
	EQUALLY	E	E	E	E	E	E	6	E	E		E	E	E	4	10	
	NOT EQUAL							0			NE		NE		2	2	
"ADVANCED DEGREE(S)" CATEGORY APPLY	YES	Y	Y	Y	Y	Y	Y	6	Y		Y	Y	Y	Y	5	11	
	EQUALLY	E	E	E	E	E	E	6	E	E	E	E		E	5	11	
	NOT EQUAL							0							0	0	
"PROFESSIONAL MILITARY EDUCATION (PME)" APPLY	YES	Y	Y	Y	Y	Y	Y	6	Y	Y	Y	Y	Y	Y	6	12	
	EQUALLY							0	E			E			2	2	
	NOT EQUAL	NE	NE	NE	NE	NE	NE	6		NE	NE		NE	NE	4	10	
"PROFESSIONAL CONTINUING EDUCATION (PCE)" APPLY	YES	Y	Y	Y	Y	Y	Y	6	Y	Y	Y	Y	Y	Y	6	12	
	EQUALLY	E	E	E	E	E	E	6	E	E	E	E		E	5	11	
	NOT EQUAL							0					NE		1	1	
"PROFESSIONAL INVOLVEMENT" CATEGORY APPLY	YES	Y	Y	Y	Y	Y	Y	6			Y	Y	Y	Y	4	10	
	EQUALLY		E	E	E	E	E	5	E	E	E	E		E	5	10	
	NOT EQUAL	NE						1					NE		1	2	
"TECHNICAL COMPETENCE" CATEGORY APPLY	YES	Y	Y	Y	Y	Y	Y	6	Y	Y	Y	Y	Y	Y	6	12	
	EQUALLY	E	E	E	E	E		5	E						1	6	
	NOT EQUAL					NE		1		NE	NE	NE	NE	NE	5	6	
"PERSONAL QUALITIES AND CHARACTERISTICS" APPLY	YES	Y	Y	Y	Y	Y	Y	6	Y	Y	Y	Y	Y	Y	6	12	
	EQUALLY	E	E	E	E	E	E	6	E	E	E	E	E	E	6	12	
	NOT EQUAL							0							0	0	
SUBDIVISIONS OF ABOVE EIGHT CATEGORIES APPLY	YES	Y	Y	Y		Y	Y	5		Y		Y		Y	3	8	
	EQUALLY		E					1				E			1	2	
	NOT EQUAL	NE		NE		NE	NE	4	N	NE				NE	2	6	

Responses for civilians (C1-6) and military (M1-6)
are randomly different than the interview sequence.

Appendix D. Pretest Concepts Interview Schedule

TO: _____

FOR FACE-TO-FACE INTERVIEW
 TELEPHONE

With AFIT STUDENT DON NANCARROW

SCHEDULED FOR: _____, _____

INTRODUCTION AND REFERENCE INFORMATION
FOR
THESES INTERVIEWS ON CONCEPTS

1. I am Don Nancarrow, a civilian in the AFALC at WPAFB. Right now I am in Long Term Full Time (LTFT) training in the Graduate Logistics Program at AFIT/LS.

2. There continues to be much interest in developing better Air Force senior logisticians, both military and civilians. My thesis is to develop a general, descriptive model of the essential qualities, background, and characteristics of senior civilian logisticians. My research can help define what senior civilian logisticians should be. To picture this model, think of a sheet of paper with some number of boxes, with whatever appropriate labels, scattered around and all connected to the center.

3. This is the second set of interviews in my research. The first set of interviews and review of relevant literature have formed a basis for the model, but have also identified several additional questions. Analysis of this set of answers will be used to develop a final questionnaire that will be used to construct the model.

4. The expert judgment of senior logisticians, like you, is necessary to form a strong foundation for the model and to determine the thrust of the final set of questions. There are no right or wrong answers for my questions. I am interested in your open and honest opinions. Your responses will be merged with others to form an overall picture. You will not be identified with your responses in the thesis. I do plan to list all interviews in my bibliography, except for any interviewee who desires to remain anonymous.

5. I will ask 60 questions in ten groups. Half of the questions will be quick YES-NO or choice type, many of them followed by one or more comment type questions. I will note your responses and I may read my notes back to be sure I accurately captured your intent. Pretests indicate this interview should take about 30 minutes more.

6. Several definitions are necessary to set the stage.

a. Military Logistics: A full, integrated system of processes which must be used to support the military operations of an organization, including combat. Although recent logistics doctrine changes suggest this includes all areas which support combat such as hospital, food, and personnel services, logistics traditionally encompasses the disciplines and functional areas listed below.

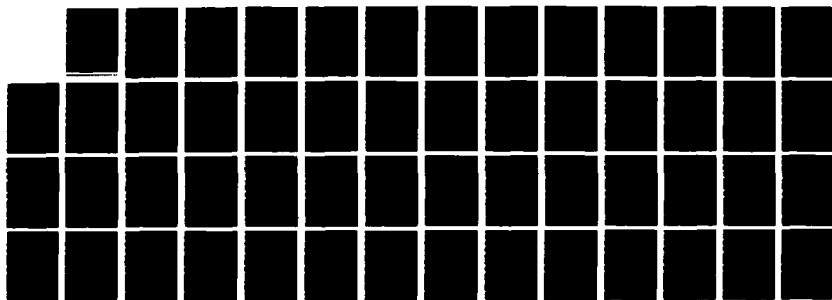
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AN INVESTIGATION OF THE ESSENTIAL QUALITIES
CHARACTERISTICS AND BACKGROUN (U) AIR FORCE INST OF
TECH WRIGHT-PATTERSON AFB OH SCHOOL OF SYST
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b. **Logistics Disciplines:** Major groups of related logistics activities, each of which involves many of the logistics functional areas. The main disciplines are:

Retail	Wholesale
Acquisition	Combat
International	

c. **Logistics Functional Areas:** The different types of actions and expertise needed to carry out the full spectrum of military logistics and its disciplines. The list is subject to judgment and varying emphasis. For the purposes of this thesis, the following areas are included:

Supply	System, Item, or Program Management
Transportation	Engineering
Maintenance	Logistics Planning
Procurement	

d. **Logistician:** An individual whose profession or specialty is performing one or more of the prime management functions (planning, organizing, coordinating, directing, and controlling) in a logistics discipline or functional area or is responsible for ensuring logistics processes are completed in support of an organization's activities.

e. **Senior Logisticians:** Civilians at GS/SS-15 and higher, including Senior Executive Service (SES), and colonels and general officers, serving as logisticians.

f. **Qualities:** Traits or properties that describe an individual and help distinguish him or her from other individuals.

g. **Qualities for success:** Traits and properties possessed by persons considered successful and frequently judged to be reasons for that success. Qualities for successful logisticians suggested by literature and this research include:

Manager	Integrity
Leader	Dedicated
Intelligent	Job knowledge
Thinker	Can "get things done"
Communicator	Creative
Multidisciplined	Flexible
Initiative	Common sense
Visionary/Forward looking	Computer literate
Planning ability	Can "get along"
Analytical techniques	Understands federal budget
Problem-solving/Systems viewpoint	

7. I appreciate your help on this research, thank you.

CONCEPTS INTERVIEW SCHEDULE

Respondent _____ Date of Interview _____

Office, Grade _____ Time of Interview _____

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PRELIMINARY QUESTIONS

a. Sir, did you receive the introductory reference sheet I sent?
(If not, read it all or reschedule the interview.)

b. Did you have a chance to read it?
(If not, suggest he read it now.)

c. Do you have any questions about the reference information?

d. Sir, I think it might be useful later on if you keep the second page handy during the interview.

