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**AN EMPIRICAL ANALYSIS
OF AN
AIR FORCE ITEM MANAGER ROLE
AND
ITS RELATIONSHIPS
WITH AUTOMATED PROCESSES**

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THESIS FOR THE DEGREE OF PH.D.
PAUL ERNEST ERZEN
MICHIGAN STATE UNIVERSITY

1969

ABSTRACT

AN EMPIRICAL ANALYSIS OF AN AIR FORCE ITEM MANAGER ROLE AND ITS RELATIONSHIPS WITH AUTOMATED PROCESSES

By

Paul Ernest Erzen

The Problem

The Air Force Logistics Command has been a pioneer in promoting automation of management information systems and procedures for management and control of world-wide logistics support functions. Implementation of the automated processes has substantially changed the logistics manager's work environment over the past ten years with more and more individuals becoming heavily dependent upon automated systems and the systems' outputs for performance of their position responsibilities.

The research was limited to a descriptive study of the Economic Order Quantity (EOQ) Item Manager role and its relationships with the automated data processing (ADP) systems upon which it is dependent for information to perform various stock control functions. Some of the basic concepts from role analysis theory were used in examining the item manager's role behavior and attitudes relating to the ADP systems' environment. The primary objectives of the study were:

1. To identify basic characteristics of the persons performing the functions of EOQ item management in an automated systems environment from biographical and job activity survey data.

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2. To analyze the EOQ item manager's role relationships with automated data processing systems and the systems' products.
3. To investigate the EOQ item manager's role behavior in terms of perceived career satisfaction, job satisfaction and anxieties related to role conflict or ambiguity situations.
4. To search for dysfunctional role behavior resulting from role conflicts and role ambiguity related to ADP Systems' factors within his work environment.

Study Methodology

A mail survey questionnaire was developed with role theory concepts providing the basic conceptual framework. The questionnaire was administered to about 50 per cent of the EOQ item managers at each of the five Air Materiel Areas within the Air Force Logistics Command. The survey provided data on EOQ item managers' evaluations of the necessity of specific ADP systems' products and also their perceptions of ADP systems' efficacy. Information was also generated on item manager career satisfaction, job satisfaction, and job related anxieties.

To test the proposition that ADP systems can be a source of role conflict and ambiguity for some item managers, two sets of high and low groups were contrived by selecting the 20 per cent of the sample having the highest and lowest product necessity and system efficacy response scores.

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These groups' responses to the job satisfaction and the job anxiety items were used to test hypothesis predictions.

Analysis of the data relied primarily on descriptive statistics with limited application of a parametric test of the equality of the means.

Findings and Implications

1. ADP systems' products having the highest degree of consensus on necessity were required for performance of primary operational tasks and decisions relating to stock control actions. The products with the lowest product necessity response scores usually provided item managers information for general management type actions, and these response patterns reflected "lack of agreement" on product necessity rather than a consensus that products were unnecessary.
2. ADP systems, when viewed as a total entity, are perceived by the majority of item managers as being highly effective.
3. Primary sources of role conflict and ambiguity were related to the more general situational factors such as: (1) excessive work load, (2) too little authority for the responsibility, and (3) a lack of knowledge about promotion possibilities. Role overload ranked highest as a source of role conflict.

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4. Examination of ADP systems as a specific source of role conflict and ambiguity for the total item manager sample indicated general acceptance of the ADP systems' environment.
5. The selected "low product necessity" and "low systems efficacy" groups reflected significantly more job dissatisfaction and ADP systems related role conflict and ambiguity than the selected "high product necessity" and "high systems efficacy" groups.

AN EMPIRICAL ANALYSIS OF AN AIR FORCE ITEM
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Paul Ernest Erzen

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CHAPTER I

INTRODUCTION

The purpose of this study is to describe and analyze, through the concepts and techniques of role analysis theory, the Air Force item manager role and its relationships with selected automated data processing systems and activities. We are living in a world of exploding knowledge and technology. This explosion has had a dramatic impact on our society, its institutions, and individual workers, managers, and consumers. Two hundred years ago the gap between theory and invention was fifty to one hundred years but today it has decreased to approximately ten years. The constraints of time and distance have been radically changed by technology. Walter Buckingham stated that past experience indicates innovation of the scope of automation will undoubtedly produce serious economic and social problems.¹

The technology of automation has an impact on a broad spectrum of people and activities, but this dissertation is specifically concerned with the Air Force position of the Economic Order Quantity (EOQ) item manager. It is designed to investigate the influences that automated processes in

¹Walter Buckingham, Automation: Its Impact on Business and People, (New York: Harper & Row Publishers, 1961), p. 3.

the EOQ item manager's work environment have on his job behavior. The main objectives of the study are:

1. To identify the basic characteristics of the persons performing the functions of EOQ item management in an automated systems environment from biographical and job activity survey data.
2. To analyze the EOQ item manager's role relationships with automated data processing (ADP) systems and the system's products.
3. To investigate the EOQ item manager's role behavior in terms of perceived career satisfaction, job satisfaction and anxieties related to role conflict or ambiguity situations.
4. To search for dysfunctional role behavior resulting from role conflict and role ambiguity related to ADP system's factors within his work environment.

Background

Changing Technology and the Management Function

Dr. Buckingham described "science" and "technology" in the following manner:

Science is knowledge, systematized and formulated to discover general truths. Technology is science applied to the industrial arts. While science is concerned with understanding technology is concerned with practical uses. Technology includes the development of tools that permit the specialization of labor according to varying abilities. It embraces mechanization of manufacturing, transportation commerce and agriculture, the development of new forms of energy, the standardi-

zation of parts, the mass production of goods and services, and automatic control systems.²

The progress of technology in the modern era can be separated into three general phases. First, came mechanization which created the factory system. The factory system, with its specialization of labor, separated labor and management in industrial organizations and created the environment for Frederick W. Taylor's and Henry Fayol's work in developing some basic theories of management which have withstood the test of time and which are considered to be major contributions to present day management theory. Taylor's principles for improving efficiency and control of managerial processes were developed primarily from observing shop operations in organizations with several production activities and large numbers of people. Fayol's studies identified universal principles of management as they apply to planning, organizing, and control. In particular, Fayol developed the principle of the universality of management functions to all levels of management and to all types of organizations.

It was the progress in technology that brought about the mechanization of industry and mechanization resulted in changing management practices. The new environment which this generated lead to the identification of management principles by Taylor and Fayol.

A second identifiable phase concerns the extension of mechanization into large mass production organizations whose

²Ibid., p. 2.

large capital investment requirements caused a separation of organization ownership from organization management. The pressures of World War II for better management and increased productivity fostered the growth of both technology and management theory. This era promoted the development and growth of new theories in management. Such writers as Elton Mayo and F. J. Roethlisberger studied individual and group behavior within the organization and laid the foundation for a systematic approach to the analysis of human relations in industry. The result has been extensive additions to and modifications of the traditional "school" of management theory initiated by the writings of Taylor, Fayol, and other pioneers in the field.

The third phase of advancing technology relates to automation and has added the elements of automatic control and programmed decision making which is turning the industrial organization into a more highly integrated "whole system." The effects of automation on management practices and related theory are still in various stages of change and development. However, writers such as H. A. Simon and J. G. March are adding a new perspective to management by their systems approach and decision making theories.

An extremely important factor to recognize is the compression of time resulting from the application of advancing technology. The manager of today does not have five to ten years available for on-the-job training. Change comes rapidly and managers must expand their knowledge and comprehension

in order to keep pace. It is no longer adequate to say managers accomplish goals by managing people, work, material, and money. Technology is now forcing him to be a manager of "systems." The Air Force can no longer rely upon on-the-job training, some unstructured ancillary education programs, or even command experience to develop the type of management talent required by a dynamic and complex automated logistics system. Automated programs are "tools for managers" which require new (and perhaps greater) skills, talents, and knowledge differing from those of the past if they are to be used for more effective and efficient attainment of organizational goals. The potential for increased productive output, lower per unit cost, and faster customer service is great but the corollary of high costs for "mistakes" is sometimes forgotten.

Automated Systems Impact on Management Functions

A limited survey of the literature on this subject reflects a variety of fairly generalized descriptive statements, and a priori conclusions and projections. However, despite the volume of recent writings, there appears to be very little in the literature to assist those responsible for developing and administering programs which must consider the direction and rate of technological changes, and the economic and organizational effects of these changes. In other words, a manager at any level in Headquarters, Air Force Logistics Command would find very little to help him understand the cause and effect relationships of actual or probable "problems" brought by automated systems or programs. In many re-

spects he is "flying blind" with no instruments to guide his path and steer him around serious pitfalls.

This position is supported by Dr. Norman G. Pauling, who has been the Chief of Automation Impact Studies Division, in the office of Manpower, Automation and Training of the U.S. Department of Labor since August 1962.³ His article expressed personal views based on experience gained from this research program.

The following statements are quoted to illustrate a few of his major points.⁴

The deficiencies in our knowledge are especially acute in the case of personal and institutional effects of automation and related technological change on workers.

In this statement the term "workers" can be expanded to include managers although they are normally separated in organization and management theory writings.

In general, the existing literature in this area has failed to yield findings from which one may generalize with sufficient confidence to approach solutions to the social and economic problems accompanying technological change.

The reporting of research findings has generally been descriptive rather than the product of analytic statistics, with the result that, despite some interesting empirical data, we know very little about relationships among these data. Where mathematical treatment has

³ Norman G. Pauling, "Some Neglected Areas of Research on the Effects of Automation and Other Technological Change on Workers," The Journal of Business, Vol. XXXVII, Number 3 (July 1964), pp. 261-273.

⁴ Ibid., pp. 262-3.

revealed relationships among the data, we are still unable to give any sort of analytical explanations of these relationships, owing to the absence of any generalized model. The data have, therefore, failed to produce any useful predictive measures or to suggest appropriate policies for the amelioration of the problems which they describe.

The author also stated that there is a great need for study replication and that the available literature needs codification and synthesis. He identified the following areas as having received virtually no attention, and therefore, should be the subject of intensive research.

1. Changes in the work role and working conditions resulting from technological change.
2. The effects of these changes in work role and working conditions on workers.
3. Factors affecting individual occupational choice, commitment, and adjustment to changes in the work role
4. The effects of technological displacement on workers.

Dr. Pauling's findings can be restated in terms of management's work role. For example, his second statement of an area requiring research can be restated as, "the effects of technological changes on the role and working conditions (environment) of organizational managers." Current writings provide similar material.

Leavitt and Whisler foresee information technology leading to radical changes in administrative practices. They define "information technology" as including high-speed, large quantity information processing, application of mathematical

methods to decision making, and computer simulation of high-order thinking. They go on to predict: (1) new sources of managers who will be able to enter the organization at nearly any level, (2) greater centralization with top management assuming more of the creative functions, (3) most middle management jobs becoming highly structured and declining in status and compensation, and (4) the line between top and middle management becoming similar to that between hourly workers and first-line supervisors.⁵

However, another author disagrees with the frequently stated prediction that the increase in automation will reverse the trend toward decentralization of business management decision making and that it will also reduce the need for lower and middle management.⁶

Lipstreu and Reed conducted a two year study of the effects of transition to automation in industrial concerns. In phase one they developed 46 potential effects (hypotheses) of automation, supervision and the work force which were used to survey the 500 largest industrial organizations. This

⁵Harold J. Leavitt and Thomas F. Whisler, "Management in the 1980's," Harvard Business Review (November-December, 1958), pp. 41-48.

⁶John F. Burlingame, "Information Technology and Decentralization," Harvard Business Review (November-December, 1961), pp. 121-126.

information was used to empirically test pertinent hypotheses by intensive study of one industrial firm undergoing a major technological change.⁷

Even though this research effort did not include "office" automation of the integrated data processing variety, several of their findings could be extended to "office" automation and replicated. The following are a couple of examples.

1. "Automation poses greater adjustment problems for supervisors than for workers who are transferred to automated jobs."

About 50% of industry respondents agreed with this hypothesis. In general the study of firm X also supported this statement. Supervisors tended to identify more closely with their jobs than non-supervisory personnel. Their behavioral patterns, based upon their conception of the organization and their "job," has brought them relative success. Now they are required to completely reorganize their perceptual fields, and the case of company X was that no well-developed program was employed to assist them in augmenting their fields of knowledge and adjusting to the new environment.⁸

⁷Otis Lipstreu and Kenneth Reed, Transition to Automation, (Boulder, Colorado: Series in Business No. 1, University of Colorado Press, 1964).

⁸Ibid., pp. 108-9.

2. "Automation tends to shift supervisory emphasis from employee to process."

This hypothesis was based upon the fact that supervisors now had greater responsibility for keeping machinery operating and, therefore, would be more likely to think of themselves as being supervisors of machines rather than men. A majority of executives surveyed agreed with this hypothesis but no real conclusion could be drawn from the data. In company X, it appeared that immediately after transition to automation emphasis shifted from employees to process. The supervisors tended to exhibit an incredible-preoccupation-with-machinery attitude.⁹

3. "Automation makes supervisory, human relations skills less important."

Since it is necessary for supervisors to become more "machine oriented" it might appear that he need apply less human relations knowledge and more technical skills. However, the study indicated that just the opposite seemed true. "The isolation of work stations, the increased speed, and the new impersonality of work appear to require that supervisors develop not less but far more skill in interpersonal relations."¹⁰

⁹Ibid., pp. 109-10.

¹⁰Ibid., pp. 110-11.

This study by Lipstreu and Reed indicates that automation does have a severe impact upon the lower levels of management by changing his work environment. The pressures which he had learned to master in his old role and thereby gain success have now changed and perhaps increased.

In the Air Force logistics system with its rapid transition to more and more automated programs, we can logically surmise that logistics managers are being forced to cope with new and ever changing environment for which they may not be adequately prepared. The technology is increasing faster than the manager's comprehension. Even though work is being done on this problem, more knowledge and facts are required to prepare the manager to effectively function in the new automated systems environment.

Organizational Environment

The numerous technological breakthroughs during the past ten years have made possible drastic changes in the use and relationships of human and mechanical resources. Professor Kahn and others point out that conflict and ambiguity are two major characteristics of our society and that neither of these conditions will be easily resolved for they are among the unintended consequences of two deeply ingrained trends in modern industrial life--the increasing dominance of physical science and growth of large scale organizations.¹¹ The Air

¹¹Robert L. Kahn, et al., Organizational Stress (New York: John Wiley and Sons, 1964), p. 3.

Force Logistics Command (AFLC) definitely exemplifies both of these trends. The following data present a brief description of the size and complexity of the Air Force logistics support organization.

Dollar Indicators of Size¹²

An expression of logistics organization and operations in terms of the familiar dollar measurement scale provides a means for comparative evaluation of the system's magnitude. The following are a few indicators of organization size expressed in dollars.

The Air Force Logistics Command's investment in real property (excluding aircraft and missiles in the Command) is approximately 1.2 billion dollars and the operating budget totals some 2.2 billion.

A major operation is the management of a world-wide inventory valued at about 10.0 billion; 67% of which is deployed to bases throughout the world. Added to this inventory annually is some 3.7 billion dollars with an equal amount being consumed or disposed of by other means. Expenditures for repair of components and accessories total 1.2 billion annually, and another major expenditure is 1.0 billion for civilian payrolls. The value of purchased computers comes to 49.7 million and computer rental and maintenance expenses total 11.2 million.

¹²The figures presented represent Air Force Logistics Command operations for Fiscal Year 1969 and were obtained from personnel responsible for preparing reports in the various areas.

Overall, AFLC is responsible for the management of about 11.7 billion dollars of funds. As indicated by this brief summary, Air Force logistics support operations involves billions of dollars and is in a sense comparable to the nation's largest corporations. For example, in 1967 General Motors ranked first in sales volume with 20.0 billion and assets of 13.3 billion; Standard Oil of New Jersey ranked second with 13.3 billion in sales and 15.2 billion in assets; and Ford Motor Company ranked third with 10.5 billion in sales and 8.0 billion in assets.¹³

Unit Indicators of Size

Another way of looking at the magnitude of logistics support operations is through indicators of volume and numbers of items. The following are some representative figures of AFLC organization and operations.

Total personnel authorized (Jun 68)	139 Thousand
Number of computers in operation (Sep 68)	132
Warehouse Space (Jun 68) . .	27.7 Million Sq. Ft.
Maintenance Shops & Hangar Space (Jun 68)	20.1 Million Sq. Ft.
Administrative Space (Jun 68)	10.3 Million Sq. Ft.
Line Items of Inventory carried (Jun 68)	1.7 Million

¹³"Fortune's Director of the 500 Largest U.S. Industrial Corporations," Fortune, June, 1968.

Number of retail demands received (FY 68)	15.0 Million
Components and Accessories repaired annually (FY 68).	2.8 Million
Tons of Freight Moved (AMA originated, FY 68)	568,848 Tons

A more detailed breakout of the personnel strength figures show that the organization is composed of 3,524 Air Force Officers, 12,627 Airmen, and 122,849 civilians. Fifty-eight thousand of the 122,849 civilians are General Schedule (GS) employees of which about 15,000 are high grade positions (GS-11 and above). When the 3,524 officers are added to the high grade civilians, there are some 18,524 employees who would fall into a general classification of managers. The annual total base pay for the 15,000 civilian managers alone comes to some 182.8 million dollars.

Application of Automation Technology

The Air Force logistics support organization has been a leader in promoting automation of management information systems and procedures for management and control of logistics support functions. Automated methodologies have been developed for the repetitive routine subprocesses and, with increasing knowledge, experience and improved hardware, the organization has continued to expand and integrate individual components into larger interrelated systems. Currently, the Air Force Logistics Command (AFLC) utilizes 170 separate automated processes within the logistics management structure. These processes vary in size and complexity but some indica-

cation of general magnitude may be illustrated by the inventory Management Stock Control and Distribution System (D032) which took three years to develop and 300 man-years of effort. The D032 system receives automated data inputs from 32 other automated systems and provides inputs for 36 automated systems.¹⁴

The magnitude of operations by itself gives an indication of the management efforts and problems involved in operating an effective logistics support system. However, the military must also cope with a high degree of uncertainty which further complicates management planning and programming functions. Providing for national defense today carries a world-wide commitment. The uncertainty of possible outbreaks of conflict makes the planning of force deployment difficult and subject to rapid change. This environment creates a need for a fast, accurate, and responsible logistics system composed of the "best" man machine methodologies and programs available. There is no question that this requires continuous application of the best management organization and techniques available.

One of the characteristics reflecting these changes is that the first tier of management in logistics support organizations is one of managing logistics within the framework of a large number of automated systems as contrasted to a decade

¹⁴U.S. Department of the Air Force, Air Force Logistics Command, Interface of Automated Data Processing Systems, (Wright-Patterson AFB, Ohio, 12 January 1968).

ago when the task was one of managing logistics based primarily on the efforts of a large number of people. People maintained physical records and physically filled requisitions and physically computed requirements and stock levels as well as performing many other physical logistics activities. Today many of the more routine activities have been programmed for computer operations changing the logistics managers working environment. Professor Kahn, et al., point out that such change invalidates the experience of the individual, and that as his experience becomes more and more irrelevant, his dependence on expertise approaches the infinite.

The world for which their advice could have been useful we have no longer with us. One does not speak the language of computers from common experience . . .¹⁵

This continuing trend in the automation of "office work" and routine decision making is creating a changing environment for the formal management role in the organization's hierarchical structure. For the Air Force to cope with and take advantage of the creative forces generated by advancing automated methodologies, empirical testing and evidence is required to factually reflect the fundamental expectations and behavior of individuals performing such managerial roles. Top levels of logistics management require an understanding of the environmental impact of automation to overcome unan-

¹⁵Kahn, op. cit., p. 4.

anticipated dysfunctional aspects and to initiate actions based upon objective information rather than upon guesses or an emotional response.

Limiting the Problem for Empirical Research

The problem is that the implementation of automated processes in the Air Force Logistics Command's organization has changed logistics managers' work environment. Technological changes produce new areas of specialization which have a direct bearing upon many of the job activities and their organizational relationships. With this increase in automation of "office functions," actual operations being performed emphasize process flows and synergistic functioning of a "system" as well as performance within a bounded functional area. The buffers between specialized functional activities are being bypassed to the point where the actions of one individual or organizational process has a direct input into one or more other specialized functional activities thereby directly affecting the job activity and job behavior of these individuals.

One of the great inherent needs of any organization is dependability of role performance. The interdependency of organizational production processes require each member to carry out his role in a predictable manner. Further, as an organization becomes more complex with more specialized activ-

ities, the degree of interdependence increases requiring greater conformity in the performance of organizational roles.¹⁶

The Air Force Logistics Command (AFLC) has undergone major changes with the development of computer sciences and the implementation of automated methodologies. The result appears to be that logistics managers are put under pressure for an even higher degree of dependence and conformity in the performance of their roles. However, the relatively rapid and far reaching changes resulting from implementation of computer technology tends to create a working environment that is less familiar. In other words the more complex automated system demands greater reliability and conformance in role performance but at the same time creates conditions of greater uncertainty regarding role performance expectations.

Professor Weick points out that organizational stability and lengthy periods of interpersonal contact increases familiarity with organizational processes which results in greater predictability of individual or group behavior.¹⁷ Or in other words, changes within an organization reduces conformity and predictability in job behavior.

The results of environmental changes in the Air Force Logistics Command appears to be that logistics managers are

¹⁶Joseph A. Litterer, The Analysis of Organizations (New York: John Wiley & Sons, Inc., 1965), pp. 319-329.

¹⁷Karl E. Weick, "Laboratory Experimentation with Organizations," Handbook of Organizations. Edited by James G. March. (Chicago: Rand McNally & Company, 1965). p. 214.

being exposed to increasing degrees of role conflict and ambiguity. Discussions with people in the organization create the impression that logistics managers frequently feel that the "system" is running them and that they are unable to direct and control their functional work efforts effectively.

Professor Kahn, et al., theorizes on this subject as follows:

. . . it is not the conformity requirements alone that creates problems of conflict and ambiguity. Conflict and ambiguity seem rather to be emergent problems, arising from the demand for successful conformity under conditions of ceaseless and accelerating changes. To the costly ideology of bureaucratic conformity is added the irony of conflicting and ambiguous directions.¹⁸

The Specific Research Area

Time and resources necessitated study of only a small segment of the effect of automation technology on the employees of the Air Force Logistics Command organization. Therefore, the research effort was limited to the Economic Order Quantity (EOQ) item manager and his relationships with Automated Data Processing (ADP) systems and system's products.

The item manager's position within the Air Force has operational responsibility for stock control. The Air Force defines stock control as the management required to insure that materiel and supplies are adequate and are stocked geographically to meet current military requirements most economically. An item manager is assigned a specific group of items and it

¹⁸Kahn, op. cit., p. 6.

is his responsibility to: (1) compute the Air Force requirements for these items, and (2) control the distribution of assets world-wide to include rationing when necessary for items in short supply. The title EOQ Item Manager identifies those item managers in the Air Force responsible for the management of assets meeting the economic order and stockage criteria.¹⁹

The current stock control system has become standardized at all of the Air Materiel Areas (AMA's), using a 7080 computer data system with package programming and file maintenance being accomplished at Headquarters AFLC. The end result is that the EOQ item manager in performing his stock control functions is almost totally dependent upon the reports and other management data provided by two major ADP systems: (1) D062--EOQ Buy Computation System, and (2) D032--Item Manager, Stock Control and Distribution System. In addition, he receives a few reports from a relatively new ADP system: D143B--AMA Edit, Index, and Routing Subsystem.

Relying upon role theory concepts and research methods,²⁰ the basic field research effort considered automated processes as being, in effect, "role senders" exerting pressure upon EOQ item managers (the focal role) and thereby becoming an important factor in formulating item manager role behavior.

¹⁹U.S. Department of the Air Force, U.S. Air Force Supply Manual, AFM 67-1 (Washington D.C., 14 October 1968), Vol. 1, Part one, Chapter 8, p. 8-1.

²⁰The conceptual framework and definitions involved in role theory are presented in Chapter II.

It was theorized that automated processes influence the formulation of role behavior in a manner similar to individuals who hold expectations about what the incumbent of a focal role should do. In other words, from a conceptual viewpoint a programmed procedure can place demands upon a manager to perform job related activities which in effect can be similar to demands imposed by human superiors.

Hypotheses

Two general hypotheses were developed to direct the development and structure of the empirical research effort.

1. Automated processes within the EOQ item manager's organizational environment act as a role sender imposing demands upon the item manager role which are factors in influencing EOQ item manager role behavior.
2. If automated processes are in effect role senders influencing role behavior, then automated processes are potential sources of role conflict and role ambiguity.

Overview of Thesis Organization

Chapter II contains a discussion of the conceptual framework for development of the research design, and Chapter III presents a detailed explanation of the research methodology including sample selection, survey instrument construction and administration, and analytical techniques. Chapter IV describes some basic characteristics of EOQ item managers by

presenting a biographical and work data profile. Analysis of the survey data and findings are presented in Chapters V through VII. The last chapter contains a summary of the research effort, its findings and conclusions.

CHAPTER II

CONCEPTUAL FRAMEWORK

The Role Theory Approach

Role theory is the part of social psychology which deals with the behavior of individuals and their cognitions of various dimensions of their environment. It provides a practical means for developing an empirical study since it offers a useful way of looking at group member behavior and cognition, and can be operationalized to actual situations.¹

Since the environment of an individual occupying a position is a key to effective job behavior, and since pressures on the individual affect his perception of the environment, role theory concurrently offers a way of looking at the item manager as an active and a passive factor in analyzing role behavior. Intuitively, it may be inferred that understanding the environment and eliminating dysfunctional pressures are key elements to making the item manager's future performance more effective.

Many definitions of the term role have been presented in scholarly literature representing different disciplines and varying viewpoints within a discipline. Gross, Mason

¹Bruce J. Biddle, The Present Status of Role Theory, Columbia, Missouri: University of Missouri Press, 1961, p.2.

and McEachern, after reviewing much of the literature on role, determined that most authors' definitions and conceptualizations of role contain three basic ideas or elements: (1) social locations, (2) behavior, and (3) expectations. Their conclusion was that even though some fundamental differences existed, most authors on role were addressing the same phenomena--individuals in social positions behave with reference to expectations.²

People do not behave in a random manner; their behavior is influenced to some extent by their own expectations and those of others in the group or society in which they are participants. Some authors have included this idea in the concept of status or position, others in role, but nearly all include it somewhere.³

Role theory deals primarily with patterns of behaviors or other characteristics which are common to persons, and also with a variety of cognitions held about those patterns by social participants. The conceptual distinctions of role theory center around a description of the behavioral patterns or of the cognitions.^{4,5}

Gross, Mason and McEachern in their review of the

²Neal Gross, Ward S. Mason, Alexander W. McEachern, Explorations in Role Analysis (New York: John Wiley and Sons, 1965), p. 17.

³Ibid., p. 17.

⁴Biddle, op. cit., p. 2.

⁵Professor Biddle states that the concept of cognition, as applied in role theory, deals mainly with two types of orientation: beliefs and values. He goes on to explain these as follows. "Expectations--a cognition consisting of a belief . . . held by a person for an aspect of another. Norm--a cognition consisting of a value . . . held by a person for an aspect of another. p. 12.

literature on role theory suggest that definitions and concepts of role theory fall into three broad classifications: (1) Normative cultural patterns--what is expected of an incumbent of a particular role or status. In short, role is viewed in terms of behavior standards and not actual behavior. (2) Orientation to the situation--role viewed as an individual's definition of his situation with reference to his and others' social positions. (3) Behavior of actors occupying social positions--role defined in this manner refers to what actors actually do as position occupants.⁶

In essence, role theory is fundamentally concerned with two aspects of the relationship among men: the normative, and the behavioral. The very fact that such a dichotomy is useful immediately presents some problems from an operational viewpoint.

First, in the literature on role, researchers have reached no precise definitions of the terminology used. Biddle stated that the reception of the role orientation was enthusiastic but that little integration had appeared.

Authors are at odds with one another over terms, concepts and propositions constituting the field, or indeed over what phenomena role theory purports to deal with.⁷

However, Professor Biddle also goes on to point out that role concepts have utility and seem to be easy to operationalize since a large number of reported theoretical

⁶Gross, Mason and McEachern, op. cit., pp. 11-15.

⁷Biddle, op. cit., p. 3.

and empirical studies are making use of the same role terms and concepts.

Secondly, each side of the above dichotomy may be subdivided. For example, in a normative sense, a role can be segmented into expectations for the behaviors involved as well as the expectations for personal attributes and qualities. Gross, Mason and McEachern also suggest that most authors have used the role concept to embrace the normative element of social behavior.⁸ However, this study primarily relates to the behavioral aspects of the Air Force item manager role in relation to one major element of his work environment, and will only briefly consider some of the attributes involved.

Basic Terms and Definitions

Linton who is credited with initially solidifying the role concept describes a role in terms of status:

A status, in the abstract, is a position in a particular pattern (of social behavior) A status, as distinct from the individual who may occupy it, is simply a collection of rights and duties. A role (then) represents the dynamic aspect of status. An individual is socially assigned to a status and occupies it with relation to other statuses. When he puts the rights and duties which constitute a status into effect, he is performing a role.⁹

It is clear that Linton views role not as normative but as behavioral, and is using the term status, in a sense, as the normative.

⁸Gross, Mason and McEachern, op. cit., p. 17.

⁹Ralph Linton, The Study of Man (New York: D. Appleton-Century Company, 1936), pp. 115-114.

Gross, Mason, and McEachern do not believe that status is as inclusive as Linton suggests. They distinguish between status and office in the following manner.

The term status would then designate a position in the general institutional system, recognized and supported by the entire society, spontaneously evolved rather than created, rooted in the folkways and mores. Office, on the other hand, would designate a position in a deliberately created organization governed by specific and limited rules in a limited group more generally achieved than ascribed.¹⁰

With respect to an occupational position, Davis indicated that a position may be both a status and an office--the first when viewed by the public, and the second when viewed by a particular firm.¹¹ So in terms of these distinctions, office will be analogous to position, and this study will use the term position in its examination of the item manager role.

Role Defined. "A role is a set of related cognitions maintained for a person or position by himself or another."¹² An individual's role then is defined by: (1) his own expectations and (2) the expectations of others in his environment. These expectations influence his perceptions and behavior.

If one wishes to look at the behavior of the individual, in a specified work situation, he is in effect viewing the role behavior of that individual. Role behavior is the action or behavioral part of role.

¹⁰Gross, Mason and McEachern, op. cit., p. 57.

¹¹Kingsley Davis, Human Society (New York: Millan, 1948), pp. 88-9.

¹²Biddle, op. cit., p. 5.

Role Set. If a role then is a set of expectations about the behavior and attributes of an individual in a given position, a key factor in role analysis is the identification of the definers of the role, i.e., those positions which hold relevant expectations for the focal position. The definers of a given role, including the focal role, may be referred to as a role set.

Some role theorists adopt the view that a position is an element of a network or system of positions. Professor Kahn used the term role set to reflect this construct. The organization is visualized as a vast fish net in which each knot represents a position and each line a functional relationship. The positions are structured into a role set by virtue of the work-flow, technology, and the authority structure of the organization.¹³ A person's role set may also include individuals who are related to him in other ways--close friends, family and others within or outside the organization who are concerned with his behavior in his organizational role.

Role Expectations and Sent Role. Members of a person's role set depend upon his performance in some way--either through reward or through dependence which affects their own performance or status. Gross, Mason and McEachern state a particular position has no meaning apart from other positions, and an investigator focusing on a particular position must

¹³Robert L. Kahn, et al., Organizational Stress (New York: John Wiley and Sons, 1964), p. 13.

specify the other positions with which his analysis will be concerned.¹⁴ This is due to the fact that incumbents of these positions have a vital interest in the performance of the focal position and they develop beliefs and attitudes about what should and should not be done as part of the focal role. These prescriptions held by members of a role set are called role expectations. The role expectations are communicated in various ways to the focal person influencing his role behavior. Kahn, et al., expressed this concept as follows:

The crucial point for our theoretical view is that the activities (potential behavior) which define a role consist of the expectations of members of the role set, and that these expectations are communicated or "sent" to the focal person.¹⁵

Sent Role and Role Perceptions. The numerous acts which make up the process of role sending are influence attempts directed toward the focal person and are intended to bring about conformity with the expectation of the senders. Such acts are labeled role pressures. The sent role then is the means by which the organization communicates to the position occupant the do's and don'ts associated with his position. However, individuals respond to the sent roles in terms of their perceptions which may be different. So, there is not only a sent role, but also a received role in terms of an individual's perceptions and cognitions of what was sent. It is this received role, the individual's personal

¹⁴Gross, Mason and McEachern, op. cit., p. 50.

¹⁵Kahn, et al., op. cit., p. 15.

perception of the situation, which acts to influence his role behavior.

Conceptual Basis for Study Design

If a role consists of a set of expectations about the performance and attributes of an individual in a given position, a key factor in analysis is the identification of the role definers, i.e., those who have relevant expectations--the role set. However, specifying the complete role set frequently causes problems. Access to each member of the role set may be difficult because of the large number of individuals involved. Furthermore, the degree of influence of each member of the role set is often very difficult to identify. Consequently, including the expectations of all members of the role set may give as distorted a picture as not having identified some members.

Role theory literature recognizes that any given position cannot be completely described until all other positions to which it is related have been specified. However, a complete relational specification is impossible to deal with empirically so a specific research problem normally takes into account only a limited set of role definers. Gross, Mason and McEachern state that in studying a particular position (a focal position), it may, for some purposes, be adequate to consider its relationships to only one other position (a counter position). They termed the concept a dyad model and it provided the basis for designing this study.¹⁶

¹⁶Gross, Mason and McEachern, op. cit., p. 51.



COUNTER POSITION

FOCAL POSITION

Organizational Factors in Role Analysis

In the literature on role theory we find a worker's role behavior to be the product of forces resulting from role relationships. This occurs because the role set constantly brings influence to bear upon the focal role incumbent which serves to regulate his behavior in accordance with his perception of the role expectations held for him.

In role theory, organizational variables are normally assumed to be sufficiently universal and stable to be treated as independent of the particular individuals in the role set. In other words, the basic concepts used in role theory concern relationships and behaviors between individuals occupying given positions within the formal organization structure. Organizational factors (e.g., structure, functional specialization and division of labor, reward system, and physical properties) dictate the major content of a position, but a person executes the activities. Organizational factors are recognized as variables but are usually assumed to be independent of the variables being measured and analyzed. Professor Kahn stated:

What the occupant of that office is supposed to do, . . . , is given by these and other properties of the organization itself. Although human beings are doing the "supposing" and rewarding, the

structural properties of organization are sufficiently stable so that they can be treated as independent of the particular persons in the role set. For such properties as size, number of echelons, rate of growth, the justifiable abstraction of organizational properties from individual behavior is even more obvious.¹⁷

Computerized Processes as a Role Sender. Abstracting organizational properties is logically sound and justified for the research efforts reported by Professor Kahn and others. However, it appears conceptually sound to extend the constructs of role theory analysis to specifically include an organizational variable wherever it can be operationally defined and shown to be a major factor directly influencing role behavior in a particular position. Therefore this study is an attempt to relate an organizational factor--automated processes--to the behavior of a specific management role--the item manager. From the concepts involved in role theory, it seems logical to hypothesize that the item managers' perceptions of the computer activities affecting his job performance will be a factor in formulating his role behavior. The computer performs certain programmed activities and executes routine programmed decisions which may be viewed as role sending intended to bring about conformity in the behavior of the focal role incumbent. Even though the computer is an inanimate object without the psychological characteristics of a human being, the item manager must still interact with this "machine" in order to successfully perform his assigned tasks.

¹⁷Kahn, et al., op. cit., p. 31.

The communications with the computer are not oral, but in some written or other coded form that establishes a definite interdependency which must influence item manager's role behavior. This relationship is important in the motivation of the item manager's role behavior. It is a definable factor influencing his attitudes and beliefs about what he should and should not do as an item manager. Therefore certain automated processes have been specified as the role sending counter position for this study.

Item Manager as the Focal Role. The focal position selected for this dyad model design was that of an economic order quantity (EOQ) item manager. The rationale for this selection rests in two areas. First, a major portion of the item manager's job activities is directly dependent upon computerized processes, and it is therefore reasonable to expect the position incumbent to consider this factor in defining his own role and hence in his role behavior.¹⁸ Second, the position is clearly defined, and its relationships to computer processes are the most direct and highly structured within the Air Force Logistics Command (AFLC).

Role Consensus

The focal role incumbent is an integral member of his own role set and his own views are most relevant. In a sense, each person is a role-sender to himself. He has a conception

¹⁸A study by Robert N. Smith, "OOAMA Model IM Study Group Final Report" (Unpublished report, Hill AFB, Utah, Ogden Air Materiel Area, 1966), found that item managers, on an average, spent 58 per cent of their time working with computer products.

of his position (and the counter-position) and a set of attitudes and beliefs about what he should and should not do while in that position.¹⁹ Analysis of the responses from focal individuals is a primary consideration in this thesis.

Role Consensus as a Variable

A matter of critical importance to the research design and subsequent analysis is whether consensus (agreement) on the role for a particular focal individual may be treated as an empirical variable subject to study and analysis. Many role concept formulations have assumed that consensus on role definition exists among members of a group. In other words, consensus is not treated as an important variable in role formulation.

However, Gross, Mason and McEachern expressed the thoughts of several authors on the importance of consensus. It was their contention that consensus on role definition was an important factor affecting the functioning of social systems. After an extensive review and analysis of prior writings involving consensus, they came to the following conclusion:

That the members of a social system, whether a dyad of a total society, must agree among themselves to some extent on values and expectations is a matter of definition. The point we have been trying to underscore is that the degree of consensus on expectations associated with positions is an empirical variable,

¹⁹Kahn, et al., op. cit., p. 17.

whose theoretical possibilities until recently have remained relatively untapped.^{20,21}

Affects of Nonconsensus

Considering consensus as a variable, what then could result from nonconsensus? Logically, conflict is a product of nonconsensus on role definition and this then can create tensions and anxiety for the incumbent of the focal position.²² Some authors have chosen to relate these tensions to role conflict and role ambiguity. This study will also consider role conflict and role ambiguity separately since both can lead to tension and anxiety which may produce dysfunctional job behavior adversely affecting job performance.

Newcomb, Turner and Converse believe that the sources of role conflict problems encountered by the individual trying to carry on his end of a behavioral relationship may be classified according to whether the role prescriptions facing the individual are (1) unclear, (2) excessive, or (3) mutually contradictory.²³ In other words, an individual's role conflict may be due to (1) ambiguous role expectations levied upon him, (2) "role overload" where the role demands

²⁰Gross, Mason and McEachern, op. cit., p. 43.

²¹For support of this position see A. R. Lindesmith and Anselm L. Strauss, Social Psychology, revised edition, (New York: Dryden Press, 1956, pp. 383-385.

²²C. Osgood, "Cognitive Dynamics in Human Affairs," Public Opinion Quarterly, Summer, 1960, p. 341.

²³Theodore M. Newcomb, Ralph H. Turner and Phillip E. Converse, Social Psychology (New York: Holt, Rinehart and Winston, Inc., 1965), p. 404.

become too heavy for him to fulfill, or (3) when there is no apparent way of simultaneously and effectively coping with two different role expectations.

Nonconsensus and Operational Performance. The fact that nonconsensus or role conflict exists is relatively unimportant unless it can be related to operational performance. A study by Kahn and Wolfe of role pressures on the occupants of certain positions showed that where individuals were subjected to more demands than they could reasonably fulfill, they experienced significantly more on-the-job tension, less job satisfaction and less confidence in the organization. However personality factors modified both the degree of overload experienced and the means of coping with such overload.²⁴

A study by Getzels and Guba indicated that those instructors at a military school who experienced role conflict also tended to be ineffective when measured by their peers.²⁵

The implication related in a study by Smith indicates a stronger relationship. In an experimental group, the researchers paid some members not to enter a discussion while the other members remained unaware of the arrangement. The productivity of the experimental group dropped sharply

²⁴R. L. Kahn and K. M. Wolfe, "Role Conflict in an Organization," in Conflict Management in Organization, ed. by K. Boulding (Ann Arbor, Mich: Foundation for Research on Human Behavior), 1961.

²⁵J. W. Getzels and E. G. Guba, "Role, Conflict, and Effectiveness: An Empirical Study," American Sociological Review, 1954, pp. 164-175.

as compared to the control group. When the experiment was repeated and all group members were advised of the situation, experimental group productivity did not vary from the control group.²⁶

In summary, role theory presents a systematic way of looking at the relationships of group members and the effect each has on the other. It provided terminology and definitions which aided the construction, implementation and reporting of the empirical research.

²⁶E. E. Smith, "The Effects of Clear and Unclear Role Expectations on Group Productivity and Defenses," Journal of Abnormal Social Psychology, 1955, pp. 213-217.

CHAPTER III

RESEARCH DESIGN AND METHODOLOGY

The stated purpose of this study is to describe and analyze, through the concepts and techniques of role theory and analysis, the Air Force item manager role and its relationships with selected computer programmed activities. The methodology presented in this chapter was designed to fulfill this purpose.

Method of Data Acquisition

The role set for this investigation is comprised of one focal position (EOQ item manager) and one counter position (automated processes--D062, D032, and D143B). Study of the role and role relationships required determination of an effective and economically practical method of data collection. Despite the inherent limitations of mail survey methods, this method best fitted the needs of the study for three reasons. First, the alternatives of personally interviewing and/or observing was economically impossible. Second, a highly structured method of data generation, which would allow statistical comparisons, was necessary. Third, anonymity to encourage "true" expression of personal judgments and opinions could be more effectively conveyed by the mail survey method.

Questionnaire Design and Construction

Part I--Item Manager Profile and Classification Data.

The objective of the first part was to generate information which would provide a profile of the item manager and also describe some of the basic factors and characteristics related to the position. A screening question was included to insure that only EOQ item managers completed the survey. Twenty additional questions were asked under the following headings: personal data, organization and unit of assignment, weekly work load data, work experience, education, training, and items managed. A space was provided for any comments a respondent wished to make.

Part II--Necessity of Computer Products. An EOQ item manager is provided approximately fifty-six separate and distinct computer printouts. The purpose of Part II was to obtain an item manager's evaluation of how necessary these products were for the performance of his item management tasks. Each computer product provided EOQ item managers were identified by product number and title. Each item manager surveyed was asked to evaluate the necessity of each product on a seven point semantic differential scale.

