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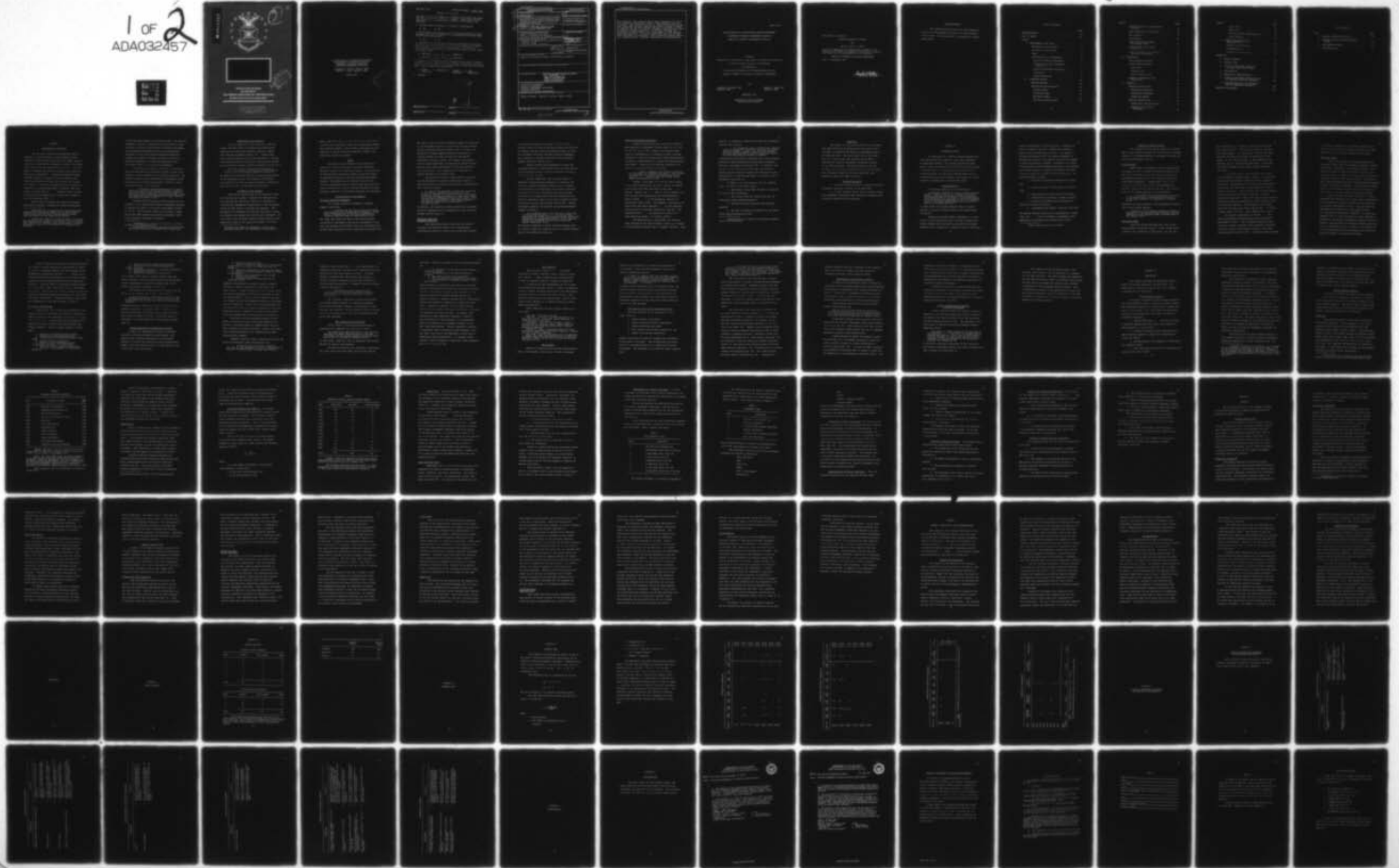
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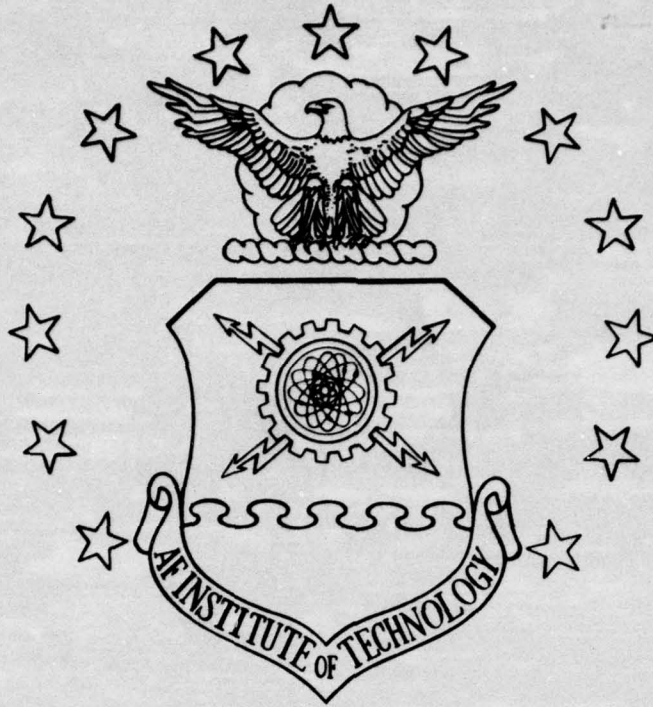
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AN APPLICATION OF INSTRUCTIONAL SYSTEM
DEVELOPMENT TO DETERMINE FINANCIAL
MANAGEMENT EDUCATION NEEDS FOR
LOGISTICS MANAGEMENT POSITIONS

Jonathan N. Brooks, Captain, USAF
Donald J. Queen, Captain, USAF

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4 The purpose of this research effort was to determine the financial management educational needs of USAF graduate logistics positions. Goal analysis was used to identify financial management techniques and task analysis was used to develop a method to identify the use of financial management techniques by people in graduate logistics positions. A survey instrument was developed and administered to a random sample of USAF graduate logistics positions. The survey identified financial management techniques in five areas: cost accounting, capital budgeting, working capital, financial forecasting, and programming.

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AN APPLICATION OF INSTRUCTIONAL SYSTEM DEVELOPMENT
TO DETERMINE FINANCIAL MANAGEMENT EDUCATION
NEEDS FOR LOGISTICS MANAGEMENT POSITIONS

A 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

By

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September 1976

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This thesis, written by

Captain Jonathan N. Brooks

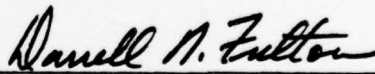
and

Captain Donald J. Queen

has been accepted by the undersigned on behalf of the
faculty of the School of Systems and Logistics in partial
fulfillment of the requirements for the degree of

MASTER OF SCIENCE IN LOGISTICS MANAGEMENT

Date: 7 September 1976



COMMITTEE CHAIRMAN

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CHAPTER I

ENVIRONMENT OF THE STUDY

The Air Force Institute of Technology (AFIT), a component of Air University, provides education and training¹ to meet United States Air Force (USAF) needs in scientific, technological, managerial, medical, and other areas directed by USAF Headquarters (55:2-3).² The AFIT School of Systems and Logistics conducts two programs to meet these requirements: a Graduate Management Program (courses leading to a Master of Science degree) and a Continuing Education Program (short courses not leading to a degree). The degree programs provide an educational background to selected Department of Defense (DOD) personnel to enable them to ". . . understand their cultural and technical environment and to analyze and attempt to solve its problems [59:4]."

AFIT's School of Systems and Logistics provides educational programs in systems and logistics management

¹Education and training will be used synonymously. References to vocational, apprentice, or other forms of training which are not part of an accredited, degree granting program will be specifically defined.

²Scientific citation is used throughout this paper. The bibliographical number of the source, a colon, and the page number(s) are enclosed within parentheses or brackets. Citations for more than one reference are separated by a semicolon.

to meet the requirements of the USAF and DOD. The Graduate Management Program is designed to develop executive capabilities of military logisticians for eventual assignment to key positions throughout the military departments. Graduates of this twelve month accredited educational program are awarded the degree of Master of Science in Logistics Management, in Logistics Management with a Procurement major, or in Facilities Management.

The graduate management curriculum is designed to meet DOD requirements by providing courses of study which establish a solid foundation for logistics decisions. The courses provide a unique integration of management theory and analytical techniques specifically related to logistics applications. The curriculum

. . . achieves a balanced presentation of quantitative and qualitative oriented course[s], created to meet the specific needs of military logisticians by providing a broad knowledge of military systems, logistics economics, and the management of human, material, and fiscal resources [3:13].

Although the curriculum has been accepted for its relevance to the complex DOD logistics management problems, it remains the subject of continuing development efforts (5; 6; 60). This research effort is an attempt to apply the current USAF Instructional System Development (ISD)³ to the logistics management curriculum.

³AF Manual 50-2, *Instructional System Development* (61:Atch.1,p.3) defines ISD as:

"A deliberate and orderly process for planning and developing instructional programs which ensure that

Background of the Problem

Since introduction of the first major USAF ISD system, the application of advanced curriculum design techniques has structured technical training courses using systems management methods (22). Current USAF policy requires application of ISD techniques to existing instructional systems; the goals of instructional systems must be directly related to USAF requirements (61:Ch.1,p.1).

The first step in planning and developing an *instructional* system is the analysis of requirements of the *operational* system involved [61:Ch.2,p.1].

The USAF policy statement explicitly requires application of ISD techniques to the "full spectrum of education and training," but does not provide specific guidance for application of ISD to knowledges and attitudes.

Statement of the Problem

USAF policy requires that ISD be applied to existing instructional systems. Although ISD techniques may have been applied implicitly, there is no evidence of a documented, comprehensive application of the ISD process within the AFIT School of Systems and Logistics. The procedures and techniques for applying ISD within a graduate education environment have not yet been validated. The first step of the ISD Model requires identification of the educational needs of the operational system. Air Force

personnel are taught the knowledges, skills, and attitudes essential for successful job performance."

Manual (AFM) 50-2 (61), *Instructional System Development*, indicates that educational needs can be determined through goal analysis; however, goal analysis techniques were not addressed in AFM 50-2 and the educational needs of the operational system are unknown.

Scope

The scope of this research will be limited to application of the first step of the USAF ISD Model-- determine needs of the operational system. The study will be concerned with educational needs for the AFIT School of Systems and Logistics, Graduate Logistics Management Program. The problem will be further limited to the financial management needs of USAF officer positions which require graduates of the AFIT Graduate Management Program, hereafter referred to as Graduate Logistics (GL) positions.

Justification of the Research

Efficient Resource Management

In a recent analysis of managerial research, Campbell found that:

. . . training cost has risen to the point where, along with the cost of salaries and materials, it has come to represent one of the major investments of financial resources made by organizations [9:40].

The study also found that most of the training effort was applied to management training and development in the hope that managers would improve their job performance and become better prepared for more responsible positions (9:45).

The USAF's need for effective managers capable of promotion to top management positions is driven by the same economic factors motivating private industry (3:9). In fact, the magnitude of defense spending and the criticality of national defense can make the need for high quality management a national issue. For example, the replacement of James Schlesinger as Secretary of Defense and the ensuing public debate documented in both the electronic and printed media (34:2) emphasized the management of defense spending as a national issue.

The pervasive nature of USAF logistics functions and the magnitude of logistics expenditures create an important potential for savings recognized by Headquarters USAF logistics planners.

In view of the magnitude of resources controlled by the various logistics disciplines, and ever increasing demands to do more with less, it is imperative that an adequate reservoir of qualified officer logisticians be developed to meet future needs. This can best be accomplished by determining experience and education and training requirements . . . [57:Part II,p.25].

In addition, DOD logistics planners assume that increased technical competence will be required of future logistics managers (64:Ch.2,pp.2-3).

Effective Logistics Management Education

USAF sponsored graduate education has received increasing and detailed evaluation by congressional investigators seeking to insure that educational programs

are receiving effective management (21:61; 46:19). Specific details of defense spending changes are difficult to predict, but DOD logistics planners assume that calls for increased efficiency and more effective management will increase in intensity and lead to more stringent budget constraints (64:Ch.2,p.2).

Several studies have documented the scope and increased managerial effectiveness which the USAF derives from sponsoring graduate logistics management education (4; 10; 17; 27; 31; 49).

Private industries' need for more effective managers is recognized by developers of logistics curricula for graduate business schools (11:6). However, the development of undergraduate and graduate logistics curricula in civilian institutions follows a pattern of evolution and change which has been hampered by the nature of managerial work and the lack of effective means to evaluate training effectiveness (9:271-320). Gordon and Howell summarize the business curriculum development dilemma as follows:

It is probably safe to say that in no other area of professional education . . . is there so much uncertainty as to what constitutes a proper educational background for professional practice or are existing educational standards and practices viewed with greater skepticism [23:6].

The potential benefits of better educated managers lend an intuitive appeal for research which will enable development of more effective curricula.

Effective Management Education

Numerous studies have been called for effective determination of management training needs (11; 18; 23; 25; 33; 35; 36; 37; 45). However, the authors could locate no documentation of attempts to apply a systems approach or a definitive educational needs determination in either an undergraduate or graduate business logistics environment. Cherington and Schneider emphasized the logistics curriculum problem by stating:

. . . others [teachers] may use their intuition or rely simply on available text books. Each teacher must determine for himself the objectives of his logistics . . . courses within the context of his school's orientation [11:101].

Campbell cited Gagne (19) and six other studies in the needs determination area but, "almost no substantive studies have been published in this area. . . ." Further, Campbell was ". . . able to find no example of a task analysis even approaching the scope demanded by Gagne's schema . . ." in the managerial training or educational areas (9:260). The Campbell study goes on to assert that they were surprised ". . . by the extremely limited nature of training studies done thus far," and recognized that ". . . the question of training, or 'what should be taught,' is crucial [9:481]."

The determination of educational and training needs required by the USAF ISD Model (61:Ch.1,p.3) hinges on task analysis--another area of academic interest. Task

analysis⁴ in managerial areas has not been well documented although task analysis

. . . is an essential step in performance, descriptions and evaluation, selection, training, and organizational studies. However, relatively few studies have been performed which extend or apply the results of broad task analysis studies [47:388-89].

A Headquarters USAF planner estimated that a more accurate educational needs determination would benefit manpower, personnel, and education planners (26). In addition, the Chairman of the AFIT School of Systems and Logistics Academic Affairs Committee agreed that educational needs determination is directly applicable in courses in the GL management curriculum (5).

In summary, the justification for this research effort is found in four major areas:

1. Application of the USAF ISD Model is required, but has not been documented.
2. The critical need for logisticians who can effectively manage defense resources.
3. The need for more effective USAF education programs.
4. The lack of studies and research in the educational needs determination area.

⁴Task analysis is a specific and detailed examination of job activities.

Objectives

The purpose of this research effort is to conform with USAF ISD policy by applying the first step of the ISD Model to determine the financial management needs of GL coded positions. The first objective of this study will be to verify that goal analysis can be used to identify the financial management techniques required in GL coded positions. The second objective will be to apply goal analysis to determine the financial management techniques needed for GL coded positions, and, therefore comply with USAF ISD policy.