TOPIC 1: ACADEMIC EDUCATION

Higher education is not presently required for many civilian job series prevalent in Air Force logistics functional areas.

a. Should a senior civilian logistician have a bachelors degree?

YES _____ NO _____ NO OPINION _____

WHY? _____

b. Are there any civilian grade levels at which possessing this degree is particularly beneficial?

YES ____ LEVEL(S) _____ NO ____

c. Should a senior civilian logistician have an advanced degree?

YES ____ NO ____ NO OPINION ____

WHY? _____

d. Are there any civilian grade levels at which possessing this degree is particularly beneficial?

YES ____ LEVEL(S) _____ NO ____

TOPIC 2: PROFESSIONAL MILITARY EDUCATION (PME)

Several senior officials believe that PME is appropriate for the background of senior civilian logisticians. Several reasons have been suggested. (1) Senior civilians should appreciate the implications and requirements of war and since they must work and communicate with senior military logisticians they should have some common education. (2) It is important for logistics organizations and their civilian leadership to understand the operational requirements they are supporting. This understanding could be enhanced by resident participation in PME at all levels, but resident PME opportunities are limited for civilians. (3) Each PME level has a distinct emphasis that could benefit our career civilians. Squadron Officer's School (SOS) teaches leadership along with problem solving and communication, Intermediate Service Schools (ISS) emphasize staff work, and Senior Service Schools (SSS) stress strategy and policy. As you may suspect, not all senior officials agree with the above statements.

a. How important is PME to the professional development of a senior civilian logistician?

COMMENTS _____

b. Which of the following points along a one to five scale best summarizes your opinion about senior civilian logisticians completing PNE?

1	2	3	4	5
DEFINITELY NOT	NICE, IF HANDY	NOT A FACTOR	SHOULD ENROLL	FIRM RIGHT

COMMENTS _____

TOPIC 3: EXPERIENCE BY POSITION

"Command" opportunities are extremely rare for civilians and "director" civilians are the exception. This scarcity applies both to experience civilians can gain and to positions they care to strive and prepare for. Office chief positions (division, branch, section, group) vary relative to number of letters in the office symbol, number of subordinates supervised, and dollar value of responsibility as one changes command levels (USAF, MAJCOM, ALC) or commands (AFLC, AFSC).

a. What leadership, management, and supervisory experience should a senior civilian logistician be expected to have?

b. What staff experiences should a senior civilian logistician be expected to have?

COMMENTS _____

c. Should the above managerial/leadership, supervisory, or staff experiences for the senior civilian logistician be in a logistics discipline or functional area?

YES _____ NO _____ NO OPINION _____

WHY? _____

d. In how many logistics disciplines should the senior civilian logistician have experience? You might want to refer to the first list, near the top, on the reference sheet.

ONE ____ TWO ____ THREE ____ FOUR ____

WHY? _____

TOPIC 4: TECHNICAL COMPETENCE

Several senior logistics officials feel senior logisticians, both civilian and military, should have some degree of technical competence in logistics.

a. What does technical competence mean to you?

b. Please define technical competence as it relates to logistics and the logistics functional areas listed near the middle of the introductory reference sheet.

c. In how many functional areas should the senior civilian logistician be technically competent?

ONE ____ TWO ____ THREE ____ FOUR ____ FIVE ____

Why? _____

TOPIC 5: QUALITIES AND CHARACTERISTICS

Research has suggested there may be identifiable qualities and characteristics which distinguish successful civilian logisticians from unsuccessful ones.

a. Do you agree with this premise?

YES _____ NO _____ NO OPINION _____

b. Please refer to the list of prospective qualities near the bottom of the reference sheet. Which qualities or characteristics do you think are relevant/important for successful senior civilian logisticians? (no limit)

Manager _____	Integrity _____
Leader _____	Dedicated _____
Intelligent _____	Job knowledge _____
Thinker _____	Can "get things done" _____
Communicator _____	Creative _____
Multidisciplined _____	Flexible _____
Initiative _____	Common sense _____
Visionary _____	Computer literate _____
Planning ability _____	Can "get along" _____
Analytical techniques _____	Understands federal budget _____
Problem-solving/Systems viewpoint _____	

c. Do you recommend any other personal qualities for a model for senior civilian logisticians?

YES _____ NO _____ NO OPINION _____

If so, what are they?

COMMENTS _____

d. Mobility is mandatory for military personnel but is more optional for civilians. Should a senior civilian's history on mobility be a factor in selection for and performance of senior logistician duties?

YES _____ NO _____ NO OPINION _____

WHY? _____

e. Should a senior civilian's mobility history be considered a personal quality or part of his/her experience?

QUALITY _____ EXPERIENCE _____ NO OPINION _____

WHY? _____

f. Should a senior civilian's present attitude toward moving be a factor in selection for and performance of senior logistician duties?

YES _____ NO _____ NO OPINION _____

WHY? _____

TOPIC 6: CAREER DEVELOPMENT AND BROADENING

The military logistics disciplines and functional areas listed in the introductory reference sheet cut across each other in matrix style. Some civilian job series align with the functional areas while others cut across functional areas and disciplines. Some job series continue up to the GS/GM-15 and Senior Executive Service (SES) ranks while others stop at lower grades.

a. Should every logistics job series offer full career development for civilians up into the SES ranks?

YES _____ NO _____ NO OPINION _____

WHY? _____

b. Should there be a "logistician" job series, perhaps with shredsouts, to facilitate development and progression of highly qualified civilian logisticians to senior ranks and greater responsibilities?

YES _____ NO _____ NO OPINION _____

WHY? _____

c. Should the Air Force select and groom only promising civilian logistician candidates for senior logistician responsibilities?

YES _____ NO _____ NO OPINION _____

WHY? _____

d. If some selection and grooming were to be done, how and when should it be done? (disciplines, functional area, operational assignments, grade levels)

COMMENTS _____

TOPIC 7: BACKGROUND DIFFERENCES

a. **Should** there be any differences in the essential background and characteristics of civilian and military senior logisticians?