Part III--Confidence in Automated Data Processing Systems.

The purpose of Part III was to ascertain current attitude of the item managers toward the automated systems upon which they must depend for a major portion of the information required to do their job. Interviews with Headquarters Air Force Logistics Command (Hq AFLC) staff personnel and review

of information systems literature provided five basic variables (timeliness, accuracy, usefulness, clarity, and dependability) which are considered necessary for an effective information system. Each item manager was asked to rate each automated system on the basis of these five variables. In addition, a question was specifically designed to obtain a measure of opinion regarding man-machine relationship with these automated data systems. Two questions relating directly to the item manager's supervisor were also included.

Part IV--Career Satisfaction Instrument. Six items were constructed for the career evaluation part of the survey. The items were designed to obtain data on the item manager's attitude toward a career in item management in general rather than his attitude toward the specific EOQ item manager position occupied at the time of the survey.

Part V--Job Satisfaction Instrument. A job satisfaction instrument was constructed to obtain data on the item manager's attitude toward the position he currently occupied. The ten items were designed to gain an expression of opinion from the item manager concerning his personal feelings of satisfaction or dissatisfaction concerning specific aspects of his job.

Part VI--Job Related Tension Instrument. In Part VI the objective was to obtain a measure of job related tension and anxiety. The instructions to the respondent item managers were as follows:

All of us occasionally feel bothered by certain things in our work. The following is a

list of things that sometimes upsets people. Please circle the number after each statement representing the phrase which most accurately reflects how frequently you feel bothered by each of these situations.

The items generated were based upon two objectives.

1. There must be several items in this part which could be directly related with key characteristics in the previous parts of the survey to allow comparisons and analysis.
2. There must be a number of questions which could allow an assessment of the source of an item manager's anxieties, if any. As previously indicated, writers in the area of role theory and analysis have found role conflict or ambiguity situations can develop anxieties in the behavior of role incumbents. Items were included in an attempt to determine if certain conflict situations produced job related tensions.

The questionnaire became longer and more complex than was originally envisioned. Since it was not possible to obtain the breadth and depth of information required by using a short questionnaire, which is generally considered more conducive to generating responses, the decision was made to physically design the questionnaire in a compact booklet format. This was more costly and time consuming but the result was a physically compact questionnaire with fifty per cent fewer pages. The 89.5 per cent response rate justified the intensiveness of the questioning and the additional cost of the questionnaire design and publication.

Field Test

The original draft of the survey was developed based upon study and analysis of the Air Force Logistics Command's (AFLC) publications, academic literature, interviews with AFLC staff personnel, and a visit to the Warner Robins Air Materiel Area (WRAMA) at Robins Air Force Base, Georgia. Even with the best available advice and guidance, there was no assurance the survey would be understood by job incumbents. Therefore, testing the questionnaire in the actual item manager environment was considered essential. To conserve time and provide for direct feedback, a decision was made to visit two Air Materiel Area (AMA) organizations and personally administer the questionnaire to at least twenty item managers at each AMA.

Sacramento Air Materiel Area (SMAMA). The first AMA visited was at McClellan AFB, California. Arrangements were made to administer the questionnaire to individual groups of at least five item managers from four branches selected by the branch supervisor. A private room was used to insure privacy and encourage free expression. The item managers completing the questionnaire were most cooperative and did not hesitate to express their comments. Apparently working in small groups where all group members were acquainted aided freedom of expression. The Sacramento field test resulted in two major changes and several minor wording clarifications.

1. In Part II, the computer products of two other automated systems were added: (1) Item Manager Stock

Control and Distribution System (D032), and (2) AMA Edit, Index and Routing Subsystem (D143B).

2. In Part III, the number of choices was reduced, instructions expanded and the question format revised. Also, their suggestions resulted in adding a question on the supervisor's ability to provide technical assistance concerning the automated systems.

Parts IV, V and VI presented no problems and the item managers expressed a positive attitude toward being given an opportunity to express their opinions regarding the role of item management.

Ogden Air Materiel Area (OOAMA). The second AMA visited was Hill AFB, Ogden, Utah. Arrangements were again made to administer the questionnaire to individual groups from four branches. However, in one instance item managers from two branches were combined and completed the survey as one group. The result was a noticeable decrease in the expression of comments after the surveys had been completed.

The corrections and additions developed from the Sacramento field test had been incorporated into the questionnaire for the Ogden test, and the respondents had no apparent difficulties with the survey. However, the additional questions did increase the average time required to complete the survey from thirty-five minutes to fifty-five minutes. The acceptance of the questionnaire was still positive with active expression of opinions.

It was noted that the D032 system seemed to cause more problems than the D062 system. Apparently D032 tends to

"machine pace" the item manager more than does the D062 system. As one item manager stated, "The system dictates exactly how I must handle an action so if it doesn't fit you have to make an erroneous action; you 'play games' with the system." In general these item managers expressed consistent comments on their inability to effectively communicate with the automated aspects of their job. For example, one said, "Even when there is an obvious error, there is no one you can go to who is able to correct it."

In summary, the field test proved to be absolutely essential for clarifying and completing the questionnaire. A preliminary and relatively superficial analysis of the results indicated the basic objectives of the research were valid and that the survey would produce the desired data. However, it was recognized that this small sample was not representative and that the conditions could have produced substantial biases.

Sample Selection and Size

Since the research concerns the functions of EOQ item management in its working environment, the most desirable and logical source of factual data would be the item managers themselves. To fulfill the requirement of obtaining results which could be generalized for the Air Force population of item managers, a sample was drawn from the population of item managers located at five geographically dispersed Air Materiel Areas (AMA's). The objective was to obtain a sampling of

approximately 50 per cent of the population at each AMA. Table 1 shows the number of item managers at each AMA and the number selected for sampling.

TABLE I
EOQ ITEM MANAGER POPULATION AND SAMPLE SIZE

Air Materiel Area	EOQ Item Manager Population	Sample Size
Sacramento AMA	230	120
Ogden AMA	249	120
Oklahoma City AMA	532	260
Warner Robins AMA	254	130
San Antonio AMA	400	200
TOTALS	1,665	830

The decision to survey approximately one half of the EOQ item managers was a compromise between the ideal of a total census and the opposite extreme of the smallest acceptable random sample. A census was too costly and time consuming and a small random sample would not provide the desired degree of confidence in any consensus that occurred. Also a small sample would not provide a sufficient number of cases in many of the subgroups to permit application of non-parametric statistical techniques in the comparison and analysis of data. In other words, a primary objective in determining the sample size was to avoid having to rely on the less

powerful small sample statistical techniques. The result was a compromise decision to establish a sample size of about one half of the population.

Questionnaire Administration

The desired method of distributing the questionnaire was by mail to each randomly selected item manager. But, after visiting three AMA's and talking to division chiefs, branch chiefs and personnel people, it was determined that individual mailing addresses were not readily available; it would require a special effort by each AMA; and it would cause excessive delay. However, each of the visited AMA's stated that they would assist in administering the survey and would make distribution of the questionnaire through the normal organizational channels provided the survey was sanctioned by their headquarters. Another reason for going through organizational channels was that government employees are advised not to answer questionnaires from outside sources concerning their jobs.

The Supply Operations Division of the Air Force Logistics Command reviewed the research project and proposed questionnaire, and agreed to assist in its administration. The author completed the working details which involved: (1) writing the transmittal letter of instructions, (2) informally coordinating requirements with the five AMA's by telephone, and (3) physically assembling and mailing the questionnaire package to the Requirements and Distribution Division Office at each AMA. The Requirements and Distribution Office at each AMA made selective distribution to item managers in each of the

branches. The item manager was provided with: a questionnaire, a pre-addressed return envelope, and instructions to complete the questionnaire and mail it.

Throughout the distribution process, respondents were assured that their reply would be held in confidence, used only in an aggregate, and their identity would remain anonymous. This was considered essential for encouraging the respondent to reflect his true opinions and observations. Even so there is no guarantee that the individuals did not attempt to select answers which they might feel are the "right" responses. To help overcome any such tendency, the questionnaire was clearly identified with the School of Systems and Logistics with no reference to the Air Force Logistics Command.

Questionnaire Mailings and Returns

A total of 830 questionnaire packages were mailed on 19 July 1968, to the Requirements and Provisioning Branch Chiefs of the five Air Materiel Areas. The branch chiefs were instructed to randomly distribute the questionnaire to EOQ item managers. Instructions on the questionnaires requested the item manager to complete it within two weeks from the date of receipt and mail it in the attached pre-addressed envelope.

The first returns were received on 28 July, seven days after mailing. By the 23rd of August, thirty-five days after the mailing, 656 questionnaires had been returned without a need for follow-up action. This represented an overall return rate of 79 per cent. Four of the five AMA's had a re-

turn rate of 81 per cent or higher. The response from the other AMA was only 49 per cent. A telephone follow-up was made with the branch chief and this action raised the response to 77 per cent by the 6th of September, forty-nine days after the initial mailing.

With the return of 743 questionnaires out of the 830 mailed, a decision was made to cut off the returns and proceed with the tabulation and analysis of the data. The 743 responses represent an overall return rate of 89.5 per cent which is considered excellent for mail surveys and well above the average for doctoral dissertations.¹

Table 2 gives a breakdown of questionnaires mailed and returned.

TABLE 2
QUESTIONNAIRE MAILING AND RETURN DATA

Air Materiel Area	Questionnaires Distributed	Questionnaires Returned	Per cent Returned
Sacramento AMA	120	114	95.0
Ogden AMA	120	105	87.5
Oklahoma City AMA	260	242	93.1
Warner Robins AMA	130	128	98.5
San Antonio AMA	200	154	77.0
TOTALS	830	743	89.5

¹Carter V. Good, *Introduction to Education Research* (New York: Appleton-Century-Crofts, 1963), p. 283. The author reported that the mean percentage of questionnaire returns for 204 doctoral dissertations at Teachers College, Columbia University was 71 per cent; and 59 research studies reported in the "Journal of Educational Research" was 81 per cent.

Statistical Techniques

The nature of the data and measurement scales developed in the questionnaire survey restricts the types of statistical techniques suitable for description of the data and the analysis or relationships. The highest order of measurement scale applied in the research questionnaire is ordinal. An ordinal scale defines only the relative position of an object or individual with respect to a characteristic, and does not specify the actual distance between positions. In other words, with ordinal measurement scales we are limited to statements of "greater than", "equal to", or "less than"; we can not make correct statements as to how much greater or how much less.²

The fact that the interval positions on the scale are not known suggests the need for caution in interpreting the statistical measure used to represent response variability. Therefore, this study relied primarily on percentage frequency distributions to reflect both the central tendencies and the dispersion of the responses to the semantic differential scales used in the survey instruments. The arithmetic means and standard deviations were also computed to assist in analysis of the data.

In addition to descriptive analysis of survey responses, a technique was required to determine whether a comparison of

²Claire Sellitz, et al., Research Methods in Social Relations, revised edition, (New York: Henry Holt & Company, 1956), p. 411.

responses by specific groups of item managers indicated agreement or disagreement in their responses to job satisfaction survey items and anxiety survey items. The statistical technique for testing the significance of the difference between two distributions was the large sample parametric test of the equality of the means. Description of the technique is presented in the appendix.

The testing for differences between variables did not necessarily indicate a causal relationship. A cause and effect relationship requires a more exacting research design criteria than was possible in this study.³ However, testing for differences was important for gaining insights and searching for strong implications of possible causal relationships. With these inferences and implications it was possible to isolate and describe areas of general consensus concerning the inherent characteristics of the EOQ item manager role in its relations with automated processes.

An IBM 1620, model II computer was used to tabulate questionnaire data, establish rankings, and compute percentages, means and standard deviations.

³Research literature states that there are three necessary and sufficient conditions for establishing causal relationships in hypothesis testing. For example, Claire Sellitz, et al, op. cit., p. 94, states these as: "... (1) evidence of concomitant variation--that is, that the causal variable and the dependent variable are associated; (2) evidence that the dependent variable did not occur before the causal variable; and (3) evidence ruling out other factors as possible determining conditions of the dependent variable."

Limitations of the Study

The design and implementation of almost any empirical study has limitations when tested against the proven theories and procedures of scientific research methodology, and this study is no exception. However, the presence of such limitations does not necessarily invalidate the contributions or findings of empirical research provided these compromises of the "ideal" research design are recognized and accepted.

The imposed constraints of time and resources severely limit both the scope and content of the research effort. For example, a much more effective research program could have been designed had it been possible to complete a thorough initial pilot (exploration) study to seek out the most promising variables and relationships for specific testing.

Limitations are noted in the analysis chapters, but there are a few other general limitations which should be pointed out at this time.

1. The limitations of mail questionnaire surveys are well established and widely documented in research literature. It is extremely difficult to evaluate the accuracy of given responses or to eliminate all the semantic communicative difficulties. Also, it is not possible to describe the profile or nature of non-respondents. However, the aggregate return of almost 90 percent mitigates this limitation more so than the average research efforts using mail surveys.

2. In assessing the effect of automated processes and products on the item managers' role behaviors it is important to realize that such behaviors are also influenced by differences in item managers' personalities as well as relationships and personalities of other individuals in the role set.
3. Methodological limitations also occur. The ordinal nature of the data limits the number and certainty of conclusions which can be drawn. The statistical limitations have been previously noted.
4. Finally, there is always a question of the representativeness of the sample drawn even though the size and procedures warrant a high degree of confidence that it does represent the item manager population in the Air Force.

Summary

With role theory as the basic conceptual framework, a mail questionnaire was developed. The questionnaire was administered to approximately 50 per cent of the EOQ item managers at each of the five Air Materiel Areas within the Air Force Logistics Command. Descriptive statistical techniques were employed primarily due to the ordinal nature of the data generated by the mail survey. Means and standard deviations were also computed to assist in the analysis of the data.

CHAPTER IV

PROFILE OF THE AIR FORCE EOQ ITEM MANAGER

The purpose of this chapter is to identify some basic characteristics of the incumbents of EOQ item manager positions by presenting a biographical and work data profile. Since a primary research objective of the thesis is to examine item manager role relationships with ADP systems, a logical operational objective is to determine the characteristics of the individuals who occupy the position. The next chapter will report the results of consensus analysis on specified item manager environmental factors, and any role consensus analysis should address the questions: Consensus on what? Consensus by whom? This chapter addresses the question, "Consensus by whom?"

Item Manager Biographical Data

An important set of descriptive variables are the demographic ones: job grade, age, sex, education, and work experience. Some important insights as to the nature of the work force can be gained by examining the distribution of these variables within the item manager sample.

Civil Service Grade and Within Grade Step Data

Table 3 contains a breakdown of the item manager sample by civil service grade with ingrade steps consolidated into

TABLE 3

CIVIL SERVICE GRADE LEVEL DATA FOR
THE EOQ ITEM MANAGER SAMPLE

Civil Service Grade	Grouped Grade Steps	Number of IM's	Percent N = 735 ^a	Salary Range	Time in Steps Range
GS 5	1 - 5	36	4.9	\$5732 - 6489	1 - 6 years
GS 5	6 - 10	13	1.8	6690 - 7456	7 - 13
Total		49	6.7		
GS 7	1 - 5	236	32.1	\$6981 - 7913	1 - 6 years
GS 7	6 - 10	68	9.3	8146 - 9078	7 - 13
Total		304	41.4		
GS 9	1 - 5	303	41.2	\$8462 - 9590	1 - 6 years
GS 9	6 - 10	70	9.5	9872 - 11000	7 - 10
Total		373	50.7		
GS 11	1 - 5	6	0.8	\$10203 - 11563	1 - 6 years
GS 11	6 - 10	2	0.3	11903 - 13263	7 - 10
Total		8	1.1		
2nd Lt		1	0.1		

^aEight of the 743 respondents did not answer this section

two groups. It also shows the annual salary ranges and time in grouped step ranges.

The major facts these data illustrate are that the majority of item managers (92%) are in GS grades 7 and 9, and that the majority of this group (73%) have less than 7 years in grade with annual salaries falling within the range of \$6981 to \$9590. These factors imply the following:

1. Item managers basically fall into two civil service grades even though they are performing essentially the same functions.
2. There appears to be opportunity for grade promotion

within the EOQ item management field for approximately half of the item managers but the group that are GS 9 appear to have little opportunity.

3. The majority of item managers will definitely receive within-grade-step pay increases and can look forward to a salary of about \$10,000 annually without leaving the career field of item management.

Age and Sex Data

Table 4 provides data on the age characteristics of the EOQ item manager sample.

TABLE 4
AGE DISTRIBUTION OF THE EOQ ITEM MANAGER SAMPLE

Age	Number of IM's	Percent N = 742 ^a
24 or under	34	4.6
25 - 29	78	10.5
30 - 34	70	9.4
35 - 39	85	11.5
40 - 44	134	18.1
45 - 49	152	20.5
50 - 54	104	14.0
55 or over	85	11.4

^aOne respondent did not answer

The age distribution indicates that the item managers as a group are chronologically mature since 64 per cent are 40 years of age or older. The modal group of 40 to 49 includes about 39 per cent of the item manager sample. In general this age information implies a relatively stable career

civil service oriented work force with a large group being in their most effective and productive time in life. The median age is approximately 43 which indicates the group is neither young or old.

A question asking the item manager to indicate his sex immediately followed the question on age. A rather surprising result was the high proportion of refusals to answer the male/female inquiry. Of the total 743 respondents, 81 failed to answer the question, 298 checked male, and 364 checked female. This is in direct contrast to the response pattern for the remaining items in Part I.¹ There appears to be no logical explanation for this response pattern, and the "no response" group is large enough to cast doubts as to what the true male/female mix of the group is. However, the data seems to indicate that the work force is highly integrated on the basis of sex with the female group being proportionately larger.

Education and Work Experience Data

The modal educational group among item managers is the high school graduate which represents 48 per cent of the total sample. Since another 30 per cent have some college in addition to completing high school, the general educational level of item managers may be considered as being generally above a high school level. It is also important to note that approximately half of the item managers have education beyond

¹The range of no responses for the remaining questions in Part I was one to fourteen with the average being about eight or approximately one per cent.

high school. However, the dominate educational group is the high school graduate and not the college graduate. Table 5 presents the data in detail.

TABLE 5

THE EDUCATIONAL LEVEL ATTAINMENTS OF THE
30Q ITEM MANAGER SAMPLE

Educational Level	Number of IM's	Percent N = 741 ^a
Not a High School Graduate	25	3.4
High School Graduate	358	48.3
1 or 2 Years College	182	24.6
3 or more Years College	43	5.8
Bachelor's Degree	124	16.7
Master's Degree	9	1.2

^a Two respondents did not answer this question

Work Experience. Along with educational levels it was revealing to examine the general work experience backgrounds of item managers. The fact that 72 per cent have worked in civil service for 10 or more years definitely characterizes this group as career civil service or government employee. However, the majority of item managers have not been in the functional area of item management anywhere near that length of time. For example, about 56 per cent have been item managers 3 years or less. This indicates that the majority of the item managers in this sample have not been career item managers and that many of them are relatively inexperienced in the function of item management. Table 6 presents the data on civil service experience and item management experience in detail.

TABLE 6

NUMBER OF YEARS EOQ ITEM MANAGERS REPORTED HAVING WORKED
IN CIVIL SERVICE AND THE NUMBER OF YEARS
THEY WORKED AS ITEM MANAGERS

Number of Years	Years Worked in Civil Service		Years Worked as an Item Manager	
	Number of IM's	Percent N = 741 ^a	Number of IM's	Percent N = 741 ^a
0	4	0.5	9	1.2
1	34	4.6	103	13.9
2	40	5.4	173	23.3
3	35	4.7	128	17.3
4	10	1.3	38	5.1
5	12	1.6	49	6.6
6	13	1.8	41	5.5
7	18	2.4	22	3.0
8	19	2.6	34	4.6
9	23	3.1	20	2.7
10 and over	533	71.9	124	16.7

^aTwo respondents did not answer these questions

Training Background Factors

The questions related to training were intended to draw a descriptive picture of how the average item manager is prepared to cope with the functional responsibilities of his position--both formally and informally. The data provided by the respondents were not internally consistent. For example, the first question asked, "Did you receive any type of training for item management?" Seventy-nine per cent answered yes and 20 per cent answered no leaving about 1 per cent who did not respond. The remaining questions dealt with specific types or sources of training so responses to these questions should not have exceeded the 79 per cent yes response rate to

TABLE 7

TYPES OF TRAINING EOQ ITEM MANAGERS REPORTED
HAVING RECEIVED

Type of Training	YES		NO		NO RESPONSE	
	Number of IM's	% N=743	Number of IM's	% N=743	Number of IM's	% N=743
Any type training for item management	589	79.3	148	19.9	6	0.8
Formal course(s) of instruction	250	33.6	441	59.4	52	7.0
On-the-job training from fellow IM's	693	93.3	35	4.7	15	2.0
On-the-job training from supervisors	419	56.4	280	37.7	44	5.9

TABLE 8

TYPES OF ADP SYSTEMS IN WHICH EOQ ITEM MANAGERS
REPORTED HAVING RECEIVED TRAINING OF ANY TYPE

Type of Training	REPORTED TRAINING RECEIVED	
	Number of IM's	Percent N=743
DO62 EOQ	672	90.4
DO67 DSP ISSP	293	39.4
DO17 DIA	256	34.4
DO33 Base	43	5.8
DO32 IM, SC&D	641	86.2
DO41 CAT I & II	176	23.7
DO34 SSM, SC&D	116	15.6
OTHER	145	19.5

the first question. Yet this occurred three times: (1) yes responses to receiving on-the-job training from fellow IM's was 93 per cent, (2) ninety per cent checked training received on the D062 system, and (3) eighty-six per cent checked training received on the D032 system. It is possible that item managers do not view on-the-job or systems training as being training in item management functions.

The most explicit training question relates to formal courses of instruction where 33.6 per cent of the item managers stated that they had received formal instruction and wrote in the course title. From this it appears that the majority of item managers are informally trained for their job. In operational terms this means item managers are placed in this position with very limited or no formal preparation and have to learn a complex set of operations and relationships from fellow IM's and supervisors. This can result in learning some wrong or ineffective practices as well as effective operations. Tables 7 and 8 present the survey data on item manager training.

Weekly Work Load Distribution Data

The research undertaken in this thesis required some knowledge as to how much of the item manager's time was actually devoted to working with the major ADP systems which had been designed as an integral part of his job function. If item managers did not spend a major portion of their time

TABLE 9

AVERAGE NUMBER OF HOURS PER WEEK ITEM MANAGERS STATED THEY
WORKED ON ITEM MANAGEMENT JOB ACTIVITIES OR FUNCTIONS

Hours per Week	Number of IM's	Percent N = 736
24 or under	15	2.0
25 - 29	6	0.8
30 - 34	34	4.6
35 - 39	106	14.4
40	546	74.2
41 - 44	24	3.3
45 or over	5	0.7

^aSeven respondents did not answer this question

TABLE 10

AVERAGE NUMBER OF HOURS PER WEEK ITEM MANAGERS REPORTED
SPENDING ON D062 AND D032 ADP SYSTEM PRODUCTS

Hours Per Week	D062 System Products		D032 System Products	
	Number of IM's	Percent N = 732 ^a	Number of IM's	Percent N = 729 ^b
0 - 4	20	2.7	52	7.1
5 - 9	51	7.0	101	13.9
10 - 14	132	18.0	242	33.2
15 - 19	137	18.7	137	18.8
20 - 24	152	20.8	125	17.1
25 - 29	129	17.6	45	6.2
30 or over	111	15.2	27	3.7

^aEleven respondents did not answer this question

^bFourteen respondents did not answer this question

working with ADP system products, then it would not be reasonable to view ADP systems as role senders influencing item manager job behavior.

The results of the survey questions on work load are presented in Tables 9 and 10. The data supports the writer's initial assumption that EOQ item management requires the item manager to spend the majority of his effort working on ADP system products. The only results which did not coincide with information previously obtained from personal interviews with command staff personnel was that the questionnaire data reported proportionately more time spent on DO62 EOQ Buy Computation System computer products. The commonly held opinion is that the DO32 Item Manager Stock Control and Distribution System requires a greater portion of the item manager's time.

However, the important point for this study is that the item managers do in fact spend the majority of their work effort and time relating to ADP system computer products. It supports the contention that ADP systems are a major factor in the item manager's work environment.

The Number and Nature of Items Managed

The last area in developing an item manager profile concerns the number of items managed and an evaluation of how troublesome they tend to be. Tables 11 and 12 summarize these data.

The majority of item managers (66.5%) are responsible for 200 to 800 line items with the modal group being 400 to

TABLE 11

AVERAGE TOTAL NUMBER OF LINE ITEMS EOQ ITEM
MANAGERS REPORTED MANAGING

Number of Line Items	Number of IM's	Percent N = 735 ^a
199 or Under	72	9.8
200 - 399	139	18.9
400 - 599	205	27.9
600 - 799	145	19.7
800 - 999	86	11.7
1000 or more	88	12.0

^aEight respondents did not answer the question

TABLE 12

AVERAGE NUMBER OF "PROBLEM" LINE ITEMS REQUIRING
SPECIAL EFFORT (OUT OF THE TOTAL NUMBER OF ITEMS
MANAGED) REPORTED BY THE EOQ ITEM MANAGER

Number of Line Items	Number of IM's	Percent N = 731 ^a
None	3	0.4
1 - 24	145	19.8
25 - 49	96	13.1
50 - 74	92	12.6
75 - 99	72	9.8
100 - 124	72	9.8
125 - 149	32	4.4
150 - 174	29	4.0
175 - 199	30	4.1
200 or over	160	21.9

^aTwelve respondents did not answer the question

600 line items. This relates closely with the work load factors that have been developed for EOQ item management.

However, a factor of great importance is the difficulty of handling a line item measured by its status and extraordinary efforts required in its management. EOQ items are supposedly processed in a routine sequence of actions. If everything goes smoothly and according to plan, the average EOQ item manager can manage the normally assigned work load without undue effort. However, if he has an excessive number of critical items with backorders and stockouts, his job becomes exceedingly difficult to perform. Therefore, it is possible for an item manager responsible for 400 line items to have a more stressful job than the item manager with 800 line items. This can be a source of role conflict which is an item of particular interest in this study.

The data in Table 12 indicates that a little less than half (44%) of the item managers reported over 100 "problem" items, with 22 per cent of this group claiming 200 or over. This seems rather excessive and indicates a potential source of role conflict.

A Generalized Composite Item Manager Profile

Because this research pertains to a specifically identified group of specialists, whose responses are being used for consensus role analysis, a composite profile of the "typical item manager" should be helpful in reviewing the response patterns and research findings. However, an important

point which must be kept in mind is that the following description of the "average" item manager will seldom completely fit any specific individual.

The following is a generalized descriptive profile of the "typical item manager" based upon an analysis of the responses to Part I of the survey.

Age, Education and Sex. A male or female about forty years of age who is a high school graduate with some college credits.

Position Grade. The civil service grade held GS-9 with from one to six years in grade and an annual salary of \$8462 to \$9590, depending upon time in grade.

Work Experience. The item manager is a career civil service employee with over 10 years of government employment tenure, but he has been working as an item manager for less than 4 years.

Training. The item manager has not received formal training for the functions and responsibilities of item management, nor in the ADP system products with which he must work. He has learned informally from his supervisor and from his fellow item managers.

Work Activities. The item manager devotes all of his job time to item management functions, and spends about 14 hours per week on D032 IM Stock Control and Distribution system computer products, and 20 hours per week on D062 EOQ Buy Computation system computer products.

Items Managed Work Load. The item manager is responsible for the management of about 600 line items, and if asked, he would feel that over 75 of the line items gave him special problems which required intensive management actions on his part.

CHAPTER V

EOQ ITEM MANAGER ROLE RELATIONSHIPS WITH ADP SYSTEMS

Introduction

The primary objectives of this chapter are: (1) to investigate and describe the degrees of consensus among item managers on the operational usefulness of ALP systems' products, and (2) to analyze and describe the attitude of EOQ item managers toward ADP systems and automation in general.

Background

The Air Force defines stock control as the management required to insure that supplies are adequate and are stocked geographically to most economically meet current military requirements. The two major functional factors involved in exercising stock control are distribution of assets and computation of the requirements.

The position within the Air Force which has operational responsibility for stock control is titled Item Manager (IM). An item manager is assigned a specific group of items and it is his responsibility to: (1) compute the Air Force's requirements for these items, and (2) control the world-wide

distribution of Air Force assets to include rationing for items in short supply.¹

The current stock control system has become standardized at all of the air materiel areas. The automated data system uses a 7080 computer with package programming and file maintenance being accomplished at Headquarters AFLC. The end result is that the EOQ item manager in performing his stock control functions is almost totally dependent upon the reports and other management data provided by two major ADP systems: (1) DO62 -- the EOQ Buy Computation System, and (2) the DO32 -- Item Manager, Stock Control and Distribution System. In addition, he receives a few reports from a relatively new ADP system -- the D143B, AMA Edit, Index, and Routing Subsystem.²

Within ADP Systems Analysis of Product Necessity

To evaluate the perceived operational usefulness of ADP systems computer products currently provided to EOQ item managers, each respondent was asked to rank, on a seven point semantic differential scale, each product on the criterion of necessity for the performance of his stock control functions. The specific instructions to the item managers were:

Part II. We are interested in your professional experience with the various computer

¹U.S., Department of the Air Force, U.S. Air Force Supply Manual, AFM 67-1, (Washington D.C.; 14 October 1968), Vol. III, Part one, Chapter 8, p. 8-1.

²A description of the three ADP systems and system products is provided in Appendix C.

products available to you for support of your task of item management. In Part II we have listed by number and title all the D062, D032 and D143B systems' computer processed products which you may receive and use. The purpose is to obtain your evaluation of just how necessary you consider these products for the performance of your task of item management.

Please circle the one number after each of the below listed computer products representing the phrase (e.g., absolutely unnecessary, etc.) which most accurately reflects your personal judgment as to the necessity of the information for your work.

Each section in part II listed all of the computer products generated for item managers by the three ADP systems. The responses by the item managers resulted in a distribution for each product ranging from "absolutely unnecessary" to "absolutely necessary." Since the objective was to obtain some insights from the patterns of the response distribution, some method had to be used which would permit examination for consensus in responses and which would accommodate ranking the products on a continuum of consensus.

A technique which Gross, Mason and McEachern used in their research was applied in part to this problem. They suggest that measurement of consensus required consideration of at least two elements: central tendency and variability of the distribution. To consider only one of these would ignore important information.³

³Neal Gross, Ward S. Mason, Alexander W. McEachern, Explorations in Role Analysis (New York: John Wiley and Sons, 1965), pp. 104-12.

If all responses were to fall into one response category there would be perfect consensus. However, this is not the usual case in empirical studies. For example, in Part II of this study there is only one product for which the response pattern comes near this extreme. So the primary issue is one of analyzing the lack of consensus. The two "pure" types of distribution which can result in a lack of consensus are:

(1) distributions with "equal" frequencies in all response categories, and (2) bimodal distributions where the responses fall "equally" into the two opposite extreme response categories. These extreme cases of lack of consensus indicate the difficulty in interpreting variability in distribution. For example, a strongly bimodal distribution with the same variance score as a "flat" distribution might indicate a much higher degree of disagreement. Even though the number of persons falling into the "necessary" versus "unnecessary" categories may be nearly the same, the convictions of each group is stronger. There are fewer persons with permissive responses. The differences in the lack of consensus would tend to be more a matter of degree rather than a kind of response or, in other words, intensity rather than direction.

With these points in mind, the standard deviation was calculated as a measure of dispersion and the mean as the measure of central tendency. These statistics, along with response frequency distributions, provided a relative basis for comparing item managers' evaluations of ADP systems' product necessity. Response distributions indicating

disagreement (lack of consensus) were examined for both direction of response (necessary versus unnecessary) and intensity of response (how necessary or unnecessary).

Detailed data on item managers' evaluation of ADP systems' product necessity generated by Part II of the questionnaire survey are presented in Appendix D.

Table 13 presents the data on D062 system product necessity in a form designed to facilitate analysis.

D062 System Products

A total of 34 individual products were evaluated within the D062 system. The only one for which there was an obvious consensus of necessity is provided below:

Question 9: "D062.J11-09, EOQ Buy Computation Worksheet: Buy Notice"

This product provides the item manager with a complete record of data required to initiate procurement action. The "direction only" distribution (see Table 13) shows 98.2 per cent of the respondents considered the product necessary, 1.5 per cent unnecessary, and 0.3 per cent undecided. The "full" distribution (see Appendix D) shows 94.5 per cent evaluated the product as being "absolutely necessary." Since this document is so vital to the requirements buy process, a logical argument could be established that the responses should have reflected the 100 per cent necessity. In a sense it can serve as a basis for examining the response patterns of the other products.

TABLE 13

"DIRECTION ONLY" PERCENTAGE DISTRIBUTION OF ITEM MANAGERS' RESPONSES
 EVALUATING THE NECESSITY OF D062 SYSTEM PRODUCTS
 (The questions are listed in rank order by highest response rate for
 combined response categories 5, 6, and 7.)

Ques- tion No.	Rank- ing	Response Categories: (1) Absolutely Unnecessary (2) Very Often Unnecessary (3) Sometimes Unnecessary	(4) May or may not be necessary	Response Categories: (5) Sometimes Necessary (6) Very Often Necessary (7) Absolutely Necessary	Mean	Std. Dev.
9	1	6.9	.3	98.2	6.86	.72
12	2	5.1	6.0	88.9	6.12	1.32
7	3	5.8	6.6	87.6	6.24	1.43
32	4	5.0	8.4	86.6	6.20	1.43
11	5	6.1	9.0	85.0	6.08	1.59
10	6	7.7	7.3	85.0	5.98	1.50
29	7	7.9	16.0	76.1	5.75	1.66
33	8	12.5	13.5	74.0	5.48	1.78
34	9	14.1	12.0	73.9	5.41	1.82
30	10	9.2	17.9	72.9	5.62	1.74
3	11	11.7	15.7	72.6	5.45	1.64
31	12	9.5	18.2	72.3	5.60	1.76
6	13	15.7	12.7	71.6	5.40	1.89
2	14	13.9	15.0	71.0	5.37	1.71
17	15	14.3	14.7	71.0	5.31	1.85
13	16	17.1	15.3	67.6	5.28	2.05
14	17	18.3	15.3	66.4	5.19	2.08

TABLE 13 (Continued)

Question No.	Ranking	Response Categories	(4) May or may not be necessary	Response Categories:	Mean	Std. Dev.
		(1) Absolutely Unnecessary (2) Very Often Unnecessary (3) Sometimes Unnecessary		(5) Sometimes Necessary (6) Very Often Necessary (7) Absolutely Necessary		
4	18	16.5	18.7	64.8	5.10	1.83
19	19	18.0	20.3	61.7	4.88	1.85
22	20	18.6	19.9	61.5	4.77	1.83
8	21	19.8	20.1	60.2	4.85	1.91
16	22	22.3	18.6	58.9	4.74	1.93
5	23	22.8	19.6	57.6	4.75	2.04
18	24	26.3	18.2	55.4	4.56	2.12
21	25	20.6	24.9	54.5	4.65	1.85
27	26	15.7	31.1	53.2	4.85	1.91
28	27	16.4	32.6	50.9	4.75	1.92
23	28	21.4	28.1	50.4	4.47	1.86
1	29	33.1	16.2	50.3	4.30	2.11
20	30	29.2	21.0	49.8	4.32	2.10
15	31	31.1	20.8	48.1	4.24	2.07
26	32	20.8	38.1	41.1	4.38	1.91
24	33	20.6	38.3	41.0	4.40	1.91
25	34	20.8	38.4	40.8	4.37	1.91

"High" Necessary Response Products. Six products on the "direction only" (necessary versus unnecessary) response distribution had necessary evaluations of 85 per cent or higher and a "low" standard deviation score.

Question 9 (98.2% necessary; 0.72 SD): D062.J11-09, EOQ Buy Computation Worksheet: Buy notice. (weekly)

Provides the item manager with a complete record of data required to initiate procurement action.

Question 12 (88.9% necessary; 1.32 SD): D062.J11-14 EOQ Buy Computation Worksheets: Interrogation Reply. (weekly)

Provides the item manager with automatic or requested pertinent data on an item requiring review.

Question 7 (87.6% necessary; 1.43 SD): D062.J11-07, transfer of Prime To: "gaining activity." (weekly)

Provides item manager with historical and pertinent data to be forwarded to the gaining Air Materiel Area (AMA).

Question 32 (86.6% necessary; 1.43 SD): D062.S12-03, EOQ Buy/Budget Projection Products EOQ Buy Computation Worksheets. (quarterly)

Provides the item manager with a complete record of data required for item substantiation in support of dollar projections. (quarterly)

Question 10 (85% necessary; 1.50 SD): D062.J11-10, EOQ Buy Computation Worksheet: Data Level Notice. (weekly)

Provides the item manager with computed levels, assets position, and demand history indicating procurement action within 90 days.

Question 11 (85% necessary; 1.59 SD): D062.J11-11, EOQ Buy Computation Worksheet: Termination Notice. (weekly)

Provides the item manager with computed levels and asset position indicating excess procurement to be terminated.

Observations. The D062 system products with the highest degree of perceived necessity deal predominantly with information for making operational decisions. These decisions are directly to purchasing (buy) actions and termination actions, or are used to obtain funds to accomplish procurement. The products are basic to the item managers operational task of requirements computation which is a major element of his stock control function.

"Low Necessary" Response Products. Since no clear breaks or groupings developed in the ranking, the products with the lowest percentage of necessary responses were examined. This procedure was designed to highlight product characteristics which might help explain the differences in the response patterns. Those six products with the lowest percentage of necessary responses are listed below:

Question 1 (50.3% necessary; 2.14 SD): D062.J11-03,
Manual File Maintenance Transaction List (weekly)

Provides the IM with a record of each AFLC Form 46 file maintenance action that was posted during the current cycle.

Question 20 (49.8% necessary; 2.10 SD): D062-J11-23,
Nonrecurring Demand Notice. (quarterly)

Provides the IM with a listing of items with nonrecurring demands for review and subsequent action to purify item demand history.

Question 15 (48.1% necessary; 2.07 SD): D062.J11-18, Two
Years Zero Demand Items. (annual)

Provides print out for review for justification of retention of assets at IM level.

Question 26 (41.1% necessary; 1.91 SD): D062.K77-01,
EOQ/DSA Projection Executive Management Summary
Report, Part III. (monthly)

Part III provides the IM with the same data as
Part I, except the items are summarized by MMC/FSC
within budget code.

Question 24 (41% necessary; 1.91 SD): D062.K77-01,
EOQ/DSA Projection Executive Management Summary
Report, Part II. (monthly)

Part II provides the IM with the same information
as Part I, except the items are summarized by
budget code.

Question 25 (40.8% necessary; 1.91 SD): D062.K77-01,
EOQ/DSA Projection Executive Management Summary
Report, Part I. (monthly)

Part I provides the IM with the quantity and dollar
value of each category of items requiring buy
actions prior to capitalization.

Observations. The products with "low necessary"
response patterns appear to be more indirectly related to the
operation of requirements computation. In general, they
provide the item manager with information to "purify" data
and take general management actions to facilitate better
decision when procurement action is required. Also, the
three lowest ranked products (questions 24, 25 and 26)
generally require a decision by the branch chief with the
item manager taking care of the details.

D032 System Products

A total of 18 individual products were evaluated within
the D032 system. Again, a decision was made to compare the
highest ranked products to the lowest ranked on the basis of

necessity. The data for this analysis are provided by Table 14.⁴

"High" Necessity Response Products. The five products with the highest percentage of necessary responses were:

Question 36 (88.1% necessary; 1.32SD): D032.615-C1,
Controlled Exceptions (daily)

Provides the IM with a listing of requisitions with erroneous or incompatible input. Report contains original 80 columns of data plus control number and exception code and phrase to identify the type of error.

Question 43 (87.1 necessary; 1.42 SD): D032.503-C1,
Transaction Register Hi-value and Manager Review
(daily)

Provides IM with a daily listing of transactions and ending balances of Hi-value and manager review items used to maintain close surveillance over Hi-value and specially uncontrolled items.

Question 41 (83.0% necessary; 1.69SD): D032.ED1-C1,
Transaction Register Category I Items (weekly)

Provides IM an auditable document for accountable type transactions.

Question 42 (83.0% necessary; 1.69 SD): D032.ED2-C1,
Transaction Register Category I Items (monthly)

Provides IM with an auditable document for accountable type transaction prepared from the weekly/monthly transaction listing.

Question 40 (81.6% necessary; 1.54 SD): D032.501-C1
and D032.507-C1, Processing Master Record Print
Out. (daily)

Provides IM with the complete asset position of an item. It is produced either as a result of an interrogation or internal computer processing.

⁴The complete data on distribution of item manager responses within each response category is presented in Appendix E.

TABLE 14

"DIRECTION ONLY" PERCENTAGE DISTRIBUTION OF ITEM MANAGERS' RESPONSES
EVALUATING THE NECESSITY OF D032 SYSTEM PRODUCTS
(The questions are listed in rank order by highest response rate for
combined response categories 5, 6, and 7.)

Question No.	Ranking	Response Categories: (1) Absolutely Unnecessary (2) Very Often Unnecessary (3) Sometimes Unnecessary	(4) May or may not be necessary	Response Categories: (5) Sometimes Necessary (6) Very Often Necessary (7) Absolutely Necessary	Mean	Std. Dev.
36	1	4.9	6.9	88.1	6.23	1.32
43	2	4.8	8.1	87.1	6.29	1.42
41	3	7.1	9.7	83.2	6.18	1.69
42	4	7.1	10.0	83.0	6.17	1.69
40	5	7.6	10.7	81.6	5.89	1.54
44	6	7.4	12.7	79.9	5.85	1.65
46	7	14.1	10.2	75.7	5.64	1.94
35	8	15.2	12.5	72.3	5.35	1.82
38	9	19.7	9.5	70.7	5.14	2.17
52	10	8.7	23.0	68.2	5.31	1.66
45	11	10.4	23.2	66.3	5.33	1.79
50	12	12.8	30.7	56.5	4.90	1.76
47	13	17.2	34.7	48.1	4.72	1.95
51	14	15.5	37.1	47.4	4.62	1.79
49	15	16.1	37.3	46.6	4.53	1.80
48	16	19.1	36.9	44.0	4.51	1.90
53	17	17.7	39.9	42.3	4.83	1.71
37	18	24.5	41.4	34.1	4.14	1.90

Observations. The primary characteristic of these products is that they are directly related to the operational task of asset distribution. They provide basic information required for almost all operating decisions concerned with distribution. This is consistent with the D062 products found most necessary and the distribution of response patterns are also very similar.