Research Questions

1. Can goal analysis be used to identify financial management techniques required for GL positions?
2. If goal analysis can be used to identify financial management techniques, what financial management techniques are required for GL positions?

CHAPTER II

LITERATURE REVIEW

An examination of a general systems approach provides the perspective needed to follow the development of educational models. The systems approach has been used to model the educational process with varying degrees of sophistication. An Early Model, the Spiral Model, the Warren Model, and the Mature Systems Model will be examined along with task analysis, goal analysis, and job analysis as background for the USAF ISD Model.

Systems Approach

The systems approach can be described as:

A systematic approach to helping a decision-maker choose a course of action by integrating his full problem, searching out objectives and alternatives, and comparing them in the light of their consequences, using an appropriate framework--in so far as possible analytic--to bring expert judgment and intuition to bear on the problem [16:188].

In other words, the systems approach leads to logical analysis of critical factors affecting the organization (32:462-63).

Educational systems models, discussed in a later section of the literature review, are open systems which accept feedback from interaction with their environment. Feedback can be thought of as information used to alter the

system's methodology of affecting goals. Feedback can either be negative and have a degenerative effect or positive and be reenforcing in nature. For example, a manufacturing process would use negative feedback to regulate the quality of its product and positive feedback to adjust the quantity produced. Managers at all levels of open systems receive feedback from both the environment and internal sources, interpret the feedback, and apply corrective measures to regulate system operations. The systems approach involves:

1. Defining the system by establishing boundaries.
2. Stating the goals of the system in explicit terms.
3. Determining the constraints of the system.
4. Establishing alternative courses of action.
5. Testing the alternatives with system constraints and goals as criteria.
6. Implementing the system⁵ (30:85-95; 67:36-40).

The systems approach should not be considered as a checklist, but ". . . a way of thinking--a perspective that emphasizes relationships and interactions [13:84]."

⁵These steps are not all inclusive.

Educational Systems Models

The acceptance of the systems approach to management in the aerospace industry was paralleled by increased interest in a systems approach to management training and curriculum development (19; 61).

An Early Model

Robert Gagne introduced the use of psychological principles in the development of training curricula, but used only the segment of systems theory concerned with man-machine interface (e.g., the technical training of radar system operators). Gagne's book, *Psychological Principles in System Development*, was introduced by Arthur W. Melton as the first of its kind. The application of the systems approach to training marked

. . . the coming of age of a systematic conception of the application of psychological principles . . . to the human component or components in a system [19:v].

Educators have since adopted a more comprehensive application of the systems approach.

A major aim of the systems approach to academic planning is to create educational settings which are responsive to the emerging needs of students and of the society [43:9].

The Spiral Model

Lynton and Pareek developed what they called a "Spiral Model of Training Process" (35:19) which concentrates on the interaction of the person, the job, and

the organization in an ongoing "continuous spiral feedback system [35:18]." The training process is divided into three phases: (1) pretraining, in which the organization's motivation and needs for training are documented, (2) the training phase, in which behaviors are modified, and (3) the post-training phase, in which the individual attempts to apply newly learned behaviors (35:19-23).

Lynton and Pareek's first phase of the training process examines training needs in detail. In a rigorous job analysis the technical needs of the job, personal interaction, the pressures of the job, and variability of the quantity and time frame of work should all receive intensive attention. They recognize that training requirements are driven by the needs of the job. A multidisciplinary approach, in which the training staff actively works with functional specialists, is more effective than a conventional approach. The designers of this model state that training institutions cannot adequately define training needs (35:77-78). Major emphasis was given to ". . . the crucial requirements of the job . . . that make the difference between effective and ineffective performance [35:85]." Their diagnostic approach uses a "critical incident technique" which specifies "knowledge and skill content, relationships involved, time spans, and settings and roles [35:85]." The Spiral Model provides

a conceptual framework for the systems approach, but offers little practical guidance for educational needs determination in a graduate education environment.

The Warren Model

Warren also applied the systems approach and developed a model with five elements--research, analysis, development, operations, and evaluation (65:86). The research element provides data which are used in the analysis element to identify training needs and evaluate the effectiveness of the training system. The development element generates specific training programs designed to meet organization objectives. The operations element conducts the training and administers the program on a daily basis. The last element, evaluation, examines ". . . training system efficiency [65:28-29]." Warren emphasized the importance of training needs determination for the design of training programs and for evaluation of training effectiveness (65:47). Training needs are developed by the analysis of three types of data:

(1) organization performance standards, (2) present performance, and (3) clear definition of tasks required to satisfy the organization performance standards (65:53-54). Specific training needs are developed through identification of individuals or units thought to be ineffective or by establishing specific performance goals which are used as standards to evaluate performance.

Warren viewed the difficulty of determining training needs for middle managers and supervisors as caused by a lack of congruency between the system needs and top management's expectations and said ". . . analysis will bring together system requirements and the various expectations to a point where performance can be identified [65:189]." Training needs are developed through analysis of a "task model" which identifies areas of substandard performance. These areas are further analyzed to separate training problems from problems symptomatic of inefficient job design (65:194-200). Elements of Warren's task model are incorporated in the USAF ISD Model (65:Ch.2).

The Mature Systems Model

Robert Gagne, one of the early proponents of the systems approach to education and training, presented an advanced version of the approach in *Principles of Instructional Design* (20). Gagne defined the ISD process as an interactive, ongoing process using both external and internal feedback. Gagne's process consists of twelve steps:

1. Analysis and identification of needs,
2. Definition of goals and objectives,
3. Identification of alternative ways to meet needs,
4. Design of system components,
5. Analysis of (a) resources required,
- (b) resources available, (c) constraints,
6. Action to remove or modify constraints,
7. Selection or development of instructional materials,

8. Design of student assessment procedures,
9. Field testing; formative evaluation and teacher training,
10. Adjustments, revisions, and further evaluation,
11. Summative evaluation,
12. Operational installation [20:212-13].

It is apparent that Gagne's systems approach meets the general systems criteria outlined earlier and his approach is more comprehensive than other methods found in the review of pertinent literature (9; 35; 65).

The analysis and identification of needs drive the design of the instructional system. Gagne stated:

A major advantage of the systems approach is that it encourages the setting of a design objective, and it provides a way to know that objective has been met [20:228].

Although educational needs were stressed, Gagne did not address the subject in specific detail. However, in a previous study Gagne did include a more detailed discussion written by Robert B. Miller (19:187-228) which is discussed in the "Task Description and Analysis" section (page 18).

Systems Approach--A Contemporary Critique

As part of a comprehensive review of available literature concerning managerial effectiveness, John Campbell made a detailed examination of the systems approach to training and educational needs determination. Campbell used the following steps as a description of the "traditional" training process:

1. Determine training needs,
2. Choose a theoretical approach (or approaches) appropriate to the types of things that must be taught,
3. Define the objectives of the training effort,
4. Develop a training program to meet the training objectives,
5. Identify the individuals to be trained,
6. Conduct the training,
7. Determine whether training has met its objective [9:267].

Campbell's description is closely related to Gagne's and bears a generic resemblance to the Spiral and Warren models. Campbell summarized the criticisms which four other researchers (9:267-69) had directed to training systems models. First, training needs do not exist in a vacuum and must be examined in relation to the organization's objectives. Second, the critics disagreed with the implication that the training process has a definite beginning and end. Campbell's analysis of the second criticism suggests that training should be viewed as a ". . . continuous and self-correcting process [9:268]." Third, traditional training evaluation methods do not provide a continuous source of feedback which could be used to adjust the training process. Finally, the traditional training process is not integrated with other organizational programs.

Campbell found that Gagne's approach to training was driven by educational needs determination, but

. . . to say that we can analyze a manager's job into its task components is akin to saying that we are able to describe what a manager does [9:259].

Campbell's survey found that ". . . many participants in management development programs select themselves and thus perform their own needs analysis [9:260]." Although Campbell concluded that task analysis was relevant, a critical incident technique would be more effective in training needs determination. Campbell views the critical incident technique as:

. . . reports by qualified observers of the things people did that were especially effective or ineffective in accomplishing parts of their jobs [9:77].

The preceding examination of the various education system models provided an essential background for the USAF ISD Model; however, work relating to task analysis, goal analysis, and job analysis must be reviewed for a full understanding of the needs determination step of the USAF ISD Model.

Task Description and Analysis

Miller stated "a task description may best be understood as a statement of *requirements*," and a

Task description specifies along a time scale the cues which the human should perceive in the task environment and the related responses which the human should make in his task environment [19:197].

In other words, tasks are lists of behaviors situationally defined for specific environments.

The specific behaviors are described by specifying the "cues" which alert the human that the task must be

performed. Tasks are grouped to form activities described by:

1. An indicator on which the activity-relevant indication appears,
2. The indication or cue which calls for a response,
3. The control object to be activated,
4. The activation or manipulation to be made,
5. The indication of response adequacy or feedback [41:201].

Miller defined an indicator as any object or cue which should be perceived by the human as a stimulus for action (41:201). The control object or cue provided in a man-machine interface environment becomes obvious in a specific situation. However, descriptions of tasks become complex when applied to managerial or supervisory positions. Adequacy of response to cues signals correct behavior and is another area which is difficult to analyze in managerial situations (41:203). In summary, task descriptions model behavioral responses in specific work situations and "task analysis" is the systematic study of the behavioral requirements inherent in the task (task descriptions). Miller's approach is similar to procedures used in determining USAF technical training needs (61:Ch.2,p.5) and represents a micro-view of educational needs determination. In contrast, Mager presents a macro-treatment of educational needs determination in *Goal Analysis* (36).

Goal Analysis

Mager defined a goal as ". . . a statement describing a broad or abstract intent, state, or condition [36:35]." Mager introduced goal analysis which is used to translate abstract, subjective conditions ". . . to identify the main performance that go to make up the meaning of the goal [36:10]." Lynton and Pareek's critical incident technique and Miller's task description procedure produce incongruencies when applied to managerial and supervisory task descriptions. Mager's technique of goal analysis is an approach which can reduce these incongruencies.

Mager summarizes his goal analysis technique in five steps:

Step One: Write down the goal.

Step Two: Jot down, in words and phrases, the performance that, if achieved, would cause you to agree the goal is achieved.

Step Three: Sort out the jottings. Delete duplications and unwanted items. Repeat Steps One and Two for any remaining abstractions (fuzzies) considered important.

Step Four: Write a complete statement for each performance, describing the nature, quality, or amount you will consider acceptable.

Step Five: Test the statements with the question, if someone achieved or demonstrated each of these performances, would I be willing to say he has achieved the goal [36:72]?

Job Analysis

Research in education and training needs determination, task analysis, and critical incident techniques

revealed a relationship to research being conducted in job analysis. Prien and Ronan summarize current job analysis research by stating:

In total, it appears that job attribute requirements can be derived synthetically and that using the worker oriented approach it would be possible to develop (task) selection procedures directly based on job analysis . . . [47:384].

In spite of the subjective nature of managerial work, job content analysis can meaningfully differentiate between jobs by specific identification of job characteristics. Task analysis, goal analysis, and job analysis provide a conceptual framework for the educational needs determination of the USAF ISD Model.

USAF Instructional System Development Model

The USAF ISD Model can be summarized in five steps (61:Ch.1):

1. Analyze system requirements,
2. Define education/training requirements,
3. Develop objectives and tests,
4. Plan, develop and validate instruction, and
5. Conduct and evaluate instruction.

Specific provisions are made for feedback and interaction at each step of the model. ISD is essentially the application of a systems approach in an educational/training environment. The designers of the USAF ISD Model recognize that:

. . . it is more difficult to obtain this kind of information [job task and performance standard] in areas dealing mainly with the learning of knowledges and attitudes. However, the requirement still exists, and a basis for designing and evaluating instruction still must be identified [61:Ch.7].

The first step of the USAF ISD Model, analyze system requirements, involves a systems analysis designed to identify system needs. Subsequent steps of the ISD Model determine instructional goals consistent with the system's needs and identify behaviors which will reflect attainment of the goals (61:Ch.7). These steps also determine if a need for training exists and results in an operational training system keyed to the needs of the users.

ISD techniques have gained wide acceptance by military technical training managers (1; 7; 61) and the application of ISD in a technical training environment has been thoroughly documented. For example, an ISD key word index and bibliography published in 1974 contains 2,692 items (50). However, this literature review failed to reveal documented application of ISD to undergraduate or graduate curricula. Therefore, direct contact was established with a USAF Academy instructor (53), an instructor in the Air University Academic Instructor Course (8), the Chief of Job Analysis Branch, Air Force Human Research Laboratory (39), a Headquarters Air Training Command Training Specialist (22), and a USAF Military Personnel Center Career Monitor (24). Although the

persons contacted were most interested in the research, they were unable to suggest additional sources of information relevant to this research effort.

Undergraduate and Graduate Curricula

A review of the literature failed to reveal any indication that the systems approach has gained acceptance by designers of undergraduate and graduate business curricula. In addition, no documented evidence was found of attempts to apply a systems approach or a definitive educational needs analysis for curriculum development.

Robert Gordon implies that curriculum design efforts lack direction and

Despite their size and entrenched position, the business schools have not yet reached agreement as to what their objectives should properly be and how these objectives might best be attained [23:6].

Professional journals contain several reports of accounting and financial management course design efforts (12; 14; 15; 48; 51). These reports are of very limited use in this research effort because they do not represent systematic education needs determination.

A study conducted by Neeley and Robason to determine the need for a "Government Accounting" course provides a helpful insight into course development in civilian institutions (42). A survey was made of accounting professors to determine what is presently taught and the feasibility of a governmental accounting course. The

response to the survey reflected a strong need for the course and a basis for inclusion in an accounting curriculum. Limiting factors were lack of student interest and an already comprehensive curriculum designed to satisfy the professional requirements of the American Association of Collegiate Schools of Business.

Although the need for a close interface with the industrial environment is recognized by educational administrators (11:101), the needs of the users are more explicitly defined for curriculum designers in a military education environment (55; 60:61).

School of Systems and Logistics
Curricula Development

Curricula design efforts for graduate logistics programs in the USAF environment are directly related to the needs of the users by policy (55:2) and curriculum reviews conducted biennially (60). The Chairman of the AFIT School of Systems and Logistics Academic Affairs Committee stated:

The purpose of these reviews is for the users of our graduates . . . in the major air commands and in Headquarters USAF to: first, tell us what capabilities the graduates of this school should have and, secondly, to help us determine if our curriculum provides this capability [6].

In addition to external evaluations of the curriculum, both faculty development efforts and student critiques are used to modify the curriculum (5).

This chapter reviewed education models, task analysis, goal analysis, and job analysis as a framework for the USAF ISD Model. The USAF ISD Model was summarized and the curriculum design effort of education institutions and AFIT School of Systems and Logistics were reviewed to determine if ISD techniques had been applied. Since no substantial evidence of ISD application was found, the next chapter describes a plan for application of the USAF ISD Model to determine the financial management techniques needed for GL coded positions.

CHAPTER III

METHODOLOGY

This chapter describes the methodology used to answer the research questions, the population, the sampling plan, the data collection plan, and a summary of assumptions and limitations.