YES _____ NO _____ NO OPINION _____

WHY? _____

b. If "yes," what should these differences be?

EXPLANATION _____

c. Tradition says that military personnel provide an organization with (1) a broad experience and perspective, (2) spokespersons that military members of operational commands believe because "they have been there", and (3) leadership. On the other hand, civilians are felt to provide logistics functional expertise, corporate memory, and continuity. Was this division of capabilities and responsibilities valid in the past?

YES _____ NO _____ NO OPINION _____

WHY? _____

d. Is this division of capabilities and responsibilities valid now?

YES _____ NO _____ NO OPINION _____

WHY? _____

e. Should this division of capabilities and responsibilities be continued in the future?

YES _____ NO _____ NO OPINION _____

WHY? _____

f. Should senior civilian logisticians be more technically competent, i.e.; be competent in more functional areas or have more depth of competence in one area, than their military counterparts?

YES _____ NO _____ NO OPINION _____

WHY? _____

g. Earlier research suggests Air Force logistics organizations should have "customer experience" such as retail logistics, operations, and combat, as well as expertise in logistics functional areas and disciplines such as wholesale logistics. Senior officials also suggested that the military personnel do not have time in their careers to gain all this expertise. Do civilian careers have enough time to adequately encompass the desired functional experience?

YES _____ NO _____ NO OPINION _____

WHY? _____

TOPIC 8 ADDITIONAL CATEGORIES OR ATTRIBUTES

a. Do you recommend any changes to any of the definitions or lists on the introductory reference sheet?

YES _____ NO _____ NO OPINION _____

If so, what are they?

EXPLANATION _____

b. Do you have any other comments on senior civilian logisticians or inputs for a model of their desired background?

YES _____ NO _____ NO OPINION _____

If so, what are they?

EXPLANATION _____

TOPIC 9 CONTINUING PARTICIPATION

a. Would you be interested in participating in one or more later phases of this research?

YES _____ NO _____ NO OPINION _____

b. Can you provide me any names of other experts you feel would be good contributors to this research?

YES _____ NO _____ NO OPINION _____

c. Would you like to receive an executive summary of this research?

YES _____ NO _____ NO OPINION _____

.....
.....

Thank you very much for all your time, and thank you especially for this valuable information.

Appendix E. Concepts Interview Schedule

TO: _____

**FOR FACE-TO-FACE INTERVIEW
 TELEPHONE**

With AFIT STUDENT DON NANCARROW

SCHEDULED FOR: _____.

INTRODUCTION AND REFERENCE INFORMATION

FOR

THREE INTERVIEWS ON CONCEPTS

1. I am Ben Hancarrow, a civilian in the AFMPC at WPAFB. Right now I am in Long Term Full Time (LTFT) training in the Graduate Logistics Program at AFIT/LS.

2. There continues to be much interest in developing better Air Force senior logisticians, both military and civilians. My thesis is part of the development of a general, descriptive model of the essential qualities, background, and characteristics of senior civilian logisticians. This research can help define what senior civilian logisticians should be. To picture this model, think of a sheet of paper with some number of boxes, with whatever appropriate labels, scattered around and all connected to the center.

3. This is the second set of interviews in my research. The first set of interviews and a review of relevant literature have formed a basis for the model, but have also identified several additional questions. Analysis of this set of answers will be used to develop a final questionnaire that will be used to construct the model.

4. The expert judgment of senior logisticians, like you, is necessary to form a strong foundation for the model and to determine the thrust of the final set of questions. There are no right or wrong answers for my questions. I am interested in your open and honest opinions. Your responses will be merged with others to form an overall picture. You will ~~not~~ be identified with your responses in the thesis. I do plan to list all interviews in my bibliography, except for any interviewee who desires to remain anonymous.

5. I will ask 30 questions on nine topics. About 3/4 of the questions will be quick YES-NO or choice type, but with elaboration desired. The other questions ask directly for comments. I will note your responses and I may read my notes back to be sure I accurately captured your intent. The actual interview should take about 30 minutes.

6. Several definitions are necessary to set the stage.

a. **Military Logistics:** A full, integrated system of processes which must be used to support the military operations of an organization, including combat. Although recent logistics doctrine changes suggest this includes all areas which support combat, such as hospital, food, and personnel services, logistics traditionally encompasses the disciplines and functional areas listed below.

b. Logistics Disciplines: Major groups of related logistics activities, each of which involves many of the logistics functional areas. The main disciplines are:

Retail
Acquisition
International

Wholesale
Combat

c. Logistics Functional Areas: The different types of actions and expertise needed to carry out the full spectrum of military logistics and its disciplines. The list is subject to judgment and varying emphases. For the purposes of this thesis, the following areas are included:

Supply
Transportation
Maintenance
Procurement

System, Item, or Program Management
Engineering
Logistics Planning

d. Logistician: An individual whose profession or specialty is performing one or more of the prime management functions (planning, organizing, coordinating, directing, and controlling) in a logistics discipline or functional area or who is responsible for ensuring logistics processes are completed in support of an organization's activities.

e. Senior Logisticians: Civilians at GS/GE-15 and higher, including Senior Executive Service (SES), and colonels and general officers, serving as logisticians.

f. Qualities: Traits or properties that describe an individual and help distinguish him or her from other individuals.

g. Qualities for success: Traits and properties possessed by persons considered successful and frequently judged to be reasons for that success. Qualities for successful logisticians suggested by literature and this research include:

Manager
Leader
Intelligent
Thinker
Communicator
Multidisciplined
Initiative
Visionary/Forward looking
Planning ability
Analytical techniques
Problem-solving/Systems viewpoint

Integrity
Dedicated
Job knowledge
Can "get things done"
Creative
Flexible
Common sense
Computer literate
Can "get along"
Understands federal budget

7. I appreciate your help on this research, thank you.

CONCEPTS INTERVIEW SCHEDULE

Respondent _____ Date of Interview _____

Office, Grade _____ Time of Interview _____

.....
.....

PRELIMINARY QUESTIONS

a. Sir, did you receive the introductory reference sheet I sent?
(If not, read it all or reschedule the interview.)

b. Did you have a chance to read it?
(If not, suggest he read it now.)

c. Do you have any questions about the reference information?

d. Sir, I think it might be useful later on if you keep the second page handy during the interview.

TOPIC 1: ACADEMIC EDUCATION

Higher education is not presently required for many civilian job series prevalent in Air Force logistics functional areas.

a. Should a senior civilian logistician have a bachelors degree?

YES _____ NO _____ NO OPINION _____

WHY? _____

b. Are there any civilian grade levels at which possessing the bachelors degree is particularly beneficial, or by which you would expect the civilian to have the degree?