"Low" Necessary Response Products. The five D032 system products with the lowest percentage of necessary responses were:

Question 47 (48% necessary; 1.95 SD): D032.804-C1,
Classified Item List (semiannual)

To advise IM information or classified items.
Used to insure proper storage and inventory of
classified items.

Question 51 (47.4% necessary; 1.79 SD): D032.632-C1,
Items Capitalized Listing--Previews Back Order
(as required)

To advise the IM that requisitions were on back
order at the time of capitalization of an item to
DSA.

Question 49 (46.6% necessary; 1.80 SD): D032.PW1-C1,
Interrogation Replies on Controlled Exceptions--
By Command

Provides as stock record account numbers on a
given command for a particular controlled exception
area.

Question 53 (42.4% necessary; 1.71 SD): D032.293-C1,
Requisition Control Active Masters By Site/Age.
(daily)

Furnishes replies to interrogations by site and/or
age for all open shipments.

Question 37 (34.1% necessary; 1.90 SD): D032.451-C1/C2, Defense Supply Agency Accountable Balance Transactions (as required)

This requires IM to forward the document identifier "DEE" cards to the appropriate center receiving management responsibility for AF assets being capitalized.

Observations. The D032 systems lowest ranking outputs pertained mainly general management information not requiring an "immediate" decision. The characteristic response pattern in these cases are more accurately described as reflecting "lack of agreement" rather than disagreement on the product's necessity. In other words, the responses are relatively evenly distributed rather than grouped at both directional extremes. A few of the products did tend toward disagreement (e.g., question 13, 14 and 38) discussions with AFLC staff personnel and indicated that these products were designed for a particular action which could be accomplished by using other outputs. Apparently the item managers using the products responded strongly necessary while those who didn't use the product responded strongly unnecessary.

General Findings

ADP system products required for operational decisions in performing the item manager's fundamental tasks of requirements computation and asset distribution are perceived by item managers to be necessary.

Products providing information for general management actions reflect a "lack of agreement" as to the product's necessity.

The data did not identify any product with a consensus of opinion that it was unnecessary. However, the lack of agreement on the necessity of certain products indicates that many item managers are not using the products as intended or that the products are not applicable to all item managers due to peculiarities of the items managed.

Between ADP Systems Analysis of Product Necessity

The next focus of interest is on the areas of agreement and disagreement in the distribution of responses between the three ADP systems. In the previous consensus analysis the concern was with specific ADP system products within each system ranked on the basis of necessity for the performance of item management tasks. The between system analysis is performed to investigate the possibility that item managers perceive the systems differently since each system relates to distinctly different stock control function.

General Observations

Table 15 presents a summary of item manager responses as to the necessity of each ADP system computer product. The data is expressed in two ways: by total number of responses in each response category (e.g., absolutely unnecessary, etc.) and also by what percentage this number is of the total number of actual responses (item managers failing to answer were subtracted from the total number of responses possible).

TABLE 15

NUMBER AND PERCENTAGE OF ITEM MANAGERS' RESPONSES
AS TO THE NECESSITY OF EACH OF THE
THREE ADP SYSTEMS' PRODUCTS

Response Categories	D062 SYSTEM (34 System Products)		D032 SYSTEM (18 System Products)		D143B SYSTEM (3 System Products)	
	Number of Responses	Percentage N=24349	Number of Responses	Percentage N=12571	Number of Responses	Percentage N=2083
(1) Absolutely Unnecessary	2099	8.6	1021	8.1	225	10.8
(2) Very Often Unnecessary	1208	5.0	372	3.0	59	2.8
(3) Sometimes Unnecessary	640	2.6	211	1.7	57	2.7
(4) May or May Not be Necessary	4438	18.2	2728	21.7	643	30.9
(5) Sometimes Necessary	3174	13.0	1303	10.4	337	16.2
(6) Very Often Necessary	3457	14.2	1557	12.4	301	14.5
(7) Absolutely Necessary	9333	38.3	5379	42.8	461	22.1
(0) No Responses	913	3.6 ^a	803	6.0 ^a	146	6.6 ^a

^aPercentage is computed on the total number of possible responses for each ADP system by 743 item managers (D062: N=25262; D032: N=13347; D143B: N=2229).

Perfect consensus would be all responses occurring in a single category. However, perfect consensus did not occur for any product. Therefore, the response patterns will be compared and analyzed for consensus on direction of responses (necessary or unnecessary) and also the intensity of such responses within each direction.

Direction of Response

Consensus on direction of response was examined first. Table 16 presents these data for each ADP system by combining responses in the three necessary response categories and the three unnecessary response categories.

Several observations may be made regarding the directional distribution of the item managers' responses.

Unnecessary Responses. For each system, the proportion of responses falling into the unnecessary directional classification is practically the same. This implies that there is almost complete unanimity among item managers on the proportion of unnecessary computer products in each system. However, the fact that about 15 per cent of each system's computer products were evaluated as unnecessary to some degree does not mean any single product can be eliminated. All that may be stated for certain is that each system has the same proportion of unnecessary responses and that this represents an agreement of general attitude on unnecessary products between ADP systems.

TABLE 16

"DIRECTION ONLY" FREQUENCY DISTRIBUTION OF ITEM MANAGERS' RESPONSES TO THE NECESSITY OF EACH SYSTEMS' COMPUTER PRODUCTS

ADP Systems	Response Categories: (1) Absolutely Unneces- sary (2) Very Often Unneces- sary (3) Sometimes Unneces- sary	(4) May or May Not Be Necessary	Response Categories: (5) Sometimes Neces- sary (6) Very Often Neces- sary (7) Absolutely Neces- sary
D062 EOQ (34 System Pro- ducts)	16.21	18.23	65.56
D032 IM SC&D (16 System Pro- ducts)	12.76	21.70	65.54
D143B (3 System Pro- ducts)	16.37	30.87	52.76

Necessary Responses. The proportion of responses falling into the "necessary" direction is essentially the same for the D062 and D032 systems (about 66 per cent), but noticeably less for the D143B system (53%). This indicates that item managers view the necessity of the three ADP systems' computer products as being about the same. However, the response pattern of the D143B system warrants further comment. This system is comparatively new with few products and is relatively unfamiliar to item managers. This condition apparently leads to less positive directional responses (unnecessary and necessary) and more undecided

responses since the undecided responses do increase by about ten per cent. The necessary responses decrease about 13 per cent, but the unnecessary responses stay in the same proportion as the other two systems.

Intensity of Responses

The intensity of the item manager response patterns is reflected by the "full" percentage frequency distribution presented in Table 17. The distribution of item manager responses for the D062 and D032 systems clearly indicates general agreement on product necessity evaluations between the two systems. It also infers that item manager's attitudes toward the two ADP systems are essentially the same. Of greater importance is the intensity of the responses as to the necessity of the systems products for the performance of their item management functions. Approximately 54 per cent of the total responses fall into the two highest necessary response categories while only about 12 per cent fall into the two highest unnecessary response categories.

The results for the 143B system, because it is relatively new and untested, does not reflect this positive consensus of necessity. Rather it reflects uncertainty which is logically consistent under the circumstances and tends to lend validity to the response pattern of the D062 and D032 systems.

Summary of Findings

Figure 1 graphically compares and illustrates the findings of this analysis.

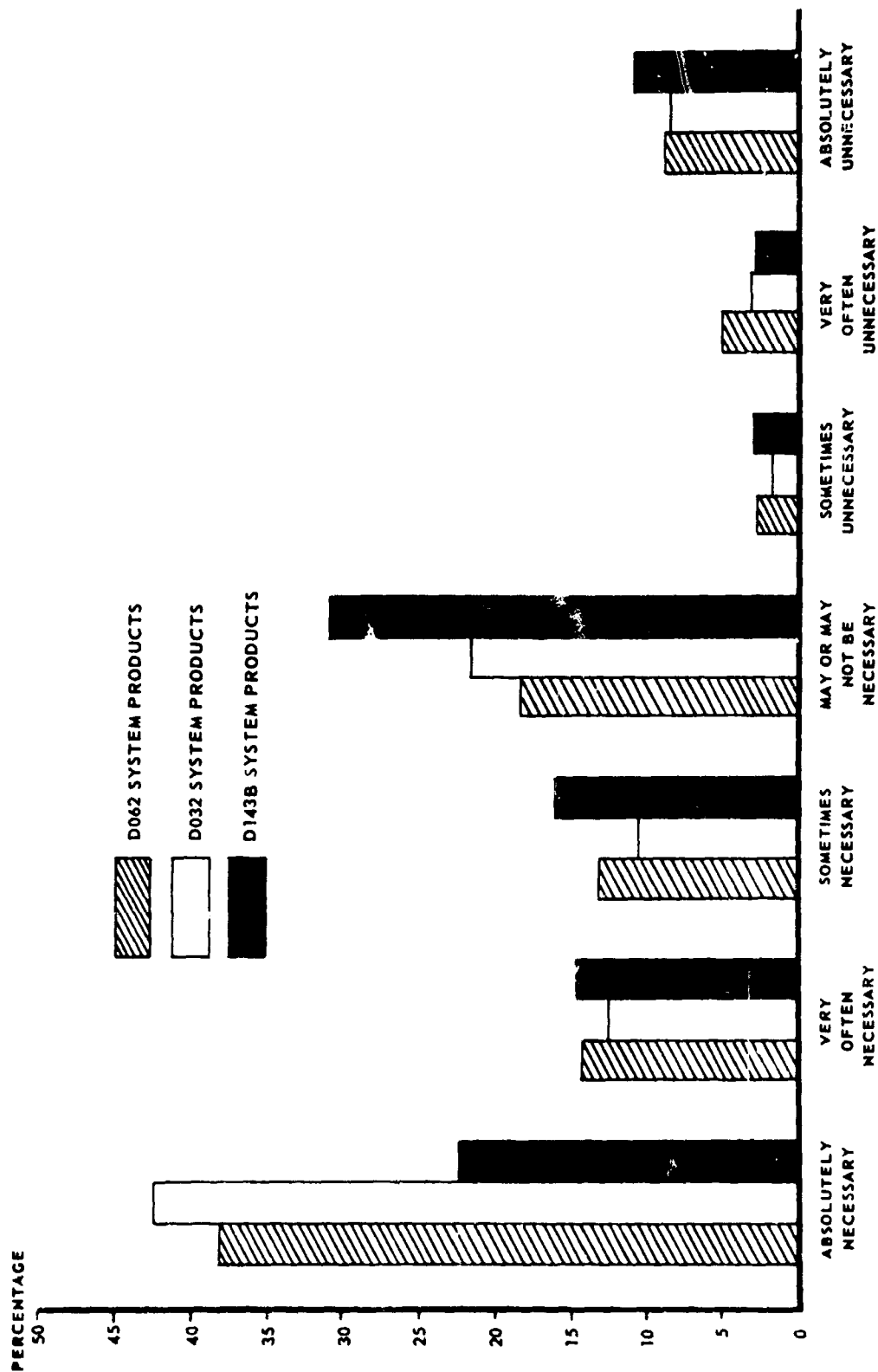


Figure 1. Percentage Frequency Distribution of Item Managers' Responses to all Items in the D062, D032 and D143B Systems Product Necessity Survey.

TABLE 17
 "FULL" PERCENTAGE DISTRIBUTION OF ITEM MANAGERS' RESPONSES
 ON THE NECESSITY OF EACH ADP SYSTEMS' PRODUCTS

ADP Systems	(1) Absolutely Unnecessary	(2) Very Often Unnecessary	(3) Sometimes Unnecessary	(4) May or May Not be Nec- essary	(5) Sometimes Necessary	(6) Very Often Necessary	(7) Absolutely Necessary
D062	8.6	5.0	2.6	18.2	13.0	14.2	38.3
D032	8.1	3.0	1.7	21.7	10.4	12.4	42.8
D143B	10.8	2.8	2.7	30.9	16.2	14.5	22.1
All Three Systems-- Average	8.6	4.2	2.3	20.0	12.3	13.6	38.9

1. The distribution of responses to the D062 and D032 systems are so similar in both direction and intensity that they reflect a similar level of evaluations and attitudes on the part of item managers.

2. There is general agreement among the item managers that the D062 and D032 computer system products, as a whole, are necessary, but only about half received strong support (very often or absolutely necessary).

3. The relatively new and unfamiliar D143B system does not have the confidence of the item managers and does not reflect as strong a feeling of necessity for the performance of their item management functions.

4. The response distributions for each system and all three systems combined did not reflect a high degree of consensus on product necessity indicating a number of each systems products are not being used by some of the respondents.

Item Manager's Perception of ADP Systems' Efficacy

The intent of Part III of the questionnaire survey was to switch the item manager's focus from the usefulness of individual ADP system's products to an evaluation of the system as a whole. Every position in an organization is affected to some degree by data inputs from other related positions or functions. The position's incumbents will develop a general impression of the factors which have a direct bearing on their work. For example, they may view a

system or activity as being reliable, providing fast service, being undependable, tending to contain errors, and so on.

To evaluate the item manager's overall confidence in each of the three systems, it was necessary to specify variables which would describe and measure, on at least a relative basis, the systems' efficacy as perceived by the item manager.

Selection and Description of Variables

Gregory and Van Horn discuss principles of data processing systems in their book and provide some ideas for the development of the measurement instrument used in the present analysis:

The quality of data and information can be described and measured in terms of accuracy, timeliness, predictability, relevance for decision-making, and consequences of use. These features determine the usefulness of information for management purposes and are important for the design and operation of a data-processing system.⁵

They also stated that, "the value of information at the pragmatic level depends on the quality, quantity, and timeliness of the reports received and the ability of the receiver to act on the basis of knowledge received."⁶ Since item managers perform at an operational level of tasks

⁵Robert H. Gregory and Richard L. Van Horn, Automatic Data Processing Systems, 2nd Ed., (Belmont, California, Wadsworth Publishing Company, Inc., 1963, p. 516.

⁶Ibid., p. 554.

and decision making, and are not directly concerned cost of information, the "value of information" referred to by Gregory and Van Horn may be evaluated on the basis of item manager perceived usefulness of the information provided by the ADP systems.

Useful Criteria. Useful was one of the selected variables since it describes information that is relevant to the item manager's job functions--primarily decision making or problem resolution. An item manager is able to make either better decisions and/or more decisions when he has relevant facts related to the decisions that must be made. In other words, an item manager would be expected to judge the ADP systems highly useful if they provided the information (facts) that he considered relevant and necessary for effective performance of his managerial functions and decision-making. Lack of information required to adequately perform a job is a frequently reported source of job related stress and anxiety, and therefore the findings of this section are useful in the analysis of Part VI data.

Quality Criteria. The quality of the information is also important. It may be possible to cope with inaccuracies and other forms of quality deficiencies, but managerial decision-making usually is not as efficient and much more frustrating for the individuals involved. For the purposes of this study, quality of information was defined in terms of accuracy, dependability, clarity, and timeliness. The particular concepts were not defined for

the item managers who completed the survey, so it is assumed that the following is a fair representation of a common interpretation.

Accuracy. Accuracy is defined as the long-run ratio of correct bits of data and information to the total data and information provided. In other words, what is the ratio of mistakes or incorrect answers provided.

Clarity. Clarity refers to unambiguous information--information which is understandable because it contains the proper content, and degree of detail, and is organized in some meaningful manner.

Dependable. Dependability refers how reliable the system is in producing the data outputs (reports) and should be a partial reflection of the item managers overall confidence in the system.

Timely. Timeliness is defined as being available when the manager feels he needs it. A manager needs information about a problem while his decision or actions can still effect the outcome, so information is timely in the sense of being available at a time desired by the decision maker.

To measure the item manager's overall confidence in the D-062, D032 and D143B ADP systems, a semantic differential scale was devised for the item manager to rate each ADP system on the basis of each of the selected variables. The variables were: (1) timeliness, (2) accuracy, (3) usefulness, (4) clarity and (5) dependability. The measurement instrument was structured in matrix form to facilitate the respondents viewing the system as a total entity. The measurement scale contained seven points to provide for expression of both "direction only" distribution and "full distribution" similar

⁷The initial concept used in the pilot study was unambiguous with ambiguous serving as the antonym. However, this was confusing to the study participants so "ambiguous" was dropped and "clear" retained.

to the scale used in Part II. However, the questionnaire construction was changed by using the variables' antonym to show a change of direction in lieu of the semantic scale.

Part III instructions to the item managers were as follows:

Part III

Every job in an organization is affected by information from data inputs, other related positions or functions, etc. People holding jobs usually develop a general impression of the factors which have a direct bearing on their work. For example, a system or activity is fairly good, provides fast service, is dependable, tends to contain errors, and so on.

The purpose of Part III is to obtain your overall impression of the automated systems which relate directly to your primary task of item management. To do this, Part III sets up a continuum for five specific conditions (e.g., timely to untimely, clear to vague, etc.) and a scale (e.g., extremely, quite, etc.) for expressing the degree to which each condition may exist.

Please place a check on the line under the one phrase of the scale which most accurately reflects your personal overall experience with the system as to its timeliness or untimeliness, accuracy or inaccuracy, etc.

Within Systems Analysis of Efficacy

Tables 18, 19 and 20 present the percentage of item managers responding within the combined response categories (extremely, quite and slightly) for each variable and each variable's antonym.⁸ Examination of the response patterns

⁸The full percentage frequency distribution is presented in Appendix E.

TABLE 18

"DIRECTION ONLY" PERCENTAGE DISTRIBUTION OF ITEM MANAGERS' RESPONSES TO
CRITERIA FOR EVALUATING THE D062 SYSTEM'S EFFICACY

Variable	Response Categories: (1) Extremely (2) Quite (3) Slightly	(4) Neither one or the other	Response Categories: (5) Slightly (6) Quite (7) Extremely	Variable's Antonym
Timely	77.2	2.0	20.8	Untimely
Accurate	84.1	2.0	13.9	Inaccurate
Useful	97.2	1.0	1.7	Useless
Clear	91.9	2.7	5.5	Vague
Dependable	86.6	2.8	10.6	Undependable
System Average	87.5	2.1	10.5	

TABLE 19

"DIRECTION ONLY" PERCENTAGE DISTRIBUTION OF ITEM MANAGERS' RESPONSES TO
CRITERIA FOR EVALUATING THE D032 SYSTEM'S EFFICACY

Variable	Response Categories: (1) Extremely (2) Quite (3) Slightly	(4) Neither one or the other	Response Categories: (5) Slightly (6) Quite (7) Extremely	Variable's Antonym
Timely	79.2	4.1	16.4	Untimely
Accurate	90.0	2.8	7.2	Inaccurate
Useful	96.8	1.2	2.0	Useless
Clear	90.5	2.2	7.3	Vague
Dependable	89.4	3.4	7.2	Undependable
System Average	89.3	2.7	8.0	

TABLE 20

"DIRECTION ONLY" PERCENTAGE DISTRIBUTION OF ITEM MANAGERS' RESPONSES TO
CRITERIA FOR EVALUATING THE D143B SYSTEM'S EFFICACY

Variable	Response Categories: (1) Extremely (2) Quite (3) Slightly	(4) Neither one or the other	Response Categories: (5) Slightly (6) Quite (7) Extremely	Variable's Antonym
Timely	69.1	14.4	16.5	Untimely
Accurate	72.8	11.6	15.5	Inaccurate
Useful	80.6	10.8	8.5	Useless
Clear	70.5	11.6	17.9	Vague
Dependable	72.5	13.0	14.6	Undependable
System Average	73.2	12.3	14.5	

indicates the criteria of timely, accurate, useful, clear, and dependable were applied in the majority of cases by item managers rating the system's efficacy (70 per cent or higher in every case). However, a pattern also appeared between the variables for each ADP system. To facilitate examination and analysis, Tables 21 and 22 were developed to rank order the variables and variable antonyms within systems. This data led to the following observations and comments.

Usefulness. The criterion of usefulness was consistently rated the highest by item managers, and ranked first by an average of 6 to 7 per cent over the next highest ranked criterion.

TABLE 21

ADP SYSTEMS' EFFICACY VARIABLES ARRANGED IN RANK ORDER BY THE HIGHEST
RESPONSE RATE FOR THE COMBINED SCALE CATEGORIES
OF EXTREMELY, QUITE, AND SLIGHTLY

Rank Order	DO62 SYSTEM		DO32 SYSTEM		D143B SYSTEM	
	Criteria	Percent ^a	Criteria	Percent ^a	Criteria	Percent ^a
(High) 1	Useful	97.2	Useful	96.8	Useful	80.6
2	Clear	91.9	Clear	90.5	Accurate	72.8
3	Dependable	85.6	Accurate	90.0	Dependable	72.5
4	Accurate	84.1	Dependable	89.4	Clear	70.5
(Low) 5	Timely	77.2	Timely	79.2	Timely	69.1

^aPercent of item managers who evaluated the criteria variables either
extremely, quite or slightly.

TABLE 22

ADP SYSTEMS EFFICACY ANTONYM VARIABLES ARRANGED IN RANK ORDER BY THE
HIGHEST RESPONSE RATE FOR THE COMBINED SCALE CATEGORIES
OF EXTREMELY, QUITE, AND SLIGHTLY

Rank Order	DO62 SYSTEM		DO32 SYSTEM		D143B SYSTEM	
	Criteria	Percent ^a	Criteria	Percent ^a	Criteria	Percent ^a
(High) 1	Untimely	20.8	Untimely	16.4	Vague	17.9
2	Inaccurate	13.9	Vague	7.3	Untimely	16.5
3	Undependable	10.6	Undependable	7.2	Inaccurate	15.5
4	Vague	5.5	Inaccurate	7.2	Undependable	14.6
(Low) 5	Useless	1.7	Useless	2.0	Useless	8.5

^aPercent of item managers who evaluated the antonym criteria variables
either extremely, quite or slightly.

The fact that about 97 per cent of the item managers evaluated the two primary and established systems (D062 and D032) as being useful to the same degree is an interesting finding. It tends to imply that the systems are definitely providing relevant facts required by item managers to resolve problems and make decisions.

Timeliness. Timeliness was the other clearly and consistently ranked criterion. It held the bottom ranking for all systems by a clear margin and its antonym, untimely, was ranked highest on the antonym variables scale for the D062 and D032 systems. For the D143B system the criterion vague was ranked highest with untimely second. This is logically consistent since the primary characteristic of the D143B system is its newness and lack of firmly established operating procedures.

The fact that almost 21 per cent of the item managers judged the D062 system untimely (versus 77 per cent timely) implies that a distinguishable number of item managers consider the D062 system information (and D032 with about 16 per cent untimely) as not being consistently available when they need it. However, this does not necessarily detract from its usefulness when they do receive it.

Clear, Dependable and Accurate. There were no distinguishable differences in the ranking of these criteria. For all practical purposes these quality criteria were judged to be of about equal value within each system. This may be partially due to the fact that they are more

closely interrelated in the minds of the item managers. The general conclusion is that for the established systems 84 to 90 per cent of the item managers consider the quality of the systems information to be effectively accurate, clear and dependable. The information has not attained the ultimate in quality but it certainly does not appear to be the source of major problems which could lead to evidence of role ambiguity due to poor quality transmission of information.

It is also noteworthy that the quality criteria for the D143B system were evaluated much lower (70 to 73 per cent versus 84 to 90 per cent for the two established systems).

Between Systems Analysis of Efficacy

Previously we have examined the response patterns to individual criterion within each of the three systems. This section will briefly compare and analyze the average response patterns between the three ADP systems as a whole. Figure 2 graphically illustrates the response distribution by each category to each of the three ADP systems. Appendix E presents the "full distribution" of all responses.

Direction of Responses

Data to examine response patterns for "direction only" are presented in Figure 2. Examination of these data lead to the following observations.

Efficacy of the Systems. When each ADP systems is viewed as a total entity and evaluated on the basis of timeliness, accuracy, usefulness, clarity and dependability,

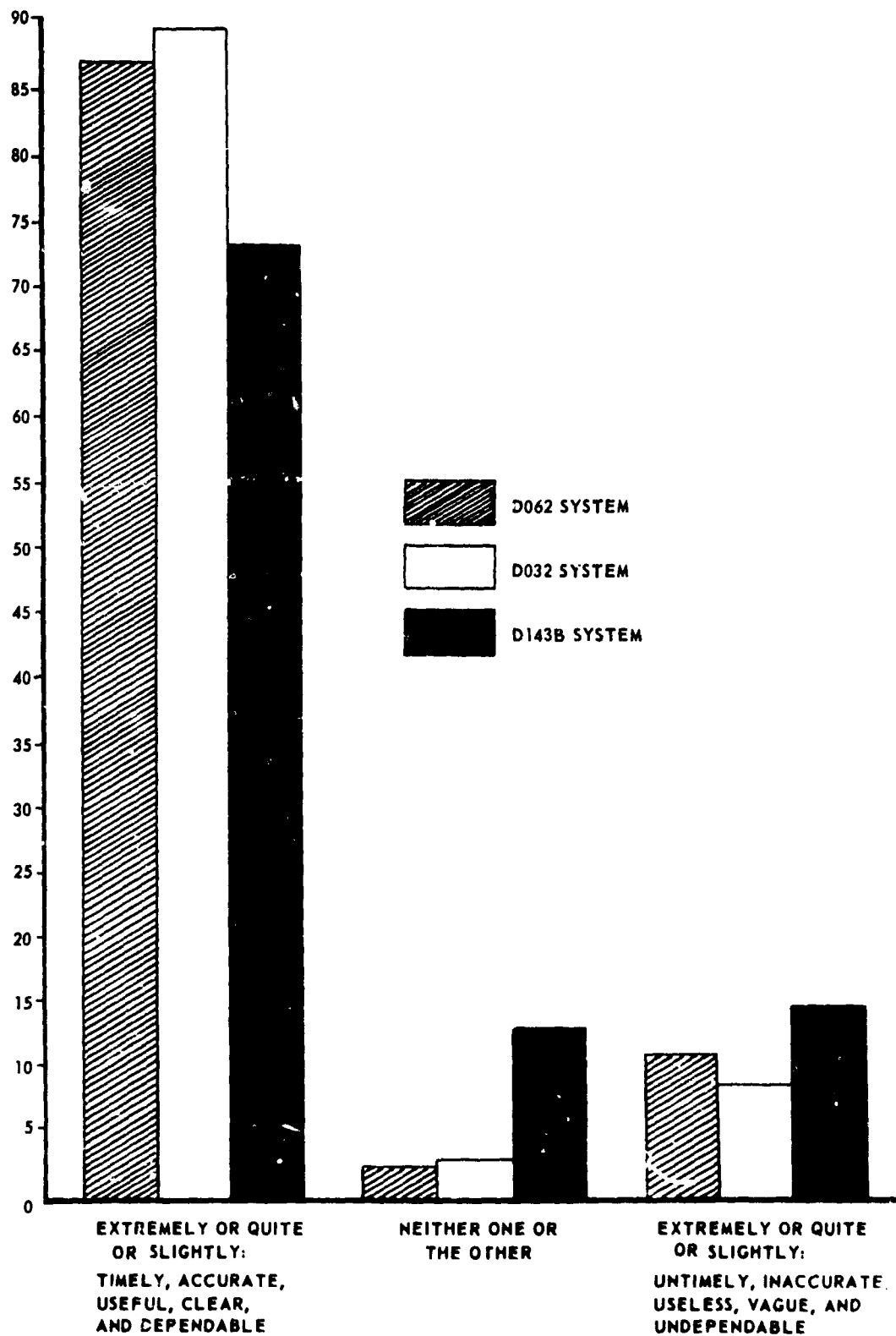


Figure 2. "Direction Only" Percentage Frequency Distribution Comparing Item Managers' Responses to Efficacy Criteria for each of the Three A.P. Systems.

the results are definitely positive, especially for the two established systems (D062 and D032). For the D062 and D032 systems approximately 87 to 89 per cent of the item managers answering the questions evaluated the systems positively while only 8 to 10 per cent responded in the negative direction (evaluated the system as being to some degree untimely, inaccurate, useless, vague, and undependable). The relatively new and unproven D143B system's positive response was noticeably less positive (73 per cent positive and 14.5 per cent negative). This is not surprising in light of previous findings.

The positive consensus here strongly implies that the item managers perceive these ADP systems to be effectively providing them with information needed to perform their stock control function. Since the variables evaluated are normally considered crucial in the functioning of an information system, these findings would indicate that the D062 and D032 ADP systems should not be an excessive source of role ambiguity. This implication is investigated in Chapter VII where sources of role conflict and role ambiguity are examined.

Intensity of Responses

Data to examine the directional intensity of the responses is presented in Figure 5. By showing the "full distribution" of the response pattern we gain a better evaluation of the strength of the system efficacy consensus. It is important to note that about 80 per cent of all item

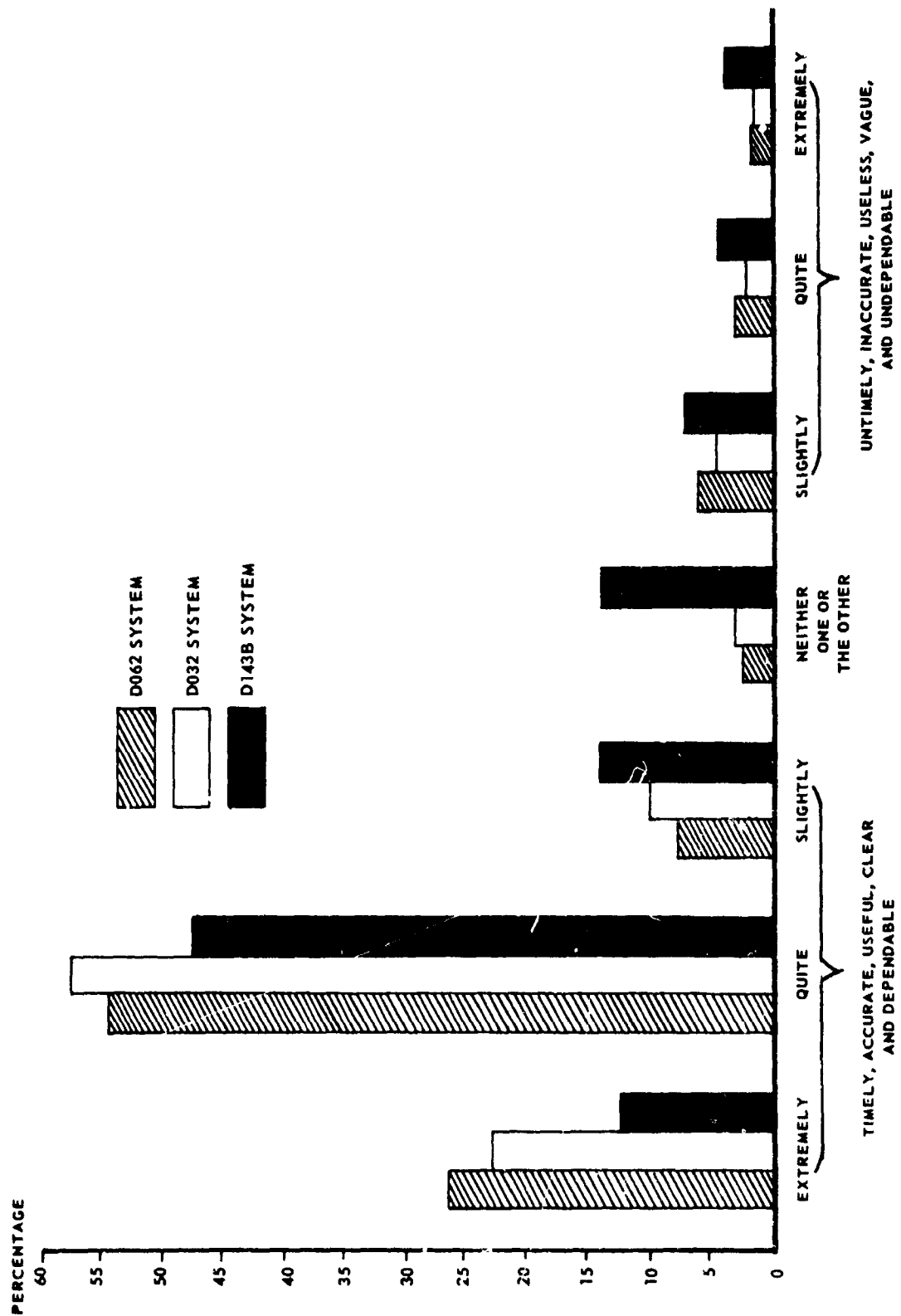


Figure 3. "Full" Percentage Frequency Distribution Comparing Item Managers' Responses to Efficacy Criteria for Each of the Three ADP Systems.

managers chose the two highest positive response categories (extremely about 25% and quite about 55%) while only about 4 per cent responded in the two highest negative categories for the D062 and D032 systems. The modal response category for all systems was "quite positive" which indicates a strong conviction in their evaluation ratings. In other words, the item managers perceive the systems as being very effective but not perfect. However, this large proportion of positive responses implies a strong consensus of opinion that the ADP systems are effective. The small group of responses that fall into the quite and extremely negative categories is not large enough to detract seriously from the finding that the consensus of opinion among item managers is that the ADP systems are highly effective on the basis of usefulness, clarity, accuracy, dependability, and timeliness.

The D143B system, however, does have a consistently different response pattern clearly indicating that it has not attained some degree acceptance as the two older established systems.

Comparison of Product Necessity and System Efficacy Findings

Part II of the questionnaire surveyed the item manager's judgment as to necessity of each individual computer product while Part III was designed to obtain the item manager's evaluation of the efficacy of each ADP system as a whole. While the two parts did not attempt to measure the exact same properties, and the whole may be something different

than the sum of its parts, the two parts are compatible and certainly interrelated to some degree. Therefore, certain similarities should emerge as well as differences.

1. In both parts II and III the distribution of responses to the D062 and D032 are so similar in both direction and intensity that they are perceived by item managers as being essentially the same.

2. Item manager responses in Part II evaluating D143B system products are supported by the responses evaluating system efficacy in Part III. There is a distinguishable difference in both parts between the D143B system and the other two systems. Also, the differences in the response distributions are in the same direction and of a similar intensity pattern. In general, the findings were that the products are not as necessary nor are the systems as effective as the other two systems.

3. Figures 1 and 3 graphically illustrate differences in the intensity of responses. The consensus in Part III is definitely that the systems are effective and the modal group falls clearly into the response category adjacent to the highest positive response category. The consensus in Part II is also positive and supports necessity of products but there is greater dispersion (variance) in the distribution. The modal group falls into the highest positive response category. However, there is a complete change in direction for the second largest grouping of responses. In Part II the second largest group is the undecided category while in

Part III it is the highest positive response category. This clearly noticeable difference in the response distribution between the two parts appears to be more logically consistent than inconsistent. In Part II the item manager views each product in relation to his tasks. Different managers may vary the use of products due to a variety of reasons ranging from personal abilities to variations between positions. Item managers will tend to evaluate a product as follows: (1) if he uses it consistently he will tend to check "absolutely necessary", (2) if he is unfamiliar with the product or refers to it on an exception basis he will then check the neutral category, "may or may not be necessary", and (3) if he knows the product and never makes use of it, he will tend to check the "absolutely unnecessary" category. The relevant fact to note is that a dominate majority of item managers view the products as being necessary--there is a general agreement on this point. It seems plausible that such an agreement would lead one to predict that when item managers viewed the system as an entity, they would also form a consensus that the system was useful and effective.

Item Managers Attitude
Toward Automation

Because the study is a descriptive survey of the item manager role as it relates to ADP systems as a role definer and role sender, a question was specifically designed to probe for the item manager's general attitude toward the concept of automation. The question was structured as follows:

2. The D062 and D032 automated data systems may be best described as: (Determine the one best response)

1. An organizational system which requires the item manager to perform activities in response to programmed demands.
2. A tool to be used by the item manager to more effectively and efficiently perform the function of item management.
3. A complex mechanical system which provides the item manager rigid data products requiring fixed responses from the item manager with little opportunity for him to exercise his personal judgment or to communicate his peculiar needs back to the system.
4. Just another machine which mechanically performs programmed computations and processes data outputs which a manager uses with discretion in making decisions and performing job responsibilities.
5. None of these: (Fill in your own description) _____

Responses 1 and 3 were contrived to reflect a negative view of automation and responses 2 and 4 were contrived to reflect a positive view of automation.

The negative contrived responses described automation as a rigid task master which machine paced the activities of the item manager. The positive contrived responses viewed automation as something the item manager used to better perform his role. Table 23 presents the response to this item.

TABLE 23

RESPONSES TO QUESTION SURVEYING
ITEM MANAGER'S ATTITUDE TOWARD AUTOMATION

Response Number	Number of IMs'	Per Cent N = 717
1	50	6.97
2	489	68.20
3	80	11.17
4	91	12.55
5	7	1.00
TOTALS	717	99.89

The response consensus was definitely positive (80 per cent) with the modal response being number 2, "a tool to be used by the item manager to more effectively and efficiently perform the function of item management." All this tells us is that 80 per cent of the item managers outwardly express a positive attitude toward automation and that it doesn't obviously conflict with any prior findings. It also tells us that about 19 per cent of the item managers apparently have a negative attitude toward automation. Whether this is a valid reflection and an indication of problem areas cannot be ascertained at this point.

Item Managers Attitude Toward His Supervisor

Interviews during the pilot study seemed to indicate that item managers were rather critical of their supervisor's technical knowledge in the ADP systems. A specific question was added to the survey to evaluate this impression. Table

TABLE 24

Questions	(1) Poor		(2) Not Very Good		(3) Fairly Good		(4) Good		(5) Very Good	
	No.	%	No.	%	No.	%	No.	%	No.	%
Your supervisor's dealings with people he supervises may be best described as:	53	7.1	65	8.7	180	24.2	324	43.6	113	15.2
Your supervisor's ability to help you resolve technical problems related to automated methodology and computer products may be best described as:	56	7.5	71	9.5	129	17.4	239	32.2	241	32.2

24 presents the results of the two questions related directly to supervision.

It is immediately apparent that supervisors in the overall picture are considered more effective as technical specialists than they are in their dealings with people. This can be a matter of biased perception on the part of item managers, but it still implies that the supervisors are not a major negative influence on ADP systems.

Summary

Part II of the item manager questionnaire survey generated data on how necessary each ADP systems' product was for performance of the task of item management. Analysis of the data resulted in the following findings:

1. D062 system products evaluated most necessary by item managers provided them with information required for operational decision making related directly to purchase actions, termination actions, transfer actions, and funding justifications. These tasks are fundamental operations for the requirements computation function.
2. D062 systems products evaluated least necessary by item managers provided them with information to perform general item management activities such as asset review, data purification, and file maintenance. These tasks are more indirectly related to the operational function of requirements computation.

3. The same pattern appeared in the analysis of D032 system "high" and "low" necessity products. Products required for the performance of fundamental operations in requirements computation and assets distribution had the highest necessary response patterns, while products providing information for general management action reflected a "lack of agreement" as to the products necessity.
4. The direction and intensity of item managers' responses on the necessity of D062 and D032 systems' products were almost identical, and indicated general agreement among item managers that most of the two systems' products are very necessary.
5. Even though several items indicated a "lack of agreement" as to their being necessary, no individual product had a consensus of unnecessary.
6. The relatively new and smaller D143B subsystem was evaluated consistently lower on necessity.

Part III of the questionnaire survey generated data on the item managers perception of each systems general efficacy on the basis of five criteria: (1) accuracy, (2) clarity, (3) dependability, (4) timeliness, and (5) usefulness.

Analysis of the data provided the following findings:

1. There was a strong consensus among item managers that the ADP systems were highly effective on the basis of these criteria. Usefulness was the highest ranked criterion for each system (81 to

97 per cent) and timeliness the lowest (69 to 79 per cent).

2. The D062 and D032 systems were evaluated almost identically by item managers with 87 to 89 per cent preceiving these two systems as being highly effective on the basis of the five criteria used in the survey.
3. The evaluation for the D143B system was noticeably lower with 73 per cent of the item managers evaluating the system effective to some degree.

A comparison of frequency response distributions between Parts II and III of the survey indicated that the item manager ratings of product necessity and system efficacy for the D062 and D032 ADP systems were essentially the same. Also, the D143B system was evaluated lower than the D062 and D032 systems in both parts (products "less" necessary and system "less" effective). This may be partially explained by the system's small size and relative newness.

A question designed to obtain the item managers' attitude toward automation in general indicate that 80 per cent had a positive attitude and considered automation a "tool" to be used to more effectively perform their item management functions. This result was considered consistent with prior survey findings.

CHAPTER VI

THE EOQ ITEM MANAGER'S PERCEPTION OF HIS ROLE

Introduction

The objective of Chapter VI is to provide a general description of the item manager's attitudes toward item management as a career and as a job, and to identify role conflict and ambiguity factors which may be viewed as sources of job related tensions.

The information was derived from data provided by Parts IV, V and VI of the questionnaire survey. These three parts were developed to gain some insights into the item manager's perception of his role and his attitudes toward his position. The first was designed to obtain the item manager's evaluation of item management as a career. The second was aimed at obtaining a relative measure of expressed job satisfaction and the third was directed at aspects of the job which may be a source of tension or irritation.

Although an evaluation of item management as a career and expressed satisfaction with ones job as an EOQ item manager are closely related, the two concepts of "evaluation" and "satisfaction" can be logically separated. The term evaluate implies the use of cognitive criteria which are outward directed while the term satisfy implies the use of

effective criteria which are inward directed.¹ In other words, evaluation relates to an expression of opinion emphasizing observation or perception but satisfaction relates to the expression of opinion emphasizing personal inclinations or feelings. They are both expressions of opinions but from differing focal points.

Career Evaluation

Six items comprised the career evaluation part of the survey, and these items were designed to obtain information on the item manager's attitude toward a career in item management:

The instructions for this part were:

In answering the following questions consider item management as a career rather than just your present job. Please circle the number of the phrase which best describes your personal thoughts and expectations for each of the following questions.

The full distribution of answers to each of the questions is given by Table 25. The six questions in this table have been ranked ordered by highest "positive" response rate (combined answers to response categories 1 and 2) to facilitate examination of the data.