First Research Question

The design to answer the first research question, "Can goal analysis be used to identify financial management techniques required for GL positions?" consists of a series of four steps. As a first step, the researchers arbitrarily established four categories of financial management techniques:

1. Capital budgeting--". . . the entire process of planning expenditures whose returns are expected to extend beyond one year [66:136]."
2. Financial forecasting--the determination of capital assets required to support the organization's activities (66:81).
3. Working capital--the management of USAF stock and industrial funds.
4. Cost accounting--the system for collecting and analyzing cost data (2:304).

The categories facilitated identification of financial management techniques and development of corresponding behavioral descriptions.

The second step consisted of listing financial management techniques used in GL positions. The third step involved the application of *goal analysis* to develop a behavioral description which will signal the use of a specific financial management technique. For example, determining the payback period of a proposed investment is a common capital budgeting technique (66:144). Use of the payback period technique would be signaled if a person calculated the initial investment required, calculated the net annual cash flow expected from the investment, and finally divided the initial investment by the net annual cash flow. The fourth step was to consult with logistics experts assigned to the graduate faculty of the AFIT School of Systems and Logistics⁶ to refine and modify the list of financial management techniques and behavioral descriptions.

The criteria for the first research question is that experts were able to identify financial management techniques appropriate to their functional area. The

⁶Hereafter referred to as experts. It is assumed that the judgment of the experts can be extended to all GL positions within the expert's specialty. However, it was not assumed that the experts were aware of all financial management techniques which could be applied in their specialty.

judgment of the experts could support the contention that financial management techniques and appropriate behavioral descriptions could be written for GL coded positions. Additional support could be found in the pilot study of a survey instrument and in the analysis of survey data used in answering the second research question.

Second Research Question

The design to answer the second research question, ". . . what financial management techniques are required for GL positions?" required an affirmative answer for the first research question. The second research question was answered by identifying and describing the financial management techniques required for GL positions.

Population

The universe relevant to this study included all USAF officer positions. For the purpose of this study, logistics officer positions were defined by the USAF Specialty Codes (AFSCs) listed in Table 1. The positions listed in Table 1 having been assigned an Advanced Academic Degree (AAD) code of 1AMY, 1AMH, 1AGA, or 1AYY in accordance with USAF Manual 36-19, *Advanced Academic Degree Management System* (54) comprised the population of interest for this study. It was assumed that GL positions were properly validated and reflect actual requirements.⁷

⁷Two studies (4; 31) described the AAD validation process in detail and identified inconsistencies in the

TABLE 1
GRADUATE LOGISTICS POSITIONS

AFSC	Utilization Field	AAD Code
0046	Director of Logistics*	1AMY
30XX	Communication Electronics*	1AMY
31XX	Missile Maintenance	1AMY
40XX	Aircraft Maintenance/Avionics	1AMY
46XX	Munitions	1AMY
55XX	Civil Engineering*	LAGA
60XX	Transportation	1AMY
62XX	Supply Services	1AYY
63XX	Fuels Management	1AYY
64XX	Supply Management	1AYY
65XX	Procurement Management	1AMH
66XX	Logistics Plans and Programs	1AMY

SOURCE: AFM 36-1, *Officer Classification Manual*, 28 May 1969, and AFM 36-19, *Advanced Academic Degree Management System (AADMS)*, 15 November 1973.

NOTE: AAD codes 1AMY, 1AMH, and 1AGA correspond to the AFIT School of Systems and Logistics Logistics Management, Logistics Management with a Procurement Major, and Facilities Management degree programs. Graduates of the Logistics Management Program are also assigned to positions with logistics AFSCs carrying an AAD code of 1AYY.

*Not included in AFM 36-1 definition of logistics career area.

After the population was identified, a choice between a census or sample had to be made. A census of the population would have had the primary advantage of certainty that each member of the population had been contacted, thus eliminating sampling errors (29:337). According to Helmstadter, the resources (time, manhours, and money) are a significant factor when considering the feasibility of a census (29:336). A census was rejected because the resources required greatly exceeded the resources available for this study.

Sampling Plan

Since a census was not feasible for this research, a sampling method was selected as a less expensive way of collecting comprehensive data within a limited time frame (68:6). This probabilistic sampling technique, based upon random selection, has the advantage of controlling precision and accuracy, as well as limiting the bias of the sample. Most importantly, a random sample enables inferences from the sample to the population (29:338).

A random stratified sampling technique was selected because stratified samples are more precise than simple random samples and do not require additional resources (29:339). Since the purpose of the USAF Officer Classification System was to create homogeneous

identification and validation of AAD coded positions.

groups (62), AFSCs were selected as a basis for stratification. Sufficient knowledge about the homogeneity of other bases for stratification, such as rank or level of assignment did not exist. Stratification was further improved by proportional sampling.

Stratified Proportional Sampling. Stratified proportional sampling has the advantage of further increasing the precision of a sample. This technique insures proper representativeness of the attributes which the researcher considers important. Even if the stratification is based upon nonhomogeneous characteristics, Parten states the sample will be no worse than a simple random sample (44:228).

Table 2 reflects the results of proportionally allocating sample elements within strata. The sample elements for each strata (N_h) were found by the following equation (68:153):

$$N_h = \frac{N_i}{N} \cdot n ,$$

where:

N_i is the number of elements in the stratum (authorizations in each AFSC),

N is the total authorizations, and

n is the desired sample size.

TABLE 2
GRADUATE LOGISTICS POSITION SAMPLE STRATA

AFSC	Authorized	Assigned	Invited Sample
0046	161	116	35
30XX	96	67	21
31XX	58	51	13
40XX	119	83	26
46XX*	0	0	0
55XX*	0	0	0
60XX	26	24	6
62XX*	0	0	0
63XX*	0	0	0
64XX	46	30	10
65XX	67	43	14
66XX	134	84	29
Total	707	498	154

SOURCE: Data were supplied by AFIT Consolidated Base Personnel Office from USAF Military Personnel Center Manpower authorizations as of 30 April 1976.

*No relevant authorizations were found. A recent realignment of AFSCs and other factors outside the scope of this study altered the authorization structure.

Sample Size. Yamane and Hansen et al., both provide procedures for determining the sample size requiring estimates of the underlying population variance and the population proportion for each variable (68:154-55; 28:213-15). However, the information required for population estimates was unavailable.

Mildred Parten stated "a review of the literature in the survey field reveals . . . much contradictory and misleading advice regarding sample size [44:290]." For example, using Parten's procedure (44:314), a sample size of sixty-nine elements would be required to capture the financial management techniques used by 90 percent of the population with a ± 5 percent error range in 90 out of 100 samples. The sample size computed using another technique was sixty one (56:118). Since a definitive method to compute sample size could not be found, a desired sample size of 100 elements was arbitrarily selected as a liberal sample size; however, a sample size of at least 65 would be considered sufficient for this research project.

Data Collection Plan

USAF Manual 50-2, *Instructional System Development*, suggested five means of collecting data: occupational survey, checklist, interview, observation, and questionnaire (61:Ch.2,pp.5-6). One occupational survey, 30XX AFSC, was found (63). The results of the survey will be

reported and analyzed along with the other data produced by this research effort. Checklists, interviews, and observations were considered, but the resources (time, manhours, and money) necessary for data collection were unavailable for this research. The mail questionnaire technique was selected because it made the least demand on the limited available resources. The advantages of the mail questionnaire are (44:94):

1. A wide geographical area can be covered.
2. A larger proportion of the population can be reached using a questionnaire than by personal interviews with a given amount of funds.
3. Mailing costs are lower than transportation and time costs of a field staff.
4. The expense and time required to train a field staff are eliminated.

Studies of similar populations encountered survey response rates of approximately 65 percent (31:28,36; 38:24). Based upon these studies, an initial survey response rate of 65 percent was expected; therefore, an invited sample size of 154 was necessary to achieve the desired 100 returns.

Using the data in Table 2 and the equation on page 31, the sample size for each stratum was calculated and is shown in the invited sample column of Table 2.

Development of a Survey Instrument. A survey instrument was developed using financial management techniques and behavioral descriptions identified in the answer to the first research question.

The survey questions are behavioral descriptions of financial management techniques. The subject was asked to indicate what proportion of his job the behavior represents and to indicate the perceived importance of the behavior.

A scale developed by the USAF Occupational Research Center and used by Meri-Akri and Walton (40:38) was modified for this study. Table 3 depicts this scale.

TABLE 3
JOB PROPORTION SCALE

Value	Proportion
0	Not part of my present job
1	An extremely small part of my job
2	A very small part of my job
3	A small part of my job
4	A moderate part of my job
5	A large part of my job
6	A very large part of my job
7	An extremely large part of my job

The survey instrument is included as Appendix D.

The importance that the subjects associate with the behaviors identified in the survey questions was measured using a modification of a scale suggested by Parten (44:192). This scale is shown in Table 4.

TABLE 4
IMPORTANCE SCALE

Value	Importance
0	Not part of my present job
1	Very low importance
2	A little below average importance
3	Average importance
4	A little above average importance
5	Very high importance

Both scales meet Siegel's (52:23-24) and Helmstadter's (20:178-79) requirements for ordinal level data.

The demographic section of the survey instrument requested the following information:

Name (optional)
Rank
Duty Title
DAFSC
Level of Assignment
Organization

Base

MAJCOM

Months in Present Position

Position Number

Parts of the demographic data were used to confirm that the survey was completed by the intended subject and the remainder of the demographic data was used to further differentiate the data for analysis.

Validation of Survey Instrument. The questionnaire was first validated by the same experts who were consulted during the development of behavioral descriptions. To further test the validity of the survey instrument, the questionnaire was administered as part of a personal interview with six randomly selected officers occupying GL coded positions located on Wright-Patterson Air Force Base, Ohio (24). The questionnaire was scored and the respondent's reactions to the questions were noted and used to modify misleading questions. The subjects used in the pilot study were excluded from the survey. At that point, it was assumed the questionnaire was valid and could be used to determine the financial management techniques used in GL coded positions.

Administration of Survey Instrument. After the validated questionnaire was submitted through normal

channels for approval (58), subjects were sequentially selected--for example (using Table 2 data for 66XX AFSC):

1. Each of the 134 authorized AFSC 66XX positions were subsequently numbered.

2. Twenty-nine numbers were selected from a table of random numbers.

3. Position numbers corresponding to the random numbers were used in the survey.

4. A mailing list was developed for the randomly selected positions.

The subjects were asked to return the completed questionnaire within one week of receipt. At the end of three weeks, a follow-up questionnaire was mailed to nonrespondents.

Scoring of Survey Instrument. Valid questionnaire responses were identified by several data items:

1. The credibility of the respondent was supported by requiring at least three months experience in the position.

2. The DAFSC corresponded to that of the desired position.

3. The respondent was assigned to a desired (GL) position.

4. The demographic data did not contain fallacious combinations of information (e.g., DAFSC 4021 with a wing commander's duty title).

Criteria for Research Question Two. The criteria for the answer to the second research question, ". . . what financial management techniques are required for GL positions?" were found in several areas:

1. Goal analysis was successfully used to write behavioral descriptions of financial management techniques.

2. A valid survey instrument could be developed to indicate the use of financial management techniques in GL positions.

3. A random survey was conducted and analysis of the subjects' responses indicated that some of the techniques were used in GL positions.

Summary of Assumptions and Limitations

The assumptions made for this study are summarized as follows:

1. GL positions have been properly validated and reflect actual requirements by the procedure found in AFM 36-19 (54).

2. The judgment of the graduate faculty of the AFIT School of Systems and Logistics can be used to identify financial management techniques required in GL coded positions.

3. The USAF Officer Classification System groups officers into homogeneous groups defined by AFSC.

4. The procedures used to validate the questionnaire resulted in a valid survey instrument.

5. The GL coded positions constitute the primary need for graduates of the AFIT Graduate Management Program.

6. The pilot study produced a valid survey instrument to use in testing the questionnaire technique.

The limitations of this study are as follows:

1. The survey instrument was designed for GL financial management techniques and should not be used for other applications.

2. This study was limited to USAF officer GL positions and should not be generalized to USAF civilian and other DOD positions.

3. The results of this research are limited to the AFIT School of Systems and Logistics, Graduate Management curriculum.

CHAPTER IV

ANALYSIS

The analysis contained in this chapter provides the background required to answer the questions which guided this research effort.

Research Question One

The design to answer the first research question, "Can goal analysis be used to identify financial management techniques required for GL positions?" involved three steps: (1) developing categories which could be associated with financial management techniques, (2) identifying techniques which could be used in GL positions and developing behavioral descriptions to signal usage of specific techniques, and (3) consulting experts to refine and modify the list of financial management techniques used in GL positions.

Developing Categories

The primary advantage of grouping financial management techniques was that grouping enabled the application of goal analysis. Goal analysis was used to translate the financial management categories into performance characteristics. The categories represent goals, and techniques represent specific performance characteristics.

For example, cost accounting represents a goal achieved through use of a specific technique (performance characteristic)--analysis of variance.

Identifying Techniques

The initial arbitrary grouping of financial management techniques (Appendix C) served as a starting point which guided a search for prospective techniques required for GL positions. Grouping also provided a common framework and a starting point for discussion of techniques with logistics experts (see footnote on page 27). At the beginning of the interview with each expert, the categories were identified and described to guide discussion of prospective financial management techniques. Interviews with logistics experts revealed that a major category applicable to military logistics positions, programming,¹ had been omitted. Once the programming category was included, several prospective techniques were added.

After the financial management techniques had been identified, a method of identifying the use of specific techniques had to be developed. Miller's approach to task analysis specifies that people receive "cues" from the environment which signal that a task must be

¹Programming is defined as scheduling resources to support USAF operations.

performed (41:201). This approach was modified by developing behavioral descriptions which would signal the use of specific financial management techniques. For example, a person identifying and analyzing the differences between planned and actual expenditures would signal use of a cost accounting technique--analysis of variance.

Consulting Experts

The potential techniques and behavioral descriptions (Appendix C) were reviewed during interviews with logistics experts. The interviews allowed the experts to confirm techniques used in their functional area and were a valuable source of additional techniques. The experts were aware of techniques which had been adapted for their functional area and were also familiar with the behaviors exhibited by people using the techniques. In addition, the experts knew of techniques and were able to describe the behaviors exhibited by people in GL positions. Therefore, the interviews prevented the researchers' experience from becoming a limiting factor in the identification of techniques and behaviors which might be found in GL positions.

In summary, goal analysis was used to identify prospective financial management techniques required in GL positions, a modified approach to task analysis was used to develop behavioral descriptions, and logistics experts confirmed that the techniques were used in

some GL positions. The experts also verified that the behavioral descriptions could be used to indicate use of the financial management techniques. The confirmation by the experts was sufficient evidence to conclude that goal analysis could be used to identify the financial management techniques required in GL positions. Additional support for this conclusion will be discussed in the analysis of the second research question.

Research Question Two

Analysis of the answer to research question two, "If goal analysis can be used to identify financial management techniques, what financial management techniques are required for GL positions?" involved analysis of an occupational survey conducted by the USAF Occupational Measurement Center (63) and an evaluation of this project's survey instrument, pilot study, sample size, follow-up survey administration, and survey results.