YES ____ LEVEL(S) _____ NO ____

c. Should a senior civilian logistician have an advanced degree?

YES ____ NO ____ NO OPINION ____

WHY? _____

d. Are there any civilian grade levels at which possessing a masters degree is particularly beneficial, or by which you would expect the civilian to have this degree?

YES ____ LEVEL(S) _____ NO ____

TOPIC 2: PROFESSIONAL MILITARY EDUCATION (PME)

Several senior officials believe that PME is appropriate for the background of senior civilian logisticians. Several reasons have been suggested. (1) Senior civilians should appreciate the implications and requirements of war and since they must work and communicate with senior military logisticians they should have some common education. (2) It is important for logistics organizations and their civilian leadership to understand the operational requirements they are supporting. This understanding could be enhanced by resident participation in PME at all levels, but resident PME opportunities are limited for civilians. (3) Each PME level has a distinct emphasis that could benefit our career civilians. Squadron Officer's School (SOS) teaches leadership along with problem solving and communication, Intermediate Service Schools (ISS) emphasize staff work, and Senior Service Schools (SSS) stress strategy and policy. As you may suspect, not all senior officials agree with the above statements.

a. How important is PNE to the professional development of a senior civilian logistician?

COMMENTS _____

TOPIC 3: EXPERIENCE BY POSITION

"Command" opportunities are extremely rare for civilians and "director" civilians are the exception. Office chief positions vary widely in level and responsibilities. Therefore, there may be some scarcity in the types of experience available.

a. Despite that possibility, what leadership, management, and supervisory experience should a senior civilian logistician be expected to have?

COMMENTS _____

b. What staff experiences should a senior civilian logistician be expected to have?

COMMENTS _____

c. Should the above managerial/leadership, supervisory, or staff experiences for the senior civilian logistician be in a logistics discipline or functional area?

YES _____

NO _____

NO OPINION _____

WHY? _____

d. For this question, you might want to refer to the first list, near the top of the reference sheet. In how many logistics disciplines should the senior civilian logistician have experience? (reasonable expectation rather than ideal)

ONE _____

TWO _____

THREE _____

FOUR _____

WHY? _____

TOPIC 4: TECHNICAL COMPETENCE

Several senior logistics officials feel senior logisticians, both civilian and military, should have some degree of technical competence in logistics.

a. What does technical competence mean to you?

COMMENTS _____

b. Considering the second list on the reference sheet, in how many functional areas should the senior civilian logistician be technically competent?

ONE___ TWO___ THREE___ FOUR___ FIVE___

WHY? _____

TOPIC 5: QUALITIES AND CHARACTERISTICS

Research has suggested there may be identifiable qualities and characteristics which distinguish successful civilian logisticians from unsuccessful ones.

a. Do you agree with this premise?

YES___ NO___ NO OPINION___

b. Please refer to the list of prospective qualities near the bottom of the reference sheet. Which qualities do you think are relevant/important for successful senior civilian logisticians? Pick as many as you think right.

Manager___	Integrity___
Leader___	Dedicated___
Intelligent___	Job knowledge___
Thinker___	Can "get things done"___
Communicator___	Creative___
Multidisciplined___	Flexible___
Initiative___	Common sense___
Visionary___	Computer literate___
Planning ability___	Can "get along"___
Analytical techniques___	Understands federal budget
Problem-solving/Systems viewpoint___	___

c. Do you recommend any other personal qualities senior civilian logisticians should have?

YES___ NO___ NO OPINION___

IF SO, WHAT ARE THEY? _____

d. Mobility is mandatory for military personnel but is more optional for civilians. Should a senior civilian's history on mobility be a factor in selection for and performance of senior logistician duties?

YES _____ NO _____ NO OPINION _____

WHY? _____

e. Should a senior civilian's mobility history be considered a personal quality or part of his/her experience?

QUALITY _____ EXPERIENCE _____ NO OPINION _____

WHY? _____

f. Should a senior civilian's present attitude toward moving be a factor in selection for and performance of senior logistician duties?

YES _____ NO _____ NO OPINION _____

WHY? _____

TOPIC 6: CAREER DEVELOPMENT AND BROADENING

The military logistics disciplines and functional areas listed in the introductory reference sheet cut across each other in matrix style. Some civilian job series align with the functional areas while others cut across functional areas and disciplines. Some job series continue up to the GS/GM-15 and Senior Executive Service (SES) ranks while others stop at lower grades.

a. Should every, or most, logistics job series offer full career development for civilians up into the SES ranks?

YES _____ NO _____ NO OPINION _____

WHY? _____

b. Should there be a "logistician" job series, perhaps with shredsouts, to facilitate development and progression of highly qualified civilian logisticians to senior ranks and greater responsibilities?

YES _____ NO _____ NO OPINION _____

WHY? _____

c. Should the Air Force select and groom promising civilian logistician candidates for senior logistician responsibilities?

YES _____ NO _____ NO OPINION _____

WHY? _____

d. If some selection and grooming were to be done, how and when should it be done, with respect to grade levels and broadening assignments?

COMMENTS _____

TOPIC 7: BACKGROUND DIFFERENCES

a. Should there be any differences in the essential background and characteristics of civilian and military senior logisticians?

YES _____ NO _____ NO OPINION _____

WHY? _____

b. If "yes," what should these differences be?

EXPLANATION _____

c. Traditional views of the civilian/military relationship suggest that military personnel provide an organization with (1) broad experience and perspective, (2) spokespersons that military members of operational commands believe because "they have been there," and (3) leadership. On the other hand, civilians are felt to provide logistics functional expertise, corporate memory, and continuity. Was this division of capabilities and responsibilities valid in the past?

YES _____ NO _____ NO OPINION _____

WHY? _____

d. Is this division of capabilities and responsibilities valid now?

YES _____ NO _____ NO OPINION _____

WHY? _____

e. Should this division of capabilities and responsibilities be continued in the future?

YES _____ NO _____ NO OPINION _____

WHY? _____

f. Should senior civilian logisticians be more technically competent than their military counterparts in terms of either competence in more functional areas or more depth of competence in one area?

MORE _____ DEEPER _____ NEITHER _____ NO OPINION _____

WHY? _____

g. Earlier research suggests Air Force logistics organizations should have leaders with "customer experience" such as retail logistics, operations, and combat, as well as expertise in logistics functional areas and disciplines such as wholesale logistics. Do civilians have enough time in their careers to adequately gain all the desired experience?

YES _____ NO _____ NO OPINION _____

WHY? _____

TOPIC 8 ADDITIONAL CATEGORIES OR ATTRIBUTES

a. Do you recommend any changes to any of the definitions or lists on the introductory reference sheet?

YES _____ NO _____ NO OPINION _____

COMMENTS _____

b. Do you have any other comments on senior civilian logisticians or inputs for a model of their desired background?