Question six had the highest positive response rate (75% definitely or probably yes vs 25% probably or definitely no) which generally indicates that this particular group is well satisfied with a civil service career. The

¹Neal Gross, Ward S. Mason, Alexander W. McEachern, Explorations in Role Analysis (New York: John Wiley and Sons, 1965), p. 214.

TABLE 25

FREQUENCY AND PERCENTAGE DISTRIBUTION OF ITEM MANAGER RESPONSES
TO THE CAREER EVALUATION SURVEY INSTRUMENT
(Questions rank ordered by highest
degree of satisfaction)

6. If you had a chance to do the same kind of work for the same pay, but in another organization or company in the community, would you stay on your present job?

Code	Frequency	Percent		
1	240	32.6	Definitely yes	2.01 - Mean
2	312	42.4	Probably yes	.92 - Std. Dev.
3	116	15.8	Probably no	
4	68	9.2	Definitely no	

2. Has item management lived up to the expectations you had before you entered it?

Code	Frequency	Percent		
1	95	12.9	Yes in all respects	2.24 - Mean
2	421	57.3	In most ways	.76 - Std. Dev.
3	166	22.6	In only a few ways	
4	53	7.2	Not at all	

3. If you "had it to do over again", would you enter the field of item management?

Code	Frequency	Percent		
1	223	30.3	Definitely yes	2.12 - Mean
2	273	37.0	Probably yes	.96 - Std. Dev.
3	165	22.4	Probably no	
4	76	10.3	Definitely no	

1. How much does item management give you a chance to do the things at which you are best?

Code	Frequency	Percent		
1	174	23.6	A very good chance	2.24 - Mean
2	301	40.9	A fairly good chance	.95 - Std. Dev.
3	167	22.7	Some chance	
4	94	12.8	Very little chance	

TABLE 25 (continued)

-
4. If a young friend of yours with adequate qualifications and temperament was looking for a career field, would you advise him to aim for item management.

Code Frequency Percent

1	159	21.6	Definitely yes	2.36 - Mean
2	261	35.5	Probably yes	.98 - Std. Dev.
3	204	27.7	Probably no	
4	112	15.2	Definitely no	

5. In general do you feel that item managers are given adequate recognition when compared to that received by other managers in an AMA such as the technical services manager, or the production manager?

Code Frequency Percent

1	41	5.6	Yes definitely	3.01 - Mean
2	159	21.5	In most respects	.88 - Std. Dev.
3	284	38.5	In some respects	
4	254	34.4	Definitely no	

basic purpose of the question was to check the acceptance of government employment as a career. It can now be assumed with reasonable confidence that the questions pertaining to item management career and job satisfaction do not reflect an abnormal anti-government employment bias. The 68 persons (9%) who answered definitely no are very unhappy with some aspect of their employment--civil service in general, their supervisor, fellow workers, etc.--but not the nature of the work itself. The 75 per cent positive response rate is consistent with data from Part I which indicate the majority of item managers are career civil service.

The remaining five questions were constructed to evaluate acceptance of item management as a "life's work." Three of the five (questions 2, 3 and 1) had about the same percentage of positive responses 70 to 65 per cent) which indicated that these individuals had accepted item management as a career. There is some indication, however, that they had had greater expectations (e.g., only 13 per cent responded very positively to question 2 which asked if item management had lived up to their expectations before entering it). This tends to be supported by questions 4 and 5 (lowest positive responses) which also were designed to evaluate acceptance of item management as a "life's work." However, closer analysis of the questions indicates that they project more of the item manager's feelings regarding personal aspirations and prestige of the field rather than a resolution on his part that it is a "good career for him." It appears that item managers may have responded from a feeling that they personally have not received adequate recognition. This may partially account for the fact that 34 per cent responded that they definitely did not receive adequate recognition while only 5.5 per cent stated that they did.

Overall Response Distribution. Figure 4 graphically presents the data from the career evaluation instrument. The modal response category reflects the general opinion of item management as a career. The attitude reflected is "fairly positive" with 60 per cent of all response to all

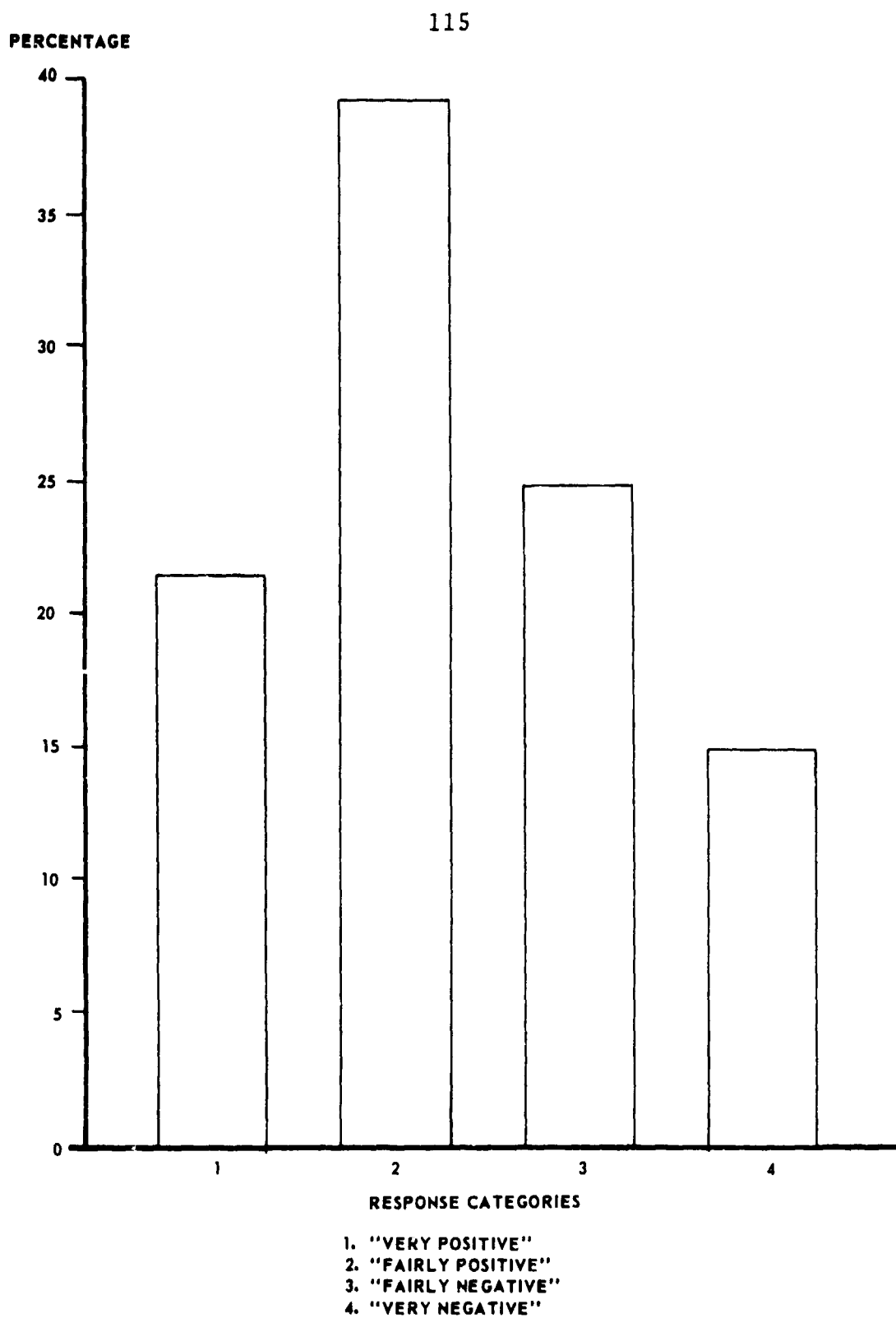


Figure 4. Percentage Frequency Distribution of Item Managers' Responses to all Items in the Career Satisfaction Survey Instrument.

items being positively oriented. Only about 15 per cent of the responses fell into the definitely negative category.

Summary. The majority of item managers (65.5 to 75 per cent) evaluated item management within the civil service structure as being a satisfying career occupation. There is no strong evidence that item management is not a worthy undertaking even though there is some indication that many of the item managers may have tempered their career aspirations to accept their current career level. This is partially supported by a strong feeling that item managers do not receive adequate recognition from within the organization. The data also indicates that approximately 15 per cent of the item managers are very dissatisfied with item management as a career.

Job Satisfaction

The second instrument developed to evaluate the item manager's attitude toward the position he holds was a job satisfaction survey. This instrument was comprised of 10 items designed to gain an expression of opinion from the item manager concerning his personal feelings of satisfaction or dissatisfaction concerning specific aspects of his job.

For each item, the respondent was asked essentially two questions: (1) was he satisfied or dissatisfied with a given aspect of his job, (2) to what degree did he feel satisfaction or dissatisfaction. A single scale allowed the item manager to answer both questions about each item. The alternatives available to him were:

1. very well satisfied
2. fairly well satisfied
3. passive--neither satisfied or dissatisfied
4. fairly dissatisfied
5. very dissatisfied

The specific instructions for accomplishing the instrument were:

People frequently have various feelings of satisfaction and dissatisfaction regarding their work. In answering the following questions consider item management as a working job. Please circle the number after each question representing the phrase which best describes your satisfaction or dissatisfaction with your work.

Table 26 presents a complete tabulation of the responses to each question concerning job satisfaction by frequency and percentage, and includes the mean and standard deviation. To aid in the analysis of expressed satisfaction or dissatisfaction, these data were arranged in Table 27 to reflect a "direction only" distributions with the questions listed in rank order of the "most satisfied" first. The questions are presented below to assist the reader in following the examination of response patterns to individual questions and groups of questions.

1. Are you satisfied that you have enough authority to do your job well?
2. How satisfied are you with your present job when you compare it to similar jobs in the AMA?
3. Are you satisfied with the progress you are making toward the goals you set for yourself in your present job?
4. Are you satisfied that the people in your organization give proper recognition to your work as an item manager?

TABLE 26
FREQUENCY AND PERCENTAGE DISTRIBUTION OF ITEM MANAGERS' RESPONSES
TO THE JOB SATISFACTION SURVEY INSTRUMENT

Question	(1) Very Well Satisfied		(2) Fairly Well Satisfied		(3) Passive--Neither Satisfied or Dissatisfied		(4) Fairly Dissatisfied		(5) Very Dissatisfied		Mean	Std. Dev.
	No.	%	No.	%	No.	%	No.	%	No.	%		
1	180	24.4	294	39.8	64	8.7	137	18.6	63	8.5	2.47	1.64
2	205	27.8	288	39.0	102	13.8	99	13.4	44	6.0	2.30	1.67
3	140	19.0	311	42.3	76	10.3	119	16.2	89	12.1	2.60	1.73
4	192	26.1	272	36.9	118	16.0	85	11.5	69	9.4	2.41	1.65
5	169	23.0	414	56.3	73	9.9	58	7.9	22	3.0	2.11	.94
6	155	21.1	427	58.2	79	10.8	56	7.6	17	2.3	2.11	.90
7	129	17.5	240	32.6	116	15.8	147	20.0	104	14.1	2.80	2.00
8	98	13.4	321	43.7	74	10.1	164	22.3	77	10.5	2.72	1.84
9	147	19.9	288	39.0	114	15.4	132	17.9	58	7.8	2.54	1.77
10	157	21.3	274	37.1	87	11.8	120	16.3	99	13.4	2.63	1.77
TOTAL	1572	21.3	3129	42.5	903	12.3	1117	15.2	642	8.7	2.47	1.67

TABLE 27

"DIRECTION ONLY" PERCENTAGE DISTRIBUTION OF ITEM MANAGER RESPONSES
TO ITEMS IN THE JOB SATISFACTION SURVEY INSTRUMENT
(Questions are listed in rank order by highest
response rate for the combined response cate-
gories 1 and 2)

Ques- tion No.	Rank- ing	Response Categories: (1) Very Well Satisfied (2) Fairly Well Satisfied	(3) Passive-- Neither Sat- isfied or Dissatisfied	Response Categories: (4) Fairly Dis- satisfied (5) Very Dis- satisfied	Mean	Std. Dev.
6	1	79.3	10.8	9.9	2.11	.94
5	2	79.2	9.9	10.9	2.11	.94
2	3	66.8	13.8	19.4	2.30	1.18
1	4	64.2	8.7	27.1	2.47	1.27
4	5	63.0	16.0	20.9	2.41	1.24
3	6	61.3	10.3	28.3	2.60	1.29
9	7	58.9	15.4	25.7	2.54	1.21
10	8	58.5	11.8	29.7	2.63	1.33
8	9	57.1	10.1	32.8	2.72	1.24
7	10	50.1	15.8	34.1	2.80	1.32

5. Are you satisfied with the D062 computer system generated printouts provided for your job?
6. Are you satisfied with the D032 computer system generated printouts provided for your job?
7. How satisfied are you with job training and education available to you?
8. How satisfied are you with the proportion of available work time required to accomplish tasks generated by computer printout products?
9. On the whole, are you satisfied that you are accepted as a professional expert to the degree to which you feel entitled by reason of your position, training, and experience?
10. How satisfied are you with your present job in light of your career expectations?

ADP Systems Products. Questions 5 and 6 were aimed directly at evaluating the item manager's satisfaction with ADP systems products. These two questions received the highest satisfaction response rate (79.2 per cent) which definitely indicates that the automated products provided are not a major source of dissatisfaction. This finding is consistent with the findings in Part III in which an average of 88 per cent of the item managers evaluated the D062 and D032 systems as highly effective.

Recognition of Performance. Questions 4 and 9 were included to obtain the item manager's views on whether he is receiving the degree of recognition due him by virtue of his performance and his position. The majority of the item managers were satisfied (63 and 59 per cent) with the modal response category being "fairly well satisfied."

Recognition of the individual does not appear to be a major source of dissatisfaction since only an average of 8 per cent stated that they were very dissatisfied. However, this is not consistent with question 5 in the career evaluation survey for which the response was definitely negative (34 per cent stated they definitely did not receive adequate recognition).

Personal Aspirations. Questions 3 and 10 were included to evaluate the item managers feelings of satisfaction regarding his job in relation to personal goals and career expectations. Again, the responses indicated general satisfaction (61 and 58 per cent) and these responses do not conflict with the general findings of the career instrument. This correspondence is particularly evident if the passive response category is divided between the satisfied and dissatisfied categories to compensate for the lack of a neutral category in the career instrument. This would make the two distribution response patterns very similar.

Job Authority. Questions 1 and 2 were included to evaluate the item managers perception of the authority he had to effectively carry out his responsibilities. The responses ranked third and fourth in satisfaction (67 and 64 per cent) which was higher than anticipated. However, this is in consonance with previous survey findings which indicated that item managers viewed ADP systems as a management tool used to aid them in making decisions rather than a structured system which restricted their activities. The relatively small percentage of strong dissatisfaction (about 7 per cent) implies that this is not a serious problem.

Workload. Since role overload is a potential source of role conflict, question 8 was asked to probe for feelings of excessive workload related to computer products. The results generally followed the overall response pattern with 57 per cent reporting satisfaction. However, this question had the lowest "very well satisfied" response rate (13.4 per cent) and the highest "fairly dissatisfied" response rate (22.3) of all the items. This indicates a strain toward dissatisfaction and possible problems. Information from data in the previous parts of the survey indicates additional data should have been generated for satisfaction with: (1) total number of items assigned and (2) number of critical items managed. This information would have provided additional insights into the question of role overload.

Item Manager Training. Question 7 on satisfaction with available training ranked lowest with 50% satisfied and 34 per cent dissatisfied. Also, these responses had the highest variance score indicating the highest level of disagreement among managers for any of the 10 items. Training is an area which indicates the possibility of a serious problem.

Overall Response Distribution. Figure 5, a graphic presentation of the data from the job satisfaction instrument. The modal response category (42.5 per cent) is "fairly well satisfied", and this attitude would be most representative of the opinions of item managers. A majority (64 per cent) reported satisfaction and about 24 per cent reported dissatisfaction but the "very dissatisfied" was only about 9 per cent.

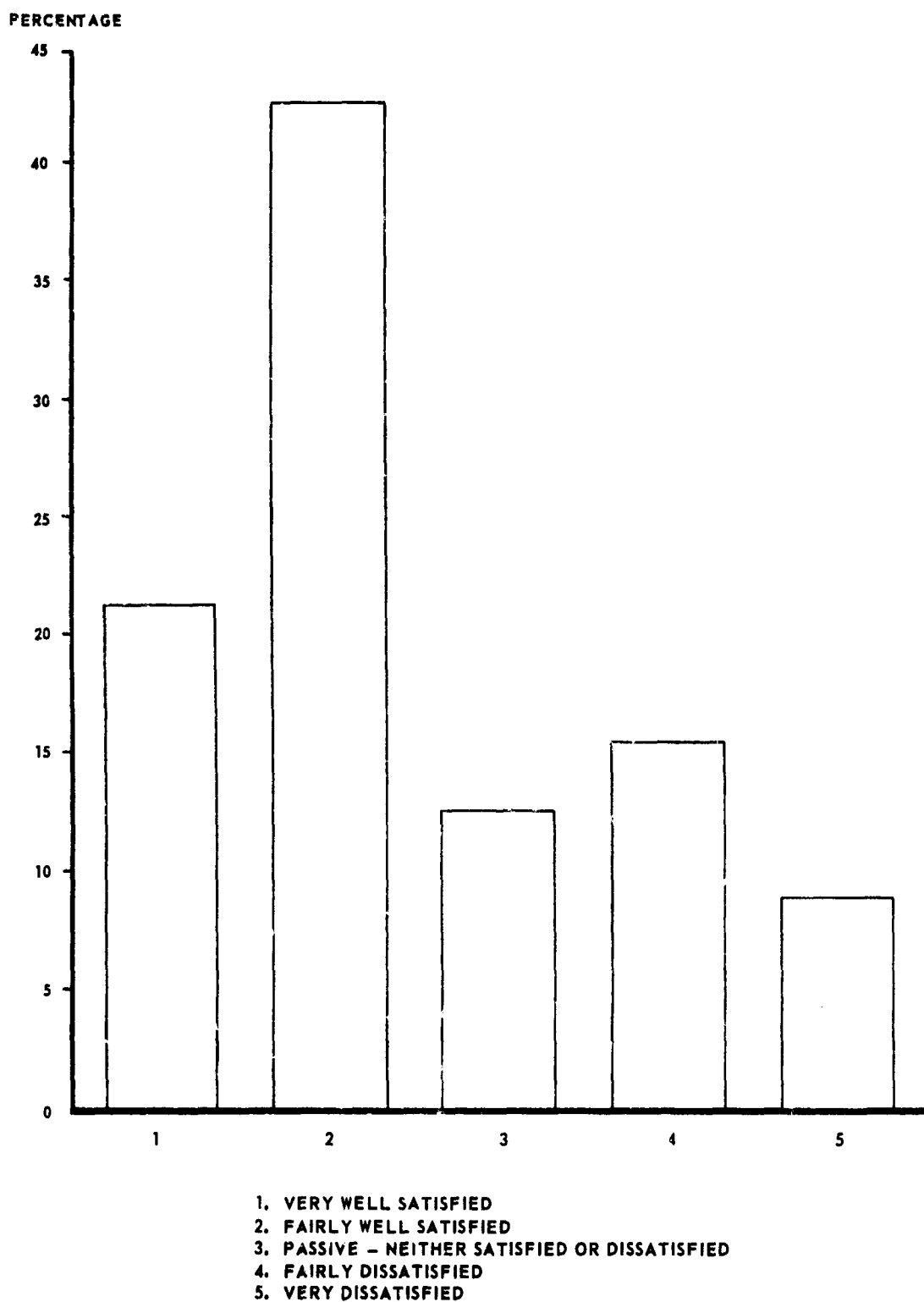


Figure 5. Percentage Frequency Distribution of Item Managers' Responses to all Items in the Job Satisfaction Survey Instrument.

Summary. The majority of item managers view their jobs as being generally satisfying. ADP system products were clearly the least source of job dissatisfaction and the 10 items in the job survey did not identify any exceptionally serious areas of dissatisfaction. Training and role overload accounted for the highest degree of dissatisfaction.

In general, job satisfaction had stronger positive support than career satisfaction. This is evident from comparison of the two distributions and also the well above average "very dissatisfied" response rates for question 3 and 10 in the job satisfaction instrument.

Role Conflict and Ambiguity

The third instrument was constructed to generate data concerning role conflict and ambiguity situations which could be sources of role pressures or irritants producing worry or anxiety for the item manager. This part was designed to serve two basic purposes: (1) to identify and describe factors or situations about the item manager's job which are worrisome, and (2) to generate information required for testing the hypothesis that ADP systems are potential sources of role conflict and role ambiguity.

Seventeen items were developed for this instrument with the intent that most would be used in groups to generate information on possible sources and degrees of role conflict and ambiguity. However, the items were randomly arranged in the questionnaire, and the instructions to the item managers were:

All of us occasionally feel bothered by certain things in our work. The following is a list of things that sometimes upset people. Please circle the number after each statement representing the phrase which most accurately reflects how frequently you feel bothered by each of these situations.

The scale device used was a five point semantic differential scale with an opportunity to identify the question as not being applicable.

1. Never
2. Rarely
3. Sometimes
4. Rather often
5. Nearly all the time
6. Does not apply

The purpose of category 6 was to make sure item managers considered every item as a potential worry source. For analysis purposes in this chapter, the item managers who failed to answer a question and those who responded in response category 6 were not included in the percentage frequency distributions. Only the respondents in response categories 1 through 5 were included since the average "no response" rate was 0.9 per cent and "does not apply" average response rate was 1 per cent. In numbers, this is an average of 14 item managers out of the 743 in the sample.

The "full" frequency and percentage distribution of item manager responses to all 17 survey items is presented by Table 28. Table 29 presents the information by combined categories 1 and 2, and 4 and 5 to emphasize the direction of response, and also ranks the items in order from most to least worrisome.

TABLE 28
FREQUENCY AND PERCENTAGE DISTRIBUTION OF ITEM MANAGERS' RESPONSES
TO THE ITEMS IN THE "ANXIETY" SURVEY INSTRUMENT

Ques- tion No.	(1) Never		(2) Rarely		(3) Sometimes		(4) Rather Often		(5) Nearly All the Time		Mean	Std. Dev.
	No.	%	No.	%	No.	%	No.	%	No.	%		
1	99	13.5	198	27.0	257	35.1	119	16.3	59	8.1	2.78	1.11
2	135	18.5	294	40.2	198	27.1	75	10.3	29	4.0	2.41	1.02
3	119	16.6	187	26.0	181	25.2	114	15.9	118	16.4	2.89	1.31
4	94	12.9	231	31.7	212	29.1	90	12.3	102	14.0	2.82	1.21
5	259	35.4	277	37.8	152	20.8	28	3.8	16	2.2	1.99	.95
6	157	21.4	306	41.8	166	22.7	71	9.7	32	4.4	2.33	1.05
7	226	30.9	276	37.8	154	21.1	54	7.4	21	2.9	2.13	1.02
8	311	43.1	262	36.3	97	13.4	38	5.3	14	1.9	1.86	.96
9	92	12.6	273	37.2	261	35.6	81	11.1	26	3.5	2.55	.96
10	108	14.8	236	32.4	258	35.4	87	12.0	39	5.4	2.60	1.04
11	74	10.1	210	28.8	287	39.3	119	16.3	40	5.5	2.78	1.01
12	195	26.7	324	44.4	145	19.9	39	5.3	27	3.7	2.14	.99
13	130	18.0	309	42.9	195	27.0	54	7.5	33	4.6	2.37	1.00
14	245	33.8	314	43.3	110	15.2	32	4.4	24	3.3	2.66	.98
15	127	17.3	209	28.5	217	29.6	112	15.3	68	9.3	2.70	1.18
16	208	28.4	312	43.3	166	23.0	28	3.9	7	1.0	2.04	.87
17	204	28.3	303	42.0	171	23.7	37	5.1	7	1.0	2.08	.89
TOTAL	783	22.5	4521	36.6	3227	26.1	1178	9.5	662	5.4		

TABLE 29

"DIRECTION ONLY" PERCENTAGE DISTRIBUTION OF ITEM MANAGER
RESPONSES TO ITEMS IN THE ANXIETY SURVEY INSTRUMENT
(Questions are listed in rank order by highest
response rate for combined response categories
4 and 5)

Question No.	Rank- ing	Response Categories: (1) Never (2) Rarely	(3) Some- times	Response Categories: (4) Rather Often (5) Nearly all the Time	Mean	Std. Dev.
3	1	42.5	25.2	32.3	2.89	1.31
4	2	44.6	29.1	26.3	2.82	1.21
15	3	45.8	29.6	24.5	2.70	1.18
1	4	40.6	35.1	24.3	2.78	1.11
11	5	38.9	39.3	21.8	2.78	1.01
10	6	47.2	35.4	17.3	2.60	1.04
9	7	49.8	35.6	14.6	2.55	.96
2	8	58.7	27.1	14.2	2.41	1.02
6	9	63.2	22.7	14.1	2.33	1.05
13	10	60.9	27.0	12.0	2.37	1.00
7	11	68.7	21.1	10.2	2.13	1.02
12	12	71.1	19.9	9.0	2.14	.99
14	13	77.1	15.2	7.7	2.00	.98
8	14	79.3	13.4	7.2	1.86	.96
17	15	70.2	23.7	6.1	2.08	.89
5	16	73.2	20.8	6.0	1.99	.95
16	17	72.1	23.0	4.9	2.04	.87

Role Overload. A very prevalent form of conflict is role overload. To examine his proposition and establish a possible source of conflict, a group of five questions were devised.

4. Feeling that you have too heavy a work load, one that you can't possibly finish during an ordinary workday.
7. Thinking that you'll not be able to handle the demands imposed upon you by the D062 and D032 systems' computer generated printouts.
10. Bothered by the fact that the D062 buy computation system provides too many unnecessary products which detract from other required activities.
11. Bothered by the fact that the D032 IM Stock Control and Distribution System provides too many unnecessary products which detract from other required activities.
15. Thinking that the amount of work you have to do may interfere with how well it gets done.

TABLE 30

PERCENTAGE FREQUENCY DISTRIBUTION OF ITEM MANAGERS' RESPONSES TO ROLE OVERLOAD ITEMS IN THE "ANXIETY" SURVEY INSTRUMENT

Question	(1) Never	(2) Rarely	(3) Some- times	(4) Rather Often	(5) Nearly All The Time	Mean	Std. Dev.
4	12.9	31.7	29.1	12.3	14.0	2.82	1.21
7	30.9	37.8	21.1	7.4	2.9	2.13	1.02
10	14.8	32.4	35.4	12.0	5.4	2.60	1.04
11	10.1	28.8	39.3	16.3	5.5	2.78	1.01
15	17.3	28.5	29.6	15.3	9.3	2.70	1.18
AVERAGE	17.2	31.8	30.9	12.7	7.4		

Questions 4 and 15 in this group were directly concerned with the total work load, and within this group received the highest proportion of responses indicating that they were a source of anxiety. In fact, these two items ranked second and third when all 17 questions were rank ordered on the basis of combined responses in categories (4), "rather often" and (5), "nearly all the time". (See Table 29 for a ranking of all 17 questions). The percentage of responses for question 4 in these two categories was 26 per cent and for question 15 it was 25 per cent. Since about 45 per cent responded "never" and "rarely", the distribution of responses indicates that work or role over load is an item of concern for over half of the item managers--about 29 per cent sometimes and about 25 per cent rather often or nearly all the time.

The remaining three questions were directed at work load originated by ADF systems and the responses indicated that they were of a lesser concern. Questions 10 and 11 referred to unnecessary ADP system products detracting from required activities. These questions ranked high (fifth and sixth) among the 17 items in the combined categories "rather often" and "nearly all the time". Question eleven's response rate was 22 per cent and question ten's response rate was 17 per cent. This distribution of response also indicates that the volume of ADP system products seems to be a source of concern to over half of the item managers.

Question 7 changed the emphasis to ADP system demands being excessive. The "rather often" and "nearly all the

time" response rate was 10 per cent which dropped the item to a ranking of eleventh out of the seventeen. The response pattern for this question appears to support prior findings that a majority of item managers view the ADP systems products as a tool to be used by them rather than a rigid task master.

The average response distribution for these five items does indicate the existence of role overload in varying degrees for about 51 per cent of the item managers. This response pattern is supported by the responses to question 8 in the job satisfaction survey which indicated that about 33 per cent of the item managers are dissatisfied with the proportion of work time available to accomplish tasks generated by computer products. Since role overload is a source of conflicting expectations levied upon item managers, many of these item managers apparently are experiencing varying degrees of tension and anxiety.

Role Ambiguity. Another source of tension for a position incumbent is uncertainty or ambiguity concerning elements of his work situation. A group of five questions were developed to examine this concept. The responses to these questions are presented in Table 31.

2. Being unclear on just what the scope and responsibilities of your job are.
3. Not knowing what opportunities for advancement or promotion exist for you.
9. Bothered by the fact that you can't get needed information from the automated data systems to properly perform your job.

16. Not knowing just what the D062 automated processes require of you in your job.
17. Not knowing just what the D032 automated processes require of you in your job.

TABLE 31

PERCENTAGE FREQUENCY DISTRIBUTION OF ITEM MANAGERS'
RESPONSES TO ROLE AMBIGUITY ITEMS IN
THE "ANXIETY" SURVEY INSTRUMENT

Question	(1) Never	(2) Rarely	(3) Some times	(4) Rather Often	(5) Nearly All The Time	Mean	Std. Dev.
2	18.5	40.2	27.1	10.3	4.0	2.41	1.02
3	16.6	26.0	25.2	15.9	16.4	2.89	1.31
9	12.6	37.2	35.6	11.1	3.5	2.55	.96
16	28.4	43.3	23.0	3.9	1.0	2.04	.87
17	28.3	42.0	23.7	5.1	1.0	2.08	.89
AVERAGE	20.9	37.6	26.9	9.2	5.2		

The response distributions to the items in this group proved to be extremely diverse in the respect that it contained both the highest ranked and lowest ranked questions. Question 3 which queried lack of knowledge concerning promotion opportunities had 32 per cent of the item managers respond that it bothered them "rather often" or "nearly all the time." Only 43 per cent responded "never" or "rarely". This finding lends support to the previous indication that item managers were less satisfied with the career aspects of item management than their job functions.

Questions 16 and 17 were concerned with understanding the requirements imposed by automated processes. Responses

to these questions definitely indicated that this was a relatively minor source of ambiguity. These questions ranked fifteenth and seventeenth and had a "rather often" or "nearly all the time" response rate of only 5 and 6 per cent. This response pattern also supports previous findings in Part III that item managers related positively and effectively with automation and that they were generally satisfied with the ADP system's products (questions 5 and 6, Part V).

Questions 2 and 9 were about in the middle of the overall ranking. Question 9, which asks if the item manager is bothered by inability to obtain needed information from the automated systems, ranked seventh with a "rather often" and "nearly all the time" response rate of 15 per cent. This result is supported by the finding in Part III that timeliness was the lowest ranked criterion in evaluating ADP systems effectiveness.

Question 2 referred to clarity of responsibilities and had a similar response distribution except for about an 8 per cent shift from "sometimes" category to the "never" and "rarely" categories.

The average response distribution for these five items indicates that role ambiguity is not as prevalent as role overload conflict, but it does exist.

People Versus ADP Systems As Sources of Conflict and Ambiguity

Another undertaking in this part was to develop information which might provide some insight regarding the

sources of role pressures and irritants. Two groups of questions were used. One was designed to relate role conflict and ambiguity to individuals and the other to ADP systems. Published role analysis research concentrates on human role sets and usually assumed that inanimate organization and environmental factors will effect all variables under study in a like manner. The purpose of these two sets of questions is a very limited effort to view ADP systems and people as separate sources of conflict and ambiguity by comparing response patterns which reflect the position incumbent's perceptions.

People as Sources of Role Conflict and Ambiguity. The following four questions were used to examine role conflict and ambiguity situations related to human sources. The percentage frequency distribution of responses are presented in Table 32.

6. Thinking that you'll not be able to satisfy the conflicting demands of various people over you.
8. Feeling that the individual demands of your supervisor are in conflict with the D062 and D032 systems' generated job activities.
12. Feeling unable to influence your immediate supervisor's decisions and actions that affect you.
14. Not knowing just what the people you work with expect of you.

TABLE 32

PERCENTAGE FREQUENCY DISTRIBUTION OF ITEM MANAGERS'
RESPONSES TO ROLE CONFLICT AND ROLE
AMBIGUITY ITEMS RELATED TO PEOPLE

Question	(1) Never	(2) Rarely	(3) Some- times	(4) Rather Often	(5) Nearly All The Time	Mean	Std. Dev.
6	21.4	41.8	22.7	9.7	4.4	2.33	1.05
8	43.1	36.3	13.4	5.3	1.9	1.86	.96
12	26.7	44.4	19.9	5.3	3.7	2.14	.99
14	33.8	43.3	15.2	4.4	3.9	2.00	.98
AVERAGE	31.21	41.45	17.80	6.18	3.33	2.08	1.01

In this group, question 66 had the highest proportion of "high anxiety" responses (14 per cent), but 63 per cent of the item managers indicated that conflicting demands from people over them "never" or "rarely" bothered them. The implication is that item managers do not receive strong role pressures from the superordinate positions within their work role set. This finding indicates that the operations of the EOQ item manager are stable and clearly delineated. The response pattern to question 8 (which queries for conflict between supervisory direction and ALP system requirements) collaborates this characteristic of routinized activity.

Questions 12 and 14 were concerned with the relations of the item manager with the immediate members of his role set--his supervisor and his fellow workers. Seventy-one per cent of the item managers responded that they either "never" or "rarely" seriously disagreed with their

supervisor's actions or decisions. This result is consistent with the distribution of responses to the two questions in Part III pertaining to item manager's satisfaction with their supervisor where 65 to 60 per cent rated supervision "very good" or "good". Responses to question 14 indicates that relations with fellow workers is even less of a source for tension.

ADP Systems Sources of Role Conflict and Ambiguity. The group of questions used to investigate the item manager's perception of and behavioral response to elements of ADP systems upon which he is dependent in his work are listed below. Table 33 presents the percentage frequency distributions for the five questions.

7. Thinking that you'll not be able to handle the demands imposed upon you by the D062 and D032 systems' computer generated printouts.
10. Bothered by the fact that the D062 buy computation system provides too many unnecessary products which detract from other required activities.
11. Bothered by the fact that the D032 IM Stock Control and Distribution System provides too many unnecessary products which detract from other required activities.
16. Not knowing just what the D062 automated processes require of you in your job.
17. Not knowing just what the D032 automated processes require of you in your job.

TABLE 33

PERCENTAGE FREQUENCY DISTRIBUTION OF ITEM MANAGERS'
RESPONSES TO ROLE CONFLICT AND ROLE AMBIGUITY
ITEMS RELATED TO ADP SYSTEMS

Question	(1) Never	(2) Rarely	(3) Some- times	(4) Rather Often	(5) Nearly All The Time	Mean	Std. Dev.
7	30.9	37.8	21.1	7.4	2.9	2.13	1.02
10	14.2	32.4	35.4	12.0	5.4	2.60	1.04
11	10.1	28.8	39.3	16.3	5.5	2.78	1.01
16	28.4	43.3	23.0	3.9	1.0	2.04	.87
17	28.3	42.0	23.7	5.1	1.0	2.08	.89
AVERAGE	22.6	36.8	28.5	8.9	3.1	2.33	1.02

The response patterns to two questions stand out. Questions 10 and 11 refer to unnecessary products provided by D062 and D032 systems, and the majority of the item managers indicated that this was bothersome at least sometimes (only 47 and 39 per cent respectively responded "never" or "rarely"). For the other three questions the majority of responses were "never" or "rarely" (7-69%; 16-73% and 17-72%). Examination of the overall average response pattern indicates that ADP systems do produce some conflict and ambiguity but relates to a relatively small percentage of the group.

Comparison of People and Systems Sources. One way to examine the relative amount of role tension related to people and to ADP systems, was to rank order the questions on the basis of the highest degree of tension indicated. Table 29 provided a ranking of all 17 items in order of highest

percentage of responses in categories "rather often" and "nearly all the time." Table 34 shows how the two groups of questions relate to each other when they are ranked.

TABLE 34
PEOPLE AND SYSTEMS SOURCES OF ROLE CONFLICT AND
AMBIGUITY QUESTIONS RANKED ON THE BASIS
OF DATA PROVIDED BY TABLE 29

Ranking	Percent Response in Categories: (4) Rather often (5) Nearly all the time	Question Number and Type Source
5	21.8	11 - ADP Systems
6	17.3	10 - ADP Systems
9	14.1	6 - People
11	10.3	7 - ADP Systems
12	9.0	12 - People
13	7.7	14 - People
14	7.2	18 - People
15	6.1	17 - ADP Systems
17	4.8	16 - ADP Systems

Two points are emphasized by this presentation of the data. One, on the basis of these questions and their rankings, no clear distinction can be made between ADP systems and people as sources of role conflict and ambiguity. Two, since nine of these questions account for 7 out of the 9 bottom ranked items, it becomes evident that, according to this survey instrument, neither people or ADP systems are identified as the primary sources of role conflict or ambiguity pressures manifested by expressions of anxiety. Also, these implications do not conflict with the information developed in Part III of the survey.

Highest Ranked Anxiety Items

Since the items designed to check ADP systems and people as sources of role pressures produced fairly indeterminate results, it became necessary to examine those items which ranked highest as sources tension or anxiety. Four questions had about 25 percent or more of their responses in the "rather often" and "nearly all the time" categories and never more than 46 percent in the "never" or "rarely" categories. These were:

3. Not knowing what opportunities for advancement or promotion exist for you.
4. Feeling that you have too heavy a workload, one that you can't possibly finish during an ordinary workday.
15. Thinking that the amount of work you have to do may interfere with how well it gets done.
1. Feeling that you have too little authority to carry out the responsibilities assigned to you.

Table 35 presents the response distribution in combined categories to emphasize the direction of the responses. The full distribution is given in Table 28.

TABLE 35

"DIRECTION ONLY" PERCENTAGE DISTRIBUTION OF ITEM
MANAGERS' RESPONSES TO THE FOUR HIGHEST
RANKED ITEMS IN THE "ANXIETY"
SURVEY INSTRUMENT

Question	Response Categories: (1) Never (2) Rarely	(3) Sometimes	Response Categories: (4) Rather Often (5) Nearly All the Time
3	42.5	25.2	32.3
4	44.6	29.1	26.3
15	45.8	29.6	24.5
1	40.6	35.1	24.3

Uncertainty concerning promotion opportunities is clearly the most prevalent source of concern for the majority item managers. This factor cannot be related directly to ADP systems or even the immediate supervisor. It is primarily a function of the civil service regulations and local management policies and practices. Data generated by the survey does not provide any information as to why this is the item of greatest concern. There is some indication in the career satisfaction instrument that item managers have not attained the career goals and have aspirations to advance. Also during the pilot test of the survey instrument, personal interviews with about 40 item managers indicated they were not satisfied with the promotion policy. At one of the air materiel areas there were several complaints that the EOQ item manager was not considered eligible for promotion because they lacked category II item management experience, and had no opportunity to gain the experience on the present job.

The next two highest sources of concern are directly related to the job of item management but again cannot be attributed to the immediate supervision or ADP systems. Questions 4 and 15 indicate role pressure due to role overload and would normally be attributed to the number of items assigned and the effort required to manage the items (e.g., large number of problem items).

The fourth item indicates that a sizable number of item managers feel they have too little authority for the responsibilities they have. It is possible that this may be partially due to the structure imposed upon their function by the ADP systems but none of the data in this survey establishes this relationship.

The only conclusion possible after examination of these four items is that ADP systems and immediate supervisors are not the primary sources of role pressures for item managers and that most of the present item managers have apparently adapted well to a highly automated job environment. It is also possible that some of the item managers who did not adapt to the automated environment have left the organization.

Lowest Ranked Anxiety Items

The four items which ranked lowest as a source of tension and anxiety were:

16. Not knowing just what the D062 automated processes require of you in your job.
5. Feeling that you are not adequately prepared to handle your job?

17. Not knowing just what the D032 automated processes require of you in your job.
8. Feeling that the individual demands of your supervisor are in conflict with the D062 and D032 systems' generated job activities.

Table 36 presents the response distribution in combined categories to emphasize the direction of the responses. The full distribution is available in Table 28.

TABLE 36

"DIRECTION ONLY" PERCENTAGE DISTRIBUTION OF ITEM MANAGERS' RESPONSES TO THE FOUR LOWEST RANKED ITEMS IN THE "ANXIETY" SURVEY INSTRUMENT

Question	Response Categories: (1) Never (2) Rarely	(3) Sometimes	Response Categories: (4) Rather Often (5) Nearly All the Time
16	72.1	23.0	4.8
5	73.2	20.8	6.0
17	70.2	23.7	6.1
8	79.4	13.4	7.2

Analysis of the four questions reflecting the lowest degree of anxiety perceived by item managers reveals that 5 of the 4 (questions 8, 16 and 17) were designed to investigate ADP systems as a source of role conflict and ambiguity. The response pattern to these questions indicates that ADP systems are not viewed as a source of conflicting or ambiguous exceptions.

Question 5 referred to the individuals preparation to handle the job. Apparently item managers do not feel ill prepared even though training was rated as next to the most

dissatisfying item in the job satisfaction survey instrument. A possible explanation is that item managers learned on the job and from fellow IM's. Therefore, they actually judge themselves to be fully knowledgeable, but feel their job preparation should have been accomplished by more formalized training programs.

Examination of these four lowest ranked questions strongly infers that ADP systems are perceived as the least source of role conflict or ambiguity by the majority of the item managers.

Summary

The group of questions used to check for role overload ranked high (2, 3, 5, 6 and 11) among a ranking of all 17 questions used in the survey. Items referring to the general workload situation ranked higher than items referring to specific sources such as ADP systems or ADP system products.

The questions used to examine for role ambiguity had a wide variation in their response distributions. Again, questions directed at the specific sources ranked lowest. The requirements of ADP systems were relatively unambiguous but knowledge about promotion opportunities were relatively ambiguous. Job responsibilities and information needed to do the job were ranked in the middle.