Occupational Survey Analysis

USAF ISD guidance contained in AFM 50-2 (61) suggests that occupational surveys be used to collect data for the educational needs determination step of the USAF ISD Model. However, only one occupational survey, for the 30XX utilization area, has been completed and documented for USAF officer positions (63). This occupational survey was a census of the entire 30XX AFSC

officer population and indicated that 7 percent of the respondents "prepare economic analyses" (63:78). The report contained insufficient evidence that 30XX personnel use financial management techniques. In addition to lacking sufficient detail about the use of financial management techniques, the report requested responses from the entire 30XX population. Even if sufficient detail had existed, the occupational survey could not have been used because only the needs of GL positions are relevant to this study.

Analysis of the Survey Instrument

The answer to the first research question was affirmative and enabled questions to be written based upon the behavioral descriptions. Once the questions were written, the same logistics experts consulted in answering the first research question were again consulted to review the questions. The questions were consistent with the experts' terminology and the logistics experts supported the assertion that the questions reflected the behavioral descriptions associated with the financial management techniques. Additionally, the experts suggested the addition of an open-ended question to capture financial management techniques not addressed in the questionnaire. The respondents were therefore asked to add related tasks which they thought were omitted from the

questionnaire. Responses to the open-ended questions were related to specific tasks within functional areas and were within the scope of existing questions.

The job proportion scale with eight categories was used in the questionnaire because the researchers hypothesized that financial management tasks would not comprise a large proportion of the tasks required in GL positions. Analysis of the responses confirms that most respondents do not spend a large proportion of their time using financial management techniques (Appendix F). The respondents who indicated any use of a technique ranged from 9.8 percent for ratio analysis to 69 percent for cost accounting. The most widely used technique (cost accounting) constituted a large, very large, or extremely large proportion of the job for only 15 percent of the respondents.

The job importance scale was included to allow the respondents to indicate the importance which they associated with the financial management tasks. Since most GL positions do not require extensive use of financial management techniques, the importance of seldom used techniques could be of value for an educator assessing the techniques used in GL positions. For example, both seldom used but important techniques and often used but unimportant techniques could be useful information to the educator during curriculum development.

Pilot Study

The pilot study interviews provided immediate feedback on the questionnaire construction and content. Although the respondents were not allowed to ask clarifying questions while completing the questionnaire, an immediate debriefing session revealed that the respondents did not encounter confusing instructions, misleading questions, or unfamiliar terminology. These interviews supported the technique of writing questions from behavioral descriptions and using those questions to indicate the actual use of specific financial management techniques. The pilot study interviews also indicated that questions could be worded in general terms and produce meaningful responses from personnel in several different utilization areas. Because of the questionnaire's applicability to all logistics utilization areas, a separate questionnaire was not needed for each AFSC.

Sample Size

The sample size was affected by the response and scoring rates. The anticipated response rate of 65 percent was not achieved with the original survey; only 50 percent of the original survey responses were received by the end of the sixth week. Three weeks after the mailing of the original survey, an identical follow-up survey was mailed to all nonrespondents. The follow-up response

rate reached 46 percent when data collection was cut off at the end of three weeks. After the original and follow-up responses had been combined, an overall response rate of 77 percent was achieved (Appendix A).

The criteria used to identify valid responses resulted in the scoring of 86 percent of the original responses and 76 percent of the follow-up responses. The primary reasons for not scoring the original responses were either that the respondent was not in a GL position or the researchers could not verify that the response came from a person in a GL position. The primary reason for not scoring the follow-up responses was that the respondent indicated that he had previously completed the survey and did not complete the follow-up survey. The overall scoring rate shown in Appendix A is 82 percent for 97 scored responses. Although the desired conservative sample size of 100 was not achieved, the 97 scored responses exceeded the minimum desired sample size of 65. The researchers concluded that the response and scoring rates resulted in an acceptable sample size.

Follow-Up Survey Administration

Three weeks after the original questionnaires were mailed, an initial analysis of the responses indicated that most nonrespondents were located in HQ USAF

positions. The remaining nonrespondents were distributed among other major commands.

The researchers contacted HQ USAF administrative personnel to determine whether the addressing procedures used in the original mailing had been adequate. The administrative personnel indicated that an address with duty title, organization, and base did not adequately identify the intended addressee at HQ USAF. However, it appeared that this addressing procedure was sufficient for most positions below the HQ USAF level. To improve the addressing procedure for the follow-up, the researchers, where possible, added the intended respondent's name and office symbol to the address. Although names were available, office symbols had to be identified on a case-by-case basis by consulting a HQ USAF telephone directory.

The characteristics of the original and follow-up respondents are shown in Appendix E. Comparison of the HQ USAF responses indicate that the HQ USAF addressing problem was solved. While the original survey did not contain any responses from the 60XX AFSC, the follow-up obtained four valid responses, and the HQ USAF response increased from 9 to 32 percent. Comments on five of the ten scored follow-up responses from HQ USAF positions indicated that they had not received the original survey. The researchers had anticipated that the use of names could prevent the survey from reaching the desired

position if a recent personnel change had occurred; however, the use of names in the follow-up significantly increased the response rate from HQ USAF positions without decreasing the scoring rate.

Survey Results

The survey results confirm the judgement of the logistics experts in identifying financial management techniques required in GL positions. The results of the Binomial Test (Appendix B) show the statistically significant questions and categories for each AFSC. The statistical significance of the questions is just one element to be considered by the educator during curriculum development and review. Another element to be considered is the importance associated with financial management techniques by the respondents. A cross-tabulation of the proportion responses by importance responses for each survey question is contained in Appendix G. The rows represent the relative job proportion which the task represents for the respondent's job, while the columns show the relative importance the respondents associated with the task. For a detailed explanation of the scoring categories for both the job proportion and job importance scales, refer to pages 35, 36 or Appendix D.

In summary, the analysis of research question two has revealed that behavioral descriptions can be used

to develop questions which signal the use of financial management techniques.

Interviews with logistics experts, a pilot study, and the analysis of the survey responses indicated that the financial management techniques required in GL positions could be identified using this research methodology. The judgment of the experts which indicated that certain techniques were used in GL positions has been supported by the pilot study and the survey results, thereby providing additional support for the answer to the first research question. The researchers conclude that the financial management techniques required for GL positions have been identified and fall in the following categories: capital budgeting, cost accounting, working capital, financial forecasting, and programming. The techniques are listed by category in Appendix F and constitute a successful answer for the second research question.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The purpose of this research effort was to conform with USAF ISD policy by applying the first step of the ISD Model to determine the financial management needs of GL positions. The effort was guided by two research questions: ". . . can goal analysis be used to identify financial management techniques required for GL positions . . . [and] . . . what financial management techniques are required for GL positions . . ."

Summary and Conclusions

The analysis of the results of this research effort indicates that goal analysis can be used to identify the financial management techniques required for GL positions. Support for this conclusion was found in the researchers' ability to categorize and identify techniques which were thought to be used in GL positions and to confirm the use of the techniques by administering a survey.

The researchers identified five categories into which financial management techniques could be placed: capital budgeting, financial forecasting, working capital, cost accounting, and programming. Goal analysis was then used to develop a list of techniques which could

be used in GL positions. A modified approach to task analysis was used to develop behavioral descriptions which would indicate the use of the techniques by people in GL positions. Logistics experts confirmed that the techniques were used in their functional area and that the behavioral descriptions could indicate use of the techniques. The survey data supports the judgment of the logistics experts and indicates that the financial management techniques identified using goal analysis are used in GL positions. The researchers conclude that the use of financial management techniques in GL positions can be identified through use of goal analysis. Therefore, the first research question has been successfully answered.

Once the financial management techniques required in GL positions had been identified using goal analysis, a questionnaire was written. Face validity of the questionnaire was supported by consulting logistics experts and conducting a pilot study. This approach confirmed that behavioral descriptions could be used to write questions which would reflect the use of financial management techniques.

Analysis of the sample size indicates that a random stratified proportional sampling plan was successfully used to collect data from a population of 707 GL positions. The use of statistically sound sampling procedures enabled the researchers to conclude that the

techniques identified in capital budgeting, working capital, cost accounting, financial forecasting, and programming categories are characteristic of all CL positions. Identification of the techniques constitutes a successful answer for the second research question.

Recommendations

The researchers believe that the methodology used in this research project could be successfully applied to other graduate, undergraduate, and professional military curriculum design efforts. Initially, it may seem that structured, task-oriented subject matter is required, but goal analysis and task analysis are potentially useful in nontask structured areas such as management and military science. For example, communications can be approached by breaking the area down into its component parts: written communication, oral communication, nonverbal communication, and so forth. Effective written communications can be considered a goal achieved by several techniques: analysis of the communications subject; selecting an approach or writing style based upon the intended audience; research, note taking, and outlining techniques; and the application of grammatical rules. Task analysis could then be used to write behavioral descriptions which would signal the use of these techniques. The educational needs determination step of

the ISD Model could be accomplished using an appropriate data collection technique.

The researchers think that the requirement for a specific target population varies with the educational curriculum design effort. This research project was concerned with a specific, well-defined population because the AFIT Graduate Management curriculum was designed for specific requirements. Therefore, the educational needs determination effort had to be tied to the specific needs of GL positions.

Although other educational institutions may have less well-defined target populations, the researchers are confident that target population information is available. Alumni data, alumni surveys, surveys of specific types of organizations, and surveys of groups of similar organizations are all potential sources of educational needs data. For example, a survey of the eight largest accounting firms or of USAF Auditor General organizations could be designed to describe the financial management techniques required for supervisory auditor positions.

In the previous communications example, the use of goal analysis and task analysis was considered potentially useful. In this case, the researcher would use goal and task analysis, but modify the data collection plan to include only those positions which require the use of a program's graduates. For example, the graduates of the

Squadron Officer School may ultimately be assigned to any USAF officer position; therefore, the data collection plan would involve a sample of all USAF officer positions.

Suggestions for Research

The first step of the ISD Model has been accomplished; the researchers recommend a continuing effort to apply the remaining steps of the ISD Model for the AFIT School of Systems and Logistics' financial management course. The next step of the ISD Model will define education requirements by identifying what instruction is necessary and deciding which instruction methods and resources to use in providing the education. The remaining steps develop education objectives, plan the instruction, and evaluate the instruction provided.

Now that the financial management techniques required in GL positions have been identified, other research projects could utilize this data base for other purposes. The same survey instrument could be used to determine if non-GL positions required the same financial management techniques. If so, the subjects may be more useful in a Professional Military Education curriculum rather than in the graduate curriculum. Other curricula could use the same survey instrument to determine if the financial management techniques should be taught. Finally, the researchers believe the sampling and survey techniques used in this research project could be used to improve data collection for USAF Technical Training ISD projects.

APPENDIXES

APPENDIX A
SURVEY RESPONSE

APPENDIX A

SURVEY RESPONSE¹

Original Survey Response

Week	Scored	Not Scored	Total
1	9	1	10
2	41	5	46
3	7	4	11
4	5	0	5
5	4	1	5
6	0	0	0
Total	66	11	77

Follow-Up Survey Response

Week	Scored	Note Scored	Total
1	5	4	9
2	20	4	24
3	6	2	8
Total	31	10	41

¹Four follow-up responses were received in the fourth week and two follow-up responses were received during the fifth week. Since these six responses were received after the three-week acceptance cut off, they were not scored.

	Response Rate	Scoring Rate
Original	50%	86%
Follow Up	46	76
Overall	77	82

APPENDIX B
BINOMIAL TEST

APPENDIX B

BINOMIAL TEST

The binomial test described by Siegel (52:36-42) was used to indicate statistically significant use of specific financial management techniques. Responses were coded in two categories--0 for not part of the job and 1 for all parts of the job between 1 and 7 on the job proportion scale.

The hypothesis test is constructed as follows:

$$H_0: P = Q = 1/2$$

$$H_1: Q > P$$

and will be tested at a 90 percent confidence level.

For more than twenty-five cases, the test statistic z is given by:

$$z = \frac{(X+CF) - NP}{\sqrt{NPQ}},$$

where:

z = Test statistic

X = The number of responses for the 0 category

P = Probability of 0

Q = Probability of 1

$CF = X + .5$ for X less than NP and $CF = X - .5$
for X greater than NP

N = Number of responses

The hypothesis tests were resolved using Siegel's Table D (52:250) when the number of cases was less than twenty-five or a critical Z value (-1.28) for more than twenty-five cases. For all cases, the following decision rule was used to evaluate the binomial tests: If the test statistic (Z) is less than a 10 percent critical value, sufficient evidence does not exist to reject H_0 ; therefore, the use of a specific financial management technique is not supported by statistical evidence. The importance subjects associate with specific techniques and the number of people who use a technique are additional factors which may influence the educator's judgment.

SIGNIFICANT QUESTIONS

Question	n=21 0046	n=14 30XX	n=9 31XX	n=16 40XX	n=4 60XX	n=6 64XX	n=7 65XX	n=20 66XX	n=97 All AFSC	Z Value
1										3.66
2										5.48
3										2.44
4										.61
5	S	S				S			S	-2.94
6	S	S								-.61
7										2.84
8										6.70
9										6.70
10										5.08
11										5.69
12										5.08
13	S	S	S			S		S	S	-3.86
14		S	S							-.41
15	S	S	S	S		S	S		S	-5.08
16	S					S		S	S	-3.45
17										7.51
18										8.12
19										8.32
20										5.08
21	S	S	S			S	S	S	S	-6.70

SIGNIFICANT QUESTIONS--Continued

Question	n=21 0046	n=14 30XX	n=9 31XX	n=16 40XX	n=4 60XX	n=6 64XX	n=7 65XX	n=20 66XX	n=97 All AFSC	Z Value
22	S	S	S			S		S	S	-3.86
23	S	S	S			S		S	S	-4.06
24										3.25
25	S	S	S	S		S			S	-4.47
26		S	S	S		S			S	-3.25
27		S				S			S	-1.42
28										0
29										.81
30								S	S	-1.83
31										2.44
32										7.51
33										7.31
34										7.92
35										6.30
36										3.66
37										4.06
38										7.11
39										5.28

SIGNIFICANT QUESTIONS--Continued

Question	n=21 0046	n=14 30XX	n=9 31XX	n=16 40XX	n=4 60XX	n=6 64XX	n=7 65XX	n=20 66XX	n=97 All AFSC	Z Value
40	s									0
41		s								-1.01
42			s							1.02
43										5.08
44										5.08
45										4.06
46										3.05

NOTE: s indicates significance at the 0.10 level as determined by the Binomial Test.

SIGNIFICANT CATEGORIES*

AFSC	Working Capital	Capital Budgeting	Cost Accounting	Financial Forecasting	Programming
0046			S		
30XX			S		
31XX	S	S	S		
40XX			S		
60XX					
64XX	S	S	S		
65XX			S		
66XX			S		
All AFSC Z Value	1.16	10.02	-6.55	10.49	9.63

NOTE: S indicates significance at the .1 level.

*Significance determined by application of the Binomial Test.

APPENDIX C
FINANCIAL MANAGEMENT TECHNIQUES
AND BEHAVIORAL DESCRIPTIONS

APPENDIX C

FINANCIAL MANAGEMENT TECHNIQUES
AND BEHAVIORAL DESCRIPTIONS

Goal and Task analysis were used to develop the financial management categories, techniques, and behavioral descriptions found in this appendix.