YES _____ NO _____ NO OPINION _____

COMMENTS _____

TOPIC 9 CONTINUING PARTICIPATION

a. Would you be interested in participating in one or more later phases of this research?

YES _____ NO _____ NO OPINION _____

b. Can you provide me any names of other experts you feel would be good contributors to this research?

YES _____ NO _____ NO OPINION _____

c. Would you like to receive an executive summary of this research?

YES _____ NO _____ NO OPINION _____

Thank you very much for all your time, and thank you especially for this valuable information.

Appendix F. Record of Choices in Basic Concepts Interviews

QUESTIONS	CHOICES	INTERVIEWEE RESPONSES														TOTAL	TOTAL
		C1	C2	C3	C4	C5	C6	TOT	M1	M2	M3	M4	M5	M6	TOT		
SHOULD HAVE BACHELORS DEG	YES	Y	Y	Y	Y	Y	Y	6	Y	Y	Y	Y	Y	Y	6	12	0
	NO							0								0	0
SHOULD HAVE ADVANCED DEG	YES		Y	Y	Y	Y	Y	5	Y		Y		Y	Y	4	9	0
	NO	N						1		N		N			2	3	0
HOW IMPORTANT IS PME (PROP. MIL. EDUC.)	VERY			V	V	V		3		V					1	4	0
	MODERAT/Y		M				M	2			M		M		2	4	0
	SLIGHTLY	S						1	S			S		S	3	4	0
MGR EXPERIENCE BE IN LOGIST.	YES	Y	Y	Y	Y	Y		5	Y		Y	Y	Y	Y	5	10	0
	NO						N	1		N				N	2	3	0
ARE QUALITIES FOR SUCCESS	YES	Y	Y	Y	Y	Y	Y	6	Y	Y	Y	Y	Y	Y	6	12	0
	NO							0							0	0	0
MOBILITY HISTO- RY IS FACTOR	YES	Y	Y		Y	Y	Y	5	Y	Y	Y	Y	Y		5	10	0
	NO			N				1						N	1	2	0
MOBILITY HISTO- RY IS A --->	QUALITY				Q			1	Q	Q		Q			3	4	0
	EXPER'NCE	E	E	E	E	E	E	6	E	E	E	E	E		5	11	0
MOVING ATTITUDE NOW, A FACTOR	YES	Y	Y	Y	Y	Y	Y	6	Y	Y	Y	Y	Y	Y	6	12	0
	NO							0							0	0	0
ALL JOB SERIES GO TO SES	YES				Y			1							0	1	0
	NO	N	N	N		N	N	5	N	N	N	N	N	N	6	11	0
'LOGISTICIAN' JOB SERIES	YES	Y	Y		Y	Y	Y	5	Y						1	6	0
	NO			N				1		N	N	N	N	N	5	6	0
SELECT & GROOM PROMIS'G ONES	YES		Y	Y	Y	Y	Y	5			Y	Y	Y	Y	4	9	0
	NO	N						1	N	N					2	3	0
BACKGROUND DIFFERENCES	YES		Y	Y		Y	Y	4	Y	Y		Y			3	7	0
	NO	N			N			2			N		N	N	3	5	0
TRADITIONAL VI- EW WAS VALID	YES	Y	Y	Y	Y	Y	Y	6	Y	Y	Y		Y	Y	5	11	0
	NO							0				N			1	1	0
TRADITIONAL VI- EW VALID NOW	YES	Y	Y	Y	Y	Y	Y	6	Y	Y	Y		Y		4	10	0
	NO							0				N		N	2	2	0
TRADITIONAL VI- EW STAY VALID	YES	Y	Y	Y		Y		4	Y	Y				Y	3	7	0
	NO				N		N	2			N	N	N		3	5	0
CIVILIANS HAVE MORE TECHNICAL COMPETENCE THAN MILITARY	MOR AREAS	M	M		M	M	M	5				M		M	2	7	0
	DEEPER	D		D				2		D	D	D		D	4	6	0
	NEITHER							0	NE						1	1	0
	NO OPIN'N							0					N		1	1	0
CIVILIANS HAVE TIME FOR EXP.	YES	Y			Y			2				Y	Y		2	4	0
	NO		N	N		N	N	4	N		N			N	3	7	0

Responses for civilians (C1-6) and military (M1-6) are randomly different than the interview sequence.

**Appendix G. Record of Quantitative Responses
in Basic Concepts Interview**

QUESTIONS	INTERVIEWEE RESPONSES															
	C1	C2	C3	C4	C5	C6	MEAN	M1	M2	M3	M4	M5	M6	MEAN	MEAN	MEAN
GRADE BY WHICH SHOULD HAVE BACHELORS DEGREE	13	13	12	A	12	9	11.8	12	13	7	11	12	13	11.3	11.5	
GRADE BY WHICH SHOULD HAVE ADVANCED DEGREE	14	13	15	14	15	12	13.8	15	A	13	15	13	15	14.2	14.8	
SHOULD HAVE EXPERIENCE IN (#) DISCIPLINES	2	3	1	2	2	3	2.2	2	2	2	2	2	3	2.2	2.2	
TECHNICALLY COMPETENT IN _ FUNCT'NAL AREAS	3	3	2	3	3		2.8	2	1	2	2	1	4	2.0	2.4	
GRADE AT WHICH SELECT AND START GROOMING	11	12	11	9	12	11	11.0	12		12	9	13	11.5	11.2		

Responses for civilians (C1-6) and military (M1-6)
are randomly different than the interview sequence.

* Interviewee said minimum of 2 with 3 preferred, or said 2 or 3.

** No answer given

Note: A- = Any Grade
NY

Appendix H. Report of Selection of Qualities from a List

QUALITIES	1	2	3	4	5	6	7	8	9	10
ALL - THE WHOLE LIST	1X							1X		
IMAGINE	°	1X	1X		41	1X	1	1X		41
LEADER	°	4	1X		1	41		1	1X	2
INTELLIGENT	°		1X			21	1X	1		21
TUNED	°		1X			21		1		11
COMMUNICATIVE	°	2	1X	4	1X		51	1X	1	
MULTIDISCIPLINED	°				1X	6	31	1X	1	1X
INITIATIVE	°		1X				21	1X	2	1
VISIONARY/FIND LAURELS	°	3	1		1X		41		1	1X
PLANNING ABILITY	°		1X				21		1	1X
ANALYTICAL THOUGHT	°						11		1	
FEEL-SELF-OUT VISIT	°		1X				21	1X	1	1X
MODESTY	°	1	1		1	4	51	1X	1	2
RECOGNIZED	°				3	21	1X	1X	1X	2
JOB ENTHUSIASM	°		2				21	1X		2
ONE "GET THINGS DONE"	°		2	2			31	1X		2
CREATIVE	°		1X				21		1	
FLUENT	°		1				21		2	
OWNED SHARE	°		2			2	31	1X	1X	2
COMPUTER LITERATE	°		1			1X	11		1X	2
ONE "GET ALONG"	°		1X	3		1X	21	1X		2
LESS PERSONAL INFLUENCE	°			2		2	31		2	

Responses for civilians (CI-6) and military (MI-6) are randomly different than the interview sequence.