An attempt to check ADP systems and people as distinguishably different sources of role conflict and role ambiguity produced indeterminate results. However, these

questions relating role conflict and ambiguity to ADP systems and people sources generally ranked in the bottom half of the 17 questions in the survey. This indicated that neither the people in the immediate role set or ADP systems were the primary sources of role conflict and ambiguity. This result led to further analysis of the data.

An examination of the 4 top and 4 bottom ranked items indicated that the highest role conflict and ambiguity "anxiety" levels were related to the more general situational factors (e.g., excessive workload, too little authority for the responsibility and lack of promotion opportunity knowledge) rather than specifically to people or ADP systems in the immediate role set.

The only reasonable conclusion which may be drawn from these data is that most item managers do not view ADP systems and their products as sources of role conflict and ambiguity producing job tensions and frustrations. The only data which did not consistently support this finding concerned an excess of unnecessary computer products (questions 10 and 11).

CHAPTER VII

ANALYSIS OF ADP SYSTEMS' ROLE CONFLICT AND AMBIGUITY

Introduction

In Chapters Five and Six an attempt has been made to explore and describe the EOQ item manager's perceptions of ADP systems and ADP systems' products, and the relationship of ADP systems to the item manager's attitudes and behavior. In this section an attempt will be made to investigate the proposition that, for a specific group of item managers, ADP systems are an identifiable source of role conflict and role ambiguity. The question of interest here is whether or not anxieties expressed by item managers, which can be thought of as consequences of role conflict and ambiguity, are related to ADP systems and ADP systems' products. Two general hypotheses were proposed which were tested by relating the expressed anxieties of two groups of item managers with differing perceptions of ADP systems and the systems' products.

Hypotheses

The hypotheses examined are based on the following reasoning. If an individual perceives an element of his work environment as being necessary and/or effective for the purpose of performing his role, then this element is not a pre-dominate source of conflict or ambiguity which may cause him

some feelings of anxiety. However, if an individual views a factor related to his job responsibilities as being unnecessary and/or ineffective, then it becomes a potential source of conflict and ambiguity which tends to produce a state of tension and dissatisfaction within many individuals. It is further assumed that individuals will reflect such conflict and ambiguity conditions by a general expression of anxiety or dissatisfaction. This reasoning leads to the following hypotheses:

- H-1. The more EOQ item managers perceive ADP systems as being unnecessary, the greater will be their expressed anxieties and dissatisfaction concerning ADP system related job activities.

A second very closely related hypothesis may be stated as:

- H-2. The more EOQ item managers perceive ADP systems as being ineffective for fulfillment of their role as they perceive it, the greater will be their expressed anxieties and dissatisfactions concerning ADP systems.

On the basis of these hypotheses, specific predictions were made and tested.

Contriving Two Groups for Hypothesis Testing

The description and analysis presented in previous chapters indicated that ADP systems were the least predominate sources of anxiety or job dissatisfaction for the 743 respondents in the item manager sample. However, the data did not eliminate ADP systems as a potential source of role conflict or ambiguity generated anxiety for some of the item managers. All parts of the questionnaire reflected about an 8 to 20 per cent response rate expressing attitudes in a

"negative" direction. Identifying those item managers accounting for most of the extreme directional differences appeared to provide a logical basis for investigating and testing for dysfunctional role behavior resulting from role conflict or ambiguity related to automated environmental job factors.

The method devised to isolate any consistent directional difference in total sample response distribution was to contrive two groups from the 743 respondents. One group consisted of those item managers who had the highest scores, and the other group consisted of those item managers who had the lowest scores. In other words, the procedure was to identify those item managers who accounted for the directional extremes in the distribution of the total sample's responses to certain specified parts of the questionnaire survey.

High and Low "Product Necessity" groups. The first set of "high" and "low" groups was contrived from the respondents to the ADP systems product necessity survey (Part II of the questionnaire). A mean score was computed for each item manager responding to the 55 items in Part II of the survey, and these means were then ranked. The 148 respondents (20 per cent of the 741 IM's who answered Part II) whose means indicated that they evaluated the ADP systems' products as being the most necessary were identified as the "high necessity" group, and the 148 respondents whose means indicated that they evaluated the ADP systems' products as being the least necessary were identified as the "low necessity" group.

High and Low ADP "Systems Efficacy" Groups. The second set of "high" and "low" groups was contrived from the same sample of 743 item managers, but on the basis of their responses to the ADP systems' efficacy survey (Part III of the questionnaire). The same method was used to identify the 146 (20% of the 731 IM's who answered to Part III) respondents in the "low efficacy" group and the 146 respondents in the "high efficacy" group.

Results of Testing High and Low "Product Necessity" Groups Anxiety Prediction

The group of item managers who evaluated ADP systems' products highest on necessity for the performance of their stock control functions should experience less conflict and ambiguity for those aspects of their job which are related to ADP systems generated activities. According to our first hypothesis, we would predict that the low "product necessity" group will express a greater degree of ADP systems related job anxiety than the high "product necessity" group. To test this prediction, the responses by both groups were tabulated for the eight questions in the anxiety survey instrument designed to evaluate ADP systems as a source of role conflict and ambiguity for item managers. Table 37 presents the mean scores for each group for each of these anxiety survey items. These data clearly show that for each of the eight items, the low "product necessity" group had a higher mean anxiety score than the high "product necessity"

TABLE 37

MEAN SCORES FOR ANXIETY SURVEY ITEMS BY THE LOW "PRODUCT NECESSITY"
GROUP AND THE HIGH "PRODUCT NECESSITY" GROUP

ADP Systems Anxiety Items from Part VI of the Questionnaire	High Group Means	Low Group Means	Direction Predicted Correctly (+) or Incorrectly (-) According to Hypothesis 1
7. Thinking that you'll not be able to handle the demands imposed upon you by the D062 and D032 systems' computer generated printouts.	1.84	2.32	+
8. Feeling that the individual demands of your supervisor are in conflict with the D062 and D032 systems' generated job activities.	1.68	2.07	+
9. Bothered by the fact that you can't get needed information from the automated data systems to properly perform your job.	2.23	2.83	+
10. Bothered by the fact that the D062 buy computation system provides too many unnecessary products which detract from other required activities.	2.00	3.15	+
11. Bothered by the fact that the D032 system provides too many unnecessary products which detract from other required activities.	2.21	3.20	+
13. Feeling unable to influence the automated aspects of the buy computation system or stock control and distribution system which affect your work.	2.01	2.60	+
16. Not knowing just what the D062 automated processes require of you in your job.	1.79	2.19	+
17. Not knowing just what the D032 automated processes require of you in your job.	1.85	2.16	+

group which is in accordance with the prediction. Also, the difference between the means for each item is significant to at least the .002 level. The result is therefore interpreted as providing support for the hypothesis.

Table 38 provides a comparison and test of the mean anxiety score for all eight items for each of the two groups. Since this test of the two groups' mean scores is significant to at least the .001 level, it further supports the hypothesis.

TABLE 38

MEAN ADP SYSTEMS' ANXIETY SCORE FOR THE HIGH "PRODUCT NECESSITY" GROUP AND LOW "PRODUCT NECESSITY" GROUP

High Group Anxiety Mean	Low Group Anxiety Mean	Difference in the Mean Scores	t value
1.95	2.57	.62	5.20*

*Significant to at least the .001 level

Job Satisfaction Prediction

Research by Gross, Mason and McEachern indicated that individuals who are exposed to role conflict are less satisfied with their jobs and worry more in general.¹ This finding and the reasoning in developing the hypothesis led to the prediction that the low "necessity group" will indicate a higher degree of job dissatisfaction than the high "necessity group". To test this prediction the responses

¹Neal Gross, Ward S. Mason, and Alexander W. McEachern, Explorations in Role Analysis (New York: John Wiley and Sons, 1965), p. 278.

TABLE 39

MEAN SCORES FOR JOB SATISFACTION SURVEY ITEMS BY THE HIGH "PRODUCT NECESSITY" GROUP AND THE LOW "PRODUCT NECESSITY" GROUP

Job Satisfaction Items, Part V of the Questionnaire	High Group Means	Low Group Means	Direction Predicted Correctly (+) or Incorrectly (-) According to Hypothesis 1
1. Are you satisfied that you have enough authority to do your job well?	1.98	2.97	+
2. How satisfied are you with your present job when you compare it to similar jobs in the AMA?	2.00	2.80	+
3. Are you satisfied with the progress you are making toward the goals you set for yourself in your present job?	2.37	2.96	+
4. Are you satisfied that the people in your organization give proper recognition to your work as an item manager?	2.17	2.66	+
5. Are you satisfied with the D062 computer system generated printouts provided for your job?	1.68	2.55	+
6. Are you satisfied with the D032 computer system generated printouts provided for your job?	1.70	2.50	+
7. How satisfied are you with job training and education available to you?	2.25	3.41	+
8. How satisfied are you with the proportion of available work time required to accomplish tasks generated by computer printout products?	2.32	3.12	+

TABLE 39 (continued)

Job Satisfaction Items, Part V of the Questionnaire	High Group Means	Low Group Means	Direction Predicted Correctly (+) or incorrectly (-) according to Hypothesis 1
9. On the whole, are you satisfied that you are accepted as a profes- sional expert to the degree to which you feel entitled by reason of your position, training, and experience?	2.04	3.08	+
10. How satisfied are you with your present job in light of your career expectations?	2.08	3.12	+

by both groups were tabulated for the 10 questions in the job satisfaction survey. Table 39 presents the mean scores for each group for each for the job satisfaction survey items. A comparison of the mean scores verified our prediction since, for every item, the low "product necessity" group has a higher mean score indicating a higher degree of job dissatisfaction. The differences between the means for each item also was significant to at least the .002 level. The result provides additional support for the hypothesis.

Table 40 provides a comparison and test of the mean job satisfaction score for the 10 combined items for each of the two groups. The test of the mean anxiety scores is significant to at least the .001 level and provides evidence in support of the hypothesis.

TABLE 40

MEAN JOB SATISFACTION SCORE FOR THE HIGH "PRODUCT NECESSITY"
GROUPS AND THE LOW "PRODUCT NECESSITY" GROUP

High Group Anxiety Mean	Low Group Anxiety Mean	Difference in the Mean Scores	t test
2.06	2.92	.86	5.48*

*Significant to at least the .001 level

Results of Testing High and Low ADP
"Systems Efficacy" Groups

The purpose of Part III of the questionnaire survey was to obtain a measure of the item managers overall confidence in ADP systems. In other words, does he perceive them as being effective in providing required information for the efficient performance of his stock control responsibilities? Lack of adequate information can be a source of role conflict and ambiguity for some people.

Anxiety Prediction

The group of item managers who perceived ADP systems as being highly effective in providing necessary information for their job tasks should experience less conflict and ambiguity relating to ADP systems factors. In view of our second hypotheses, we would predict that the low "efficacy group" would experience a higher degree of ADP systems related job anxiety than the high "systems efficacy" group.

TABLE 41

MEAN SCORES FOR ANXIETY SURVEY ITEMS BY THE HIGH "ADP SYSTEMS EFFICACY" GROUP AND THE LOW "ADP SYSTEMS EFFICACY" GROUP

ADP Systems Anxiety Items from Part VI of the Questionnaire	High Group Means	Low Group Means	Direction Predicted Correctly (+) or Incorrectly (-) According to Hypothesis 2
7. Thinking that you'll not be able to handle the demands imposed upon you by the D062 and D032 systems' computer generated printouts.	1.84	2.52	+
8. Feeling that the individual demands of your supervisor are in conflict with the D062 and D032 systems' generated job activities.	1.54	2.18	+
9. Bothered by the fact that you can't get needed information from the automated data systems to properly perform your job.	2.00	3.11	+
10. Bothered by the fact that the D062 buy computation system provides too many unnecessary products which detract from other required activities.	2.12	3.19	+
11. Bothered by the fact that the D032 IM Stock Control and Distribution system provides too many unnecessary products which detract from other required activities.	2.35	3.26	+
13. Feeling unable to influence the automated aspects of the buy computation system or stock control and distribution system which affect your work.	1.98	2.91	+
16. Not knowing just what the D062 automated processes require of you in your job.	1.79	2.30	+
17. Not knowing just what the D032 automated processes require of you in your job.	1.82	2.30	+

To test this prediction, the responses by both groups were tabulated for the same eight questions in the anxiety survey instrument used to evaluate the first hypotheses. The results of these data are presented in Table 41. A comparison of the mean anxiety score for each item by the two groups shows that the means are in the predicted directions. For every item, the low "systems efficacy" group had a higher mean anxiety response, and the differences were significant to at least the .001 level. This result substantiates our prediction and supports our second hypothesis.

Table 42 provides a comparison and test of the mean anxiety score for the eight items for each of the groups. The test of the mean anxiety score is significant to at least the .001 level and strengthens the case for accepting the second hypothesis.

TABLE 42
MEAN ADP SYSTEMS' ANXIETY SCORE FOR THE HIGH "SYSTEMS EFFICACY" GROUP AND THE LOW "SYSTEMS EFFICACY" GROUP

High Group Anxiety Mean	Low Group Anxiety Mean	Difference in the Mean Scores	t test
1.93	2.73	.80	6.74*

*Significant to at least the .001 level

The Job Satisfaction Prediction

The second hypothesis also leads to the prediction that the "low efficacy" group of item managers will have a higher

TABLE 43

MEAN SCORES FOR JOB SATISFACTION SURVEY ITEMS BY THE HIGH "ADP SYSTEMS EFFICACY" GROUP AND THE LOW "ADP SYSTEMS EFFICACY" GROUP

Job Satisfactions Items, Part V of the Questionnaire	High Group Means	Low Group Means	Direction Predicted Correctly (+) or Incorrectly (-) According to Hypothesis 2
1. Are you satisfied that you have enough authority to do your job well?	1.88	2.91	+
2. How satisfied are you with your present job when you compare it to similar jobs in the AMA?	1.81	2.72	+
3. Are you satisfied with the progress you are making toward the goals you set for yourself in your present job?	2.24	2.96	+
4. Are you satisfied that the people in your organization give proper recognition to your work as an item manager?	2.00	2.81	+
5. Are you satisfied with the D032 computer system generated print-outs provided for your job?	1.67	2.77	+
6. Are you satisfied with the D032 computer system generated print-outs provided for your job?	1.64	2.74	+
7. How satisfied are you with job training and education available to you?	2.33	3.38	+
8. How satisfied are you with the proportion of available work time required to accomplish tasks generated by computer printout products?	2.18	3.23	+

TABLE 43 (continued)

Job Satisfaction Items, Part V of the Questionnaire	High Group Means	Low Group Means	Direction Predicted Correctly (+) or Incorrectly (-) According to Hypothesis 2
9. On the whole, are you satisfied that you are accepted as a pro- fessional expert to the degree to which you feel entitled by reason of your position, training, and experience?	1.93	3.10	+
10. How satisfied are you with your present job in light of your career expectations?	2.16	3.08	+

degree of job dissatisfaction than the "high efficacy" group. This prediction was tested by a comparison of each groups' mean scores for each of the 10 items in the job satisfaction survey. The results of this data is provided in Table 43. A comparison of the mean scores for each item between the two groups verifies our prediction in every case, and the differences are also significant to the .001 level. This further supports the second hypothesis.

Table 44 provides a comparison and test of the mean job satisfaction score for the 10 items for each of the groups and the results are significant at least the .001 level.

TABLE 44

MEAN JOB SATISFACTION SCORE FOR THE HIGH "SYSTEMS EFFICACY"
GROUP AND THE LOW "SYSTEMS EFFICACY" GROUP

High Group Mean Score	Low Group Mean Score	Difference in the Mean Scores	t test
1.98	2.97	.99	7.05*

*Significant to at least the .001 level

Implications of Hypotheses Test
Findings

The fact that all the predictions based upon the two hypotheses were verified by analysis of data from the high and low groups' responses, and also the fact that all of the statistics were all significant to at least the .002 level, provides strong evidence for acceptance of the two hypotheses. These findings imply the following:

1. ADP systems can have the effect of a role sender in situations where the incumbent of a focal role is dependent upon automated systems and their outputs for effective performance of his role. In this sense they can be a source of role conflict and ambiguity for some individuals and do effect their role behavior. However, there is no way of judging from the findings of this study whether these individuals were generally "anxious" and less capable of coping with role pressures of any type from any source. Even so, the findings do imply that

ADP systems are, in a given situation, a potential source of role conflict and ambiguity.

2. There is also a strong implication that individuals who do experience role conflict and ambiguity from their ADP systems environment are less satisfied with their jobs. It is not possible to determine how great an influence this may be but it does appear to be a factor contributing to increase job dissatisfaction. The degree would depend upon the individuals relative ability to cope with all the other expectations and pressures related to his position.
3. The research findings also indicate that the individuals who perceived ADP systems outputs as being relatively unnecessary for their position tasks also feel that the systems are relatively ineffective. This raises the possibility that these individuals have never acquired sufficient technical knowledge to master the complexities of their automated environment. This could be a major factor contributing to role conflict and ambiguity situations and manifestations of anxiety and job dissatisfaction,

especially for any individual who is a
"worrying" type.

Analysis of High and Low Group
Biographical Data

The purpose of this section is to compare and analyze the biographical data of both sets of high and low groups which were used to test the hypotheses in the previous section. Since the two high groups consistently reported significantly less anxiety and job dissatisfaction than the two low groups, there must be some differences between the two groups. The biographical data for the groups may help to explain some of the differences.

Age and Sex Data

Table 45 provides data on the groups' age distribution.

TABLE 45
AGE DISTRIBUTIONS FOR HIGH AND LOW GROUPS

Age	High Groups		Low Groups	
	Product Necessity	System Efficacy	Product Necessity	System Efficacy
(1) 24 or under	.7	2.1	7.4	5.5
(2) 25 - 29	4.7	9.0	12.8	15.8
(3) 30 - 34	6.8	10.3	13.5	9.6
(4) 35 - 39	14.9	13.1	7.4	10.3
(5) 40 - 44	17.6	15.7	14.9	11.6
(6) 45 - 49	25.7	16.6	14.2	13.5
(7) 50 - 54	27.6	19.3	16.9	13.0
(8) 55 and over	12.8	14.5	12.8	15.8
Mean	5.53	5.29	4.83	4.93
Std. Dev.	1.66	1.95	2.21	2.21

On the average, the high groups are older than the low groups with the primary differences being in the age groupings under thirty. However, the differences are not extremely great since the median age for the high groups is about forty five and for the low groups it is about forty one.

Table 46 provides data on the groups' sex characteristics.

TABLE 46
SEX CHARACTERISTICS OF THE HIGH AND LOW GROUPS

Sex	High Groups		Low Groups	
	Product Necessity	System Efficacy	Product Necessity	System Efficacy
Male	34.7	39.7	50.0	43.3
Female	65.3	60.3	50.0	56.7
No Response	16.2	13.7	6.8	8.2

The primary difference is that the high groups have proportionately more females and more no responses. The distribution for the 743 item managers in the sample was 45 per cent male, and 55 per cent female. The low groups more nearly match this total sample composition of males and females.

Civil Service Grade Data

Table 47 presents data on the civil service grades between the two groups.

TABLE 47

CIVIL SERVICE GRADE LEVEL DATA FOR HIGH AND LOW GROUPS

Civil Service Grade	High Groups		Low Groups	
	Product Necessity	System Efficacy	Product Necessity	System Efficacy
GS-5	3.5	4.9	10.1	5.5
GS-7	34.4	37.2	45.3	48.2
GS-9	60.0	57.3	44.6	44.1
GS-11	2.1	.7	.0	2.0

The basic difference is that the high groups have a larger share of the higher grades. For example, the high groups have more GS-9's and less GS7's than the low groups.

Education and Work Experience Data

TABLE 48

EDUCATIONAL LEVEL ATTAINMENTS OF THE HIGH AND LOW GROUPS

Educational Level	High Groups		Low Groups	
	Product Necessity	System Efficacy	Product Necessity	System Efficacy
(1) Not a High School Graduate	3.4	6.9	2.7	3.4
(2) High School Graduate	61.2	51.7	46.3	45.5
(3) 1 or 2 Years College	22.4	24.1	21.1	20.7
(4) 3 or More Years College	5.4	6.2	2.7	5.5
(5) Bachelors' Degree	6.8	11.0	25.2	23.4
(6) Masters' Degree	.7	.0	2.1	1.4
Mean	2.53	2.62	3.07	3.04

Table 48 presents data on the two groups educational levels. The primary difference is that the low groups have a noticeably larger proportion of the college graduates. Or in other words, the high groups have a lower average educational level.

Tables 49 and 50 contain data on the number of years of civil service experience and the number of years experience as an item manager.

TABLE 49

NUMBER OF YEARS CIVIL SERVICE EXPERIENCE FOR HIGH AND LOW GROUPS

Years	High Groups		Low Groups	
	Product Necessity	System Efficacy	Product Necessity	System Efficacy
0	0.0	0.0	0.0	0.0
1	2.0	3.4	6.1	5.5
2	2.0	2.8	11.6	8.9
3	0.0	2.8	4.1	7.5
4	0.7	1.4	2.0	0.7
5	1.4	2.1	1.4	3.4
6	1.4	1.4	2.0	2.1
7	0.0	2.8	6.1	3.4
8	2.0	1.4	3.4	4.1
9	2.0	1.4	3.4	3.4
10 and over	88.4	80.7	59.8	60.9
Mean	10.42	9.91	9.68	8.75

TABLE 50

NUMBER OF YEARS EOQ ITEM MANAGER EXPERIENCE FOR HIGH AND LOW GROUPS

Years	High Groups		Low Groups	
	Product Necessity	System Efficacy	Product Necessity	System Efficacy
0	.7	0.0	1.4	0.7
1	8.2	9.7	17.7	16.4
2	11.6	17.9	26.5	28.8
3	13.6	14.5	17.0	13.7
4	7.5	2.1	4.1	5.5
5	8.9	10.4	3.4	4.2
6	6.1	5.5	6.1	7.5
7	4.1	5.5	2.7	2.1
8	11.6	6.9	4.1	2.7
9	2.7	3.4	2.0	2.1
10 and over	25.2	24.1	15.0	16.4
Mean	6.80	6.48	5.11	5.21

Examination of the data reveals that the high groups have more experience in civil service and also more experience as an item manager. Over 80 per cent of the high groups have worked over 10 years in civil service versus 60 per cent for the low groups. The same trend holds for item management experience where the medians for the high groups fall at 5 years and the low groups at approximately 3 years. This implies that the high groups are more knowledgeable in the operations of the organization and their item management task.

Training Data

Tables 51 and 52 present the data on training.

TABLE 51

TYPES OF TRAINING REPORTED BY HIGH AND LOW GROUPS

Training Questions	High Groups		Low Groups	
	Product Necessity	System Efficacy	Product Necessity	System Efficacy
Any type of training for item management.	85.1	80.1	71.0	82.5
Formal courses(s) of instruction.	42.1	42.3	27.9	32.8
On-the-job training from fellow IMs.	62.7	68.6	46.4	51.1
On-the-job training from supervisors.	95.9	92.3	95.1	92.9

TABLE 52

TYPES OF ADP SYSTEMS IN WHICH HIGH AND LOW GROUPS HAVE RECEIVED SOME TRAINING

Type of Training	High Groups		Low Groups	
	Product Necessity	System Efficacy	Product Necessity	System Efficacy
D062 EOQ	95.3	93.8	81.1	84.2
D067 DSP ISSP	48.6	43.2	24.3	32.2
D017 DIA	46.2	39.7	23.6	28.1
D033 Base	8.1	6.2	5.4	4.1
D032 IMSC&D	91.9	86.3	70.4	86.3
D041 Cat I & II	27.7	26.7	18.4	21.9
D034 SSM, SC&D	18.2	17.8	10.1	19.9
Other	24.3	20.5	13.5	10.7

These data reflect that the high product necessity and system efficacy groups have received proportionately more training, especially in formal courses and from fellow item managers. Even though the data reflect some inconsistencies, the general picture which emerges is that the high groups have received more training in the areas of item management and systems. They therefore should be better able to cope with the requirements of the position and its automated systems environment.

Allocation of Work Time Data

Table 53 presents data on the item manager's allocation of work hours to the function of item management.

TABLE 53

AVERAGE NUMBER OF HOURS PER WEEK HIGH AND LOW GROUPS
WORKED ON ITEM MANAGEMENT JOB ACTIVITIES

Hours per Week	High Groups		Low Groups	
	Product Necessity	System Efficacy	Product Necessity	System Efficacy
(1) 24 or under	.7	1.4	5.5	1.4
(2) 25 - 29	.7	1.4	.7	.7
(3) 30 - 34	1.4	3.5	5.5	6.9
(4) 35 - 39	9.6	6.9	17.8	19.3
(5) 40	83.6	84.0	65.7	66.2
(6) 41 - 44	2.8	1.4	4.1	4.2
(7) 45 or over	1.4	1.4	.7	1.4
Mean	4.88	4.80	4.52	4.66

There is an indication that the low product necessity and system efficacy groups spend slightly less time on item management tasks. About 84 percent of the low groups reported spending 35 to 40 hours of their time on item management versus about 92 per cent for the high groups. The difference is slight but may reflect a difference in attitudes and commitment to their item management responsibilities.

Tables 54 and 55 present data on allocation of time between the D062 and D032 systems' requirements. Examination of the data revealed no obvious differences between the high groups and the low groups.

TABLE 54
AVERAGE NUMBER OF HOURS PER WEEK HIGH AND LOW GROUPS
REPORTED SPENDING ON D062 SYSTEM PRODUCTS

Hours per Week	High Groups		Low Groups	
	Product Necessity	System Efficacy	Product Necessity	System Efficacy
(1) 0 - 4	.7	2.8	3.4	2.7
(2) 5 - 9	2.1	8.3	14.3	9.0
(3) 10 - 14	14.6	16.0	15.0	13.1
(4) 15 - 19	11.8	13.2	21.1	20.0
(5) 20 - 24	25.0	17.4	18.4	21.4
(6) 25 - 29	20.2	17.4	17.7	20.7
(7) 30 or over	25.7	25.0	10.2	13.1
Mean	5.21	4.86	4.30	4.62

TABLE 55

AVERAGE NUMBER OF HOURS PER WEEK HIGH AND LOW GROUPS
REPORTED SPENDING ON D032 SYSTEM PRODUCTS

Hours per Week	High Groups		Low Groups	
	Product Necessity	System Efficacy	Product Necessity	System Efficacy
(1) 0 - 4	6.9	11.1	10.2	4.8
(2) 5 - 9	18.7	16.0	12.9	15.9
(3) 10 - 14	29.9	29.9	34.0	31.7
(4) 15 - 19	17.4	20.1	14.3	20.7
(5) 20 - 24	17.4	11.1	19.0	20.7
(6) 25 - 29	6.3	7.0	4.1	3.5
(7) 30 or over	3.5	4.9	5.4	2.7
Mean	3.52	3.44	3.53	3.57

Data on the Number and Nature of Items Managed

Table 56 presents the data on the number of line items managed and Table 57 presents data on the number of problem line items among the total number of line items managed. No noteworthy differences appeared between the high groups and the low groups in any of these data. This implies that the workload has no obvious effect on the item manager's evaluation of ADF systems or the systems' products. It also indicates that the number of "problem" line items is not a factor for differentiating the high and low groups.

TABLE 56

AVERAGE TOTAL NUMBER OF LINE ITEMS HIGH AND LOW
GROUPS REPORTED MANAGING

Number of Line Items	High Groups		Low Groups	
	Product Necessity	System Efficacy	Product Necessity	System Efficacy
(1) 199 and under	9.6	11.0	6.8	9.6
(2) 200 - 399	16.4	12.4	21.2	19.3
(3) 400 - 599	24.7	26.9	27.4	32.4
(4) 600 - 799	23.3	22.1	15.1	13.8
(5) 800 - 999	13.0	11.7	15.8	13.8
(6) 1000 or more	13.0	15.9	13.7	11.0
Mean	3.52	3.58	3.52	3.35

TABLE 57

AVERAGE NUMBER OF "PROBLEM" LINE ITEMS REQUIRING SPECIAL
EFFORT HIGH AND LOW GROUPS REPORTED MANAGING

Number of Line Items	High Groups		Low Groups	
	Product Necessity	System Efficacy	Product Necessity	System Efficacy
(1) None	0.0	0.0	.7	.7
(2) 1 - 24	13.9	21.4	23.1	16.5
(3) 25 - 49	13.2	12.4	13.6	14.5
(4) 50 - 74	15.3	17.9	9.5	10.3
(5) 75 - 99	11.1	9.6	8.2	9.0
(6) 100 - 124	6.3	6.9	10.9	8.3
(7) 125 - 149	5.5	4.1	2.0	4.1
(8) 150 - 174	4.2	2.7	2.7	3.4
(9) 175 - 199	2.8	2.1	4.1	5.5
(10) 200 or over	27.8	22.8	25.2	27.6
Mean	5.96	5.38	5.56	5.95

Summary and Implications of Findings

The general findings resulting from comparison and examination of biographical data for the groups with high evaluations of ADP systems and their products versus the groups with low evaluations are briefly summarized below.

High Groups:

1. The average age was higher.
2. There were proportionately more females.
3. They had a larger share of the higher civil service grades.
4. They had more experience in civil service jobs.
5. They had more experience in the item manager position.
6. The item managers in these groups generally received more training, particularly in formal courses.

Low Groups:

1. They had a higher level of education with proportionately more college graduates.

Areas of no Differences:

1. There was no indication of differences in the allocation of time to D062 and D032 systems' requirements.
2. There was no significant difference in the range of the number of items managed or the number of "problem" items managed.

Implications of Findings. The pattern which emerged from the findings implies that an item manager's perceptic and evaluation of the effectiveness of ADP systems and the necessity of the systems' products is partially a function of his experience and training. However, it is also possible that some of the differences could have resulted from a "screening out" through transfers and terminations of those individuals most dissatisfied with the functions of item management. Over time the result would be an older, more experienced, and more satisfied group of item managers who were better suited for the position

The results also imply that the more knowledgeable and experienced an item manager is about automated systems, the less the systems will be a source of role conflict and ambiguity contributing to dysfunctional behavior. However, it must be recalled that previous findings in Chapter VI identified ADP systems as a relatively minor source of role conflict and ambiguity for the majority of item managers.

These results also indicate that college education may not be as important for developing effective item managers as a well planned internal training program. Since the item manager is primarily a manager of resources rather than people, technical training seems to be relatively more important than college education and management development. The item manager operates in a complex environment and technical expertise in his functional area may tend to relieve feelings of insecurity and anxiety. In other words, he will

perceive less role conflict and ambiguity. However, one must not lose sight of the fact that a certain percentage of these item managers must be developed to move into supervisory and higher level staff positions.

CHAPTER VIII

SUMMARY AND CONCLUSIONS

Introduction

This dissertation focused on a study of the EOQ item manager position and its relationships with automated data processing (ADP) systems. Some of the basic ideas from role analysis theory were used in examining the item manager's role behavior and attitudes. The study had four general objectives.

1. To identify the basic characteristics of the persons performing the functions of EOQ item management in an automated systems environment from biographical and job activity survey data.
2. To analyze the EOQ item manager's role relationships with automated data processing (ADP) systems and the system's products.
3. To investigate the EOQ item manager's role behavior in terms of perceived career satisfaction, job satisfaction and anxieties related to role conflict or ambiguity situations.
4. To search for dysfunctional role behavior resulting from role conflict and role ambiguity related to ADP systems' factors within his work environment.

Two general hypotheses were developed to direct the development and structure of the empirical research effort and support the research objectives.

1. Automated processes within the EOQ item manager's organizational environment act as a role sender imposing demands upon the item manager role which are factors in influencing EOQ item manager role behavior.
2. If automated processes are in effect role senders influencing role behavior, then automated processes are potential sources of role conflict and role ambiguity.

Role theory provided a conceptual framework for investigating ADP systems as viable sources of role expectations influencing the behavior and attitudes the position incumbents. A role theory postulate which is adapted to this study is that human behavior is in part a function of the role incumbents perception of the position he occupies and also the expectations held for him by members of his role set. So, an individual's behavior and attitudes in a particular role are partially a function of the way he sees "his job" and what others expect of him in his job. If there is insufficient agreement between the way an individual views his position and the expectations held by others, conflict may be experienced to such a degree that the position incumbent suffers tension which may manifest itself in such ways as anxiety or dissatisfaction.

This study applied these ideas to a "man-machine" relationship in lieu of the usual man-to-man communicated role expectation. In a position in which the incumbent is highly dependent upon ADP systems and their products for the performance of his role, it was hypothesized that the automated systems would be an identifiable source of role conflict and ambiguity.

To investigate, describe and test these concepts and ideas, the position of EOQ item manager was selected, and the following methodology was applied in structuring the study.

1. To evaluate and test the postulate that ADP systems were in effect role definers in the sense that they imposed role expectations upon a position incumbent required measures of the position incumbent's perceptions of ADP systems as well as attitudes toward automated systems. To meet this requirement, a sample was drawn from the population of EOQ item managers within the five Air Force Air Materiel Areas (AMAs')
2. Mail questionnaires were sent to approximately fifty per cent of the EOQ item managers at each of the air materiel areas. The questionnaires were designed to elicit responses reflecting the item manager's perception of ADP systems and also responses reflecting his role behavior. The questionnaire content was

tested by a small pilot study and personal interviews with item managers, AMA staff personnel and Air Force Logistics Command staff personnel.

3. Each questionnaire contained six major parts: (1) a biographical and work data section designed to generate information which would provide a profile of the EOQ item manager and also describe some of the basic factors and characteristics related to the position, (2) a section designed to obtain the item manager's evaluation of just how necessary ADP system's computer products were for the performance of the item manager's position responsibilities, (3) a confidence in ADP systems section designed to obtain the item managers evaluation of the system's efficacy and also to ascertain their general attitude toward automated systems upon which they must depend for a major portion of the information required to do their job, (4) a career satisfaction section was included to evaluate the item managers' views of item management as a life time occupation, (5) the job satisfaction section was designed to evaluate both ADP and non ADP elements of his position which might be sources of dissatisfaction, and (6) the personal anxiety survey was specifically designed to evaluate aspects of the job which are potential sources of role conflict and role ambiguity as manifested by a general expression of anxiety.

A number of the questions referred directly to ADP systems factors. A number of the questions were also designed so they could be related to key elements in previous sections of the survey.

Chapters IV, V, VI, and VII are devoted to examining each of these areas. While each of the chapters relate to one of the objectives, all of the data generated by the survey was examined for reinforcing information or contradictory findings.

General Findings

Item Manager Profile

Biographical data indicates that most item managers are career civil service employees with over 10 years tenure but with less than 4 years experience in an item management position. Formal training was not the primary method by which item managers gained knowledge about their position functions and responsibilities, and ADP system requirements. Most learned informally from fellow item managers and supervisors. Generally item managers had a high school education with about one quarter having some college. The overall information provided by the data indicate that the majority apparently are well qualified for the position of item management even though there is a definite absence of a well structured training program.

Necessity of ADP Systems' Products

Item managers evaluated products from the D062, D032, and D143B ADP systems as to how necessary or unnecessary each product was for the performance of their stock control functions. Between systems analysis of the percentage frequency distribution of responses to the D062 and D032 systems' products found them to be so similar in both direction and intensity that it appears item managers perceive the two systems' products to be essentially the same when judged on the criterion of necessity. Also, the intensity of the necessary response categories was high. Approximately 54 per cent of the total responses were in the two highest necessary response categories ("absolutely necessary" and "very often necessary"), while only about 12 per cent were in the two highest unnecessary response categories ("very often unnecessary" and "absolutely unnecessary"). Even though 12 per cent is a relatively small portion of the total response, it does indicate certain item managers feel strongly that some products are unnecessary. For this portion of item managers ADP systems may be the source of role conflict and ambiguity leading to dysfunctional job behavior. The remaining 34 per cent of the responses were in the passive or uncertain response categories ("sometimes unnecessary, "may or may not be necessary" and "sometimes necessary"). This lack of decisiveness on the necessity of certain products indicates that many item managers are not

using the products as intended or that the products are not applicable to all item managers due to peculiarities of the items managed.

The results for the D143B system did not reflect a general consensus of necessity. Rather, it reflected uncertainty with about a 50 per cent response rate in the "passive/uncertain" categories and only 37 per cent in the two highest necessary response categories. This is undoubtedly due to the fact that the D143E system is relatively new and therefore rather unfamiliar to many of the item managers. The uncertainty reflected by responses to the unfamiliar D143B system lends support to the author's general hypothesis that ADP systems can be potential sources of role conflict or ambiguity.

The within systems analysis of ADP system product necessity revealed that the products required for operational decisions related to the item managers' primary task of requirements computation and asset distribution have the highest degree of consensus as to necessity. These products are required for such basic tasks as buy actions, termination actions, obtaining procurement funds, and asset positioning or movement.

The systems' products with the lowest necessary response rates are more indirectly related to the operational tasks of requirements computation and assets distribution. In general, they provide the item manager with information to "purify" data and take general management actions to facilitate more

effective decision making when operational actions are required. The general characteristic of the response patterns for these products is more accurately described as reflecting "lack of agreement" rather than disagreement on the products necessity. The responses tended to be relatively evenly distributed rather than grouped at the directional extremes.

ADP System Efficacy

In this section the item manager's focus was switched from evaluating individual systems' products to his perception of total system efficacy on the basis of five criteria: (1) useful, (2) accurate, (3) clear, (4) dependable, and (5) timely. The purpose was to measure the item manager's attitude toward the automated systems.

Analysis of the responses to each criterion within each system revealed that usefulness was consistently evaluated the highest by item managers. It ranked first by about 7 per cent over the next highest criterion. For the D062 and D032 systems, 97 per cent of the item managers evaluated the systems useful versus only 2 per cent useless.

The other clearly and consistently ranked criterion was timeliness. Of the five criteria, it ranked at the bottom for all systems by a clear margin, and for the D062 and D032 systems its antonym (untimely) also ranked highest. However, the consensus was that all systems are timely with the lowest response rate being 69 per cent for the D143B system, and the highest response rate being 79 per cent for the D032 system.

The 21 per cent untimely response factor reflects lack of desired information and indicates potential ambiguity since the item manager can not "talk" to the computer.

For the quality criteria of clear, dependable and accurate there were no distinguishable differences in the response rates. For the D062 and D032 systems they ranged from about 84 per cent to 91 per cent, and for the D143B system the range was 70 per cent to 73 per cent.

The results of the data analysis clearly indicated that ADP systems, when viewed as a total entity, are perceived by item managers as being highly effective, especially the two well established systems (D062 and D032). For the D062 and D032 systems an average of 87 to 89 per cent of the item managers evaluated the systems as "effective" while only 8 to 10 per cent responded in the "ineffective" direction (evaluated the systems as being to some degree untimely, inaccurate, useless, vague, and undependable). The relatively new D143B system's "effectiveness measure" was noticeable less (73 per cent positive and 14.5 per cent negative). This is indicative of the fact that it takes time to implement new systems or methods in an organization. A period of adjustment is required for both the people and the system before the system is proven and generally accepted.

Comparison of these findings with the findings of product necessity lead to some similarities and differences: (1) in both surveys the distribution of response to the D062 and D032 systems were so similar in both direction and

intensity that they could be viewed as one big system, (2) in both surveys there was a distinguishable difference between the D143B system and the other two, and (3) there was a difference in the intensity of consensus between the two surveys in that there was a greater variance in the product necessity measure than in the system efficacy measure.

The general findings for these two parts of the survey were reinforced by a question in Part III specifically designed to probe for the item manager's general attitude toward the concept of automation. Eighty per cent of the item managers reflected a positive attitude toward automated systems. In other words, they considered automation as "a tool to be used to more effectively and efficiently perform their functions" rather than viewing it as "a system requiring them to perform activities in response to programmed demands". The 20 per cent negative response score is compatible with preceding response distributions and indicates that some item managers may have problems relating to the ADP systems environment.

Career Evaluation

The career evaluation instrument consisted of six items designed to obtain information on the item manager's attitude toward item management as a career occupation. Analysis of individual responses indicated that three quarters of the item managers were well satisfied with government employment as a career, while the response patterns to questions referring specifically to a career as an item manager had a

favorable response rate of about two thirds. This indicated general acceptance of item management as a career but the response distribution also reflected a strain toward dissatisfaction and an indication that many item managers had higher aspiration levels.

The basic conclusion was that there is no strong evidence that item management is not perceived as a worthy career occupation even though there was some indication that many of the item managers may have tempered their career aspirations to accept their current career level.

Job Satisfaction

About two thirds of the item managers view their jobs as being satisfying to some degree with the most representative response being "fairly well satisfied". The survey data indicated that ADP systems' products were the least source of job dissatisfaction with only about 10 per cent of the item managers reporting some degree of dissatisfaction.

The two items reflecting the highest degree of dissatisfaction were training and excessive work load with about one third of the item managers responding either "fairly dissatisfied" or "very dissatisfied".

Comparison of the data from the career satisfaction survey and the job satisfaction survey revealed that item managers expressed greater satisfaction with their jobs than their careers. This was evident from a comparison of the two response distributions and also the well above average "very

dissatisfied" response rates to two job satisfaction questions concerning satisfaction with progress toward personal goals and career goals.

The general conclusion, based on responses to data generated by this survey, was that there were no major areas of job dissatisfaction for the majority of item managers, and that item managers were essentially well satisfied with ADP systems' products. However, there was a consistent 12 to 20 per cent negative "attitude" toward ADP systems.

Role Conflict and Ambiguity

A seventeen item survey instrument was devised to generate information on possible sources of role conflict and ambiguity manifested by expressions of anxiety. The questions were analyzed in contrived groups to evaluate the different kinds and sources of role conflict and ambiguity. The essential findings were as follows:

1. Role over load was perceived as the most prevalent form of role conflict. The five role over load questions, as a group, had the highest "anxiety" response rate. Within the group, questions which referred to general work load situations ranked higher than questions referring to specific sources such as ADP systems or systems' products. The responses to these five questions indicated role over load was a source of role conflict for about 51 per cent of the item managers.