WORKING CAPITAL CATEGORY

Technique	Behavior
The preparation and review of operating budgets	<ul style="list-style-type: none">a. Review of budget estimates for mission support adequacy.b. Participate in Budget Working Group Budget Report Program meetings.c. Analysis of fiscally constrained force programs.
Management of Air Force stock and industrial funds.	<ul style="list-style-type: none">a. Preparation of operating or spending plans.

CAPITAL BUDGETING CATEGORY

Technique	Behavior
Ranking order of investment alternatives	<ul style="list-style-type: none"> a. Sequencing alternatives based upon total cost. b. Sequencing alternatives based upon both total cost and priority considerations.
Payback period	<ul style="list-style-type: none"> a. Dividing initial total investment by net benefit per period to yield payback periods. b. Subtracting total anticipated savings from total anticipated costs.
Rate of return	<ul style="list-style-type: none"> a. Dividing periodic net benefit by initial total investment to yield an interest rate.
Internal or discounted rate of return	<ul style="list-style-type: none"> a. Equating present value (PV) of benefits to PV of investment outlay using a formula or table of interest or discount factors.

CAPITAL BUDGETING CATEGORY--Continued

Technique	Behavior
Net PV	a. The PV of the investment and the PV of the operating and maintenance expenses are subtracted from the PV of benefits
Other PV methods	a. PV of investment, PV of expenses, and PV of benefits are algebraically manipulated to yield PV ratios, benefit cost ratios, or profitability indices.

COST ACCOUNTING CATEGORY

Technique

Behavior

Analysis of variance

- a. Identification of differences between planned and actual expenditures.
- b. Analysis of differences between planned and actual expenditures.
- c. Decomposition of expenditure differences into price and usage components.

FINANCIAL FORECASTING CATEGORY

Technique	Behavior
Pricing of replacement proposals for plant, equipment, and other items	a. Determining the economical or technological life of an existing item; costing or pricing proposed items for acquisition, operating, and maintenance; and determining the benefits of each proposal.
Pricing of production or capacity expansion	a. Determining required capacity and project cost estimates for cost categories.
Pricing of new weapons systems support requirements	a. Pricing the effect of new weapons systems as a member of a working group.
Pricing of other proposals such as contingency plans, safety plans, and security plans	a. Pricing alternative proposals as a member of a working group.
Ratio analysis of contractor's financial condition	a. Computing ratios based upon financial statements.

PROGRAMMING CATEGORY

Technique	Behavior
Preparation and analysis of Planning Programming and Guidance Memoranda	a. Determining the impact of fiscal guidance upon desired operational capability through participation in working groups and individual analysis
Preparation and analysis of Joint Forces Memoranda	a. Developing recommendations on fiscally constrained force levels
Preparation and analysis of Program Objective Memoranda	a. Participating in the development of resource requirements
Preparation and analysis of Program Decision Memoranda	a. Participating in the analysis and response to Joint Forces Memoranda and Program Objective Memoranda

APPENDIX D
QUESTIONNAIRE

APPENDIX D

QUESTIONNAIRE

The cover letter for the original survey, the cover letter for the follow-up survey, and the survey instrument are contained in this appendix. The follow-up instrument was identical to the original questionnaire.

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



REPLY TO
ATTN OF: SLG (Capt Fulton/AUTOVON 78-72527)

SUBJECT: Financial Management Utilization Questionnaire

TO:

1. The purpose of the attached questionnaire is to determine the financial management tasks used in facilities, logistics, and procurement advanced academic degree coded positions. Headquarters USAF Survey Control Number 76-134 has been assigned to this questionnaire.

2. Participation is voluntary and you may remain anonymous by not providing your name. Your cooperation is important because the data you provide will be used to improve logistics education programs. If you choose to participate, please return the questionnaire in the attached envelope within one week of receipt.

A handwritten signature in cursive script that reads "Henry W. Parlett".

HENRY W. PARLETT, Colonel, USAF
Associate Dean for Graduate
Education
School of Systems and Logistics

- 2 Atch
1. Questionnaire
2. Return Envelope

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



REPLY TO
ATTN OF: SLG (Capt Fulton/AUTOVON 78-72527)

12 JUL 1976

SUBJECT: Financial Management Utilization Follow-up Questionnaire

TO:

1. The purpose of the attached questionnaire, HQ USAF Survey Control Number 76-134, is to determine the financial management tasks used in facilities, logistics, and procurement advanced academic degree coded positions.
2. This questionnaire is being sent as a follow-up to all positions for which responses were not received by 9 July 1976. If the response for your position has been returned, please disregard this letter. In addition to your questionnaire responses, the researchers are interested in the reasons why the first questionnaire was not returned. This information would be used in validating the questionnaire as a method of data collection.
3. Participation in this research effort is voluntary and you may remain anonymous by not providing your name. If you choose to participate, please provide the requested background information to verify that the survey reached the intended position and return the questionnaire in the attached envelope within one week of receipt. Your participation in this research effort will be greatly appreciated.

A handwritten signature in cursive script that reads "Henry W. Parlett".

HENRY W. PARLETT, Colonel, USAF
Associate Dean for Graduate
Education
School of Systems and Logistics

- 2 Atch
1. Questionnaire
2. Return Envelope

FINANCIAL MANAGEMENT UTILIZATION QUESTIONNAIRE

This survey is being administered to an Air Force-wide sample of officers. As a result, the questions are not worded in specific terms and may not contain the specific technical terms used in your job. We are not trying to describe your entire job--we are only interested in the part of your job which could be loosely described as financial management. This survey should take no more than 20 minutes of your time.

Please complete the background information in Part I of the questionnaire. Your name is not required. The background information will be used to confirm that the survey reached the intended people. After completing the background information, read the instructions for Part II of the survey.

PRIVACY STATEMENT

In accordance with paragraph 30, AFR 12-35, the following information is provided as required by the Privacy Act of 1974:

a. Authority:

(1) 10 U.S.C., 80-12, Secretary of the Air Force, Powers, Duties, Delegation by Compensation; and/or

(2) EO 93-97, 22 Nov 43, Numbering System for Federal Accounts Relating to Individual Persons; and/or

(3) DOD Instruction 1100.13, 17 Apr 68, Surveys of Department of Defense Personnel; and/or

(4) AFR 178-9, 9 Oct 73, Air Force Military Survey Program.

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

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

d. Participation in this survey is entirely voluntary.

e. No adverse action of any kind may be taken against any individual who elects not to participate in any or all of this survey.

PART I

NAME (optional) _____
RANK _____
DUTY TITLE _____
DAFSC _____
LEVEL OF ASSIGNMENT (HQ AF, MAJCOM, NAF, ETC.) _____
ORGANIZATION _____
BASE _____
MAJCOM _____
MONTHS IN PRESENT POSITION _____
POSITION NUMBER _____

PART II

This part of the survey lists 46 tasks which may be required in your present job. After you have read the tasks, you will be asked to rate each task twice--once for the relative proportion of your job the task represents and once for the importance you place on the task. Space has been provided at the end of the task list for your comments.

Please return the completed questionnaire within five work days. Thank you for your cooperation.

JOB PROPORTION SCALE

Please rate each task in PART 2 according to the relative proportion of your job represented by the task. Use the following scale:

- 0 NOT PART OF MY PRESENT JOB
- 1 AN EXTREMELY SMALL PART OF MY JOB
- 2 A VERY SMALL PART OF MY JOB
- 3 A SMALL PART OF MY JOB
- 4 A MODERATE PART OF MY JOB
- 5 A LARGE PART OF MY JOB
- 6 A VERY LARGE PART OF MY JOB
- 7 AN EXTREMELY LARGE PART OF MY JOB

Circle 7 for tasks comprising the largest part of your job. Circle 6 for tasks comprising the next largest part of your job and so on with 0 for tasks not part of your job.

AD-A032 457

AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OHIO SCHO--ETC F/G 5/9
AN APPLICATION OF INSTRUCTIONAL SYSTEM DEVELOPMENT TO DETERMINE--ETC(U)
SEP 76 J N BROOKS, D J QUEEN

UNCLASSIFIED

SLSR-4-76B

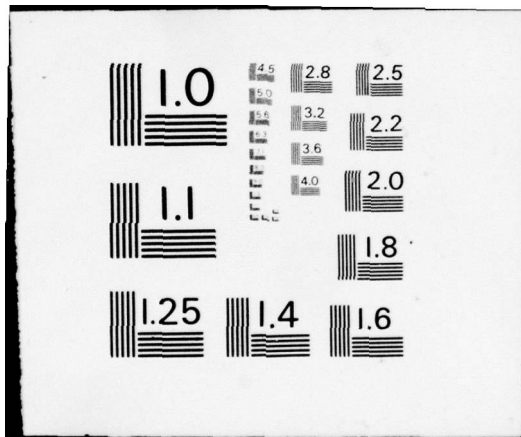
NL

2 of 2
ADA032457



END

DATE
FILMED
1 - 77



JOB IMPORTANCE SCALE

Please rate each task in PART 2 according to the relative importance you place upon the task. Use the following scale:

- 0 NOT PART OF MY PRESENT JOB
- 1 VERY LOW IMPORTANCE
- 2 A LITTLE BELOW AVERAGE IMPORTANCE
- 3 AVERAGE IMPORTANCE
- 4 A LITTLE ABOVE AVERAGE IMPORTANCE
- 5 VERY HIGH IMPORTANCE

Circle 5 for tasks you rank highest in importance.
Circle 4 for tasks of next highest importance and so on
with 0 for tasks not part of your present job.

TASKS

1. Participate in the preparation of an operating or spending plan for an Air Force Stock Fund division.

0 1 2 3 4 5 6 7
(Proportion)

0 1 2 3 4 5
(Importance)

2. Participate in the preparation of an operating or spending plan for an Air Force Industrial Fund.

0 1 2 3 4 5 6 7
(Proportion)

0 1 2 3 4 5
(Importance)

3. Determine cost and volume relationships.

0 1 2 3 4 5 6 7
(Proportion)

0 1 2 3 4 5
(Importance)

4. Sequence alternatives based only upon total cost.

0 1 2 3 4 5 6 7
(Proportion)

0 1 2 3 4 5
(Importance)

5. Sequence alternatives based upon cost and the urgency of mission requirements.

0 1 2 3 4 5 6 7
(Proportion)

0 1 2 3 4 5
(Importance)

6. Evaluate or prepare alternative proposals by subtracting total anticipated savings from total anticipated cost.

0 1 2 3 4 5 6 7
(Proportion)

0 1 2 3 4 5
(Importance)

7. Evaluate or prepare alternative proposals by dividing the total investment by anticipated periodic savings to give the number of periods required to cover the total investment.

0 1 2 3 4 5 6 7
(Proportion)

0 1 2 3 4 5
(Importance)

8. Evaluate or prepare alternative proposals by dividing the periodic savings amount by total investment to determine an interest rate.

0 1 2 3 4 5 6 7
(Proportion)

0 1 2 3 4 5
(Importance)

9. Evaluate or prepare alternative proposals by calculating the present value of savings, calculating the present value of investment costs, and determining the interest rate required to set the present value of savings and the present value of investment costs equal to each other.

0 1 2 3 4 5 6 7
(Proportion)

0 1 2 3 4 5
(Importance)

10. Evaluate or prepare alternative proposals by subtracting the present value (PV) of the investment, and PV of operations and maintenance costs from the PV of savings.

0 1 2 3 4 5 6 7
(Proportion)

0 1 2 3 4 5
(Importance)

11. Evaluate or prepare alternative proposals using present value techniques not listed in this questionnaire.

0 1 2 3 4 5 6 7
(Proportion)

0 1 2 3 4 5
(Importance)

12. Evaluate or prepare alternative proposals by using a constant dollar index to adjust historical costs.

0 1 2 3 4 5 6 7
(Proportion)

0 1 2 3 4 5
(Importance)

13. Evaluate unit expenditures compared to periodic targets.

0 1 2 3 4 5 6 7
(Proportion)

0 1 2 3 4 5
(Importance)

14. Evaluate subordinate units' expenditures compared to periodic targets.

0 1 2 3 4 5 6 7
(Proportion)

0 1 2 3 4 5
(Importance)

15. Analyze differences between planned and actual expenditures to isolate potential problem areas.

0 1 2 3 4 5 6 7
(Proportion)

0 1 2 3 4 5
(Importance)

16. Determine if deviations from planned expenditures are caused by differences between planned and actual price and/or planned and actual usage.

0 1 2 3 4 5 6 7
(Proportion)

0 1 2 3 4 5
(Importance)

17. Evaluate or analyze contractor's financial condition by computing various ratios based upon his financial statements.

0 1 2 3 4 5 6 7
(Proportion)

0 1 2 3 4 5
(Importance)

18. Evaluate or analyze contractor's financial condition by using a statement of changes in financial position.

0 1 2 3 4 5 6 7
(Proportion)

0 1 2 3 4 5
(Importance)

19. Evaluate or analyze contractor's financial condition by examining projected changes in financial statements.

0 1 2 3 4 5 6 7
(Proportion)

0 1 2 3 4 5
(Importance)

20. Analyze contractor provided data on costs and schedules.

0 1 2 3 4 5 6 7
(Proportion)

0 1 2 3 4 5
(Importance)

21. Participate in the development of unit budget estimates for TDY.

0 1 2 3 4 5 6 7
(Proportion)

0 1 2 3 4 5
(Importance)

22. Participate in the development of unit budget estimates for operations and maintenance.

0 1 2 3 4 5 6 7
(Proportion)

0 1 2 3 4 5
(Importance)

23. Participate in the development of unit budget estimates for equipment items.

0 1 2 3 4 5 6 7
(Proportion)

0 1 2 3 4 5
(Importance)

24. Participate in the development of unit budget estimates for military construction.

0 1 2 3 4 5 6 7
(Proportion)

0 1 2 3 4 5
(Importance)

25. Review unit budget estimates.

0 1 2 3 4 5 6 7
(Proportion)

0 1 2 3 4 5
(Importance)

26. Review budget estimates for mission support adequacy.
- | | |
|-----------------|--------------|
| 0 1 2 3 4 5 6 7 | 0 1 2 3 4 5 |
| (Proportion) | (Importance) |
27. Review budget estimates for contingency support adequacy.
- | | |
|-----------------|--------------|
| 0 1 2 3 4 5 6 7 | 0 1 2 3 4 5 |
| (Proportion) | (Importance) |
28. Participate in the budget working group review of budget estimates.
- | | |
|-----------------|--------------|
| 0 1 2 3 4 5 6 7 | 0 1 2 3 4 5 |
| (Proportion) | (Importance) |
29. Participate in the budget review panel review of budget estimates.
- | | |
|-----------------|--------------|
| 0 1 2 3 4 5 6 7 | 0 1 2 3 4 5 |
| (Proportion) | (Importance) |
30. Provide guidance for the development of annual budgets and revisions.
- | | |
|-----------------|--------------|
| 0 1 2 3 4 5 6 7 | 0 1 2 3 4 5 |
| (Proportion) | (Importance) |
31. Participate in the consolidation of unit budgets.
- | | |
|-----------------|--------------|
| 0 1 2 3 4 5 6 7 | 0 1 2 3 4 5 |
| (Proportion) | (Importance) |
32. Participate in MAJCOM review of subordinate organization budget submissions.
- | | |
|-----------------|--------------|
| 0 1 2 3 4 5 6 7 | 0 1 2 3 4 5 |
| (Proportion) | (Importance) |
33. Participate in HQ AF review of MAJCOM budget submissions.
- | | |
|-----------------|--------------|
| 0 1 2 3 4 5 6 7 | 0 1 2 3 4 5 |
| (Proportion) | (Importance) |
34. Participate in the preparation of the HQ AF "call" for budget estimates.
- | | |
|-----------------|--------------|
| 0 1 2 3 4 5 6 7 | 0 1 2 3 4 5 |
| (Proportion) | (Importance) |