Numbers in columns C1-C6 and E1-E6 are the priorities stated by the interviewee.

*Xs in columns C1-C5 and M1-M5 are unprioritized selections by the interviewee.

BIB in columns C1-C6 and E1-E6 are indications by the interviewees that the information was not known at the time.

Quantities in the "TOT" and "TOTAL" columns are the number of indicators of any kind in that row except each "10" entry reduces the quantity by one.

Appendix I. Record of Additional Qualities for a Model

QUALITIES	C1	C2	C3	C4	C5	C6	M1	M2	M3	M4	M5	M6	TOT	TOTAL
FOUR	IX						1						0	1
PERSUASION				IX			1			IX			1	2
THIS PLANNED-OUT. VIEW				IX			1						0	1
HEAVY			IX				1						0	1
SMALL CROWDING			IX				1						0	1
MOBILITY							0	IX					1	1
HAS A SENSE OF HUMOR							0		IX				1	1
DO COMPLETE STAFF WORK							0				IX		1	1
HEAVY SCHEDULE							0				IX		1	1
ARE ADAPTIVE							0			IX			1	1

Responses for civilians (C1-6) and military (M1-6) are randomly different than the interview sequence.

"No" in columns C1-C6 and M1-M6 are unprioritized selections by the interviewees.

Quantities in the "TOT" and "TOTAL" columns are the number of indicators in that row.

Appendix J. Draft Delphi Questionnaire

INSTRUCTIONS AND BACKGROUND

1. Survey Objectives:

a. To obtain expert opinions on what the qualities and background of the professional senior Air Force civilian logistician should be.

b. To determine what steps the Air Force could take to achieve the desired civilian logistician.

2. Terms Defined:

a. **Military Logistics:** A full, integrated system of processes which must be used to support the military operations of an organization, including combat. Although recent logistics doctrine changes suggest this includes all areas which support combat, such as hospital, food, and personnel services, logistics traditionally encompasses the disciplines and functional areas listed below.

b. **Logistics Disciplines:** Major groups of related logistics activities, each of which involves many of the logistics functional areas. The main disciplines are:

Retail

Wholesale

Acquisition

Combat

International

c. **Logistics Functional Areas:** The different types of actions and expertise needed to carry out the full spectrum of military logistics and its disciplines. The list is subject to judgment and varying emphases. For the purposes of this thesis, the following areas are included:

Supply	Transportation
Maintenance	Engineering
Logistics Planning	Procurement
System, Item, or Program Management	
Resourcing (Programming, Budgeting, Allocating)	

d. **Logistician:** An individual whose profession or specialty is performing one or more of the prime management functions (planning, organizing, coordinating, directing, and controlling) in a logistics discipline or functional area or who is responsible for ensuring logistics processes are completed in support of an organization's activities.

e. **Senior Logisticians:** Civilians at GM/GS-15 and higher, including Senior Executive Service (SES), and colonels and general officers, serving as logisticians.

f. **Qualities:** Traits or properties that describe an individual and help distinguish him or her from other individuals.

3. General Comments:

a. The subject areas covered in this questionnaire are not meant to be complete or exhaustive. This partial coverage is designed to stimulate your thoughts in a brainstorming manner.

b. Your participation and honest opinions are key to the success of this research project. There are no right or wrong answers. Please keep in mind that incomplete or brainstorming comments or ideas should not be discarded. In later 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 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 an executive summary of this research after it is completed.

d. The questionnaire has 43 questions in eight topics. Many call for an answer along a scale. Others ask for ranking by relative importance. Some request a term be supplied.

e. The number in the upper right-hand corner of the questionnaire is for survey control purposes only. Please be assured that complete anonymity will be enforced.

4. Specific Instructions:

- a. Please circle the number which most accurately reflects your judgment on that question or statement.
- b. Please complete rank order questions with numbers, using "1" for the most important item.
- c. Please include your reasons for your answers, especially in the areas about which you feel strongly.
- d. Please add any illustrations, examples, or experiences you may have had that will help other respondents understand the topic and your response. For multipart questions, please identify the part(s) to which you are referring.
- e. Please provide any ideas or recommendations you have for improving the military logistics system or civilian logistician development.
- f. Please feel free to continue your comments or recommendations on the back of the survey sheets.
- g. The last page of the survey is for any other comments or recommendations you feel are pertinent to this investigation.

THANK YOU FOR PARTICIPATING IN THIS SURVEY

TOPIC 1: ACADEMIC EDUCATION

a. Prior research has indicated civilian logisticians aspiring to senior positions should have a bachelors degree, even though there is not a firm requirement for one. If you agree, please identify the specific field of study for this degree. (please check one on its line)

- ☐ Business Administration
- ☐ Engineering
- ☐ Liberal Arts
- ☐ Logistics Management
- ☐ Sciences
- ☐ Management
- ☐ Other (please specify) _____
- ☐ Degree important but area of study is not
- ☐ I disagree with statement

b. Civilian logisticians should possess education beyond a bachelors degree.

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

c. If you agree, please identify in which area of study should a civilian logistician pursue advanced academic work. (please check one on its line)

- _____ Business Administration
- _____ Engineering
- _____ Liberal Arts
- _____ Logistics Management
- _____ Sciences
- _____ Management
- _____ Other (please specify) _____
- _____ Degree important but area of study is not
- _____ I disagree with statement

d. If earning a MS degree, civilian logisticians should be encouraged to do so at the Air Force Institute of Technology.

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

TOPIC 1 COMMENTS _____

TOPIC 2: PROFESSIONAL MILITARY EDUCATION (PME)

a. Senior civilian logisticians should have completed some PME, for the benefits traditionally stated for the military and for commonality of background with the military.

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

b. How important is PME to the professional development of a senior civilian logistician?

1	2	3	4	5
definitely not, uses good slots	only for input to military	makes no difference	moderately, should if get chance	extremely, should be mandatory

c. Please rank the following schools for benefit to senior civilian logisticians. (Use "0" for "none" as often as you think appropriate.)

_____	Squadron Officers School (SOS)
_____	Air Command and Staff College (ACSC)
_____	Defense Systems Management College (DSMC)
_____	Industrial College of the Armed Forces (ICAF)
_____	Air War College (AWC) (or Navy or Army)
_____	Other (please specify) _____

d. Civilian residency should be expanded to increase the benefits to civilians.