2. The items used to examine for role ambiguity had a wide variation in their response distribution. Again, questions directed at specific sources ranked lowest as a source of ambiguity. The requirements of ADP systems were relatively unambiguous but knowledge about promotion opportunities was a source of concern. This may be due to the fact that automation is making item managers technical specialists managing resources. With the computer taking over much of the routine clerical work, there are fewer groups of clerical workers and fewer easily visible supervisory positions. Implementation of automated data systems requires a large group of technical specialists. For example, there are 4000 item managers in the Air Force Logistics Command with over 1600 being EOQ item managers. The hierarchy of supervisory levels is proportionately small causing the item manager concern about promotion opportunity.
3. An investigation of people and ADP systems as distinguishable different sources of role conflict and ambiguity produced indeterminate results. The survey data indicated that neither people nor systems were the primary sources of role conflict and ambiguity.
4. Examination of the highest ranked role conflict and ambiguity items indicated that the primary sources were related to the more general situational factors

such as: (1) excessive work load, (2) too little authority for the responsibility, and (3) a lack of knowledge about promotion possibilities.

5. Examination of the lowest ranked items strongly inferred that ADP systems were perceived by item managers as the least source of role conflict and ambiguity. Review of the findings from these data definitely indicates that the majority of item managers do not manifest anxieties relating to ADP systems conflict or ambiguity situations.

Analysis of ADP Systems Role Conflict and Ambiguity

The product necessity survey and systems efficacy survey response scores indicated that about 8 to 20 per cent of the item manager sample reflected a "negative" attitude toward ADP systems. This indicated automated systems could be a source of role conflict and ambiguity for some of the item managers.

To investigate the proposition that ADP systems can be a source of role conflict and ambiguity, two sets of high and low groups were contrived from the sample of 743 item managers. The high groups consisted of: (1) the 20 per cent of the item managers who evaluated ADP systems' products as being most necessary, and (2) the 20 per cent of the item managers who perceived ADP systems as being most effective. The low groups consisted of: (1) the 20 per cent of the item managers who evaluated ADP systems' products as being

most unnecessary, and (2) the 20 per cent of the item managers who perceived ADP systems as being most ineffective.

The responses of these groups to eight items in the anxiety survey instrument and the ten items in the job satisfaction instrument were analyzed to test the following hypotheses.

1. The more EOQ item managers perceive ADP systems as being unnecessary, the greater will be their expressed anxieties and dissatisfaction concerning ADP system related job activities.
2. The more EOQ item managers perceive ADP systems as being ineffective for fulfillment of their role as they perceive it, the greater will be their expressed anxieties and dissatisfactions concerning ADP systems.

The predictions based upon the hypotheses were that the low groups would experience more anxiety and less job satisfaction than the high groups. The predictions were tested by comparing and testing mean scores for the high and the low groups for eight of the items in the anxiety survey instrument and all of the items in the job satisfaction survey instrument. In every case the results were in the direction predicted and the differences in the mean scores were significant to at least the .002 level.

Based upon these test results the hypotheses were accepted and it was concluded that ADP systems can be a source of role conflict and ambiguity for some people affecting their

role behavior. Also, those individuals who do experience role conflict and ambiguity from their ADP systems environment tend to be less satisfied with their jobs, which may lead to dysfunctional job behavior.

Comparison and analysis of high and low groups' biographical data implied that experience and training were factors influencing the item manager's evaluation of ADP systems and the systems' products as they relate to his function of stock control. In general the high groups were more experienced in item management, had longer tenure in civil service, were older, and had had more training. The low groups had a higher average level of education which tentatively indicated that technical training may be more relevant for an item manager, who is primarily responsible for management of resources, than academic education beyond a certain level.

The data analysis also revealed no noticeable differences in the high and low groups allocation of time between the DO62 and DO32 systems. Also, there were no apparent differences between the groups on the range and quantity of line items managed, nor in the numbers of "problem" items among the total number of line items for which they are responsible. This implied that their work loads were not a factor affecting their evaluations of product necessity or system efficacy.

Implications of the Study

The foregoing summary of the study's findings and conclusions based on the examination of the survey data suggested the following recommendations.

1. A substantial number of item managers are not using all of the ADP system products provided for their decision making and management functions. Because information is costly and its improper use or application may reduce productivity, an effort should be undertaken to determine the basic reasons. Are there truly unnecessary products or are item managers just not adequately trained in their use? This question warrants some attention by higher management levels in the logistics command.
2. Item managers indicated significant dissatisfaction with the training they receive for the development and maintenance of required EOQ item management skills and knowledge. While there is a limit to the amount of formal training an organization can realistically provide, there is a strong inference that this function has not received adequate management attention and has not maintained pace with the technological progress in the organization's operations. ADP systems require knowledgeable well trained personnel in order to generate accurate inputs and to make effective use of the outputs. This places a premium on a fast and effective way to communicate with people when procedures change, problems occur, new elements are added, etc. The survey results for the D143B subsystem gave ample evidence of the difference in attitude toward, and acceptance of a new system.

The training requirements in a highly automated environment suggests the need for creative thinking in this area. To be highly effective item managers must not only be a specialist in his particular functional area, but he should also have a sound understanding of the requirements and functioning of related systems. Much of the data he receives is a direct input from another system at a completely different organizational situation.

The size and complexity of the organization and the number of people involved suggest the use of media assisted instruction. For example, closed circuit television (CCTV) may be a very effective means of providing fast and accurate instruction to large numbers of item managers (and other personnel in the organization). This study indicates that automation seems to emphasize the need for effective in-house training capability quickly responsive to the needs of the operational situations.

APPENDICES

APPENDIX A

THE QUESTIONNAIRE SURVEY DOCUMENTS

This appendix contains a sample of the letter of transmittal, guidelines for distribution of the EOQ item manager survey questionnaire, and the questionnaire booklet.

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE LOGISTICS COMMAND
WRIGHT-PATTERSON AIR FORCE BASE, OHIO 45433



REPLY TO
ATTN OF: AFLC-MCSO

18 July 1968

SUBJECT: EOQ Item Manager Research Survey

TO: WRAMA (NMR/Mr. Jack Currington)
Robins AFB, Georgia 31093

1. Major Paul E. Erzen on the faculty of AFIT, School of Systems and Logistics (AFIT-SLFR) is conducting a research project on the EOQ item manager. The purpose of this research project is to examine, describe and analyze selected factors in the item manager's work environment which may influence his job performance and behavior.
2. The enclosed research instrument was designed to obtain data directly from EOQ item managers in nonsupervisory positions. Instructions for completing the survey are stated within the survey instrument.
3. Hq AFLC (MCS) has approved the use of this data gathering instrument and is very interested in the potential information it will generate. The results may provide some valuable insights for developing item manager training programs and other support for item management. The survey was field tested for clarity and validity at OOAMA and SMAMA. It required an average of forty-five minutes to complete which is not excessive considering the data it will provide.
4. Your assistance is requested in making distribution of the enclosed survey instruments to a representative sample of EOQ item managers in your organization. Since every EOQ item manager will not participate, it is very important to obtain a randomized sampling so that valid inferences can be made regarding the entire population. Guidelines for selecting item managers to complete the survey are contained in attachment 1.
5. Any questions concerning this survey may be addressed directly to Major Paul Erzen, AFIT-SLFR, Wright Patterson AFB, Ohio. His phone extensions are: 72527 or 72704. Your prompt and personal attention to this project would be sincerely appreciated.

FOR THE COMMANDER

ROBERT L. ALEXANDER
Directorate of Supply Operations
DCS Supply

2 Atch
1. Guidelines for Distribution
of EOQ Item Manager Survey
2. EOQ Item Manager Research
Survey (260 cys)

GUIDELINES FOR DISTRIBUTION OF EOQ
ITEM MANAGER RESEARCH SURVEY

Since it is too costly to survey the entire population of item managers, it is very important that a representative randomized sample be obtained. The number of enclosed surveys should sample approximately half of the total population of EOQ item managers assigned to your organization. The following guidelines are provided to assist in selecting a representative sample.

1. Select only EOQ item managers in nonsupervisory positions.
2. Determine the approximate number of EOQ IMs assigned to the R&D Branch of each SSM and IM Division.
 - a. From each R&D Branch randomly select a proportionate number of EOQ item managers. For example, if you have sufficient copies to sample one half of all EOQ IMs and one branch has 50 and another branch has 30, then select 25 from the branch with 50 IMs and 15 from the branch with 30 IMs.
 - b. The selection of EOQ IMs to complete the survey should be as impersonal and random as possible. For example, if EOQ IMs have an organizational distribution code symbol for each individual item manager, then impersonal selection and distribution on the basis of such a code number would be considered random sampling.
 - c. It is intended that the established distribution system be used to the greatest degree possible.
3. The survey states that all replies are to be anonymous and that no individual or organizational unit will be identified with any given response. The item managers should be encouraged to complete the survey as soon as possible and not later than two weeks after receipt. Also, they should mail the completed survey directly to AFIT-SLFR in the attached preaddressed envelope. This is necessary to insure anonymity of the respondent.

EOQ ITEM MANAGER RESEARCH SURVEY

1. This is a research project investigating the item manager's role and his relationships with certain automated environmental factors. The objective of this research project is to examine, describe and analyze selected factors in the item manager's work environment which may influence his job performance or behavior. The results of this study may identify factors for making computerized systems more responsive to the needs of item managers.
2. Since this research concerns the function of item management in its working environment, item managers are the logical source of factual information. You are therefore being asked to assist in this effort by completing the attached research survey. Your assistance and cooperation is most important and would be sincerely appreciated.
3. Neither you nor your organizational unit will in any way be identified with the survey instrument. The information will be tabulated and presented in summary form. All answers will be held in strict confidence to insure you complete anonymity.
4. This survey is in six parts. Instructions for completing the survey are stated at the beginning of each individual part of the survey. Please feel free to make any comments or remarks that you feel may add to the research effort.
5. Please complete the survey within two weeks from the date of receipt and mail it in the preaddressed envelope.

Part I

Please fill in the requested information or check the applicable block. Disregard the numbers in parentheses (e.g., (1), (2), etc.). These numbers will be used to assist in computer processing of the data.

Personal Data:

1. My present position title is: (be specific) _____

2. What is your present civil service grade and step or military rank?

(1) ☐ GS5 (1-5)	(8) ☐ GS11 (1-5)
(2) ☐ GS5 (6-10)	(9) ☐ GS11 (6-10)
(3) ☐ GS7 (1-5)	(10) ☐ 2nd Lieutenant
(4) ☐ GS7 (6-10)	(11) ☐ 1st Lieutenant
(5) ☐ GS9 (1-5)	(12) ☐ Captain
(6) ☐ GS9 (6-10)	(13) ☐ Other

3. What is your age?

(1) ☐ 24 or under	(5) ☐ 40-44
(2) ☐ 25-29	(6) ☐ 45-49
(3) ☐ 30-34	(7) ☐ 50-54
(4) ☐ 35-39	(8) ☐ 55 or over

4. Are you? ☐ Male ☐ Female

Organization and Unit of Assignment:

5. At which Air Materiel Area (AMA) are you employed?

(1) ☐ WRAMA	(4) ☐ OOAMA
(2) ☐ OCAMA	(5) ☐ SMAMA
(3) ☐ SAAMA	

6. In what type of division do you work?

- (1) ☐ IM (2) ☐ SSM (3) ☐ Other

Weekly Workload Data:

7. What is the total average number of hours per week that you work?

(1) ☐ 39 or under	(3) ☐ 41-44
(2) ☐ 40	(4) ☐ 45 or over

8. What is the average number of hours per week you usually work on IM job activities or functions?

(1) ☐ 24 or under	(5) ☐ 40
(2) ☐ 25-29	(6) ☐ 41-44
(3) ☐ 30-34	(7) ☐ 45 or over
(4) ☐ 35-39	

Of the hours per week spent on IM activities and functions, how many hours do you usually work on:

9. D062 EOQ Buy Computation System computer products?

(1) ☐ 0-4	(5) ☐ 20-24
(2) ☐ 5-9	(6) ☐ 25-29
(3) ☐ 10-14	(7) ☐ 30 or over
(4) ☐ 15-19	

10. D032 Item Manager Stock Control & Distribution System computer products?

(1) ☐ 0-4	(5) ☐ 20-24
(2) ☐ 5-9	(6) ☐ 25-29
(3) ☐ 10-14	(7) ☐ 30 or over
(4) ☐ 15-19	

Work Experience:

11. How many years have you worked in civil service or military?
(Please round off to the nearest whole year)

(1) ☐ 0	(5) ☐ 4	(9) ☐ 8
(2) ☐ 1	(6) ☐ 5	(10) ☐ 9
(3) ☐ 2	(7) ☐ 6	(11) ☐ 10 or over
(4) ☐ 3	(8) ☐ 7	

12. How many years have you worked as an item manager?

(1) ☐ 0	(5) ☐ 4	(9) ☐ 8
(2) ☐ 1	(6) ☐ 5	(10) ☐ 9
(3) ☐ 2	(7) ☐ 6	(11) ☐ 10 or over
(4) ☐ 3	(8) ☐ 7	

Education:

13. What is your highest education level?

(1) ☐ Not a high school graduate	(4) ☐ 3 or more years college
(2) ☐ High school graduate	(5) ☐ Bachelor's degree
(3) ☐ 1 or 2 years college	(6) ☐ Master's degree

Training:

14. Did you receive any type of training for item management?

(1) ☐ Yes (2) ☐ No

15. Formal course(s) of instruction? (1) ☐ Yes (2) ☐ No

If yes, Title:

16. On-the-job training from your supervisor? (1) ☐ Yes (2) ☐ No

17. On-the-job training from your fellow IM's? (1) ☐ Yes (2) ☐ No

18. Have you received any type of training in any of the following areas? (Please check all applicable items)

(1) ☐ D062 EOQ	(5) ☐ D032 IM, SC&D
(2) ☐ D067 DSP ISSP	(6) ☐ D041 CAT I & IIR
(3) ☐ D017 DIA	(7) ☐ D034 SSM, SC&D
(4) ☐ D033 Base	(8) ☐ Other

Items Managed:

19. What is the approximate average total number of items you manage?

(1) ☐ 199 or under	(4) ☐ 600-799
(2) ☐ 200-399	(5) ☐ 800-999
(3) ☐ 400-599	(6) ☐ 1000 or more

- (1) ☐ None
- (2) ☐ 1-24
- (3) ☐ 25-49
- (4) ☐ 50-74
- (5) ☐ 75-99
- (6) ☐ 100-124
- (7) ☐ 125-149
- (8) ☐ 150-174
- (9) ☐ 175-199
- (10) ☐ 200 or over

Add any comments you wish: _____

[illegible]

We are interested in your professional experience with the various computer products available to you for support of your task of item management. In Part II we have listed by number and title all the DO62, DO32 and D143B systems' computer processed products which you may receive and use. The purpose is to obtain your evaluation of just how necessary you consider these products for the performance of your task of item management.

4

**Section A: EOQ Buy
Computation
System (D062)**

1.	Absolutely unnecessary
2.	Very often unnecessary
3.	Sometimes unnecessary
4.	May or may not be necessary
5.	Sometimes necessary
6.	Very often necessary
7.	Absolutely necessary

1.	D062.J11-03, Manual File Maintenance Transaction List	1	2	3	4	5	6	7
2.	D062.J11-04, EOQ Exception Listing, Parts I, II, and III.							
	Part I	1	2	3	4	5	6	7
3.	Part II	1	2	3	4	5	6	7
4.	Part III	1	2	3	4	5	6	7
5.	D062.J11-05, Procurement Source Code Changed to Local Manufacture or Local purchase or Other Services Stock Fund.	1	2	3	4	5	6	7
6.	D062.J11-06, Change of Category . . .	1	2	3	4	5	6	7
7.	D062.J11-07, Transfer of Prime to: () (gaining activity).	1	2	3	4	5	6	7
8.	D062.J11-08, EOQ Item Code Change Notice.	1	2	3	4	5	6	7
9.	D062.J11-09, EOQ Buy Computation Worksheet: Buy Notice.	1	2	3	4	5	6	7
10.	D062.J11-10, EOQ Buy Computation Worksheet: Data Level Notice.	1	2	3	4	5	6	7
11.	D062.J11-11, EOQ Buy Computation Worksheet: Termination Notice.	1	2	3	4	5	6	7
12.	D062.J11-14, EOQ Buy Computation Worksheet: Interrogation Reply	1	2	3	4	5	6	7
13.	D062.J11-15, Index of Actions and Dollar Value Requirements, Parts I & II.							
	Part I	1	2	3	4	5	6	7
14.	Part II	1	2	3	4	5	6	7

1.	Absolutely unnecessary
2.	Very often unnecessary
3.	Sometimes unnecessary
4.	May or may not be necessary
5.	Sometimes necessary
6.	Very often necessary
7.	Absolutely necessary

15. D062.J11-18, Two Years Zero Demand Items 1 2 3 4 5 6 7
16. D062.J11-19, Three Years Zero Demand Items 1 2 3 4 5 6 7
17. D062.J11-20, Four Years Zero Demand Items 1 2 3 4 5 6 7
18. D062.J11-21, Delete Coded EOQ Items Dropped From Master Files. 1 2 3 4 5 6 7
19. D062.J11-22, Special Coded EOQ Items. 1 2 3 4 5 6 7
20. D062.J11-23, Nonrecurring Demand Notice. 1 2 3 4 5 6 7
21. D062.J11-24, Management Control Notice. 1 2 3 4 5 6 7
22. D062.J11-25, Interrogation by Application 1 2 3 4 5 6 7
23. D062.V14-01, Items Peculiar to Obsolete Applications. 1 2 3 4 5 6 7
24. D062.K77-01, EOQ/DSA Projection Executive Management Summary Report, Parts I, II, & III
 - Part I 1 2 3 4 5 6 7
 25. Part II 1 2 3 4 5 6 7
 26. Part III 1 2 3 4 5 6 7
27. D062.K77-02, EOQ/DSA Projection Index of Action & Dollar Value of Requirements 1 2 3 4 5 6 7
28. D062.K77-03, EOQ/DSA Projection . . . 1 2 3 4 5 6 7
29. D062.S12-02, EOQ Buy/Budget Projection Index of Actions & Dollar Value of Requirements Action, Parts I, II, & III.
 - Part I 1 2 3 4 5 6 7
 30. Part II 1 2 3 4 5 6 7
 31. Part III 1 2 3 4 5 6 7

32. D062.S12-03, EOQ Buy/Budget Projection
Products EOQ Buy Computation Worksheets 1 2 3 4 5 6 7
33. D062.S12-04, Index of EOQ Items
Offered ISSP in Long Supply 1 2 3 4 5 6 7
34. D062.S12-05, Excess Notice 1 2 3 4 5 6 7

**Section B: Item Manager,
Stock Control,
and Distribution
System (D032)**

1.	Absolutely unnecessary
2.	Very often unnecessary
3.	Sometimes unnecessary
4.	May or may not be necessary
5.	Sometimes necessary
6.	Very often necessary
7.	Absolutely necessary

35. D032.501-C1, Class Notifications. 1 2 3 4 5 6 7
36. D032.615-C1, Controlled Exceptions. 1 2 3 4 5 6 7
37. D032.451-C1/C2, Defense Supply Agency
Accountable Balance Trans. 1 2 3 4 5 6 7
38. D032.505-C1, Item Management Jacket. 1 2 3 4 5 6 7
39. D032.632-C1, Item Capitalized Listing –
Previous Back Order.
40. D032.501-C1 Processing Master Record Printout 1 2 3 4 5 6 7
D032.507-C1
41. D032.ED1-C1, Transaction Register Category I
Items. (Weekly) 1 2 3 4 5 6 7
42. D032.ED2-C1, Transaction Register
Category I Items. (Weekly) 1 2 3 4 5 6 7
43. D032.503-C1, Transaction Register
Hi-Value & Manager Review. 1 2 3 4 5 6 7
44. D032.661-C1, "X" Blocked Balances Listing 1 2 3 4 5 6 7
45. D032.663-C1, "Y" Blocked Balances Listing 1 2 3 4 5 6 7
46. D032A.615-P1, Priority Distribution System
Controlled Exception 1 2 3 4 5 6 7
47. D032.804-C1, Classified Item List. 1 2 3 4 5 6 7
48. D032.451-C1/C2, Defense Supply Agency
Accountability Balance Transfer 1 2 3 4 5 6 7

49.	D032.PW1-C1, Interrogation Replies on Controlled Exceptions – By Command.	1 2 3 4 5 6 7
50.	D032.DA1-DA7, Item Status Reports	1 2 3 4 5 6 7
51.	D032.632-C1, Items Capitalized Listing – Previous Back Order	1 2 3 4 5 6 7
52.	D032.572-C1, Requirements History Interrogation Reply.	1 2 3 4 5 6 7
53.	D032.293-C1, Requisition Control Active Masters By Site/Age	1 2 3 4 5 6 7

**Section C: AMA Edit, Index,
and Routing
Subsystem(D143B)**

1.	Absolutely unnecessary
2.	Very often unnecessary
3.	Sometimes unnecessary
4.	May or may not be necessary
5.	Sometimes necessary
6.	Very often necessary
7.	Absolutely necessary

54.	D143B.H81-02, Unidentified Data	1 2 3 4 5 6 7
55.	D143B.MT5-01, Cross Reference Records for Management Review.	1 2 3 4 5 6 7
56.	D143B.MT5-03, Local Management Discrepancies	1 2 3 4 5 6 7

Part III

Every job in an organization is affected by information from data inputs, other related positions or functions, etc. People holding jobs usually develop a general impression of the factors which have a direct bearing on their work. For example, a system or activity is fairly good, provides fast service, is dependable, tends to contain errors, and so on.

The purpose of Part III is to obtain your overall impression of the automated systems which relate directly to your primary task of item management. To do this, Part III sets up a continuum for five specific conditions to which each condition may exist.

Please place a check on the line under the one phrase of the scale which most accurately reflects your personal overall experience with the system as to its timeliness or untimeliness, accuracy or inaccuracy, etc.

1. The data and information provided by the D062, EOQ Buy Computation System are:

	Neither one or the other					
	Extremely	Quite	Slightly	Quite	Extremely	
Timely						Untimely
Accurate						Inaccurate
Useful						Useless
Clear						Vague
Dependable						Undependable

2. The D032 Item Manager Stock Control and Distribution System's data and information is:

	Neither one or the other					
	Extremely	Quite	Slightly	Slightly	Quite	Extremely
Timely						Untimely
Accurate						Inaccurate
Useful						Useless
Clear						Vague
Dependable						Undependable

10 3. The 143B AMA edit, Index, and Routing Subsystem's data and information is:

	Neither one or the other					
	Extremely	Quite	Slightly	Slightly	Quite	Extremely
Timely						Untimely
Accurate						Inaccurate
Useful						Useless
Clear						Vague
Dependable						Undependable

2. The D062 and D032 automated data systems may be best described as: (Determine the one best response)

1. An organizational system which requires the item manager to perform activities in response to programmed demands.
2. A tool to be used by the item manager to more effectively and efficiently perform the function of item management.
3. A complex mechanical system which provides the item manager rigid data products requiring fixed responses from the item manager with little opportunity for him to exercise his personal judgment or to communicate his peculiar needs back to the system.
4. Just another machine which mechanically performs programmed computations and processes data outputs which a manager uses with discretion in making decisions and performing job responsibilities.
5. None of these: (Fill in your own description) _____

Your supervisor is also an important factor in your work environment. Please select the one best response for the following two questions on supervision.

3. Your supervisor's dealings with the people he supervises may be best described as:

1. He is poor at handling people.
2. He is not very good at dealing with people—does other things much better.
3. He is fairly good at dealing with people.
4. He is good at dealing with people—better than most.
5. He is very good at dealing with people—it is his strongest point.

4. Your supervisor's ability to help you resolve technical problems related to automated methodology and computer products may be best described as:

1. Poor	4. Good
2. Not very good	5. Very good
3. Fairly good	

Part IV

In answering the following questions consider item management as a career rather than just your present job. Please circle the number of the phrase which best describes your personal thoughts and expectations for each of the following questions.

1. How much does item management give you a chance to do the things at which you are best?
 1. A very good chance
 2. A fairly good chance
 3. Some chance
 4. Very little chance
2. Has item management lived up to the expectations you had before you entered it?
 1. Yes in all respects
 2. In most ways
 3. In only a few ways
 4. Not at all
3. If you "had it to do over again", would you enter the field of item management?
 1. Definitely yes
 2. Probably yes
 3. Probably no
 4. Definitely no
4. If a young friend of yours with adequate qualifications and temperament was looking for a career field, would you advise him to aim for item management?
 1. Definitely yes
 2. Probably yes
 3. Probably no
 4. Definitely no
5. In general do you feel that item managers are given adequate recognition when compared to that received by other managers in an AMA such as the technical services manager, or the production manager?
 1. Yes definitely
 2. In most respects
 3. In some respects
 4. Not at all
6. If you had a chance to do the same kind of work for the same pay, but in another organization or company in the community, would you stay on your present job?
 1. Definitely yes
 2. Probably yes
 3. Probably no
 4. Definitely no

Part V

People frequently have various feelings of satisfaction and dissatisfaction regarding their work. In answering the following questions consider item management as a working job. Please circle the number after each question representing the phrase which best describes your satisfaction or dissatisfaction with your work.

1. Very well satisfied
2. Fairly well satisfied
3. Passive—neither satisfied or
dissatisfied
4. Fairly dissatisfied
5. Very dissatisfied

1. Are you satisfied that you have enough authority to do your job well? 1 2 3 4 5
2. How satisfied are you with your present job when you compare it to similar jobs in the AMA? 1 2 3 4 5
3. Are you satisfied with the progress you are making toward the goals you set for yourself in your present job? 1 2 3 4 5
4. Are you satisfied that the people in your organization give proper recognition to your work as an item manager? 1 2 3 4 5
5. Are you satisfied with the D062 computer system generated printouts provided for your job? 1 2 3 4 5
6. Are you satisfied with the D032 computer system generated printouts provided for your job? 1 2 3 4 5
7. How satisfied are you with job training and education available to you? 1 2 3 4 5
8. How satisfied are you with the proportion of available work time required to accomplish tasks generated by computer printout products? 1 2 3 4 5
9. On the whole, are you satisfied that you are accepted as a professional expert to the degree to which you feel entitled by reason of your position, training, and experience? 1 2 3 4 5
10. How satisfied are you with your present job in light of your career expectations? 1 2 3 4 5

Part VI

All of us occasionally feel bothered by certain things in our work. The following is a list of things that sometimes upset people. Please circle the number after each statement representing the phrase which most accurately reflects how frequently you feel bothered by each of these situations.

1.	Never
2.	Rarely
3.	Sometimes
4.	Rather often
5.	Nearly all the time
6.	Does not apply

1.	Feeling that you have too little authority to carry out the responsibilities assigned to you.	1 2 3 4 5 6
2.	Being unclear on just what the scope and responsibilities of your job are.	1 2 3 4 5 6
3.	Not knowing what opportunities for advancement or promotion exist for you.	1 2 3 4 5 6
4.	Feeling that you have too heavy a work load, one that you can't possibly finish during an ordinary workday.	1 2 3 4 5 6
5.	Feeling that you are not adequately prepared to handle your job?	1 2 3 4 5 6
6.	Thinking that you'll not be able to satisfy the conflicting demands of various people over you.	1 2 3 4 5 6
7.	Thinking that you'll not be able to handle the demands imposed upon you by the D062 and D032 systems' computer generated printouts.	1 2 3 4 5 6
8.	Feeling that the individual demands of your supervisor are in conflict with the D062 and D032 systems' generated job activities.	1 2 3 4 5 6
9.	Bothered by the fact that you can't get needed information from the automated data systems to properly perform your job.	1 2 3 4 5 6

10.	Bothered by the fact that the D062 buy computation system provides too many unnecessary products which detract from other required activities.	1 2 3 4 5 6
11.	Bothered by the fact that the D032 IM Stock Control and Distribution System provides too many unnecessary products which detract from other required activities.	1 2 3 4 5 6
12.	Feeling unable to influence your immediate supervisor's decisions and actions that affect you.	1 2 3 4 5 6
13.	Feeling unable to influence the automated aspects of the buy computation system or stock control and distribution system which affect your work.	1 2 3 4 5 6
14.	Not knowing just what the people you work with expect of you.	1 2 3 4 5 6
15.	Thinking that the amount of work you have to do may interfere with how well it gets done.	1 2 3 4 5 6
16.	Not knowing just what the D062 automated processes require of you in your job.	1 2 3 4 5 6
17.	Not knowing just what the D032 automated processes require of you in your job.	1 2 3 4 5 6

Remarks: (Please make any comments you desire on any part or question in this survey. We sincerely appreciate the time and effort you have given us. Thank you.)

APPENDIX B

TABULATION OF RESPONSES TO THE QUESTIONNAIRE SURVEY

This appendix provides a tally of responses by the sample of 743 item managers to each question in the questionnaire survey.

APPENDIX B

TABULATION OF RESPONSES TO THE QUESTIONNAIRE SURVEY

PART I	<u>NUMBER OF RESPONSES</u>
1. My present position title is: (be specific)	
2. What is your present civil service grade and step or military rank?	
(1) GS5 (1-5)	36
(2) GS5 (6-10)	13
(3) GS7 (1-5)	236
(4) GS7 (6-10)	68
(5) GS9 (1-5)	303
(6) GS9 (6-10)	70
(7) GS11 (1-5)	6
(8) GS11 (6-10)	2
(9) 2nd Lieutenant	1
(10) 1st Lieutenant	0
(11) Captain	0
(12) Other	0
No response	8
3. What is your age?	
(1) 24 or under	34
(2) 25 - 29	78
(3) 30 - 34	70
(4) 35 - 39	85
(5) 40 - 44	134
(6) 45 - 49	152
(7) 50 - 54	104
(8) 55 or over	85
No response	1
4. Are you?	
(1) Male	298
(2) Female	364
No response	81
5. At which Air Materiel Area (AMA) are you employed?	
(1) WRAMA	128
(2) OCAMA	242
(3) SAAMA	154
(4) OOAMA	105
(5) SMAMA	114

APPENDIX B (Continued)

NUMBER OF
RESPONSES

6. In what type of division do you work?

(1) IM	655
(2) SSM	76
(3) Other	5
No response	7

7. What is the total average number of hours per week that you work?

(1) 39 or under	17
(2) 40	677
(3) 41 - 44	40
(4) 45 or over	6
No response	3

8. What is the average number of hours per week you usually work on IM job activities or functions?

(1) 24 or under	15
(2) 25 - 29	6
(3) 30 - 34	34
(4) 35 - 39	106
(5) 40	546
(6) 41 - 44	24
(7) 45 or over	5
No response	11

Of the hours per week spent on IM activities and functions, how many hours do you usually work on:

9. D062 EOQ Buy Computation System computer products?

(1) 0 - 4	20
(2) 5 - 9	51
(3) 10 - 14	132
(4) 15 - 19	137
(5) 20 - 24	152
(6) 25 - 29	129
(7) 30 or over	111
No response	11

APPENDIX B (Continued)

NUMBER OF
RESPONSES10. D032 Item Manager Stock Control & Distribution
System computer products?

(1)	0 - 4	52
(2)	5 - 9	101
(3)	10 - 14	242
(4)	15 - 19	137
(5)	20 - 24	125
(6)	25 - 29	45
(7)	30 or over	27
	No response	14

11. How many years have you worked in civil service or
military? (please round off to the nearest whole year)

(1)	0	4
(2)	1	34
(3)	2	40
(4)	3	35
(5)	4	10
(6)	5	12
(7)	6	13
(8)	7	18
(9)	8	19
(10)	9	23
(11)	10 or over	533
	No response	2

12. How many years have you worked as an item manager?

(1)	0	9
(2)	1	103
(3)	2	173
(4)	3	128
(5)	4	38
(6)	5	49
(7)	6	41
(8)	7	22
(9)	8	34
(10)	9	20
(11)	10 or over	124
	No response	2

APPENDIX B (Continued)

NUMBER OF
RESPONSES

13. What is your highest education level?

(1)	Not a high school graduate	25
(2)	High school graduate	358
(3)	1 or 2 years college	182
(4)	3 or more years college	43
(5)	Bachelor's degree	124
(6)	Master's degree	9
	No response	2

14. Did you receive any type of training for item management?

(1)	Yes	589
(2)	No	148
	No response	6

15. Formal course(s) of instruction? If yes, Title:

(1)	Yes	250
(2)	No	441
	No response	52

16. On-the-job training from your supervisor?

(1)	Yes	419
(2)	No	280
	No response	44

17. On-the-job training from your fellow IM's?

(1)	Yes	693
(2)	No	35
	No response	15

18. Have you received any type of training in any of the following areas? (Please check all applicable items)

(1)	DO62 EOQ	672
(2)	DO67 DSP ISSP	293
(3)	DO17 DIA	250
(4)	DO33 Base	43
(5)	DO32 IM, SC&D	641
(6)	DO41 CAT I & IIR	176
(7)	DO34 SSM, SC&D	116
(8)	Other	145

APPENDIX B (Continued)

NUMBER OF
RESPONSES

19. What is the approximate average total number of items you manage?

(1)	199 or under	72
(2)	200 - 399	139
(3)	400 - 599	205
(4)	600 - 799	145
(5)	800 - 999	86
(6)	1000 or more	88
	No response	8

20. Of the total number of items managed, about how many are highly active, critical, require special effort, etc.? (E.g., Back-order, below support level, below reorder level, etc.)

(1)	None	3
(2)	1 - 24	145
(3)	25 - 49	96
(4)	50 - 74	92
(5)	75 - 99	72
(6)	100 - 124	72
(7)	125 - 149	32
(8)	150 - 174	29
(9)	175 - 199	30
(10)	200 or over	160
	No response	12

21. Type of items managed?

(1)	EOQ	644
(2)	EOQ and CAT IIR	82
	No response	17

APPENDIX B (Continued)

PART II

Section A: EQQ Buy Computation System (DO62)

0. No response
1. Absolutely unnecessary
2. Very often unnecessary
3. Sometimes unnecessary
4. May or may not be necessary
5. Sometimes necessary
6. Very often necessary
7. Absolutely necessary

NUMBER OF RESPONSES

	0	1	2	3	4	5	6	7
1. DO62.J11-03, Manual File Maintenance Transaction List.	27	113	94	30	119	111	85	164
2. DO62.J11-04, EQQ Exception Listing, Parts I, II, and III.								
Part I	32	28	34	37	107	108	134	263
Part II	49	21	31	29	109	106	133	265
Part III	59	46	38	29	128	101	128	214
5. DO62.J11-05, Procurement Source Code Changed to Local Manufacture or Local Purchase or Other Services Stock Fund.	28	84	59	20	140	107	90	215
6. DO62.J11-06, Change of Category.	28	44	47	21	91	92	98	322

APPENDIX B (Continued)

PART II, Section A (Continued)

NUMBER OF RESPONSES

	0	1	2	3	4	5	6	7
7. D062.J11-07, Transfer of Prime to: () (gaining activity)	16	19	15	8	48	58	70	509
8. D062.J11-08, EOQ Item Code Change Notice.	35	63	53	24	142	130	96	200
9. D062.J11-09, EOQ Buy Computation Worksheet: Buy Notice.	3	8	0	3	2	8	20	699
10. D062.J11-10, EOQ Buy Computation Worksheet: Data Level Notice.	4	18	24	15	54	80	142	406
11. D062.J11-11, EOQ Buy Computation Worksheet: Termination Notice.	3	21	32	14	44	66	71	492
12. D062.J11-14, EOQ Buy Computation Worksheet: Interrogation Reply.	4	11	13	14	44	101	129	427
13. D062.J11-15, Index of Actions and Dollar Value Requirements, Parts I and II.								
Part I	11	80	31	14	112	69	93	333
Part II	16	88	29	16	111	74	94	315
14. D062.J11-18, Two Years Zero Demand Items.	9	124	75	29	153	113	105	135
15. D062.J11-19, Three Years Zero Demand Items.	7	78	51	35	138	119	143	172
16. D062.J11-20, Four Years Zero Demand Items.	8	56	32	17	108	107	136	270

APPENDIX B (Continued)

PART II, Section A (Continued)

NUMBER OF RESPONSES

	0	1	2	3	4	5	6	7
18. DO62.J11-21, Delete Coded EOQ Items Dropped From Master Files	14	112	60	20	133	119	83	202
19. DO62.J11-22, Special Coded EOQ Items.	14	60	49	22	148	141	122	187
20. DO62.J11-23, Nonrecurring Demand Notice.	10	128	62	24	154	116	94	155
21. DO62.J11-24, Management Control Notice.	24	71	44	33	179	135	104	153
22. DO62.J11-25, Interrogation by Application	16	64	52	19	145	180	100	167
23. DO62.V14-01, Items Peculiar to Obsolete Applications.	25	90	39	25	202	142	90	130
24. DO62.K77-01, EOQ/DSA Projection Executive Management Summary Report, Parts I, II, & III								
Part I	65	96	27	17	260	63	76	139
Part II	71	98	26	16	258	67	76	131
Part III	69	98	26	16	257	67	76	134
25.								
26.								
27. DO62.K77-02, EOQ/DSA Projection Index of Action & Dollar Value of Requirements	49	74	21	14	216	74	91	204
28. DO62.K77-03, EOQ/DSA Projection	66	81	17	13	221	68	97	180

APPENDIX B (Continued)

PART II, Section A (Continued)

NUMBER OF RESPONSES

	0	1	2	3	4	5	6	7
29. D062.S12-02, EOQ Buy/Budget Projection Index of Actions & Dollar Value of Requirements Action, Parts I, II, & III.								
Part I	23	31	18	8	115	68	106	374
30. Part II	38	40	17	8	126	66	105	343
31. Part III	39	41	17	9	128	64	105	340
32. D062.S12-03, EOQ Buy/Budget Projection Products EOQ Buy Computation Worksheets	18	24	6	6	61	53	92	483
33. D062.S12-04, Index of EOQ Items Offered ISSP in Long Supply	15	41	36	14	98	95	137	307
34. D062.S12-05, Excess Notice	18	48	33	21	87	106	136	294

PART II

Section B: Item Manager, Stock Control, and
Distribution System (D032)

- 0 No response
 1. Absolutely unnecessary
 2. Very often unnecessary
 3. Sometimes unnecessary
 4. May or may not be necessary
 5. Sometimes necessary
 6. Very often necessary
 7. Absolutely necessary

APPENDIX B (Continued)

PART II, Section B (Continued)

NUMBER OF RESPONSES

	0	1	2	3	4	5	6	7
35. D032.501-C1, Class Notifications.	21	42	40	28	90	110	131	281
36. D032.615-C1, Controlled Exceptions.	9	13	11	12	51	50	126	471
37. D032.451-C1/C2, Defense Supply Agency Accountable Balance Trans.	62	112	32	23	282	61	55	116
38. D032.505-C1, Item Management Jacket.	8	89	41	15	70	45	69	406
39. D032.632-C1, Item Capitalized Listing - Previous Back Order.	737	1	0	0	0	1	1	3
40. D032.501-C1 Processing Master Record Printout D032.507-C1	24	18	24	13	77	82	119	386
41. D032.ED1-C1, Transaction Register Category 1 Items. (Weekly)	65	45	3	0	66	15	41	508
42. D032.ED2-C1, Transaction Register Category 1 Items. (Weekly)	81	44	3	0	66	16	40	493
43. D032.503-C1, Transaction Register Hi-Value & Manager Review.	54	22	6	5	56	35	63	502
44. D032.661-C1, "X" Blocked Balances Listing	17	38	11	5	92	65	125	390
45. D032.663-C1, "Y" Blocked Balances Listing	54	49	16	7	160	77	112	268

APPENDIX B (Continued)

PART II, Section B (Continued)

NUMBER OF RESPONSES

	0	1	2	3	4	5	6	7
46. D032A.615-Pl, Priority Distribution System Controlled Exception	15	58	32	13	74	58	86	407
47. D032.804-Cl, Classified Item List.	68	81	22	13	234	64	60	201
48. D032.451-Cl/C2, Defense Supply Agency Accountability Balance Transfer	57	89	22	20	253	79	64	159
49. D032.FW1-Cl, Interrogation Replies on Controlled Exceptions - By Command.	52	82	22	7	258	108	81	133
50. D032.DA1-DA7, Item Status Reports	55	55	24	9	211	108	103	178
51. D032.G32-Cl, Items Capitalized Listing - Previous Back Order	59	70	25	11	254	92	89	143
52. D032.572-Cl, Requirements History Interrogation Reply.	43	37	16	8	161	121	119	238
53. D032.293-Cl, Requisition Control Active Masters By Site/Age	59	77	22	22	273	117	74	99

203

PART II

Section C: AMA Edit, Index, and Routing Subsystem (DL43B)

0. No response
1. Absolutely unnecessary
2. Very often unnecessary
3. Sometimes unnecessary
4. May or may not be necessary
5. Sometimes necessary
6. Very often necessary
7. Absolutely necessary

APPENDIX B (Continued)

PART II, Section C (Continued)

NUMBER OF RESPONSES

	0	1	2	3	4	5	6	7
54. DL43B.H81-02, Unidentified Data	49	84	24	17	217	115	90	147
55. DL43B.MT5-01, Cross Reference Records for Management Review.	48	68	16	20	201	116	112	162
56. DL43B.MT5-03, Local Management Discrepancies	49	73	19	20	225	106	99	152

APPENDIX B (Continued)

Part III

Every job in an organization is affected by information from data inputs, other related positions or functions, etc. People holding jobs usually develop a general impression of the factors which have a direct bearing on their work. For example, a system or activity is fairly good, provides fast service, is dependable, tends to contain errors, and so on.

The purpose of Part III is to obtain your overall impression of the automated systems which relate directly to your primary task of item management. To do this, Part III sets up a continuum for five specific conditions (e.g., timely to untimely, clear to vague, etc.) and a scale (e.g., extremely, quite, etc.) for expressing the degree to which each condition may exist.

Please place a check on the line under the one phrase of the scale which most accurately reflects your personal overall experience with the system as to its timeliness or untimeliness, accuracy or inaccuracy, etc.