35. Participate in the preparation of MAJCOM "call" for budget estimates.

0 1 2 3 4 5 6 7
(Proportion)

0 1 2 3 4 5
(Importance)

36. Participate in the analysis and/or submission of Program Objective Memoranda.

0 1 2 3 4 5 6 7
(Proportion)

0 1 2 3 4 5
(Importance)

37. Participate in the analysis and/or responses to Program Decision Memoranda.

0 1 2 3 4 5 6 7
(Proportion)

0 1 2 3 4 5
(Importance)

38. Participate in the analysis of Joint Force Memoranda.

0 1 2 3 4 5 6 7
(Proportion)

0 1 2 3 4 5
(Importance)

39. Participate in the analysis of the Planning and Program Guidance Memoranda.

0 1 2 3 4 5 6 7
(Proportion)

0 1 2 3 4 5
(Importance)

40. Serve as a resource advisor.

0 1 2 3 4 5 6 7
(Proportion)

0 1 2 3 4 5
(Importance)

41. Review unit expense reports.

0 1 2 3 4 5 6 7
(Proportion)

0 1 2 3 4 5
(Importance)

42. Participate in the analysis of Program Budget Decisions.

0 1 2 3 4 5 6 7
(Proportion)

0 1 2 3 4 5
(Importance)

43. Participate in the pricing of proposed replacement items.

0 1 2 3 4 5 6 7
(Proportion)

0 1 2 3 4 5
(Importance)

44. Participate in the pricing of expansion of capacity or production projects.

0 1 2 3 4 5 6 7
(Proportion)

0 1 2 3 4 5
(Importance)

45. Participate in the pricing of acquisition and support costs for new items.

0 1 2 3 4 5 6 7
(Proportion)

0 1 2 3 4 5
(Importance)

46. Participate in the pricing of contingency, safety, security, and other plans.

0 1 2 3 4 5 6 7
(Proportion)

0 1 2 3 4 5
(Importance)

47. Now that you have completed the questionnaire, please list other related tasks that you think we omitted from the questionnaire.

APPENDIX E
DEMOGRAPHIC CHARACTERISTICS

APPENDIX E

DEMOGRAPHIC CHARACTERISTICS

This appendix contains population, sample, and respondent demographic data. The percentages apply to the column total. For example, the 0046 AFSC invited sample size is 23 percent of the total invited sample size.

AFSC

AFSC	Invited	Percent	Original	Percent	Follow-Up	Percent	Scored	Percent
0046	35	23	10	15	11	36	21	22
30XX	21	14	13	20	1	3	14	14
31XX	13	8	8	12	1	3	9	9
40XX	26	17	12	18	4	13	16	17
60XX	6	4	0	6	4	13	4	4
64XX	10	7	4	--	2	7	6	6
65XX	14	9	4	6	3	10	7	7
66XX	29	19	15	23	5	16	20	21
Total	154		66		31		97	

MAJCOM

MAJCOM	Pop.	Percent	Sample	Percent	Original	Percent	Follow-Up	Percent	Total	Percent
AAC	5	1	2	1	2	3	0	--	2	2
ADCOM	40	6	3	2	3	5	0	--	3	3
USAFE	12	2	4	3	2	3	0	--	2	2
AFLC	74	10	2	1	1	2	1	3	2	2
AFSC	32	5	6	4	0	--	1	3	1	1
ATC	11	2	3	2	1	2	1	3	2	2
AU	11	2	3	2	3	5	0	--	3	3
HQUSAF	84	12	24	16	5	8	10	32	15	16
MAC	33	5	8	5	5	8	1	3	6	6
PACAF	14	2	7	5	1	--	2	6	3	3
SAC	147	21	34	22	14	21	7	23	21	22
TAC	102	14	24	16	13	20	5	16	18	19
AFSS	12	2	5	3	4	6	0	--	4	4
AFCS	44	6	12	8	6	9	0	--	6	6
HQ COMD, USAF	70	10	14	9	4	6	1	3	5	5
Other	16	2	3	2	2	3	2	6	4	4
Total	707		154		66		31		97	

LEVEL OF ASSIGNMENT

Level	Original	Percent	Follow-Up	Percent	Total	Percent
HQ USAF	6	9	10	32	16	16
MAJCOM	15	23	7	23	22	23
NAF	8	12	3	10	11	11
AD	1	2	1	3	2	2
Center	3	5	2	6	5	5
Group	3	5	0	0	3	3
Wing	13	20	5	16	18	19
Squadron	11	17	1	3	12	12
Other	6	9	2	6	8	8
Total	<u>66</u>		<u>31</u>		<u>97</u>	

RANK

Rank	Original	Percent	Follow-Up	Percent	Scored	Percent
Capt	11	17	3	10	14	14
Maj	14	21	7	23	21	22
LtC	26	40	14	45	40	41
Col	15	23	7	23	22	23
Total	<u>66</u>		<u>31</u>		<u>97</u>	

APPENDIX F
FINANCIAL MANAGEMENT TECHNIQUES USED
IN GRADUATE LOGISTICS POSITIONS

APPENDIX F

FINANCIAL MANAGEMENT TECHNIQUES USED
IN GRADUATE LOGISTICS POSITIONS

This appendix contains the financial management techniques required in GL positions. The median usage and median importance associated with each technique are shown.

FINANCIAL MANAGEMENT TECHNIQUES USED IN GRADUATE LOGISTICS POSITIONS

Category Technique Question	Respondents Using the Technique	Large, Very Large, or Extremely Large Proportion of Job	Respondents Considering the Technique Important	Little Above Average or High Importance
<u>Cost Accounting</u>				
Analysis of Variance				
Q13	70.1%	15.5%	71.1%	26.8%
Q14	52.6	8.3	52.6	15.4
Q15	76.3	16.5	76.3	31.9
Q16	68.0	14.4	67.0	25.8
Median	69.0%	15.0%	69.0%	26.3%
<u>Capital Budgeting</u>				
Rank Order Investments				
Q4	46.4%	8.2%	47.4%	16.5%
Q5	62.9	17.6	62.9	34.1
Median	54.7	12.9	70.7	25.3
Payback Period				
Q6	53.6%	5.2%	43.6%	11.3%
Q7	35.1	3.1	36.1	5.1
Median	44.4%	4.2%	39.9%	8.2%
Rate of Return				
Q8	15.5%	0.0%	15.5%	0.0%

FINANCIAL MANAGEMENT TECHNIQUES--Continued

Category Technique Question	Respondents Using the Technique	Large, Very Large, or Extremely Large Proportion of Job	Respondents Considering the Technique Important	Little Above Average or High Importance
Internal Rate of Return Q9	15.5%	0.0%	16.5%	1.0%
Net Present Value Q10	23.7%	0.0%	22.7%	3.1%
Other Present Value Methods Q11	20.6%	2.0%	20.6%	6.2%
Q12	<u>23.7</u>	<u>2.0</u>	<u>22.7</u>	<u>2.0</u>
Median	22.0%	2.0%	21.7%	4.1%
<u>Financial Forecasting</u> Pricing Replacement Proposals Q43	23.7%	4.1%	23.7%	7.2%
Pricing for Expansion Q3	37.1%	7.2%	38.1%	14.4%
Q44	<u>23.7</u>	<u>4.1</u>	<u>23.7</u>	<u>5.1</u>
Median	30.4%	5.7%	30.9%	9.8%

FINANCIAL MANAGEMENT TECHNIQUES--Continued

Category Technique Question	Respondents Using the Technique	Large, Very Large, or Extremely Large Proportion of Job	Respondents Considering the Technique Important	Little Above Average or High Importance
Pricing New Support Requirements Q45	28.9%	4.1%	28.9%	7.3%
Pricing Other Proposals Q46	34.0%	2.1%	34.0%	7.3%
Ratio Analysis				
Q17	11.3%	2.0%	11.3%	2.0%
Q18	8.2	1.0	8.2	1.0
Q19	7.2	2.0	6.2	2.0
Q20	<u>23.7</u>	<u>5.2</u>	<u>24.7</u>	<u>7.2</u>
Median	9.8%	2.0%	9.8%	2.0%
Working Capital Management of USAF Stock/Industrial Funds				
Q1	30.9%	2.0%	34.0%	13.4%
Q2	<u>21.6</u>	<u>2.0</u>	<u>20.6</u>	<u>8.2</u>
Median	26.3%	2.0%	27.3%	10.8%
Preparation/Review of Operating Budgets				
Q21	84.5%	6.2%	84.5%	18.5%
Q22	70.1	13.4	69.1	27.8
Q23	71.1	12.4	70.1	24.8

FINANCIAL MANAGEMENT TECHNIQUES--Continued

Category Technique Question	Respondents Using the Technique	Large, Very Large, or Extremely Large Proportion of Job	Respondents Considering the Technique Important	Little Above Average or High Importance
Q24	33.0%	3.1%	35.1%	9.3
Q25	73.2	13.5	72.2	35.0
Q26	67.0	12.4	67.0	28.8
Q27	57.7	6.2	37.7	57.7
Q28	49.5	8.3	50.5	19.6
Q29	45.4	9.3	45.4	21.7
Q30	59.8	10.3	58.8	19.6
Q31	37.1	6.1	37.1	13.4
Q32	11.3	1.0	13.4	6.3
Q33	12.4	3.1	14.4	8.2
Q34	9.3	3.1	10.3	5.2
Q35	17.5	2.1	19.6	7.2
Q40	49.5	12.4	49.5	23.7
Q41	55.7	11.4	55.7	25.8
Median	49.5%	8.3%	55.7%	19.6%
<u>Programming</u>				
Program, Planning and Guidance Memoranda Q39	22.7%	2.0%	23.7%	8.2%
Joint Force Memoranda Q38	13.4%	3.1%	13.4%	6.2%

FINANCIAL MANAGEMENT TECHNIQUES--Continued

Category Technique Question	Respondents Using the Technique	Large, Very Large, or Extremely Large Proportion of Job	Respondents Considering the Technique Important	Little Above Average or High Importance
Program Objective Memoranda Q36	30.9%	5.2%	33.0%	12.3%
Program Decision Memoranda Q37	28.9%	8.3%	28.9%	15.4%
Q42	<u>44.3</u>	<u>7.2</u>	<u>44.3</u>	<u>20.6</u>
Median	36.6%	7.8%	36.6%	18.0%

APPENDIX G
CROSS-TABULATION OF JOB PROPORTION AND
JOB IMPORTANCE RESPONSES

APPENDIX G

CROSS-TABULATION OF JOB PROPORTION AND
JOB IMPORTANCE RESPONSES

This appendix contains a cross-tabulation of proportion and importance responses for each survey question. The rows represent the relative job proportion which the task represents, while the columns show the relative importance associated with the task. For example, the table for question 1 shows that the six respondents who indicated that the task represents "an extremely small part" of the job also associated "a very low importance" with the task.

PROPORTION AND IMPORTANCE RESPONSES FOR QUESTION NO. 1*

	0.	1.00	2.00	3.00	4.00	5.00	ROW TOTAL
0.	64	2	0	1	0	0	67
1.00	0	6	1	1	0	0	69.1
2.00	0	0	2	3	1	2	8
3.00	0	0	1	2	2	2	8.2
4.00	0	0	0	1	4	0	7.2
5.00	0	0	0	0	1	1	5
6.00	0	0	0	0	0	1	5.2
7.00	0	0	0	0	0	1	1
COLUMN TOTAL	64	8	4	8	7	6	97
TOTAL	66.0	8.2	4.1	8.2	7.2	6.2	100.0

*Participate in the preparation of an operating or spending plan for an Air Force Stock Fund division.

PROPORTION AND IMPORTANCE RESPONSES FOR QUESTION NO. 2*

	0.	1	1.001	2.001	3.001	4.001	5.001	ROW TOTAL
0.	76	0	0	0	0	0	0	76
1.00	1	2	0	0	0	0	0	3
2.00	0	0	3	3	3	0	0	6
3.00	0	0	0	0	2	2	1	5
4.00	0	0	0	0	2	1	2	5
5.00	0	0	0	0	0	1	0	1
7.00	0	0	0	0	0	0	1	1
COLUMN TOTAL	77	2	3	3	7	4	4	97
	79.4	2.1	3.1	3.1	7.2	4.1	4.1	100.0

*Participate in the preparation of an operating or spending plan for an Air Force Industrial Fund.

PROPORTION AND IMPORTANCE RESPONSES FOR QUESTION NO. 3*

	0.	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	ROW TOTAL
0.	0	0	0	0	1	0	0	0	0	0	6.1
1.00	0	3	0	3	0	0	0	0	0	0	6.2
2.00	0	0	4	3	0	0	0	0	0	1	8.2
3.00	0	0	2	4	3	0	0	0	0	0	9.3
4.00	0	0	1	1	3	1	0	0	0	1	6.2
5.00	0	0	0	0	1	2	1	1	3	0	6.2
6.00	0	0	0	0	0	0	0	0	0	1	1.0
7.00	0	0	0	0	0	0	0	0	0	0	1.0
COLUMN TOTAL	60	3	7	13	8	6	6	6	6	6	97
TOTAL	61.9	3.1	7.2	13.4	8.2	6.2	6.2	6.2	6.2	6.2	100.0

*Determine cost and volume relationships.

PROPORTION AND IMPORTANCE RESPONSES FOR QUESTION NO. 4*

	0.	1	1.00	2.00	3.00	4.00	5.00	ROW TOTAL
0.	51	1	0	0	0	0	0	52
1.00	0	7	1	3	1	1	0	12
2.00	0	1	5	4	1	1	2	13
3.00	0	1	3	3	1	1	0	8
4.00	0	0	0	0	1	2	1	4
5.00	0	0	0	0	0	5	2	7
7.00	0	0	0	0	0	0	1	1
COLUMN TOTAL	51	10	9	11	10	10	6	97
TOTAL	52.6	10.3	9.3	11.3	10.3	10.3	6.2	100.0

*Sequence alternatives based only upon total cost.

PROPORTION AND IMPORTANCE RESPONSES FOR QUESTION NO. 5*

	0.	1.000	2.000	3.000	4.000	5.000	ROW TOTAL
0.	35	0	0	1	0	0	36
1.00	1	5	3	1	0	0	37.1
2.00	0	0	2	3	2	2	10
3.00	0	0	5	3	4	2	10.3
4.00	0	0	2	2	3	4	9
5.00	0	0	0	1	6	2	9.3
6.00	0	0	0	0	3	2	5
7.00	0	0	0	0	0	3	5.2
COLUMN TOTAL	36	5	12	11	18	15	97
TOTAL	37.1	5.2	12.4	11.3	18.6	15.5	100.0

*Sequence alternatives based upon cost and the urgency of mission requirements.