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

TOPIC 2 COMMENTS _____

TOPIC 3: EXPERIENCE

a. Senior civilian logisticians should have had management and supervisory experience at several levels, including responsibility for a large number (at least 100) of people with different skills and a large value of resources.

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

b. Senior civilian logisticians should have had at least one staff job

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

c. Please indicate the minimum level for at least one management or staff job in the experience of a senior civilian logistician. (PD indicates AFSC Product Division.)

1	2	3	4	5
ALC or PD branch	ALC or PD division	ALC or PD direct-orate	AFLC or AFSC headquarters Three ltr	pentagon USAF or SECAF

d. At what minimum grade level should the senior civilian logistician have had the chief, supervisory, and staff experience?

1	2	3	4	5
GS-11	GS-12	GS/GM-13	GM-14	GM-15

e. Please indicate the portion of mangement and staff experiences of a senior civilian logistician that should have been in logistics jobs.

1	2	3	4	5
none	a few	half	most	all

f. Prior research has indicated civilian logisticians aspiring to senior positions should have experience in more than one logistics discipline, as listed in background information. Please indicate the number of logistics disciplines that should be included in the senior civilian logistician's experience.

1 2 3 4 5

g. Please rank the following logistics disciplines in the order of their importance in the experiences of a senior civilian logistician.

☐ Retail	☐ Wholesale
☐ Acquisition	☐ Combat
☐ International	

h. Command, operational, military staff, or support experience gained outside a civilian career, such as during prior military service, should be an important experience factor for senior civilian logisticians.

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

TOPIC 3 COMMENTS _____

TOPIC 4: TECHNICAL COMPETENCE

a. Please rate the following terms in order of the amount of knowledge each term connotes to you.

☐ working knowledge	☐ expertise
☐ some knowledge	☐ technical competence
☐ expert	

b. Prior research has indicated civilian logisticians aspiring to senior positions should have experience in more than one logistics functional area, as listed in background information. Please indicate the number of logistics functional areas that should be included in the senior civilian logistician's experience.

1 2 3 4 5

c. Please rank the following logistics functional areas in the order of their importance in the experiences of a senior civilian logistician.

☐ Maintenance	☐ Transportation
☐ Supply	☐ Engineering
☐ Logistics Planning	☐ Procurement
☐ System, Item, or Program Management	☐ Resourcing

d. Senior civilian logisticians should be technically competent in more functional areas than their military counterparts.

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

e. Senior civilian logisticians should have more depth of technical competence in at least one functional area than their military counterparts.

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

f. How much is technical competence needed in senior level positions?

1	2	3	4	5
not at all, it leads to micromanagement	it isn't	makes no difference	some, not for SES	very much, for SES and GM-15

g. Civilian logisticians should demonstrate competence in military logistics through testing or certification.

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

h. If you agree, please indicate the best type and frequency of such demonstration.

- ☐ Annual tests with pay bonus tied to passing
- ☐ Annual tests
- ☐ Five-year tests, key positions require passing
- ☐ Five-year tests
- ☐ Ten-year tests
- ☐ One-time test, required for some grade level
- ☐ One-time test
- ☐ Public Certification, such as Certified Professional Logistician (CPL) offered by the Society of Logistics Engineers (SOLE)

TOPIC 4 COMMENTS _____

TOPIC 5: CAREER DEVELOPMENT

a. The present Air Force system of some job series, based on being more general or on being considered sufficiently important or highly specialized, continuing up into SES grades while other job series "top out" at lower grades, is an adequate system relative to progression of the more promising employees to senior positions.

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

b. The 346 Job series, logistics management specialist, is a good surrogate for a 'logistician' job series in terms of entry and progression.

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

c. The Air Force should have a plan(s) to identify promising employees at lower or middle levels and groom them for higher level responsibilities.

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

d. Any Air Force selection and grooming plan should feature repeated selection opportunities, iterative review, and participation based on continued good performance.

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

e. Any GM-13 or 14 should have the potential to be a successful SES, if given, or gets, the proper career broadening and education.

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

f. A good career broadening plan should include a short assignment with an operation command to gain user or retail logistics experience.

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

TOPIC 5 COMMENTS _____

TOPIC 6: MOBILITY

a. The mobility attitude and the mobility history of a logistician will probably be a factor in his or her performance in senior level positions and, therefore, should be a factor for selection to those levels.

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

b. Mobility history, at least functional mobility if not geographic mobility, is a reflection of the person's breadth of experience.

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

c. Career broadening programs should include both geographic and functional mobility.

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

d. All SSGs should be ready to go wherever necessary to put the best person in the right job, regardless of volunteering to move.

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

e. Moving should be a "two party" decision based on the needs of the Air Force and the development of the senior individual as seen by both the Air Force and the individual.

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

TOPIC 6 COMMENTS _____

TOPIC 7: QUALITIES AND CHARACTERISTICS

a. Prior research has suggested there are identifiable qualities and characteristics which distinguish successful civilian legislators, actually those in any profession, from unsuccessful ones. Please indicate in rank order all the qualities in the following list which you think are important for senior civilian legislators. This list is not intended to be exhaustive. You may draw a line through any quality to indicate recommended removal from the list.

☐ Manager	☐ Integrity
☐ Leader	☐ Dedicated
☐ Intelligent/Wise	☐ Thinker
☐ Can "get things done"	☐ Communicator
☐ Multifunctioned	☐ Creative
☐ Flexible	☐ Initiative
☐ Visionary/Forward looking	☐ Common sense
☐ Perseverance	☐ Mobility
☐ Other (please specify) _____	

b. Research has also suggested other characteristics which had been listed with the above qualities are more appropriately considered learned skills. Please indicate in rank order the five most important skill characteristics for senior civilian legislators in the following list. This list is not intended to be exhaustive. You may draw a line through any skill to indicate recommended removal from the list.

- | | | | |
|--------------------------|--------------------------------------|--------------------------|-------------------|
| ☐ | Job knowledge | ☐ | Computer literate |
| ☐ | Planning ability | ☐ | Can "get along" |
| ☐ | Analytical techniques | | |
| ☐ | Understands federal budget processes | | |
| ☐ | Problem-solving/Systems viewpoint | | |
| ☐ | Other (please specify) | _____ | |
| ☐ | Other (please specify) | _____ | |
| ☐ | Other (please specify) | _____ | |

c. Please indicate the degree to which mobility is a personal quality as included in the list of qualities in question 7.a, or is some reflection of experience.

1	2	3	4	5
quality only	mostly a quality	both, evenly	mostly experience	experience only

TOPIC 7 COMMENTS _____

TOPIC 8: PROFESSIONAL INVOLVEMENT

a. Civilian 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 mark all that apply)

- ☐ Member
- ☐ Officer, local
- ☐ Officer, national
- ☐ Active participant in speaker's bureau
- ☐ Other (please specify) _____

c. Civilian 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 mark all that are applicable)

☐ Attendee
☐ Presenter
☐ Panel or Discussion Leader
☐ Moderator
☐ Other (please specify) _____

e. Professional involvement is more important for the professional development and broadening of civilian logisticians than for their military counterparts.