1. The data and information provided by the D062, EOQ Buy Computation System are:

	Neither one or the other						NUMBER OF NO RESPONSES	
	Extremely	Quite	Slightly	Slightly	Quite	Extremely		
Timely	88	353	68	76	43	18	Untimely	84
Accurate	94	415	43	56	25	10	Inaccurate	87
Useful	405	242	17	10	1	1	Useless	60
Clear	175	383	30	21	10	4	Vague	103
Dependable	101	385	76	32	21	16	Undependable	94

APPENDIX B (Continued)

2. The D032 Item Manager Stock Control and Distribution System's data and information is:

	Neither one or the other					NUMBER OF NO RESPONSES
	Extremely	Quite	Slightly	Slightly	Quite	
Timely	105	345	73	55	34	85
Accurate	111	426	51	33	9	90
Useful	299	318	45	7	3	59
Clear	119	398	67	23	12	98
Dependable	108	390	83	31	8	93
						Untimely
						Inaccurate
						Useless
						Vague
						Undependable

3. The 1438 AMA edit, Index, and Routing Subsystem's data and information is:

	Neither one or the other					NUMBER OF NO RESPONSES
	Extremely	Quite	Slightly	Slightly	Quite	
Timely	65	284	87	45	35	112
Accurate	65	329	70	48	29	106
Useful	127	291	110	20	18	88
Clear	62	291	89	58	28	116
Dependable	67	304	82	47	25	118
						Untimely
						Inaccurate
						Useless
						Vague
						Undependable

APPENDIX B (Continued)

NUMBER OF
RESPONSES

4. The DO62 and DO32 automated data systems may be best described as: (Determine the one best response)
1. An organizational system which requires the item manager to perform activities in response to programmed demands. 50
 2. A tool to be used by the item manager to more effectively and efficiently perform the function of item management. 489
 3. A complex mechanical system which provides the item manager rigid data products requiring fixed responses from the item manager with little opportunity for him to exercise his personal judgment or to communicate his peculiar needs back to the system. 80
 4. Just another machine which mechanically performs programmed computations and processes data outputs which a manager uses with discretion in making decisions and performing job responsibilities. . . 91
 5. None of these: (Fill in your own description) 7
 - No response. 26
5. Your supervisor's dealings with the people he supervises may be best described as:
1. He is poor at handling people. 53
 2. He is not very good at dealing with people--does other things much better. 65
 3. He is fairly good at dealing with people. 180
 4. He is good at dealing with people--better than most. . 324
 5. He is very good at dealing with people--it is his strongest point. 113
 - No response. 8
6. Your supervisor's ability to help you resolve technical problems related to automated methodology and computer products may be best described as:
1. Poor 56
 2. Not very good 71
 3. Fairly good 129
 4. Good 239
 5. Very good 241
 - No response 7

APPENDIX B (Continued)

PART IV		NUMBER OF RESPONSES
1. How much does item management give you a chance to do the things at which you are best?		
1. A very good chance	.....	174
2. A fairly good chance	.....	301
3. Some chance	.....	167
4. Very little chance	.....	94
No response	.....	7
2. Has item management lived up to the expectations you had before you entered it?		
1. Yes in all respects	.....	95
2. In most ways	.....	421
3. In only a few ways	.....	166
4. Not at all	.....	53
No response	.....	8
3. If you "had it to do over again", would you enter the field of item management?		
1. Definitely yes	.....	223
2. Probably yes	.....	273
3. Probably no	.....	165
4. Definitely no	.....	76
No response	.....	6
4. If a young friend of yours with adequate qualifications and temperament was looking for a career field, would you advise him to aim for item management?		
1. Definitely yes	.....	159
2. Probably yes	.....	261
3. Probably no	.....	204
4. Definitely no	.....	112
No response	.....	7
5. In general do you feel that item managers are given adequate recognition when compared to that received by other managers in an AMA such as the technical services manager, or the production manager?		
1. Yes definitely	.....	41
2. In most respects	.....	159
3. In some respects	.....	284
4. Not at all	.....	254
No response	.....	5

APPENDIX B (Continued)

NUMBER OF
RESPONSES

6. If you had a chance to do the same kind of work for the same pay, but in another organization or company in the community, would you stay on your present job?

1. Definitely yes	.....	240
2. Probably yes	.....	312
3. Probably no	.....	116
4. Definitely no	.....	68
No response	.....	7

PART V

APPENDIX B (Continued)

6. No response
 1. Very well satisfied
 2. Fairly well satisfied
 3. Passive--neither satisfied or dissatisfied
 4. Fairly dissatisfied
 5. Very dissatisfied

	NUMBER OF RESPONSES					
	0	1	2	3	4	5
1. Are you satisfied that you have enough authority to do your job well?	5	180	294	64	137	63
2. How satisfied are you with your present job when you compare it to similar jobs in the AMA?	5	205	288	102	99	44
3. Are you satisfied with the progress you are making toward the goals you set for yourself in your present job?	8	140	311	76	119	89
4. Are you satisfied that the people in your organization give proper recognition to your work as an item manager?	7	192	272	118	85	69
5. Are you satisfied with the DO62 computer system generated printouts provided for your job?	7	169	414	73	58	22
6. Are you satisfied with the DO32 computer system generated printouts provided for your job?	9	155	427	79	56	17

APPENDIX B (Continued)

	NUMBER OF RESPONSES					
	0	1	2	3	4	5
7. How satisfied are you with job training and education available to you?	7	129	240	116	147	104
8. How satisfied are you with the proportion of available work time required to accomplish tasks generated by computer printout products?	9	98	321	74	164	77
9. On the whole, are you satisfied that you are accepted as a professional expert to the degree to which you feel entitled by reason of your position, training, and experience?	4	147	288	114	132	58
10. How satisfied are you with your present job in light of your career expectations?	6	157	274	87	120	99

PART VI

APPENDIX B (Continued)

0. No response
 1. Never
 2. Rarely
 3. Sometimes
 4. Rather often
 5. Nearly all the time
 6. Does not apply

	NUMBER OF RESPONSES						
	0	1	2	3	4	5	6
1. Feeling that you have too little authority to carry out the responsibilities assigned to you.	5	99	198	257	119	59	6
2. Being unclear on just what the scope and responsibilities of your job are.	5	135	294	198	75	29	7
3. Not knowing what opportunities for advancement or promotion exist for you.	7	119	187	181	114	118	17
4. Feeling that you have too heavy a work load, one that you can't possibly finish during an ordinary workday.	6	94	231	212	90	102	8
5. Feeling that you are not adequately prepared to handle your job.	5	259	277	152	28	16	6
6. Thinking that you'll not be able to satisfy the conflicting demands of various people over you.	6	157	306	166	71	32	5

APPENDIX B (Continued)

NUMBER OF RESPONSES

	0	1	2	3	4	5	6
7. Thinking that you'll not be able to handle the demands imposed upon you by the DO62 and DO32 systems' computer generated printouts.	5	226	276	154	54	21	7
8. Feeling that the individual demands of your supervisor are in conflict with the DO62 and DO32 systems' generated activities.	4	311	262	97	38	14	17
9. Bothered by the fact that you can't get needed information from the automated data systems to properly perform your job.	5	92	273	261	81	26	6
10. Bothered by the fact that the DO62 buy computation system provides too many unnecessary products which detract from other required activities.	7	108	236	258	87	59	8
11. Bothered by the fact that the DO32 IM Stock Control and Distribution System provides too many unnecessary products which detract from other required activities.	9	74	210	287	119	40	4
12. Feeling unable to influence your immediate supervisor's decisions and actions that affect you.	10	195	324	145	39	27	3

APPENDIX B (Continued)

NUMBER OF RESPONSES

	0	1	2	3	4	5	6
13. Feeling unable to influence the automated aspects of the buy computation system or stock control and distribution system which affect your work.	9	130	309	195	54	53	13
14. Not knowing just what people you work with expect of you.	9	245	314	110	32	24	9
15. Thinking that the amount of work you have to do may interfere with how well it gets done.	5	127	209	217	112	68	5
16. Not knowing just what the DO62 automated processes require of you in your job.	8	208	312	166	28	7	14
17. Not knowing just what the DO32 automated processes require of you in your job.	9	204	303	171	37	7	12

APPENDIX C

DESCRIPTIONS OF THE D062, D032 AND D143B
AUTOMATED DATA PROCESSING SYSTEMS

APPENDIX C

DESCRIPTIONS OF THE D062, D032 AND D143B AUTOMATED DATA PROCESSING SYSTEMS

A very brief description of the three ADP systems is provided to give the reader a general understanding of what each system involves.

D062--The EOQ Buy Computation System

This system provides EOQ item managers data for the requirements computation for Cost Category II Non-recoverable and Cost Category III expendable items. The D062 system uses data inputs from other automated systems together with item manager file maintenance to maintain demand history and compute requirements levels. The system computes monthly demand rates, support levels, safety levels, data levels, reorder levels and retention levels on all items managed. An EOQ computational concept is used within the system and it computes all items 4 times per month to determine buy items, termination items and quantities by applying the inventory of available assets to the criteria listed above. Outputs from these computations indicating actions to be taken are in the form of: (1) the EOQ master file--showing the levels, the available assets, and the item applications, (2) the stock control and distribution support levels for the military assistance program reimbursable levels, (3) the interservice support plans for requirements interrogation data, (4) the EOQ "buy" budget projection computation, and (5) management

reports and data to assist item management decision process. The system also provides other reports and management data to various levels of management on a weekly, quarterly, semi-annual and annual frequency.^{1, 2} In one sentence, it is a system to collect and store data, perform programmed computations, and provide management information for inventory control and management of assets meeting the economic order and stockage criteria.

D032--Item Manager, Stock Control and Distribution System

Once the requirements are defined as to quantities it becomes essential to apply a uniform item management system for property accounting, inventory control, and world-wide distribution of the assets. Requirements computation and the distribution pattern are closely interrelated and must be compatible to achieve effective and efficient support.

Item managers are provided D032 computer system products to facilitate efficient performance of item management functions. The system has replaced the need for manual review of each and every individual business transaction and thereby enhances the "management by exception" principle. This technique is ideal for computer application and permits computer

¹U.S. Department of the Air Force, Air Force Logistics Command, AFLC Logistics Control Center System (134), AFLCM 300-70 (Wright-Patterson AFB, Ohio, 26 May 1967).

²U.S. Department of the Air Force, Air Force Logistics Command, Computation of Requirements for the Economic Order Quantity Type Items, AFLCM 57-6 (Wright-Patterson AFB, Ohio, 26 June 1968).

processing of high volumes of transactions without human effort. This technique permits the item managers to concentrate their efforts on those events which do not fall within the established parameters for machine processing.

The Item Manager Stock Control and Distribution (IMSC&D) System provides for the accomplishment of a number of major tasks and processes. The following is a brief description:

World-wide Support. The IMSC&D System provides for timely support regardless of location. This includes distribution or re-distribution for initial and follow-on support, and rapid action on requisitions, follow-ups, cancellations and similar transactions.

Materiel Control. The system provides such information as: asset status, location of assets, condition of assets, and the status of each storage distribution point. The computer can automatically select the optimum point from which to make consumer shipments.

Selective Item Management. The IMSC&D system provides for selective item management critical items, hi-value items, Technical Order Compliance kits, classified items, equipment, and any other item category breakout desired.

Surveillance of Stock Control Actions. The system automatically performs or provides: edit, research, and recording of requisitions until supplied; status to customers; automatically releases back-orders; repair and overhaul scheduling; and accurate transaction recording.

File Maintenance. The system mechanically maintains such files as: accountable balances; valid document and back-order files; voucher history; cross reference of old to new stock numbers; interchangeable grouping; requirements history; exception control; transportation data; document control; various tables such as stock record accounts, prime class, etc; reconciliation of depot due outs and base due ins; and inventory comparison and adjustments.

Requirements Computation Data. Provides integrated means for mechanically accumulating essential detailed data necessary for valid requirements computations.

Interchangeability and Substitution. The system provides for automatic and mechanical processing of requisitions against all assets which are considered interchangeable or suitable substitutes for the prime item when it is unavailable.

Computer Reports and Management Products. The system is able to produce numerous reports and management products based upon its internally stored data. The D032 computer products provided the EOQ item manager are included in Part II of the questionnaire, and are analyzed in Chapter V.^{3, 4}

³U.S. Department of the Air Force, Air Force Logistics Command, Item Management Stock Control and Distribution System (D032), AFLCM 300-20 (Wright-Patterson AFB, Ohio, 24 May 1968).

⁴U.S. Department of the Air Force, U.S. Air Force Supply Manual, AFM 67-1, Vol. III, Part One, "Item Manager Stock Control and Distribution Procedures", (Washington D.C., 21 August 1967).

D143B--AMA Edit, Index and Routing Subsystem

This is a subsystem of D143B--Air Force Recoverable Assembly Management System (AFRAMS), which is being developed to improve the total logistics management of recoverable assemblies (XD and XF class items) and consists of a series of data subsystems designed to give managers "complete visibility" of these assets so that managerial decisions can be made "lead time away" to help reduce management by crisis. AFRAMS will create an integrated series of data systems enabling management to make its decisions on a "total knowledge" basis rather than on piecemeal or incomplete information.

D143B is designed to provide all using systems with a particular segment of management data for all stock numbers. For the item manager it serves as his sole entry point for stock control data i.e., Expendibility-Recoverability-Repairability-Cost (ERRC) codes, unit cost, unit of issue, etc.) which enter the Air Force stock list system at the AMA level. It also verifies stock record account numbers (SRAN's) and routes incoming products to data systems and Air Materiel Areas.^{5, 6}

⁵U.S. Department of the Air Force, U.S. Air Force Supply Manual, AFM 67-1, Vol. III, Part Five, "Air Force Recoverable Assembly Management System", (Washington D.C., 1 October 1967).

⁶U.S. Department of the Air Force, Air Force Logistics Command, AMA Edit, Index, and Routing Subsystem (D143B), AFLCP 300-191, (Wright-Patterson AFB, Ohio, 11 July 1967).

1. SYSTEM DESIGNATOR CODE AND TITLE. DO62 Economic Order Quantity (EOQ) Buy Computation System.
2. PRESCRIBING DIRECTIVES. AFLCR 57-4.2 and AFLCM 300-51.
3. PURPOSE. This system provides requirements computation for Cost Category II Non-Recoverable and Cost Category III items. An Economic Order Quantity (EOQ) is applied to this computation. The EOQ master file contains data required to prepare the necessary output tapes. An application master file is maintained to provide these data in various output products. Four times per month computer file maintenance runs insure compatibility between input master files and the EOQ master file. This DO62 system computes daily issue rates, support levels, safety levels, data levels, reorder levels, termination levels, and retention levels. Assets are compared with these levels and computation work sheets are prepared. Notices are provided recommending changes in cost category and procurement source codes.
4. OUTPUT INTERFACE WITH OTHER SYSTEMS. This system provides input data to the IMSC&D System (DO32), the SSM SC&D System (DO34A), the MAST System (DO37), the Defense Materiel Utilization and Disposition Program Management System (DO67), and the EOQ Requirements Projection/RIAR Computation System (DO75).
5. INPUT TO THE SYSTEM. The flow of data into the DO62 system is by card and tape and generates from DO32, DO34A, DO37, and D104 Stock Balance and Consumption Report.
6. ADPE USED AND OPERATIONAL SITES. This system is operated on 7080/1401 equipment and operates at all AMAs and Hq AFLC.
7. PRODUCTS AND RECIPIENTS. As indicated in the following AFLC Forms 257.

Change 3
AFMCP 300-3

SYSTEM OUTPUTS									
DATA ENTRY WORK		ECONOMIC ORDER QUANTITY (EOQ) BUY COMPUTATION SYSTEM			AF REFERENCE CODE				
					D062				
					AFMCP 300-51				
					PURCHASING DIRECTIVE				
AFMCP IDENT NO	TITLE OF OUTPUT	TYPE OUTPUT (Type, Code, or Medium)	FREQ	NO. COPIES	RECIPIENTS	RCS NUMBER ASSIGNED	DO-AY STATUS CODE	PURPOSE	
D062.ELI-01	WSCAD Levels		Weekly	1	D062		D	To update WSCAD support levels and provide MAP levels for determining reimbursable status.	
D062.ELJ-01	ISSP Requirement Interrogation Data	Tape	Weekly	1	D067		D	To provide data on weekly buy items to the ISSP (D067) System to be used for mechanical inter-rogation of the ISSP data.	
D062.ELM-01	EOQ Master File	Tape	Weekly	1	D062		D	Used by the WSCAD System (D062) in determining redistribution and return of APB excess assets.	
D062.JII-01	Executive Management Summary Reports, Parts I and II	Printout	Weekly	As Rqrd	AFMCP (MCSR 1) D/MH (AR)	LOG-S279	D	Part I provides the IM with item, dollar summaries by item, and tallies of selected categories for evaluating depot workloads. Part II provides a breakout of selected tallies reflected in Part I, except for computed items.	
D062.JII-01	Executive Management Summary Report, Part IV	Printout	Monthly	As Rqrd	AFMCP (MCSR 1) D/MH (AR)	LOG-S279	D	Provides the IM with a summary and status of computed items by unit cost breakout.	
D062.JII-01	Executive Management Summary Report, Part III	Printout	Qtrly	As Rqrd	AFMCP (MCSR, D/MH (AR)	LOG-S279	D	Part III provides a tally of all special coded items which result in a printout, by ERRC, bachelor items, IAS Groups, and by depot totals. Hq AFMCP will use report to evaluate funding and for management review.	
D062.JII-02	Executive Management Summary Report (By Class) Parts I, II, and III	Printout	Weekly	As Rqrd	D/MH		D	Part I provides the IM with item and dollar summaries of items, and tallies of selected categories by class totals. Part II provides a breakout of selected tallies reflected in Part I. Part III provides a tally of all special coded items which result in a printout, by ERRC, bachelor items, IAS Groups, and by class totals.	
D062.JII-03	Manual File Maintenance Transaction Listing	Printout	Weekly	As Rqrd	D/MH		D	Provides the IM with a record of each AFMCP Form 46 file maintenance action that was posted during the current cycle. The product shows the element of data changed, both "To" and "From" by actual S/N within IAS Group S/N.	
D062.JII-04	EOQ Exception Listing, Parts I, II, and III	Printout	Weekly	As Rqrd	D/MH		D	Provides the IM with a record of erroneous and/or missing data on which corrective action is required.	
D062.JII-05	PSC Charged to IM, LP, or Other Services' Stock Fund	Printout	Weekly	1	D/MH		D	Provides the IM with stock numbers of items deleted from file due to SIC recoding to local purchase, local manufacture or other services' stock fund.	
D062.JII-06	Change of Category	Printout	Weekly	1	D/MH		D	Provides the IM with item information to be forwarded to gaining requirements system.	

AFMCP FORM 257
REPLACES MCB FORM 25 MAR 61 WHICH IS OBSOLETE

D062-2

SYSTEM OUTPUTS									
DATA ENTRY TITLE		AF REFERENCE CODE		PAGE		PAGE		PAGE	
ECONOMIC ORDER QUANTITY (EOQ) BUY COMPUTATION SYSTEM		D062.		2		5		PAGE	
AFMCP ENTRY NO.	TITLE OF OUTPUT	TYPE OF OUTPUT (Printout, Copy, or as required)	FREQ	NO. COPIES	RECIPIENTS	RCS NUMBER ASSIGNED	D-DAY STATUS CODE	PURPOSE	
D062.J11-07	Transfer of Prime To: ()	Printout	Weekly	1	D/M		D	Provides the IM with historical and pertinent data to be forwarded to the gaining AMA.	
D062.J11-08	EOQ Item Code Change Notice	Printout	Weekly	As Rqrd	D/M		D	Provides the IM with a notice of items involving actual or recommended catalog changes.	
D062.J11-09	EOQ Buy Computation Worksheet: Buy Notice	Printout	Weekly	1	D/M		D	Provides the IM with a complete record of data required to initiate procurement action.	
D062.J11-10	EOQ Buy Computation Worksheet: Data Level Notice	Printout	Weekly	1	D/M		D	Provides the IM with the computed levels, asset position, and demand history indicating procurement action within 90 days.	
D062.J11-11	EOQ Buy Computation Worksheet: Termination Notice	Printout	Weekly	1	D/M		D	Provides the IM with computed levels and asset position indicating excess procurement to be terminated.	
D062.J11-14	EOQ Buy Computation Worksheet: Interrogation Reply	Printout	Weekly	1	D/M		D	Provides the IM with automatic or requested pertinent data on an item requiring review.	
D062.J11-15	Index of Actions and Dollar Value of Requirements, Parts I and II.	Printout	Weekly	As Rqrd	D/M		D	Part I provides the IM with summary of all items requiring procurement action by class and item manager. Part II provides a summary of all items with assets requiring termination.	
D062.J11-18	Two Year Zero Demand Items	Printout	Annual	As Rqrd	D/M		D	Provides printout for review for justification of retention of assets at IM level.	
D062.J11-19	Three Year Zero Demand Items	Printout	Annual	As Rqrd	D/M		D	Provides a printout for review at Branch level for justification of retention or disposal of assets.	
D062.J11-20	Four Year Zero Demand Items	Printout	Annual	As Rqrd	D/M		D	Provides a printout for review at Division level for retention of disposal as applicable.	
D062.J11-21	Delete Coded EOQ Items	Printout	Qtrly	As Rqrd	D/M		D	Provides the IM with a record of EOQ items dropped from the master file.	
D062.J11-22	Special Coded EOQ Items	Printout	Qtrly	As Rqrd	D/M		D	Provides the IM with a listing of items which have special codes, i.e., insurance, obsolete, etc.	
D062.J11-23	Nonrecurring Issue Notice	Printout	Qtrly	As Rqrd	D/M		D	Provides the IM with an item listing for review and subsequent action to purify item history.	

REPLACES MCS FC 61, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000

AFMCP FORM 300-3
JAN 61

Change 3
AFM 300-51

SYSTEM OUTPUTS									
DATA SYSTEM TITLE		AF REFERENCE CODE			AFM 300-51				
ECONOMIC ORDER QUANTITY (EOQ) BUY COMPUTATION SYSTEM		D062.			AFM 300-51				
APLC IDENT NO.	TITLE OF OUTPUT	TYPE OF OUTPUT (Printout, Microfilm, or Magnetic)	FREQ	NO COPIES	RECIPIENTS	RCS NUMBER ASSIGNED	D-DAY STATUS CODE	PURPOSE	PAGE
D062.K71-24	Management Control Notice	Printout	Quarterly	As Rqrd	D/24		D	Provides the IM with an item listing for review of data and/or IM controls used in computing EOQ items.	1
D062.K71-25	Interrogation by Application	Printout	As Rqrd	1	D/24		D	Provides an itemized listing by application to review asset position when increasing or decreasing program or special requirements are evident.	
D062.K71-01	EOQ Item, Executive Management Summaries, Parts I, II, and III	Printout	Monthly	As Rqrd	D/24		D	Part I provides the IM with the quantity and dollar value of each category of items requiring buy action prior to capitalization. Part II provides the same information as Part I, except the items are summarized by budget code. Part III provides the same data as Part I, except the items are summarized by IM/RSQ within budget project.	
D062.K71-02	EOQ/ISA Projection, Index of Action and Dollar Value of Requirements	Printout	Monthly	As Rqrd	D/24		D	Part I provides the IM with a condensed detail and summary of items requiring buy action prior to capitalization to ISA management.	
D062.K71-03	EOQ/ISA Projection	Printout	Monthly	As Rqrd	D/24		D	Provides the IM with a complete record of data needed to initiate procurement action on items pending transfer action to ISA management.	
D062.K71-04	EOQ/ISA Projection, Item Coded to ISA, Parts I and II	Printout	Monthly	2	AFIC (MSTU)	AP-SL28	D	Part I reflects the dollar value of average annual demands of items scheduled for transfer to ISA and that will reach a buy position by the end of the FY after capitalization date. Part II reflects the dollar value of average annual demands of items pending ISA transfer that will not reach a buy position by the end of the FY after capitalization date.	
D062.K71-F1	Quality Analysis Interrogation for Cat II Items	Printout	As Rqrd	As Rqrd	D/24		D	To provide a printout for verification of input data to requirements computations, based on sampling procedures and critical factors for IE2 and IF2 items.	
D062.K71-F2	Quality Analysis Interrogation for Cat III Items	Printout	As Rqrd	As Rqrd	D/24		D	To provide a printout for verification of input data to requirements computations, based on sampling procedures and critical factors for IE3 and IF3 items.	
D062.K71-F3	Quality Analysis Interrogation for Q/K Items	Printout	As Rqrd	As Rqrd	D/24		D	To provide a printout for verification of input data to requirements computations, based on sampling procedures and critical factors for items having quantitative requirements.	

APLC FORM 257
JAN 61

REPLACES MCS FORM 84, MAR 61, WHICH IS OBSOLETE

Change 3
AFMCP 300-3

SYSTEM OUTPUTS									
SYSTEM OUTPUTS		AF REFERENCE CODE		PAGE 5 OF 5		AFMCP 300-3			
AFMCP IDENT NO.	TITLE OF OUTPUT	TYPE OF OUTPUT (Indicate Form No. or Application)	FREQ	NO. COPIES	RECIPIENTS	WCS NUMBER ASSIGNED	D-DAY STATUS CODE	PURPOSE	
D062.T15-P1	Summary Analysis of EOQ Items, Parts I, II, III, and IV	Printout	Semi-annual	As Rqrd	D/MM		D	Part I provides a noncumulative report by unit cost and AD dollar value reflecting the actual number of items and dollars (in thousands) for each category. Part II provides an accumulative report of all figures in Part I plus a count of new items with zero demands. Part III provides a noncumulative report of each category in Part I by procurement lead time of 1 through 12 months and over 12 months. A page for each I/T or a negative report. Part IV provides a summary of EOQ application data by number of peculiar items, number of items in eight other number of application ranges and the per cent of each range to the total items with applications.	
D062.T15-P1	Summary Analysis of EOQ Items (AMA Report) Parts I, II, III, and IV	Tape	Semi-annual	1	AFMCP (SGDD)	LOG-3355	D	To provide Hq AFMCP with data from the D062 system in support of prime items in the D032 and D034 systems. This data will be used in preparing the Summary Analysis of EOQ Items (AFMCP Report), D062.Z16-P1.	
D062.V14-01	Items Peculiar to Obsolete Applications	Printout	As Rqrd	As Rqrd	D/MM		D	Provides peculiar item listing of obsolete application to the IM for review and applicable action.	
D062.Y23-01	Reclaimable Item Deck	Card	As Rqrd	2 ea	D/MM, NTR		D	To provide item data for aircraft and aircraft engines programmed for reclamation for information to other military services.	
D062.X1B-01	ISSP Reclamation Data	Tape	As Rqrd		D067		D	To provide data on items scheduled for reclamation which may be available through ISSP.	
D062.Z16-P1	Summary Analysis of EOQ Items (AFMCP Report), Parts I, II, III, and IV	Printout	Semi-annual	As Rqrd	AFMCP (MCSR)		D	Part I will provide a noncumulative report, by unit cost and average AD dollar value, reflecting the number of items and dollars for each category. Reports will be prepared for each AMA, separated by items carried in the D032 and D034 systems and a consolidated AFMCP report. Part II will provide a cumulative report by unit cost, for each category of average AD dollar value. Reports will be prepared for each AMA, separated by items carried in the D032 and D034 systems and a consolidated AFMCP Report. Part III will provide a noncumulative report, by unit cost and average AD dollar value, reflecting the number of items and dollars for each category and separated by procurement lead time categories of 1 through 12 months and over 12 months. Reports will be prepared for each AMA, separated by items carried in the D032 and D034 systems and a consolidated AFMCP report.	

D062-6

AFMCP FORM 257
JAN 61
REPLACES MCB FORM 54 MAR 62 WHICH IS OBSOLETE

AUTOMATED DATA SYSTEM PRODUCTS			DATA SYSTEM TITLE Item Management Stock Control and Distribution System		DSO CODE D032		PAGE 1 OF 14		PAGES					
PRESCRIBING DIRECTIVES AFPLCM 300-20 Part Three, Vol III, AFM 67-1			INPUT FLOW of data generates from 24 other systems and is received by card or direct tape input, i.e., requisitions, follow-ups, and cancellations; file maintenance and post-post actions; on work asset reporting cards; confirmations, denials, and receipts.		ADPE USED - OPERATING SITES 7080 at all AMAS		This system is designed to improve materiel management and customer support through standardization of supply distribution decisions and AMA procedures and processes, and to provide rapid and positive response to logistics demands. The system is supported by maximum mechanization in the maintenance of accountable balance, back order, exception and document control files for automatic shipment release, clearance of suspended documents, reduction in pipeline and transportation costs.							
PURPOSE OF DATA SYSTEM														
PCN	PRODUCT TITLE	TYPE PRODUCT Tape, Card or Printout (Indicate Form No. if applicable)	FREQ	NO. COPIES	RECIPIENTS	REPORTS CONTROL SYMBOL ASSIGNED						D-DAY STATUS CODE	PURPOSE	
D032.020-C1	Updated SRAN Table	Tape	Weekly	1	D032A	N/A						C-2	To provide updated SRAN table.	
D032.021-C1	Invalid SRAN File Maintenance Transaction Listing	Printout	Weekly	1	CS	N/A						C-2	To advise distribution data branch (NPD) of SRAN inputs which were rejected.	
D032.071-C1	Deleted R/C Masters	Printout	Weekly	1	IM (D/MM)	N/A						C-2	To advise the IM of duplicate requisitions which were deleted from R/C because of SRAN consolidation/change.	
D032.08F-C1	FIA Transactions (SLC)	Tape	As Rqr	1	D050	E/A						C-2	To increase gaining AMA FIA balance.	
D032.13H-C1	Gross Depot Due Out Transactions	Tape	As Rqr	1	DL43H	N/A						C-2	To provide gross AMA due out quantities to DL43H subsystem	
D032.191-C1	Follow-up on Controlled Exceptions (Priorities 1-8/Misc)	Stuffer	Daily	1	NPD	N/A						C-2	Provides computer follow-up on overage priority 1-8 controlled exceptions.	
D03.192-C1	Follow-up on Controlled Exceptions (Priorities 9-20)	Stuffer	Daily	1	NPD	N/A						C-2	Provides computer follow-up on overage priority 9-20 controlled exceptions.	
D032.194-C1	Invalid Corrections	Stuffer	Daily	1	NPD	N/A						C-2	To advise NPD of corrected exceptions which could not be processed because of erroneous data.	
D032.195-C1	Follow-up on Controlled Exceptions - Manager Review	Stuffer	Daily	1	IM (D/MM)	N/A						C-2	Provides computer follow-up on overage Manager Review Controlled Exceptions.	

AUTOMATED DATA SYSTEM PRODUCTS (CONTINUATION SHEET)									
PCB	PRODUCT TITLE	TYPE PRODUCT TAPE, CARD OR (SPECIFY FORM NO. IF APPLICABLE)	FORM	NO. COPIES	REQUIREMENTS	REPORTS CONTROL STATUS ASSIGNED	STATUS CODE	REMARKS	PAGE 2 OF 14 PAGES
D032.196-C1	Follow-up on Controlled Exceptions - Exception Errors	Stuffer	Daily	1	NPD to CSC	N/A	C-2	To advise programmer of controlled exceptions which cannot be processed because of system error.	
D032.25D-C1	PDS Document Control	Tape	Daily	1	D032A	N/A	C-2	To control input requisitions with duplicate document numbers.	
D032.25F-C1	IM Confirmed Shipments	Tape	Daily	1	D108	N/A	C-2	To provide data for pipeline report. (RCS: LOG S366 Series)	
D032.25H-C1	Daily Edited Transactions	Tape	Daily	1	DLA3BD	N/A	C-2	To provide transactions to DLA3BD subsystem for edit, indexing and routing functions.	
D032.25J-C1	IM Initial Requisitions	Tape	Daily	1	D108	N/A	C-2	To provide data for pipeline reports. (RCS: LOG S366 Series)	
D032.26G-C1	Follow-ups on Delinquent Confirmations	Tape	Monthly	1	M024	Exempt	C-2	To notify shipping activity of unconfirmed shipments.	
D032.26JA	Unconfirmed Shipments, Denials and Reversals	Tape	Monthly	1	D039	N/A	C-2	To provide mechanized data consisting of unconfirmed shipments for building additive requirements in the Replacement Item Required Computation System (D039).	
D032.26L-C1	Follow-up on Delinquent Confirmations	Card DD Form 1348m	Monthly	1	D009	N/A	C-2	Provides computer follow-up on unconfirmed shipments.	
D032.291-C1	Unconfirmed Shipments Listing	Printout	Daily	4	SQE	N/A	C-2	Provides inventory component data concerning unconfirmed shipments to be used in research.	
D032.299-C1	Requisition Control Master by Document Number	Stuffer	Daily	1	NPD	N/A	C-2	Provides data recorded on R/C in response to an interrogation or as an automatic output.	
D032.292-C2	Requisition Control Manager Notification	Stuffer	Daily	1	NPD	N/A	C-2	Provides data recorded on R/C as an automatic output when specified conditions are met.	

AUTOMATED DATA SYSTEM PRODUCTS (CONTINUATION SHEET)									
PAGE 3 OF 14 PAGES		DSD CODE D032		PURPOSE					
PCB	PRODUCT TITLE	TYPE PRODUCT OR PRINTOUT (INDICATE FORM NO. IF APPLICABLE)	FREQ	NO. COPIES	RECIPIENTS	REPORTS CONTROL SYMBOL ASSIGNED	DATA STATUS CODE		
D032.293-C1	Requisition Control Active Masters by Site/Age	Printout	Daily	4	NPD	N/A	C-2	Provides data recorded on R/C in response to an interrogation.	
D032.295-E1	Unconfirmed Shipments - Result of Denial	Printout	Daily	4	IM (D/MK)	N/A	C-2	Provides the IM with data concerning unconfirmed shipments when a denial is received.	
D032.296-E1	Requisition Control Master by Document Number - NORS	Stuffer	Daily	1	NORS Control Center	N/A	C-2	Provides NORS data recorded on R/C in response to an interrogation.	
D032.296-E2	Requisition Control Master Notification - NORS	Stuffer	Daily	1	NORS Control Center	N/A	C-2	Provides NORS data recorded on R/C as an automatic output when specified conditions are met.	
D032.297-E1	NORS R/C Masters (Status Listing)	Printout	Daily	6	NORS Control Center	N/A	C-2	Provides daily listing of all incomplete NORS requisitions to be used for control purposes.	
D032.298-C1	Headers With no Trailers and no Back Orders or Open Quantity	Printout	Daily	1	NPD to CSC	N/A	C-2	Provides notification to data services of possible system error because of lack of feedback from previous cycle.	
D032.41A-C1	Processing Masters	Tape	Weekly	1	D062	N/A	C-2	To provide data for EDQ.	
D032.41H-C1	DMCAD Shipping Documents	Tape	Daily	1	D009	N/A	C-2	To provide shipping data.	
D032.41I-C1	Processing Errors	Printout	Daily	1	Programmer	N/A	C-2	Provides data to programmer for research of computer processing errors.	
D032.43H-E1	DMCAD Stock List Change Shipments	Tape	As Rqr	1	D009	N/A	C-2	To provide shipping data.	
D032.43I-C1	DSA Balance Cards	Card	Weekly	1	DSA Acty	Exempt	C-2	Provides notification to DSA of balance transferred to DSA on capitalization.	
D032.43I-C2	DSA Accountable Balance Transfer	Printout	Weekly	2	DSA Acty	Exempt	C-2	Provides listing of item capitalized to DSA.	
D032.43I-C1	Army Material Release Orders	Card	Weekly	1	Army Acty	Exempt	C-2	To provide MRO data to the Army.	

AUTOMATED DATA SYSTEM PRODUCTS (CONTINUATION SHEET)									
PCS	PRODUCT TITLE	TYPE PRODUCT Tape, Card or Printout (Indicate in Remarks if Applicable)	FORM	NO. COPIES	RECIPIENTS	REPORTS CONTROL SYMBOL ASSIGNED	DATA STATUS CODE	PURPOSE	
D032.432-C2	Army Material Release Orders	Printout	Weekly	2	Army Acty	Exempt	C-2	To provide MRO data to the Army.	
D032.464-C1	PTB Processing Masters	Tape	Daily	1	D032A	N/A	C-2	To provide data for PIS.	
D032.468-C1	PTB Back Order Masters	Tape	Daily	1	D032A	N/A	C-2	To provide data for PIS.	
D032.461A	Back Orders for D039	Tape	Monthly	1	D039	N/A	C-2	To provide mechanised data consisting of back orders for building additive requirements in the Replacement Item Requirement Computation System (D039).	
D032.461-E1	Weekly O/P "T" Asset List	Printout	Weekly	12	NPR	N/A	C-2	Provides Listing of assets held in O/P "T" (Bitterwine).	
D032.501-C1	DMSCAD Inventory Masters and Transactions	Tape	Daily	1	D008	N/A	C-2	To provide data for inventory.	
D032.501-C1	WRM Masters	Tape	As Req/ Daily	1	D134	N/A	C-2	To provide data for WRM.	
D032.501-C1	Master Deletions	Tape	Daily	1	D143BD	N/A	C-2	To provide processing master deletion data to D143BD.	
D032.501-C1	Processing Master Record Printout	Stuffer	Daily	1	IM (D/MM)	N/A	C-2	Provides data as contained on the processing master records as a result of interrogation, or automatically.	
D032.502-C1	Class Notification	Stuffer	Daily	1	IM (D/MM)	N/A	C-2	Provides the IM with messages when certain conditions, such as first E/O, are met.	
D032.503-C1	Daily Hi-Value/Manager Review Transaction Register	Printout	Daily	2	IM (D/MM and SOE)	N/A	C-2	Provides daily listing of accountable type transactions for Hi-Value and Manager Review coded items.	
D032.504A	B/C EV Actions	Card	Daily	1	NPR	N/A	C-2	Card output for each back order requisition being supplied by contractor.	
D032.505-E1	Item Management Jacket for IM	Stuffer	Daily	1	IM (D/MM)	N/A	C-2	Provides the IM with management data concerning items managed, including I&S group relationship.	

AUTOMATED DATA SYSTEM PRODUCTS (CONTINUATION SHEET)									
PCA	PRODUCT TITLE	TYPE PRODUCT Tape, Card or Printout (Indicate in Remarks AS APPROPRIATE)	FREQ	NO. COPIES	RECEPIENTS	REPORTS CONTROL SYMBOL ASSIGNED	DATA STATUS CODE	PURPOSE	DSD CODE DO32
DO32.506-C1	Item Management IATs	Card	Daily	1	IM (D/MM)	N/A	C-2	Provides the IM with an inventory adjustment transaction card when a denial is processed.	
DO32.507-C1	Processing Master Interrogation Replies	Stuffer	Daily	1	IM (D/MM)	N/A	C-2	Provides elements of data contained on the processing master record as a result of an interrogation.	
DO32.508A	P/C EAD Changes	Card	Daily	1	IM (D/MM)	N/A	C-2	Provides data concerning estimated availability date of back order.	
DO32.521-C1	Back Order Interrogations	Printout	Daily	1	IM (D/MM)	N/A	C-2	Provides lists of back orders by stock number as a result of an interrogation.	
DO32.522A	Weekly BV Action List	Printout	Weekly	1	NPR	N/A	C-2	Weekly printout of back order requisition to be supplied by contractor.	
DO32.53F-C1	FIA Transactions	Tape	Daily	1	DO50	N/A	C-2	To provide data for FIA records.	
DO32.53N-C1	DL43H Transactions	Tape	Daily	1	DL43H	N/A	C-2	To provide daily transaction data for DL43H subsystem as required.	
DO32.53P-C1	DL43K Transactions	Tape	Daily	1	DL43K	N/A	C-2	To provide daily transaction data for DL43K subsystem as required.	
DO32.572-C1	Requirements History Interrogation Replies	Stuffer	Daily	1	IM (D/MM)	N/A	C-2	Provides data as reflected on requirements history file, as a result of an interrogation.	
DO32.590-11	TMSOAS Logistics Transfer Records	Tape	As Rqd	1	DL43M Sys (Losing ANA)	N/A	C-2	Transfer of data from IM to IM resulting from SLC.	
DO32.591-11	Logistics Transfer Error Data	Printout	As Rqd	1	Local SLC Monitor (NSO)	N/A	C-2	Notification of SLC to Phase-out ANA.	
DO32.611-C1	DL43B/DO32 Incompatibility Notices	Tape	Daily	1	DL43BD	N/A	C-2	To provide master incompatibility data for DL43B.	
DO32.611-C1	Controlled Exception Errors (Programmer)	Stuffer	Daily	1	CS	N/A	C-2	Advises the programmer of errors in the assignment of exception codes.	

AUTOMATED DATA SYSTEM PRODUCTS (CONTINUATION SHEET)									
PCN	PRODUCT TITLE	TYPE PRODUCT TAPE, CARD OR PRINTOUT (UNLESS OTHERWISE SPECIFIED)	FREQ	NO. COPIES	RECIPIENTS	REPORTS CONTROL SYMBOL ASSIGNED	D-BAY STATUS CODE	PURPOSE	PAGE 6 OF 14 PAGES
D032.612-C1	Controlled Exceptions - Manager Review and FMS	Stuffer	Daily	1	IK (D/MX)	N/A	C-2	Provides notification of exceptions on manager review or FMS requisitions.	
D032.613-C1	AFLC Form 549, ADPE - Controlled Exception Input/Output Card	Card	Daily	1	NPD	N/A	C-2	Card output for each controlled exception which is reinput with corrected data.	
D032.614-C1	Uncontrolled Exceptions	Stuffer	Daily	1	NPD	N/A	C-2	Provides notification of uncontrolled exceptions, i.e., file maintenance types, etc.	
D032.615-C1	Controlled Exceptions - Priorities 1-8	Stuffer	Daily	1	NPD	N/A	C-2	Provides notification of controlled exceptions for priority 1-8 requisitions.	
D032.616-C1	Controlled Exceptions - Priorities 9-20 and Miscellaneous	Stuffer	Daily	1	NPD	N/A	C-2	Provides notification of controlled exceptions for priority 9-20, and also for miscellaneous transactions.	
D032.633-C1	DOS AUTODIN Transactions	Tape	Daily	1	MO24	Exempt	C-2	To provide data to AF activities.	
D032.634-C1	D032E Status Transactions	Tape	Daily	1	OOAMA (CS) For D032B	N/A	C-2	Provide D032E System (FMS) with initial status on requisitions submitted by Navy activities on JSL recoverable items.	
D032.631-C1	Manager Review MEAs/RDOs	Card	Daily	1	NPD	N/A	C-2	Card output for each manager review MEA and RDO for manager approval prior to shipment.	
D032.631-C2	FMS Information	Card	Daily	1	NPD	N/A	C-3	Card output for FMS to update status file.	
D032.631-C4	MAE Action	Card	Daily	1	NPD	N/A	C-2	Card output of all "MAP" "Q" status cards for review and approval.	
D032.631-C5	Manager Review Suspense	Card	Daily	1	NPD	N/A	C-2	Card output to permit control of manager review MEAs/RDOs being processed for approval.	
D032.631-C6	Suspense Document File	Card	Daily	1	NPD	N/A	C-2	Card output for all requisitions which require special marking or processing (suspended requisitions).	