PROPORTION AND IMPORTANCE RESPONSES FOR QUESTION NO. 6*

	0.	1.00	2.00	3.00	4.00	5.00	6.00	COLUMN TOTAL	1.000	2.000	3.000	4.000	5.000	ROW TOTAL
0.	44	0	0	1	0	0	0	46.4	0	0	1	0	0	45
1.00	1	5	4	2	0	0	0	12.4	5	4	2	0	0	12
2.00	0	2	2	4	1	0	2	11.3	2	2	4	1	2	11
3.00	0	0	7	10	2	0	0	19.6	0	7	10	2	0	19
4.00	0	0	0	3	0	0	0	5.2	0	0	3	0	0	5
5.00	0	0	0	1	2	0	0	3.1	0	0	1	2	0	3
6.00	0	0	0	0	0	0	2	2.1	0	0	0	0	2	2
TOTAL	46.4	7.2	13.4	21.6	7.2	4.1	97	100.0	7.2	13.4	21.6	7.2	4.1	97

*Evaluate or prepare alternative proposals by subtracting total anticipated savings from total anticipated cost.

PROPORTION AND IMPORTANCE RESPONSES FOR QUESTION NO. 7*

	0.	1	1.001	2.001	3.001	4.001	5.001	ROW TOTAL
0.	62	0	1	1	0	0	0	63
1.00	0	8	3	1	1	1	1	14
2.00	0	1	3	2	0	0	0	6
3.00	0	1	2	6	0	0	0	9
4.00	0	0	0	1	1	1	0	2
5.00	0	0	0	1	1	0	0	1
6.00	0	0	0	0	0	2	0	2
COLUMN TOTAL	62	10	9	11	4	1	1	97
	63.9	10.3	9.3	11.3	4.1	1.0	1.0	100.0

*Evaluate or prepare alternative proposals by dividing the total investment by anticipated periodic savings to give the number of periods required to cover the total investment.

PROPORTION AND IMPORTANCE RESPONSES FOR QUESTION NO. 8*

	0.	1.00	2.00	3.00	COLUMN TOTAL	82	11.3	1.0	3.1	97	ROW TOTAL
0.	0.	1.00	2.00	5.00	82	11.3	1.0	3.1	97	84.5	
1.00	0	7	0	1	8	8.2					
2.00	0	4	1	0	5	5.2					
3.00	0	0	0	2	2	2.1					
TOTAL	82	11.3	1.0	3.1	97	84.5	11.3	1.0	3.1	97	100.0

*Evaluate or prepare alternative proposals by dividing the periodic savings amount by total investment to determine an interest rate.

PROPORTION AND IMPORTANCE RESPONSES FOR QUESTION NO. 9*

	0.	1.00	2.00	3.00	4.00	ROW TOTAL
0.	81	1	0	0	0	82
1.00	0	4	1	0	1	6
2.00	0	3	3	0	0	6
3.00	0	0	1	2	0	3
COLUMN TOTAL	81	8	5	2	1	97
	83.5	8.2	5.2	2.1	1.0	100.0

*Evaluate or prepare alternative proposals by calculating the present value of savings, calculating the present value of investment costs, and determining the interest rate required to set the present value of savings and the present value of investment costs equal to each other.

PROPORTION AND IMPORTANCE RESPONSES FOR QUESTION NO. 10*

	0.	1.001	2.001	3.001	4.001	5.001	ROW TOTAL
0.	74	0	0	0	0	0	74
1.00	1	6	2	0	1	1	11
2.00	0	1	3	1	0	0	5
3.00	0	0	3	3	0	0	6
4.00	0	0	0	0	1	0	1
COLUMN TOTAL	75	7.2	8.2	4.1	2.1	1.0	97
	77.3			4.1			100.0

*Evaluate or prepare alternative proposals by subtracting the present value (PV) of the investment, and PV of operations and maintenance costs from the PV of savings.

PROPORTION AND IMPORTANCE RESPONSES FOR QUESTION NO. 11*

	0.	1.	2.	3.	4.	5.	6.	ROW TOTAL
0.	77	0	0	0	0	0	0	77
1.00	0	6	3	0	0	0	0	9
2.00	0	0	1	1	1	0	0	2
3.00	0	0	1	1	1	1	1	3
4.00	0	0	0	0	1	1	3	4
5.00	0	0	0	0	0	0	1	1
6.00	0	0	0	0	0	0	1	1
COLUMN TOTAL	77	6	5	3	3	3	6	97
TOTAL	79.4	6.2	5.2	3.1	3.1	3.1	6.2	100.0

*Evaluate or prepare alternative proposals using present value techniques not listed in this questionnaire.

PROPORTION AND IMPORTANCE RESPONSES FOR QUESTION NO. 12*

	0.	1.00	2.00	3.00	4.00	5.00	ROW TOTAL
0.	74	0	0	0	0	0	74
1.00	1	7	1	0	0	0	76.3
2.00	0	1	4	1	0	0	9.3
3.00	6	0	1	3	0	0	6.2
4.00	0	0	0	1	1	0	4.1
5.00	0	0	0	1	0	0	2.1
7.00	0	0	0	0	0	1	1.0
COLUMN TOTAL	75	8	6	6	1	1	97
TOTAL	77.3	8.2	6.2	6.2	1.0	1.0	100.0

*Evaluate or prepare alternative proposals by using a constant dollar index to adjust historical costs.

PROPORTION AND IMPORTANCE RESPONSES FOR QUESTION NO. 13*

ROW	0.	1.00	2.00	3.00	4.00	5.00	6.00	7.00	TOTAL
TOTAL	28.9	9.3	12.4	22.7	15.5	11.3	2.1	3.1	97
0.	28	1	0	0	0	0	0	0	29
1.00	0	7	2	3	0	0	0	0	12
2.00	0	1	6	7	1	0	0	0	15
3.00	0	0	1	5	3	3	0	0	12
4.00	0	0	2	4	5	3	0	0	14
5.00	0	0	1	2	5	2	0	0	10
6.00	0	0	0	1	1	1	0	0	2
7.00	0	0	0	0	0	0	0	3	3
COLUMN TOTAL	28.9	9.3	12.4	22.7	15.5	11.3	2.1	3.1	97

*Evaluate unit expenditures compared to periodic targets.

PROPORTION AND IMPORTANCE RESPONSES FOR QUESTION NO. 14*

	0.	1.00	2.00	3.00	4.00	5.00	7.00	ROW TOTAL
0.	45	1	0	0	0	0	0	46
1.00	1	5	3	3	4	2	3	12
2.00	0	0	6	3	0	1	0	10
3.00	0	0	2	5	1	2	1	13
4.00	0	2	1	3	1	1	1	8
5.00	0	0	0	2	2	1	1	5
7.00	0	0	0	0	0	0	3	3
COLUMN TOTAL	46	8	12	16	7	8	97	
	47.4	8.2	12.4	16.5	7.2	8.2	100.0	

*Evaluate subordinate units' expenditures compared to periodic targets.

PROPORTION AND IMPORTANCE RESPONSES FOR QUESTION NO. 15*

ROW TOTAL	0.	1.000	2.000	3.000	4.000	5.000
23	22	0	1	0	1	0
23.7						
15	0	11	2	2	0	0
15.5						
19	1	0	5	9	3	1
19.6						
12	0	0	0	3	5	4
12.4						
12	0	0	3	4	3	2
12.4						
8	0	0	0	2	6	0
8.2						
5	0	0	0	1	3	1
5.2						
3	0	0	0	0	0	3
3.1						
COLUMN TOTAL	23	11	11	21	20	11
	23.7	11.3	11.3	21.6	20.6	11.3
						100.0

*Analyze differences between planned and actual expenditures to isolate potential problem areas.

PROPORTION AND IMPORTANCE RESPONSES FOR QUESTION NO. 16*

	0.	1	1.001	2.001	3.001	4.001	5.001	ROW TOTAL
0.	31	0	0	0	0	0	0	31 32.0
1.00	1	6	1	1	1	0	0	9 9.3
2.00	0	1	9	8	3	1	1	22 22.7
3.00	0	0	2	2	3	5	5	12 12.4
4.00	0	0	0	0	5	3	1	9 9.3
5.00	0	0	1	1	4	4	1	10 10.3
6.00	0	0	0	0	0	2	1	3 3.1
7.00	0	0	0	0	0	0	1	1 1.0
COLUMN TOTAL	32 33.0	7 7.2	13 13.4	20 20.6	15 15.5	10 10.3	97 100.0	

*Determine if deviations from planned expenditures are caused by differences between planned and actual price and/or planned and actual usage.

PROPORTION AND IMPORTANCE RESPONSES FOR QUESTION NO. 17*

	0.	1.00	2.00	3.00	4.00	5.00	ROW TOTAL
0.	85	0	0	1	0	0	86
1.00	0	4	1	1	0	0	6
2.00	0	0	0	1	0	0	1
3.00	0	0	1	0	0	0	1
4.00	0	0	0	0	0	1	1
5.00	1	0	0	0	0	0	1
6.00	0	0	0	0	1	0	1
COLUMN TOTAL	86	4	2	3	1	1	97
	88.7	4.1	2.1	3.1	1.0	1.0	100.0

*Evaluate or analyze contractor's financial condition by computing various ratios based upon his financial statements.

PROPORTION AND IMPORTANCE RESPONSES FOR QUESTION NO. 18*

	0.	1.00	2.00	3.00	4.00	5.00	6.00	ROW TOTAL
0.	88	0	0	1	0	0	0	89
1.00	0	3	0	0	0	0	0	3
2.00	0	0	0	1	0	0	0	1
3.00	1	0	1	1	0	0	0	3
4.00	0	0	0	0	0	0	0	0
5.00	0	0	0	0	0	0	0	0
6.00	0	0	0	0	0	0	0	0
COLUMN TOTAL	89	3	1	3	0	0	0	97
TOTAL	91.8	3.1	1.0	3.1	1.0	1.0	1.0	100.0

*Evaluate or analyze contractor's financial condition by using a statement of changes in financial position.

PROPORTION AND IMPORTANCE RESPONSES FOR QUESTION NO. 19*

	0.	1	1.001	3.001	4.001	5.001	ROW TOTAL
0.	89	1	0	1	0	0	90
1.00	1	1	3	0	0	0	92.8
3.00	1	1	0	0	0	0	4
5.00	0	1	0	0	0	1	4.1
6.00	0	1	0	0	1	0	1
COLUMN TOTAL	91	3	3.1	1.0	1.0	1.0	97
	93.8						100.0

*Evaluate or analyze contractor's financial condition by examining projected changes in financial statements.

PROPORTION AND IMPORTANCE RESPONSES FOR QUESTION NO. 20*

	0.	1	1.001	2.001	3.001	4.001	5.001	ROW TOTAL
0.	72	1	0	1	1	0	0	74
1.00	0	5	0	2	2	2	0	9
2.00	0	1	1	1	3	0	0	5
3.00	0	0	1	1	1	2	0	4
5.00	1	0	0	0	1	0	0	2
6.00	0	0	0	0	0	2	0	2
7.00	0	0	0	0	0	0	1	1
COLUMN TOTAL	73	7	2	2	8	6	1	97
	75.3	7.2	2.1	2.1	8.2	6.2	1.0	100.0

*Analyze contractor provided data on costs and schedules.

PROPORTION AND IMPORTANCE RESPONSES FOR QUESTION NO. 21*

	0.	1.00	2.00	3.00	4.00	5.00	ROW TOTAL
0.	14	0	0	0	1	0	15 15.5
1.00	0	16	4	4	1	1	26 26.8
2.00	0	1	7	11	1	3	23 23.7
3.00	1	0	3	9	2	2	17 17.5
4.00	0	0	1	5	3	1	10 10.3
5.00	0	0	0	1	1	0	2 2.1
6.00	0	0	0	0	1	0	1 1.0
7.00	0	0	1	1	0	1	3 3.1
COLUMN TOTAL	15 15.5	17 17.5	16 16.5	32 32.0	10 10.3	8 8.2	97 100.0

*Participate in the development of unit budget estimates for TDY.

PROPORTION AND IMPORTANCE RESPONSES FOR QUESTION NO. 22*

	0.	1.00	2.00	3.00	4.00	5.00	6.00	7.00	ROW TOTAL
0.	29	0	0	0	0	0	0	0	29
1.00	0	2	5	3	1	0	0	0	11
2.00	1	0	10	4	4	3	0	0	22
3.00	0	0	1	8	2	1	0	0	12
4.00	0	0	0	4	5	1	0	0	10
5.00	0	0	0	2	1	1	0	0	4
6.00	0	0	0	0	0	3	3	0	6
7.00	0	0	0	1	1	1	0	1	3
COLUMN TOTAL	30	2	16	22	17	10	10	10	97
TOTAL	30.9	2.1	16.5	22.7	17.5	10.3	10.3	10.3	100.0

*Participate in the development of unit budget estimates for operations and maintenance.

PROPORTION AND IMPORTANCE RESPONSES FOR QUESTION NO. 23*

	0.	1.00	2.00	3.00	4.00	5.00	ROW TOTAL
0.	28	0	0	0	0	0	28
1.00	0	9	5	3	1	2	20
2.00	0	0	9	5	3	2	19
3.00	0	0	1	6	1	1	9
4.00	1	0	0	4	3	1	9
5.00	0	0	0	2	4	1	7
6.00	0	0	0	0	2	1	3
7.00	0	0	0	0	1	1	2
COLUMN TOTAL	29	9	15	20	15	9	97
TOTAL	29.9	9.3	15.5	20.6	15.5	9.3	100.0

*participate in the development of unit budget estimates for equipment items.

PROPORTION AND IMPORTANCE RESPONSES FOR QUESTION NO. 24*

	0.	1	1.001	2.001	3.001	4.001	5.001	ROW TOTAL
0.	63	0	0	1	1	0	1	65
1.00	0	6	2	4	3	1	0	15
2.00	0	1	4	3	0	1	1	9
3.00	0	0	1	2	0	1	1	4
4.00	0	0	0	0	0	1	0	1
5.00	0	0	0	0	1	1	1	3
COLUMN TOTAL	63	7	7	7	11	5	4	97
TOTAL	64.9	7.2	7.2	7.2	11.3	5.2	4.1	100.0

*Participate in the development of unit budget estimates for military construction.

PROPORTION AND IMPORTANCE RESPONSES FOR QUESTION NO. 25*

	0.	1.00	2.00	3.00	4.00	5.00	ROW TOTAL
0.	26	0	0	0	0	0	26
1.00	0	8	4	2	3	2	19
2.00	1	0	7	4	6	3	21
3.00	0	0	2	4	4	0	10
4.00	0	0	0	3	3	2	8
5.00	0	0	0	2	7	0	9
6.00	0	0	0	0	1	1	2
7.00	0	0	0	0	0	2	2
COLUMN TOTAL	27	8	13	15	24	10	97
TOTAL	27.8	8.2	13.4	15.5	24.7	10.3	100.0

*Review unit budget estimates.

PROPORTION AND IMPORTANCE RESPONSES FOR QUESTION NO. 26*

	0.	1.001	2.001	3.001	4.001	5.001	ROW TOTAL
0.	32	0	0	0	0	0	32
1.00	0	9	1	5	1	1	17
2.00	0	0	5	3	4	2	14
3.00	0	0	2	3	6	1	12
4.00	0	0	0	6	1	3	10
5.00	0	0	0	3	2	1	6
6.00	0	0	0	0	2	0	2
7.00	0	0	0	0	1	3	4
COLUMN TOTAL	32	9.3	8.2	20.6	17.5	11.3	97
TOTAL	33.0						100.0

*Review budget estimates for mission support adequacy.