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

f. Professional involvement is unimportant for civilians and military logisticians and their work time and energies should not be diluted by these activities.

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

TOPIC 8 COMMENTS _____

Appendix K: List of Interviews

1. Bleau, Richard O., GM-15, ESD/PLL, Hanscom AFB MA. Telephone interview. 30 April 1987.
2. Briesch, Earl W., SES DV-5, AFLC/MM, Wright-Patterson AFB OH. Personal interview. 17 August 1987.
3. Burton, J. Greg, GM-15, AFSC/PLX, Andrews AFB MD. Telephone interview. 19 August 1987.
4. Curtis, Lewis G., Maj Gen, SAALC/CC, Kelly AFB TX. Telephone interview. 18 August 1987.
5. DeVecchio, Joseph E., SES, USAF/LEX, Pentagon, Washington DC. Telephone interview. 14 August 1987.
6. Gillis, Richard F., Maj Gen, AFALC/CC, Wright-Patterson AFB OH. Personal interview. 20 April 1987.
7. Goldfarb, Oscar A., SES DV-55, SAF/ALG, Pentagon, Washington DC. Telephone interview. 14 August 1987.
8. Harruff, Thomas R., GM-15, AFALC/OAP, Wright-Patterson AFB OH. Personal interview. 7 April 1987.
9. Honeywill, Thomas, Brig Gen, SAF/AGX, Pentagon, Washington DC. Telephone interview. 29 April 87.
10. Hopp, James W., Brig Gen, AFLC/SC/LHSG, McClellan AFB Ca. Personal interview. 25 August 1987.
11. Hovell, C. Ronald, SES DV-5, AFLC/XR, Wright-Patterson AFB OH. Personal interview. 28 April 1987.
12. LaPlante, Thomas A., Maj Gen, USAF/LEX, Pentagon, Washington DC. Telephone interview. 4 May 1987.
13. Lewis, Clinton, SES DV-6, WRALC/MA, Robins AFB Ga. Telephone interview. 19 August 1987.
14. Lindsey, Clarence H., Jr, Brig Gen, USAF/LET, Pentagon, Washington DC. Telephone interview. 28 April 1987.
15. McCausland, Charles., Lt Gen, AFLC/CV, Wright-Patterson AFB OH. Personal interview. 17 August 1987.
16. Metzler, Philip L., Jr, Brig Gen, USAF/LEY, Pentagon, Washington DC. Telephone interview. 19 August 1987.

17. Moemann, Lloyd, K., II, SES DV-4, SAF/ALG, Pentagon, Washington DC. Telephone interview. 27 April 1987.
18. Olsen, Alan K., SES DV-5, USAF/LEYM, Pentagon, Washington DC. Telephone interview. 21 April 1987.
19. Ray, William R., GM-15, AFSC/PLL, Andrews AFB MD. Telephone interview. 4 May 1987.
20. Reynolds, Jon F., Col, SD/AL, Los Angeles AFS CA. Telephone interview. 20 August 1987.
21. Skipton, Charles P., Maj Gen, USAF/LE, Pentagon, Washington DC. Telephone interview. 21 August 1987.
22. Smith, Monroe T., Maj Gen, AFLC/PL, Andrews AFB Md. Telephone interview. 27 April 1987.
23. Smith, Richard D, Maj Gen, AFLC/MM, Wright-Patterson AFB Oh. Personal interview. 22 April 1987.
24. Wallin, James C., SES DV-6, SMALC/MM, McClellan AFB CA. McClellan AFB CA. 24 August 1987.

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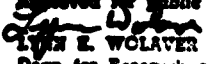
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VITA

Donald W. Nancarrow was born on 28 February 1940 in Hancock MI. He was graduated from Houghton High School in Houghton MI in 1958. He received a Bachelor of Science degree in Electrical Engineering from Michigan Technological University in June 1964 and was commissioned a second lieutenant in the Air Force through AFROTC. He started active duty at Wright-Patterson AFB OH in September 1964 as a project engineer in Aeronautical Systems Division's (ASD) Deputy for Engineering. In April 1969 he transferred to NASA's Manned Spacecraft Center near Houston TX. Two years later he was assigned to Eglin AFB FL as a test engineer. In May 1974 he was transferred to Satellite Control Headquarters, part of SAMSO, at Los Angeles AFS, El Segundo CA as a project manager. He was separated from active duty in May 1976. From July 1976 to January 1977 he was in installation engineer with the FAA Western Region, Los Angeles CA. In January 1977 he returned to Wright-Patterson as a general engineer for the US Army, co-located from the Missile Command at Huntsville AL. In November 1977 he joined AFLC's Acquisition Logistics Division. In January 1978 he was co-located with the ASD's Deputy for Strategic Systems as a support equipment acquisition manager in the Directorate of Integrated Logistics. In June 1986 he entered the Air Force Institute of Technology's School of Systems and Logistics as a graduate student. He is married to the former Carol Orr of Pasadena TX and they have three children; Michael (13), Brian (10), and Laura (3).

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Block 19. Abstract

Department of Defense (DOD) management has come under increasing scrutiny lately as defense spending is a political issue. Military logistics has received attention because personnel, operations, and support consume over half of the DOD budget. The Assistant Secretary of Defense for Acquisition and Logistics, Dr. Wade, recently stated DOD's logistics management needed improvement and needed senior personnel who can function effectively over many high-level logistics assignments. Air Force officials have made similar statements.

This research is an effort toward defining a normative model of the essential qualities, characteristics, and background of the ideal Air Force senior civilian logistician. Research efforts at the Air Force Institute of Technology (AFIT) developed an AFIT Model of the senior military logistician. Because this research had the same objective as the military model research, similar procedures were adopted. These included a review of literature, interviews with senior logistics officials about successful logisticians, a Delphi survey, model definition, and weighting the model components. An additional interview set evaluated the applicability of the military model to civilians. This study completed both sets of interviews and started the Delphi survey step. Interview results and a draft Delphi Questionnaire were produced.

The results indicated a descriptive model of the ideal military logistician should be applicable to senior civilian logisticians when the model components are general. The AFIT Model can be applied to its categories level. There were indications that some categories would not apply equally to civilians and that a civilian model would be weighted differently. The research also indicated senior civilians should have bachelors and masters degrees, broad managerial experience, and multifunctional technical competence.

When completed, the model should be useful as a civilian logistician career development guide by individuals, supervisors, and career development program managers. The model can also be used to evaluate present and perspective senior logisticians.

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