PROPORTION AND IMPORTANCE RESPONSES FOR QUESTION NO. 27*

	0.	1.000	2.000	3.000	4.000	5.000	ROW TOTAL
0.	41	0	0	0	0	0	41 42.3
1.00	0	8	3	2	1	0	14 14.4
2.00	0	1	4	5	4	1	15 15.5
3.00	0	0	1	7	3	1	12 12.4
4.00	0	0	0	6	1	2	9 9.3
5.00	0	0	0	0	1	0	1 1.0
6.00	0	0	0	0	2	1	3 3.1
7.00	0	0	0	0	0	2	2 2.1
COLUMN TOTAL	41 42.3	9 9.3	8 8.2	20 20.6	12 12.4	7 7.2	97 100.0

*Review budget estimates for contingency support adequacy.

PROPORTION AND IMPORTANCE RESPONSES FOR QUESTION NO. 28*

	0.	1.001	2.001	3.001	4.001	5.001	ROW TOTAL
0.	48	0	0	0	0	1	49
1.00	0	9	1	3	2	1	16
2.00	0	0	5	0	3	2	10
3.00	0	0	1	4	2	1	8
4.00	0	0	0	5	1	0	6
5.00	0	0	0	2	2	0	4
6.00	0	0	0	0	2	0	2
7.00	0	0	0	0	0	2	2
COLUMN TOTAL	48	9	7	14	12	7	97
TOTAL	49.5	9.3	7.2	14.4	12.4	7.2	100.0

*Participate in the budget working group review of budget estimates.

PROPORTION AND IMPORTANCE RESPONSES FOR QUESTION NO. 29*

	0.	1.000	2.000	3.000	4.000	5.000	ROW TOTAL
0.	53	0	0	0	0	0	53
1.00	0	4	1	2	1	1	9
2.00	0	0	4	3	2	2	11
3.00	0	0	1	2	5	1	9
4.00	0	0	0	5	1	0	6
5.00	0	0	0	1	3	0	4
6.00	0	0	0	0	3	0	3
7.00	0	0	0	0	0	2	2
COLUMN TOTAL	53	4	6	13	15	6	97
	54.6	4.1	6.2	13.4	15.5	6.2	100.0

*Participate in the budget review panel review of budget estimates.

PROPORTION AND IMPORTANCE RESPONSES FOR QUESTION NO. 30*

	0.	1.00	2.00	3.00	4.00	5.00	6.00	7.00	ROW TOTAL
0.	39	0	0	0	0	0	0	0	39 40.2
1.00	0	10	1	6	2	0	0	0	19 19.6
2.00	1	1	3	2	1	2	1	1	10 10.3
3.00	0	0	3	6	6	1	1	1	16 16.5
4.00	0	0	0	3	0	0	0	0	3 3.1
5.00	0	0	0	3	0	1	1	1	4 4.1
6.00	0	0	0	0	0	3	1	1	4 4.1
7.00	0	0	0	0	0	0	0	2	2 2.1
COLUMN TOTAL	40	11	7	20	12	7	7	97	
TOTAL	41.2	11.3	7.2	20.6	12.4	7.2	7.2	100.0	

*Provide guidance for the development of annual budgets and revisions.

PROPORTION AND IMPORTANCE RESPONSES FOR QUESTION NO. 31*

	0.	1.00	2.00	3.00	4.00	5.00	6.00	7.00	COLUMN TOTAL	ROW TOTAL
0.	61	0	0	0	0	0	0	0	61	61
1.00	0	6	3	2	0	0	0	0	15	15.5
2.00	0	0	3	0	0	0	0	0	4	4.1
3.00	0	0	0	6	0	0	0	0	7	7.2
4.00	0	0	1	2	1	0	0	0	4	4.1
5.00	0	0	0	0	0	1	0	0	1	1.0
6.00	0	0	0	0	0	0	3	0	4	4.1
7.00	0	0	0	0	0	0	0	0	1	1.0
TOTAL	61	6	7	10	8	10	10	5	97	100.0

*Participate in the consolidation of unit budgets.

PROPORTION AND IMPORTANCE RESPONSES FOR QUESTION NO. 32*

	0.	1.001	2.001	3.001	4.001	5.001	ROW TOTAL
0.	84	0	0	0	2	0	86
1.00	0	2	0	0	0	0	2
2.00	0	0	2	1	0	1	4
3.00	0	0	1	0	0	1	2
4.00	0	0	0	1	0	1	2
7.00	0	0	0	0	0	1	1
COLUMN TOTAL	84	2	3	2	2	4	97
	86.6	2.1	3.1	2.1	2.1	4.1	100.0

*Participate in MAJCOM review of subordinate organization budget submissions.

PROPORTION AND IMPORTANCE RESPONSES FOR QUESTION NO. 33*

	0.	1	1,001	2,001	3,001	4,001	5,001	ROW TOTAL
0.	83	0	0	0	0	2	0	85
1.00	0	2	0	0	0	0	0	87.6
2.00	0	0	3	1	0	0	0	2
3.00	0	0	0	0	0	0	2	2.1
4.00	0	0	0	0	0	1	0	4
5.00	0	0	0	0	0	1	0	4.1
7.00	0	0	0	0	0	0	2	2
COLUMN TOTAL	83	2	3	3.1	1.0	4	4	97
	85.6	2.1	3.1	1.0	4.1	4.1	4.1	100.0

*Participate in HQ AF review of MAJCOM budget submissions.

PROPORTION AND IMPORTANCE RESPONSES FOR QUESTION NO. 34*

	0.	1.001	3.001	4.001	5.001	ROW TOTAL
0.	87	0	0	1	0	88
1.00	0	2	0	0	0	90.7
2.00	0	1	1	0	0	2
3.00	0	0	0	1	0	2.1
4.00	0	0	1	0	0	2
5.00	0	0	0	0	1	2.1
7.00	0	0	0	0	1	1
COLUMN TOTAL	87	3	2	3	2	97
	89.7	3.1	2.1	3.1	2.1	100.0

*Participate in the preparation of the HQ AF "call" for budget estimates.

PROPORTION AND IMPORTANCE RESPONSES FOR QUESTION NO. 35*

	0.	1	1.001	2.001	3.001	4.001	5.001	ROW TOTAL
0.	78	0	1	1	1	0	0	80
1.00	0	3	1	1	2	1	1	8
2.00	0	0	1	1	1	0	0	2
3.00	0	0	0	0	1	0	1	2
4.00	0	0	1	1	0	2	0	3
7.00	0	0	0	0	0	0	2	2
COLUMN TOTAL	78	3	4	4	5	3	4	97
	80.4	3.1	4.1	4.1	5.2	3.1	4.1	100.0

*Participate in the preparation of MAJCOM "call" for budget estimates.

PROPORTION AND IMPORTANCE RESPONSES FOR QUESTION NO. 36*

	0.	1.00	2.00	3.00	4.00	5.00	7.00	COLUMN TOTAL	1.00	2.00	3.00	4.00	5.00	ROW TOTAL
0.	0	0	0	0	0	0	0	65	0	0	2	0	0	67
1.00	0	3	3	0	0	0	0	6	3	0	0	2	1	69.1
2.00	0	2	1	2	0	0	0	5	2	1	0	1	0	9.3
3.00	0	1	0	4	0	0	0	5	1	0	4	0	1	6
4.00	0	0	0	0	0	0	0	0	0	0	1	3	0	6.2
5.00	0	0	0	1	0	0	0	1	0	1	1	2	0	6
7.00	0	0	0	0	0	0	0	0	0	0	0	0	2	4.1
COLUMN TOTAL	65	6	4	10	0	0	0	67.0	6.2	4.1	10.3	8.2	4.1	97
TOTAL	67.0	6.2	4.1	10.3	0	0	0	100.0	6.2	4.1	10.3	8.2	4.1	100.0

*Participate in the analysis and/or submission of Program Objective Memoranda.

PROPORTION AND IMPORTANCE RESPONSES FOR QUESTION NO. 37*

	0.	1.0001	2.0001	3.0001	4.0001	5.0001	ROW TOTAL
0.	69	0	0	0	0	0	69 71.1
1.00	0	1	2	0	2	1	6 6.2
2.00	0	2	1	2	1	1	7 7.2
3.00	0	1	0	2	0	0	3 3.1
4.00	0	0	0	1	3	0	4 4.1
5.00	0	0	0	1	4	0	5 5.2
6.00	0	0	0	0	1	0	1 1.0
7.00	0	0	0	0	0	2	2 2.1
COLUMN TOTAL	69 71.1	4 4.1	3 3.1	6 6.2	11 11.3	4 4.1	97 100.0

*Participate in the analysis and/or responses to Program Decision Memoranda.

PROPORTION AND IMPORTANCE RESPONSES FOR QUESTION NO. 38*

	0.	1.000	2.000	3.000	4.000	5.000	ROW TOTAL
0.	84	0	0	0	0	0	84
1.00	0	4	1	0	1	0	6
2.00	0	1	0	1	0	0	2
4.00	0	0	0	0	1	1	2
5.00	0	0	0	0	2	0	2
6.00	0	0	0	0	0	1	1
COLUMN TOTAL	84	5	1	1	4	2	97
	86.6	5.2	1.0	1.0	4.1	2.1	100.0

*Participate in the analysis of Joint Force Memoranda.

PROPORTION AND IMPORTANCE RESPONSES FOR QUESTION NO. 39*

	0.	1.001	2.001	3.001	4.001	5.001	ROW TOTAL
0.	74	0	0	1	0	0	75
1.00	0	3	1	3	1	0	8
2.00	0	2	1	0	0	0	3
3.00	0	0	0	2	0	1	3
4.00	0	0	1	1	2	2	6
5.00	0	0	0	0	1	0	1
6.00	0	0	0	0	0	1	1
COLUMN TOTAL	74	5	3	7	4	4	97
	76.3	5.2	3.1	7.2	4.1	4.1	100.0

*Participate in the analysis of the Planning and Program Guidance Memoranda.

PROPORTION AND IMPORTANCE RESPONSES FOR QUESTION NO. 40*

	0.	1.001	2.001	3.001	4.001	5.001	ROW TOTAL
0.	49	0	0	0	0	0	49
1.00	0	6	1	1	0	2	10
2.00	0	1	1	0	0	1	3
3.00	0	1	1	5	2	3	12
4.00	0	0	0	6	4	1	11
5.00	0	0	0	2	2	3	7
6.00	0	0	0	0	3	0	3
7.00	0	0	0	0	0	2	2
COLUMN TOTAL	49	8	3	14	11	12	97
	50.5	8.2	3.1	14.4	11.3	12.4	100.0

*Serve as a resource advisor.

PROPORTION AND IMPORTANCE RESPONSES FOR QUESTION NO. 41*

	0.	1.000	2.000	3.000	4.000	5.000	ROW TOTAL
0.	43	0	0	0	0	0	43 44.3
1.00	0	5	2	3	0	2	12 12.4
2.00	0	0	5	2	3	1	11 11.3
3.00	0	0	2	1	5	0	8 8.2
4.00	0	0	1	6	3	2	12 12.4
5.00	0	0	0	2	2	1	5 5.2
6.00	0	0	0	0	1	0	1 1.0
7.00	0	0	0	0	2	3	5 5.2
COLUMN TOTAL	43	5	10	14	16	9	97
TOTAL	44.3	5.2	10.3	14.4	16.5	9.3	100.0

*Review unit expense reports.

PROPORTION AND IMPORTANCE RESPONSES FOR QUESTION NO. 42*

	0.	1	1.001	2.001	3.001	4.001	5.001	ROW TOTAL
0.	54	0	0	0	0	0	0	54
1.00	0	7	3	0	0	4	1	15
2.00	0	2	1	1	1	0	3	7
3.00	0	0	1	1	4	3	0	8
4.00	0	0	2	2	1	1	2	6
5.00	0	0	0	0	1	2	1	4
6.00	0	0	0	0	0	0	1	1
7.00	0	0	0	0	0	0	2	2
COLUMN TOTAL	54	9	9.3	7	7.2	10.3	10.3	97
	55.7							100.0

*Participate in the analysis of Program Budget Decisions.

PROPORTION AND IMPORTANCE RESPONSES FOR QUESTION NO. 43*

	0.	1.001	2.001	3.001	4.001	5.001	ROW TOTAL
0.	74	0	0	0	0	0	74
1.00	0	3	2	0	0	2	7.2
2.00	0	2	1	1	1	0	5
3.00	0	0	1	4	1	0	6.2
4.00	0	0	0	0	0	1	1
5.00	0	0	0	2	2	0	4
COLUMN TOTAL	74	5	4	7	4	3	97
	76.3	5.2	4.1	7.2	4.1	3.1	100.0

*Participate in the pricing of proposed replacement items.

PROPORTION AND IMPORTANCE RESPONSES FOR QUESTION NO. 44*

	0.	1.000	2.000	3.000	4.000	5.000	ROW TOTAL
0.	74	0	0	0	0	0	74
1.00	0	6	2	1	0	1	10
2.00	0	1	4	1	0	1	7
3.00	0	0	0	0	1	0	1
4.00	0	0	0	1	0	0	1
5.00	0	0	0	2	0	1	3
6.00	0	0	0	0	0	1	1
COLUMN TOTAL	74	7	6	5	1	4	97
	76.3	7.2	6.2	5.2	1.0	4.1	100.0

*participate in the pricing of expansion of capacity or production projects.

PROPORTION AND IMPORTANCE RESPONSES FOR QUESTION NO. 45*

	0.	1	1.00	2.00	3.00	4.00	5.00	6.00	7.00	COLUMN TOTAL	ROW TOTAL
0.	69	0	0	0	0	0	0	0	0	69	71.1
1.00	0	4	4	1	1	1	1	1	1	11	11.3
2.00	0	1	3	1	1	0	0	0	0	5	5.2
3.00	0	0	2	0	0	0	1	1	1	3	3.1
4.00	0	0	0	4	1	1	1	1	1	5	5.2
5.00	0	0	0	1	1	1	1	0	0	2	2.1
6.00	0	0	0	0	0	0	0	1	1	1	1.0
7.00	0	0	0	0	0	0	0	0	1	1	1.0
COLUMN TOTAL	69	5	9.3	7.2	2.1	2	5	5.2	97	71.1	100.0

*participate in the pricing of acquisition and support costs for new items.

PROPORTION AND IMPORTANCE RESPONSES FOR QUESTION NO. 46*

	0.	1.00	2.00	3.00	4.00	5.00	ROW TOTAL
0.	64	0	0	0	0	0	64
1.00	0	7	3	4	1	1	16
2.00	0	0	6	1	0	0	7
3.00	0	1	1	0	0	1	3
4.00	0	0	0	3	0	2	5
6.00	0	0	0	0	1	1	2
COLUMN TOTAL	64	8	10	8	2	5	97
	66.0	8.2	10.3	8.2	2.1	5.2	100.0

*Participate in the pricing of contingency, safety, security, and other plans.

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