AUTOMATED DATA SYSTEM PRODUCTS (CONTINUATION SHEET)									
ICB	PRODUCT TITLE	TYPE PRODUCT (PRINTOUT, TAPE, CARD OR UNCLASSIFIED BY AS APPLICABLE)	FREQ	NO. COPIES	REQUIREMENTS	REQUIRE CONTROL SYMBOL, ADDRESS	DATA STATUS CODE	PURPOSE	DO32 CODE PAGE 7 OF 14 PAGES
DO32.631-C7	CA/CB Actions	Card	Daily	1	NPD	N/A	C-2	Status cards for CA and CB actions for amotom of additional data prior to submission to requisitioner.	
DO32.631-C8	ISA Funding Records	Card	Daily	1	HO75	N/A	C-2	Card output for requisitions to be passed to ISA for HO75 system.	
DO32.631-C9	TCR Records	Card	Daily	1	DO09	N/A	C-2	To provide data to shipping activity.	
DO32.632-C1	Items Capitalized (Former B/O)	Card	Daily	1	IM (D/MM)	N/A	C-2	Card output for each item on back order at the time of capitalization.	
DO32.632-K1	Capitalized Items Back Order List	Printout	As Req	1	IM (D/MM)	N/A	C-2	Listing of items on back order at the time of capitalization.	
DO32.661-C1	X-Blocked Balance List	Printout	Weekly	4	IM (D/MM)	N/A	C-2	Listing of items frozen (X-blocked as a result of a denial) over 10 days.	
DO32.662A	Y-Blocked Balance List	Printout	Weekly	4	IM (D/MM)	N/A	C-2	To provide the IM with a list of those items having a Y-block balance for over 10 days.	
DO32.663A	Negative Balance List	Printout	Weekly	4	IM (U/MM)	N/A	C-2	To provide the IM with a list of those items having a negative balance over 7 days.	
DO32.721-K1	Requisition Control Interrogation Replies	Printout	As Req	1	NPD	N/A	C-2	Provides data recorded on R/C in response to an interrogation.	
DO32.762-C1	Unprocessed Back Order Interrogations	Printout	As Req	1	IM (D/MM)	N/A	C-2	To provide a listing of unprocessed B/O interrogations.	
DO32.761-C1	Back Order Master Interrogation Replies	Printout	As Req	2	NPD	N/A	C-2	Provides data for specific type back orders as a result of an interrogation.	
DO32.800-C1	IM/ISSP Assets	Tape	As Req	1	DO67	N/A	C-2	Provide balances to ISSP system.	
DO32.801-C1	FIA Reconciliation Records	Tape	As Req	1	DO50	N/A	C-2	To reconcile DO32 and FIA records.	
DO32.803-C1	Variable Balance Report	Printout	Qtrly	1	AFIC (ACDMM)	LOG-JUL19	C-2	Provides data concerning the number of variable balances reflected in the processing run.	

AUTOMATED DATA SYSTEM PRODUCTS (CONTINUATION SHEET)									
FILE	PRODUCT TITLE	TYPE PRODUCT OR PRINTOUT (SPECIFY FROM NO. 1-5 IF APPLICABLE)	FORM	NO. COPIES	REQUIREMENTS	REPORTS CONTROL SYMBOL ASSIGNED	DATA CONTROL SYMBOL ASSIGNED	DESCRIPTION	
D032.805-C1	Local Purchase Assets Listing	Printout	As Req	2	IM (D/M)	N/A	C-2	Provide listing of all local purchase items to include balances.	
D032.831-C1	Processing Master Interrogation Replies	Printout	As Req	2	NPD	N/A	C-2	Provides data reflected on processing master record as a result of an interrogation.	
D032.832-C1	Classified Item Listing	Printout	Semi-Annual	4	SQE	N/A	C-2	Provides listing of all items designated as pilferage on the master record.	
D032.832-C2	Pilferage Item List	Printout	Semi-Annual	4	SQE	N/A	C-2	Provides listing of all items designated as pilferage on the master record.	
D032.833-C1	Stock Number Listing	Printout	Monthly	12	NPD	N/A	C-3	Provides listing of all stock numbers reflected on the master record, to include Division/Manager Designator and management data.	
D032.834-C1	Weekly Merged EQ Transactions	Tape	Weekly	1	D062	N/A	C-2	To provide weekly transactions.	
D032.835-C1	Weekly Merged ISSP Transactions	Tape	Weekly	1	D067	N/A	C-2	To provide weekly transactions.	
D032.836-C1	SER Records	Tape	Qtrly	1	D1A3B	N/A	C-2	To provide data for requirements computation.	
D032.837-C1	PCAM Interrogations	Card	Qtrly	1	SQE	N/A	C-2	To provide the SQE component with pre-punched cards to obtain inventory products from the Central Material Locator System (D103).	
D032.838-C1	Item Activity List	Printout	Qtrly	6	NPD	N/A	C-2	Provides data on item activity for inventory scheduling/evaluation.	
D032.839-C1	Demand and Asset Data	Tape	Each 2 Wks	1	D073	N/A	C-2	To provide data for MISTR.	
D032.840-C1	DSCAD Pre-Inventory Location Survey Records	Tape	As Req	1	D008	N/A	C-2	To provide data for inventory.	
D032.841-C1	Transaction Input AMA Records	Tape	Monthly	1	AFIC (SGDDF) (D084)	4-LOG-S144	D	To be consolidated for AFIC Management Report (D084).	

AUTOMATED DATA SYSTEM PRODUCTS (CONTINUATION SHEET)									
POS	PRODUCT TITLE	TYPE PRODUCT (CLASSIFY FROM 10 UNLESS FROM 10 IS APPLICABLE)	FREQ	NO. COPIES	RECEIPTS	REPORT, CONTROL SYMBOL ADDRESS	DATA PAGE CODE	DDSD CODE DO32	PAGE 9 OF 14, PAGES
DO32.CRI-C1	Transaction Input Analysis - AMA Listing	Printout	Monthly	6	APLC (MCSOA) 3 NPD-3	5-LOG-S144	C-3	Provides statistics concerning types and volume of inputs into the system (AMA summary).	
DO32.CRI-C2	Transaction Input Analysis - MAG/PSU Listing	Printout	Monthly	6	NM	N/A	C-3	Provides statistics concerning types and volume of inputs into the system (class summary).	
DO32.CRI-C1	Stock Control and Distribution Analysis Detail - AF Items	Printout	Semi- Monthly	6	NND	N/A	D	Provides statistics concerning requisitions, receipts, and other data for management review and evaluation (Detail - AF Items).	
DO32.CRI-C2	Stock Control and Distribution Analysis Detail - MAP/GA	Printout	Semi- Monthly	6	NM	N/A	D	Provides statistics concerning requisitions, receipts, and other data for management review and evaluation (Detail - MAP/GA).	
DO32.CRI-C3	Stock Control and Distribution Analysis Detail - MAP/FMS	Printout	Semi- Monthly	6	NM	N/A	D	Provides statistics concerning requisitions, receipts, and other data for management review and evaluation (Detail - MAP/FMS).	
DO32.CRI-C1	Stock Control and Distribution Analysis Summary - AF Items	Printout	Semi- Monthly	6	APLC (MCSOA) 3 NM-3	4-LOG-S144	D	Provides statistics concerning requisitions, receipts, and other data for management review and evaluation (Summary - AF Items).	
DO32.CRI-C2	Stock Control and Distribution Analysis Summary - MAP/GA	Printout	Semi- Monthly	6	APLC (MCSOA) 3 NM-3	4-LOG-S144	D	Provides statistics concerning requisitions, receipts, and other data for management review and evaluation (Summary - MAP/GA).	
DO32.CRI-C3	Stock Control and Distribution Analysis Summary - MAP/FMS	Printout	Semi- Monthly	6	APLC (MCSOA) 3 NM-3	4-LOG-S144	D	Provides statistics concerning requisitions, receipts, and other data for management review and evaluation (Summary - MAP/FMS).	
DO32.CRI-C4	Stock Control and Distribution Analysis Summary - AF Consumption Items	Printout	Semi- Monthly	6	APLC (MCSOA) 3 NM-3	4-LOG-S144	D	Provides statistics concerning requisitions, receipts, and other data for management review and evaluation (AF Consumption Items).	

AUTOMATED DATA SYSTEM PRODUCTS (CONTINUATION SHEET)									
PCN	PRODUCT TITLE	TYPE OF REPORT OR SUMMARY (See Form DA-100 for details)	FREQ	NO. COPIES	REQUIREMENTS	REVIEW CONTROL SYMBOL ASSIGNED	DATA STATUS CODE	REMARKS	PAGE 10 OF 14 PAGES
DO32.CM1-C1	FMS Back Orders Over 60 Days Old	Printout	Monthly	2	AFD-1 NMD-1	N/A	C-2	Provides data on FMS back orders over 60 days old.	
DO32.CM2-E1	25 Oldest Back Orders for Grant Aid, FMS and Co-op Logistics	Printout	Monthly	6	AFLC(MCSM)-3 NPD-3	LOG-S395	C-2	Provides data on 25 oldest back orders for GA, FMS, and co-op logistics.	
DO32.DA1-C1	Item Status Report - Manager Detail and Summary	Printout	Semi-Monthly	1	IM (D/NM)	N/A	D	Provides statistics on back orders, line items managed, etc., for evaluation purposes (manager detail and summary).	
DO32.DA1-C2	Item Status Reports - Manager Summary Grant Aid	Printout	Semi-Monthly	1	IM (D/NM)	N/A	D	Provides statistics on back orders, line items managed, etc., for evaluation purposes (manager summary - GA).	
DO32.DA1-C3	Item Status Report - Manager Summary - FMS	Printout	Semi-Monthly	1	IM (D/NM)	N/A	D	Provides statistics on back orders, line items managed, etc., for evaluation purposes (manager summary - FMS).	
DO32.DA2-C1	Item Status Report - MMC/FSC, MMC Summary	Printout	Semi-Monthly	6	NM	N/A	D	Provides statistics on back orders, line items managed, etc., for evaluation purposes (MMC/FSC - MMC Summary).	
DO32.DA2-C2	Item Status Report - MMC/FSC, Grant/Aid Summary	Printout	Semi-Monthly	6	NM	N/A	D	Provides statistics on back orders, line items managed, etc., for evaluation purposes (MMC/FSC - MMC Summary - GA).	
DO32.DA2-C3	Item Status Report - MMC/FSC, MMC, FMS Summary	Printout	Semi-Monthly	6	NMD	N/A	D	Provides statistics on back orders, line items managed, etc., for evaluation purposes (MMC/FSC - MMC Summary - FMS).	
DO32.DA3-C1	Item Status Report - Supplement to AMA Summary	Printout	Semi-Monthly	6	AFLC(MCSOA)-3 NM-3	4-LOG-S144	D	Provides data on number and category of items by class.	
DO32.DA4-C1	Item Status Report - Div and AMA Summary	Printout	Semi-Monthly	6	AFLC(MCSOA)-3 NM-3	4-LOG-S144	D	Provides statistics on back orders, line items managed, etc., for evaluation purposes (Div and AMA Summary).	

AUTOMATED DATA SYSTEM PRODUCTS (CONTINUATION SHEET)									
PCS	PRODUCT TITLE	TYPE PRODUCT (CLASSIFICATION AND AS APPLICABLE)	FORM	NO. COPIES	REQUIREMENTS	REPORTS CONTROL SYMBOL, ADDRESS	DATA STATUS CODE	REPORT	PAGES
DO32.DA4-C2	Item Status Report - AMA Summary (Consumption Items Only)	Printout	Send- Monthly	6	AFLC(MCSOA) 3 NM-3	4-LOG-SLA4	D	Provides statistics on back orders, line items managed, etc., for evaluation purposes (AMA Summary - Consumption Items).	
DO32.DA4-C3	Monthly Item Status Report - Div and AMA Summary, Grant Aid	Printout	Send- Monthly	6	AFLC(MCSOA) 3 NM-3	4-LOG-SLA4	D	Provides statistics on back orders, line items managed, etc., for evaluation purposes (Div and AMA Summary - GA).	
DO32.DA4-C4	Item Status Report - Div and AMA Summary - FMS	Printout	Send- Monthly	6	AFLC(MCSOA) 3 NMD-3	4-LOG-SLA4	D	Provides statistics on back orders, line items managed, etc., for evaluation purposes (Div & AMA Summary FMS).	
DO32.DD1-C1	Unfilled Customer Orders Detail Listing	Printout	Monthly	2	CA	HAF-C20	C-2	Provides data for accounting on unfilled reimbursable back orders - by stock items.	
DO32.DD2-C1	Unfilled Customer Orders Summary	Printout	Monthly	2	CA	HAF-C20	C-2	Provides data for accounting on unfilled reimbursable back orders - by dollar for class and customer.	
DO32.DV1-E1	Processing Master Analysis - AP MMC/FSC, MMC, and Div Summaries	Printout	Monthly	2	IM (D/MM)	N/A	C-2	Provides data on assets by location by dollar value (AP MMC/FSC, MMC and Div Summaries).	
DO32.DV2-E1	Processing Master Analysis - AP AMA Summary Report	Printout	Monthly	5	AFLC(MCSOA) 3 IM (D/MM)-2	LOG-JL21	C-3	Provides data on assets by location by dollar value (AP AMA Summary).	
DO32.EB1-C1	Quarterly Shipments to Overhaul Contractors	Printout	Qtrly	4	SBR Control Unit	N/A	C-3	Provides data on shipments to overhaul contractors for SB&CR control purposes.	
DO32.EU1-C1	Weekly Transaction Register - Category I Items	Printout	Weekly	2	IM (D/MM)	N/A	C-2	Provides listing of all transactions processed by the system for the period (Cat I items - weekly).	
DO32.ED1-C2	Weekly Transaction Register - Categories II and III	Printout	Weekly	2	IM (D/MM)	N/A	C-2	Provides listing of all transactions processed by the system for the period (Cat II and III items - weekly).	
DO32.ED2-C1	Monthly Transaction Register - Category I Items	Printout	Monthly	2	IM (D/MM)	N/A	C-2	Provides listing of all transactions processed by the system for the period (Cat I - monthly).	

AUTOMATED DATA SYSTEM PRODUCTS (CONTINUATION SHEET)									
FORM	PRODUCT TITLE	TYPE PRODUCT (PRINTOUT, TAPE, OR OTHER MEDIA)	ISSUE (DATE)	NO. COPIES	REQUIREMENTS	REPORTS CONTROL SYMBOL ADDRESS	DATA STATUS CODE	DESCRIPTION	PAGE 12 OF 14 PAGES
DO32.ED2-C2	Monthly Transaction Register - Categories II and III Items	Printout	Monthly	2	IM (D/MM)	N/A	C-2	Provides listing of all transactions processed by the system for the period (Cat II & III - monthly).	
DO32.ED3-C3	ENORS Transaction Register	Printout	Monthly	2	NMD	N/A	C-2	Provides listing of all transactions identified as ENORS.	
DO32.ED4-C4	NORS Transaction Register	Printout	Monthly	2	NMD	N/A	C-2	Provides listing of all transactions identified as NORS.	
DO32.ED5-C5	AMP Transaction Register	Printout	Monthly	2	NMD	N/A	C-2	Provides listing of all transactions identified as AMP.	
DO32.ED1-C1	Weekly/Monthly Debit & IAT List	Printout	Weekly/ Monthly	1	NPD	N/A	C-2	Provides listing of all debit and IAT transactions.	
DO32.ED2-C1	Debit & IAT Effectiveness Report	Printout	Weekly/ Monthly	6	AFIC(MCSOA) 3 NM-3	4-LOG-S144	C-2	Provides data on the timeliness of processing and posting receipts.	
DO32.ED1-E1	ENORS Summary Report	Printout	Monthly	4	AFIC(MCSRE) 1 NMD-2 NMP-1	1-LOG-S436	C-2	Provides summary data on ENORS transactions.	
DO32.ED2-E2	NORS Summary Report	Printout	Monthly	4	AFIC(MCSOA) 1 NMD-2 NMP-1	2-LOG-S436	C-2	Provides summary data on NORS transactions.	
DO32.ED3-E3	AMP Summary Report	Printout	Monthly	4	AFIC(MCSOS) 1 NMD-2 NMP-1	3-LOG-S436	C-2	Provides summary data on AMP transactions.	
DO32.EDG-C1	MILSTEP Print Records	Tape	Monthly	1	AFIC(SGDDP) (DC84)	DD IAL(M)782	D	Consolidation of Supply Availability and Workload Analysis Reports from all AMAs for subsequent analysis at Hq USAF level.	

AUTOMATED DATA SYSTEM PRODUCTS (CONTINUATION SHEET)										DSB CODE DO32	PAGE 13 OF 14	PAGES
PCS	PRODUCT TITLE	TYPE PRODUCT OR SUBPRODUCT (UPDATE FROM NO. AS APPLICABLE)	FORM	NO. COPIES	REQUIREMENTS	REPORTS CONTROL SYMBOL ASSIGNED	DATA STATUS CODE	PURPOSE				
DO32.FR1-C1	Supply Availability and Workload Analysis Report	Printout	Monthly	6	ATLC(MCSOA) 3 NM-3	DD I&L(M)782 D	D	Measure workload and materiel availability by line item for all demand documents received and supply documents created under MILSTRIP at an AMA.				
DO32.FGHA	Confirmed Shipments	Tape	Monthly	1	DO39	N/A	C-2	To provide mechanized data consisting of confirmed shipments for building additive requirements in the Replacement Item Requirement Computation System (DO39).				
DO32.FG1-C1	Completed Requisition Control Masters Listing	Printout	Monthly	4	NPD	N/A	C-2	Provides listing of all completed requisitions (document file).				
DO32.FG2-EL	Weekly Completed MORS Requisitions	Printout	Weekly	4	MORS Control Center	N/A	C-2	Provides listing of all completed MORS requisitions.				
DO32.FJK-EL	Management Data Records	Tape	Monthly	1	ATLC(3GDDP) (DO84)	4-LOG-S144	D	To be consolidated for AFIC SC&D Request Analysis (DO84).				
DO32.FJ1-C1	Command Request Analysis Listing - (Air Force)	Printout	Semi- Monthly	6	ATLC(MCSOA) 3 NM-3	4-LOG-S144	C-3	Provides summary data on requisition, and rejections by Command (AF).				
DO32.FJ1-C2	Command Request Analysis Report - Consumption Items	Printout	Semi- Monthly	6	ATLC(MCSOA) 3 NM-3	4-LOG-S144	D	Provides summary data on requisitions, and rejections by Command (Consumption Items).				
DO32.FP1-C1	Controlled Exception Status Summary	Printout	Monthly	1	NPD	N/A	C-3	Provides data on unclassified controlled exceptions, by Manager Designator and Class				
DO32.FE1-C1	Controlled Exception Analysis Listing	Printout	Monthly	3	ATLC(MCSOD) 1 NM-2	5-LOG-S144	C-3	Provides statistics on types and volume of exceptions.				
DO32.GHA-C1	AUTODEN Redistribution Orders	Tape	Semi- Monthly	1	MO24	Exempt	C-2	To effect redistribution of reported excesses.				
DO32.GH1-C1	Redistribution Orders (with Suspense Documents)	Card	Semi- Monthly	1	NPD	N/A	C-2	Provides RDO card for reported excesses.				
DO32.GH3-C1	Replacement Items	Card	Semi- Monthly	1	NPD	N/A	C-2	Provides RDO card for reported excesses (replacement items).				

AUTOMATED DATA SYSTEM PRODUCTS (CONTINUATION SHEET)									
PCN	PRODUCT NAME	TYPE PRODUCT I&L CODE OR FUNCTIONAL CODE AS APPLICABLE	FORM	NO. COPIES	REQUIREMENTS	ISSUES CONTROL SYSTEM ADDRESS	CLASS SYSTEM CODE	REPORT	PAGE 14 OF 14 PAGES
D032.KL1-C1	Process Error List	Printout	Cont- Monthly	2	MPD	N/A	C-2	Provides listing of errors on reported excesses.	
D032.KR1-C1	Back Order Reconciliation Records	Tape	Monthly	1	MD24	Exempt	C-2	To provide data for reconciliation to AF activities.	
D032.KR1A	Back Order Reconciliation Count Report	Printout	Monthly	2	MPD Fwd to AFLC(MCSOD)	DD I&L(TH) 6762	C-2	To provide data for preparation of DD I&L (TH) 6762.	
D032.KR1-C1	Extracted B/O Review Cards	Card	As Rqr	1	MPD	N/A	C-2	To provide a B/O review request card for resubmission to appropriate activities.	
D032.KR1A	Back Order Cancellation Data Report	Printout	As Rqr	2	MPD Fwd to AFLC(MCSOD)	DD I&L(TH) 6762	C-2	To provide data for preparation of DD I&L (TH) 6762.	
D032.KZ1-C1	Deleted Exception Listing	Printout	Monthly	2	MPD	N/A	C-2	Provides listing of deleted debit and miscellaneous exceptions for research purposes.	
D032.PW1-C1	Command Exception Interrogation Replies	Stuffer	As Rqr	1	MPD	N/A	C-2	Provide data on bases of a major command for particular exception code, on an interrogation basis.	

1. SYSTEM DESIGNATOR CODE AND TITLE. (DL43B) AMA Edit, Index, and Routing (Subsystem of AFRAMS)
2. PRESCRIBING DIRECTIVES. AFM 67-1, Volume III, Part Five, and AFLCM 300-191.
3. PURPOSE.
 - a. The AMA edit, index and routing subsystem (DL43B) is a key feature of the Air Force recoverable assembly management system (AFRAMS). It is designed to provide all using systems with current and consistent management data for all stock numbers for which the AMA has AF item management (IM) responsibility and all stock numbers applicable to the local System Support Manager Stock Control and Distribution System (SSM SCAD) (DO34). The DL43B, subsystem serves as the IM or cataloging activity's sole entry point for stock control data; i.e., expendability - recoverability - repairability - category (RENC), unit cost, unit issue, etc., entering the AF stock list system at the AMA level. The DL43B subsystem verifies stock record account numbers (SRAMs) and routes incoming products to appropriate data systems and AMAs.
 - b. Editing, indexing, and routing, as relates to the DL43B subsystem, are explained as follows:
 - (1) Editing - The process of determining if incoming documents and transactions are correctly prepared; for example, checking to see if incoming transactions are in proper format, quantity fields are numeric, condition codes are valid, etc. The edit process involves those elements of data which are not checked in the indexing process.
 - (2) Indexing (also referred to as cross-referencing) - The process of matching incoming documents and transactions against the master AMA cross reference file to validate the stock numbers and appropriate elements of stock control data such as unit of issue, unit price, RENC, etc.
 - (3) Routing - The process of transmitting incoming documents and transactions to the appropriate user within the AMA and directing improperly routed transactions to the appropriate AMA.
4. OUTPUT INTERFACE WITH OTHER SYSTEMS. This subsystem provides output to 19 other data systems. Output products are such as reject listings, controlled exceptions, error analysis, stock list changes, and transactions from other systems that have been edited, indexed, and routed as described in above paragraphs. Systems receiving direct output from this subsystem are: DO17, DO32, DO32A, DO33, DO34A, DO41, DO62, DO62T, DO73, DO91, EO04, EL43F, DL43K, DL43M, DL43Z, GO57, JO05B, and MO24.

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AFLCP 300-3

5. INPUT TO SYSTEM. This subsystem receives input from 17 other data systems in addition to file maintenance transactions and error corrections. Transactions from other systems are input to this subsystem for the functions of editing, indexing, and routing to the next system for processing. Systems providing input are: D017, D072, D073, D074A, D077, D041, D050, D067, D073, D104, D105, D124, D143A, D143F, D143H, D143M, and D024.
6. ADPE USED AND OPERATING SITES. This subsystem will be operational on the Type 7080 and 1401 computers at OCAMA, OCAMA, SAAMA, SNAMA, and VRAMA when AFRANS is implemented.
7. PRODUCTS AND RECIPIENTS. As indicated in the following AFLC Forms 257.

D143B-2

SYSTEM OUTPUTS									
DATA SOURCE TITLE									
ANA EDIT, INDEX AND ROUTING SUBSYSTEM (APRANS)									
APLC IDENT NO.	TITLE OF OUTPUT	TYPE OUTPUT (Type, Class, or Frequency)	PREC	NO. COPIES	RECEIVER-J	RCS NUMBER ASSIGNED	C-DAY STATUS CODE	PURPOSE	APLC IDENT NO.
DL43ED7M/ DO32.35AD DO32.35AD	DIA TRANSACTIONS	TAPE	DAILY	1	DO17.		C-2	To file maintain DOL master file to reflect current S/M, SCD, and management data as well as to process receipt transactions.	DL43B APLC 300-10; PART THREE, YOU 1, 11, 12, PARTS ONE, TWO, THREE, YOU 1, 11, 12, PARTS ONE, TWO, THREE,
DL43ED7M/ DO32.35AD	SSM TRANSACTIONS	TAPE	DAILY	1	DO34A		C-2	To provide edited and updated transactions involving requisitions, back orders, shipments, item transfers, etc. to the SSM Stock Control and Distribution System DO34A. NOTE: When DO32/34/143B are running separately, will provide record establish transactions only under the DL43B label.	
DL43ED7M/ DO32.35AD	CENTRAL KNOWLEDGE TRANS-ACTIONS	TAPE	DAILY	1	DL43H		C-2	Provided edited SBR and levels as reported for all ID and critical items and record establish transactions.	
DL43ED7M/ DO32.35AD	DAILY TRANS DATA (CONSUMPTION HISTORY)	TAPE	DAILY	1	DL43F		C-2	Provides DL43F a weekly accumulation of edited and updated daily consumption transaction data.	
DL43ED7M/ DO32.35AD	INTRANSIT CONTROL TRANS-ACTIONS	TAPE	DAILY	1	DL43K		C-2	Provides the Intransit Control System with edited and updated transaction records with which to update the status information in the intranet asset records.	
DL43ED7M/ DO32.35AD	MONTHLY SBR	TAPE	MONTHLY	1	DL04.		C-2	Furnishes asset and stock level information pertaining to Non-ID items.	
DL43ED7M/ DO32.35AD	IM SCD TRANSACTIONS, VALID	TAPE	DAILY	1	DO32.		C-2	Furnishes the IM SCD system with valid transaction records involving requisitions, back orders, shipments, item transfers, etc. which have been edited and updated with latest stock list information and new record establish transaction. NOTE: When DO32/DO34/DO32/DO34 are running separately, will provide only new record establish transactions under the DL43B label.	
DO32.35AD	IM SCD EXCEPTIONS & MISC TRANS	TAPE	DAILY	1	DO32.		C-2	Provides DO32 with a tape containing all excepted transactions.	

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APLC 300-

APLC 300-10; PART THREE, YOU 1, 11, 12, PARTS ONE, TWO, THREE, YOU 1, 11, 12, PARTS ONE, TWO, THREE,

APLC 300-10; PART THREE, YOU 1, 11, 12, PARTS ONE, TWO, THREE, YOU 1, 11, 12, PARTS ONE, TWO, THREE,

DL43B

REPLACES MCS FORM 88, MAR 64, WHICH IS OBSOLETE

Change 3
AFMCP 300-3

SYSTEM OUTPUTS									
DATA SYSTEM TITLE		TITLE OF OUTPUT		TYPE OF OUTPUT (Indicate Form, Paper, or Magnetic)		FREQ		NO. COPIES	
AFMCP 300-3		MANAGER PDS CROSS		TAPE		WEEKLY		1	
APLC IDENT NO.		ITEM REFERENCE		TAPE		WEEKLY		1	
DL43BMLA0		MANAGER PDS CROSS		TAPE		WEEKLY		1	
DL43BMLH0		ANA MASTER CROSS REFERENCE		TAPE		WEEKLY		1	
DL43BMLH0		SYSTEM SUPPORT MANAGER CROSS REFERENCE		TAPE		WEEKLY		1	
DL43BMLH0		CURRENT FSN S TO IDENTIFY CP ITEMS		TAPE		MONTHLY		1	
DL43BMLH0		CURRENT PART NUMBER CROSS REFERENCE		TAPE		QUARTERLY		1	
DL43BMLH0		USER CODE TRANSACTIONS (TRANSFERS)		TAPE		MONTHLY		1	
DL43BMLH0		WEEKLY FILE MAINTENANCE TRANSACTIONS		TAPE		WEEKLY		1	
DL43BMLD0		SLC/IAS AND NEW RECORDS		TAPE		WEEKLY		1	

DL43B-7

REPLACES MCS FORM 66, MAR 62, WHICH IS OBSOLETE

APLC FORM 207
JAN 63

DATA SYSTEM TITLE: AFMCP 300-3
 APLC IDENT NO.: DL43BMLA0
 TITLE OF OUTPUT: MANAGER PDS CROSS
 TYPE OF OUTPUT: TAPE
 FREQ: WEEKLY
 NO. COPIES: 1
 RECIPENTS: DO32A/DO62
 RCS NUMBER ASSIGNED: 8
 DAY STATUS CODE: C-2
 PURPOSE: To provide a cross reference record showing reference (i.e., outdated) stock numbers related to current stock numbers and non master IAS related stock numbers reference to their master stock number for all items in the DL43B cross reference for which DO32 has or had IM responsibility.

DATA SYSTEM TITLE: AFMCP 300-3
 APLC IDENT NO.: DL43BMLH0
 TITLE OF OUTPUT: ANA MASTER CROSS REFERENCE
 TYPE OF OUTPUT: TAPE
 FREQ: WEEKLY
 NO. COPIES: 1
 RECIPENTS: DL43BD/GO57
 RCS NUMBER ASSIGNED: 8
 DAY STATUS CODE: C-2
 PURPOSE: To provide a cross reference record for all stock numbers (ANA prime plus DO34A non prime applicable to the local DL43B. Also stock numbers for which AF IM responsibility was transferred within the last 180 days will be included in this file.

DATA SYSTEM TITLE: AFMCP 300-3
 APLC IDENT NO.: DL43BMLH0
 TITLE OF OUTPUT: SYSTEM SUPPORT MANAGER CROSS REFERENCE
 TYPE OF OUTPUT: TAPE
 FREQ: WEEKLY
 NO. COPIES: 1
 RECIPENTS: DO34A
 RCS NUMBER ASSIGNED: 8
 DAY STATUS CODE: C-2
 PURPOSE: To provide a cross reference record for all items in the DL43B cross reference file for which DO34A is either the prime manager or a user.

DATA SYSTEM TITLE: AFMCP 300-3
 APLC IDENT NO.: DL43BMLH0
 TITLE OF OUTPUT: CURRENT FSN S TO IDENTIFY CP ITEMS
 TYPE OF OUTPUT: TAPE
 FREQ: MONTHLY
 NO. COPIES: 1
 RECIPENTS: JO05B
 RCS NUMBER ASSIGNED: 8
 DAY STATUS CODE: C-2
 PURPOSE: To identify all centrally procured stock numbers (FSN s) in the DL43B cross reference for which the local AMA is assigned IM responsibility.

DATA SYSTEM TITLE: AFMCP 300-3
 APLC IDENT NO.: DL43BMLH0
 TITLE OF OUTPUT: CURRENT PART NUMBER CROSS REFERENCE
 TYPE OF OUTPUT: TAPE
 FREQ: QUARTERLY
 NO. COPIES: 1
 RECIPENTS: DO41.
 RCS NUMBER ASSIGNED: 8
 DAY STATUS CODE: C-2
 PURPOSE: To provide a part number to current stock number cross reference in all I items prime at the processing AMA.

DATA SYSTEM TITLE: AFMCP 300-3
 APLC IDENT NO.: DL43BMLH0
 TITLE OF OUTPUT: USER CODE TRANSACTIONS (TRANSFERS)
 TYPE OF OUTPUT: TAPE
 FREQ: MONTHLY
 NO. COPIES: 1
 RECIPENTS: CSC - GAINING AMA
 RCS NUMBER ASSIGNED: 8
 DAY STATUS CODE: C-2
 PURPOSE: To provide the Gaining AMA by DL43M a record identifying recorded users of stock numbers when logistics responsibility is migrating from the local AMA to another AMA.

DATA SYSTEM TITLE: AFMCP 300-3
 APLC IDENT NO.: DL43BMLH0
 TITLE OF OUTPUT: WEEKLY FILE MAINTENANCE TRANSACTIONS
 TYPE OF OUTPUT: TAPE
 FREQ: WEEKLY
 NO. COPIES: 1
 RECIPENTS: DL43H
 RCS NUMBER ASSIGNED: 8
 DAY STATUS CODE: C-2
 PURPOSE: To provide stock control management and IAS data changes when DL43H is recorded as a user of the stock number and provide stock record account number changes or deletions.

DATA SYSTEM TITLE: AFMCP 300-3
 APLC IDENT NO.: DL43BMLD0
 TITLE OF OUTPUT: SLC/IAS AND NEW RECORDS
 TYPE OF OUTPUT: TAPE
 FREQ: WEEKLY
 NO. COPIES: 1
 RECIPENTS: DO32.
 RCS NUMBER ASSIGNED: 8
 DAY STATUS CODE: C-2
 PURPOSE: To provide stock control data, inter change/substitute data and management data for each current stock number in the DL43B Cross Reference for which DO32 is recorded as a user and which was changed this update cycle.

APPENDIX D

PERCENTAGE FREQUENCY DISTRIBUTION OF RESPONSES
TO PART II OF THE QUESTIONNAIRE

TABLE 58

FREQUENCY AND PERCENTAGE DISTRIBUTION OF RESPONSES TO THE DO62, DO32 AND DL43B
ADP SYSTEMS' PRODUCT NECESSITY SURVEY QUESTIONS (QUESTIONNAIRE PART II)

Ques- tion No.	No Res- ponse	(1) Absolutely Unnecessary		(2) Very Often Unnecessary		(3) Sometimes Unnecessary		(4) May or May Not Be Necessary		(5) Sometimes Necessary		(6) Very Often Necessary		(7) Absolutely Necessary		Mean	Std. Dev.
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%		
1	27	113	15.8	94	13.1	30	4.2	119	16.6	111	15.5	85	11.9	164	22.9	4.30	2.14
2	32	28	3.9	34	4.8	37	5.2	107	15.0	108	15.2	134	18.8	263	37.0	5.37	1.71
3	49	21	3.0	31	4.5	29	4.2	109	15.7	106	15.3	133	19.2	265	38.2	5.45	1.64
4	59	46	6.7	38	5.5	29	4.2	128	18.7	101	14.8	128	18.7	214	31.3	5.10	1.83
5	28	84	11.7	59	8.2	20	2.8	140	19.6	107	15.0	90	12.6	215	30.1	4.75	2.04
6	28	44	6.1	47	6.6	21	2.9	91	12.7	92	12.9	98	13.7	322	45.0	5.40	1.89
7	16	19	2.6	15	2.1	8	1.1	48	6.6	58	8.0	70	9.6	509	70.0	6.24	1.43
8	35	63	8.9	53	7.5	24	3.4	142	20.1	130	18.4	96	13.5	200	28.2	4.85	1.91
9	3	8	1.1	0	0.0	3	.4	2	.3	8	1.1	20	2.7	699	94.5	6.86	.72
10	4	18	2.4	24	3.2	15	2.0	54	7.3	80	10.8	142	19.2	406	54.9	5.98	1.50
11	3	21	2.8	32	4.3	14	1.9	44	5.9	66	8.9	71	9.6	492	65.5	6.08	1.59
12	4	11	1.5	13	1.7	14	1.9	44	5.9	101	13.7	129	17.4	427	57.8	6.12	1.32

TABLE 58 (Continued)

Ques- tion No.	No Res- ponse	(1) Absolutely Unnecessary		(2) Very Often Unnecessary		(3) Sometimes Unnecessary		(4) May or May Not Be Necessary		(5) Sometimes Necessary		(6) Very Often Necessary		(7) Absolutely Necessary		Mean	Std. Dev.
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%		
13	11	80	10.9	31	4.2	14	1.9	112	15.3	69	9.4	93	12.7	333	45.9	5.28	2.05
14	16	88	12.1	29	4.0	16	2.2	111	15.3	74	10.2	94	12.9	315	43.3	5.19	2.08
15	9	124	16.9	75	10.2	29	3.9	153	20.8	113	15.4	105	14.3	135	18.4	4.24	2.07
16	7	78	10.6	51	6.9	35	4.7	138	18.7	119	16.2	143	19.4	172	23.4	4.74	1.93
17	8	56	7.6	32	4.3	17	2.3	108	14.7	107	14.5	136	18.5	279	37.9	5.31	1.85
18	14	112	15.4	60	8.2	20	2.7	133	18.2	119	16.3	83	11.4	202	27.7	4.56	2.12
19	14	60	8.2	49	6.7	22	3.0	148	20.3	141	19.3	122	16.7	187	25.6	4.88	1.85
20	10	128	17.5	62	8.4	24	3.3	154	21.0	116	15.8	94	12.8	155	21.4	4.32	2.10
21	24	71	9.9	44	6.1	33	4.6	179	24.0	135	18.8	104	14.5	153	21.2	4.65	1.85
22	16	64	8.8	52	7.1	19	2.6	145	19.9	180	24.7	100	13.7	167	23.0	4.77	1.83
23	25	90	12.5	39	5.4	25	3.5	202	28.1	142	19.8	90	12.5	130	18.1	4.47	1.86
24	65	96	14.1	27	4.0	17	2.5	260	38.3	63	9.3	76	11.2	139	20.5	4.40	1.91
25	71	98	14.6	26	3.9	16	2.4	258	38.4	67	9.9	76	11.3	131	19.5	4.37	1.91

TABLE 58 (Continued)

Question No.	No. Response	(1) Absolutely Unnecessary		(2) Very Often Unnecessary		(3) Sometimes Unnecessary		(4) May or May Not Be Necessary		(5) Sometimes Necessary		(6) Very Often Necessary		(7) Absolutely Necessary		Mean	Std. Dev.
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%		
26	69	98	14.6	26	3.9	16	2.4	257	38.1	67	9.9	76	11.3	134	19.9	4.38	1.91
27	49	74	10.7	21	3.0	14	2.0	216	31.1	74	10.7	91	31.1	204	29.4	4.85	1.91
28	66	81	12.0	17	2.5	13	1.9	221	32.6	68	10.0	97	14.3	180	26.6	4.75	1.92
29	23	31	4.3	18	2.5	8	1.1	115	16.0	68	9.4	106	14.7	374	51.9	5.75	1.66
30	38	40	5.7	17	2.4	8	1.1	126	17.9	66	9.4	105	14.9	343	48.6	5.62	1.74
31	39	41	5.8	17	2.4	9	1.3	128	18.2	64	9.1	105	14.9	340	48.3	5.60	1.76
32	18	24	3.3	6	.8	6	.8	61	8.4	53	7.3	92	12.7	483	66.6	6.20	1.43
33	15	41	5.6	36	4.9	14	1.9	98	13.5	95	13.0	137	18.8	307	42.2	5.48	1.78
34	18	48	6.6	33	4.5	21	2.9	87	12.0	106	14.6	136	18.7	294	40.5	5.41	1.82
35	21	42	5.8	40	5.5	28	3.9	90	12.5	110	15.2	131	18.1	281	38.9	5.35	1.82
36	9	13	1.8	11	1.5	12	1.63	51	6.9	50	6.8	126	17.2	471	64.2	6.23	1.32
37	62	112	16.4	32	4.7	23	3.4	282	41.4	61	8.9	55	8.1	116	17.0	4.14	1.90
38	8	89	12.1	41	5.6	15	2.0	70	9.5	45	6.1	69	9.4	406	55.2	5.41	2.17

TABLE 58 (Continued)

Ques- tion No.	No Res- ponse	(1) Absolutely Unnecessary		(2) Very Often Unnecessary		(3) Sometimes Unnecessary		(4) May or May Not Be Necessary		(5) Sometimes Necessary		(6) Very Often Necessary		(7) Absolutely Necessary		Mean	Std. Dev.
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%		
39	737	1		0		0		0		1		1		3			
40	24	18	2.5	24	3.3	13	1.8	77	10.7	82	11.4	119	16.5	386	53.7	5.89	1.54
41	65	45	6.6	3	.4	0	.0	66	9.7	15	2.2	41	6.0	508	74.9	6.18	1.69
42	81	44	6.6	3	.4	0	.0	66	9.7	16	2.4	40	6.0	493	74.5	6.17	1.69
43	54	22	3.2	6	.9	5	.7	56	8.1	35	5.1	63	9.1	502	72.8	6.29	1.42
44	17	38	5.2	11	1.5	5	.7	92	12.7	65	8.9	125	17.2	390	53.7	5.85	1.65
45	54	49	7.1	16	2.3	7	1.0	160	23.2	77	11.2	112	16.2	268	38.9	5.33	1.79
46	15	58	8.0	32	4.4	13	1.8	74	10.2	58	8.0	86	11.8	407	55.9	5.64	1.94
47	68	81	12.0	22	3.2	13	1.9	234	34.7	64	9.5	60	8.9	201	29.8	4.72	1.95
48	57	89	13.0	22	3.2	20	2.9	253	36.9	79	11.5	64	9.3	159	23.2	4.51	1.90
49	52	82	11.9	22	3.2	7	1.0	258	37.3	108	15.6	81	11.7	133	19.2	4.53	1.80
50	55	55	8.0	24	3.5	9	1.3	211	30.7	108	15.7	103	15.0	178	25.5	4.90	1.76
51	59	70	10.2	25	3.6	11	1.6	254	37.1	92	13.4	89	13.0	143	20.9	4.62	1.79

TABLE 58 (Continued)

Ques- tion No.	No. Res- ponse	(1) Absolutely Unnecessary		(2) Very Often Unnecessary		(3) Sometimes Unnecessary		(4) May or May Not Be Necessary		(5) Sometimes Necessary		(6) Very Often Necessary		(7) Absolutely Necessary		Mean	Std. Dev.
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%		
52	43	37	5.3	13	2.3	3	1.1	161	23.0	121	17.3	119	17.0	238	34.0	5.31	1.66
53	59	77	11.2	22	3.2	22	3.2	273	39.9	117	17.1	74	10.8	99	14.5	4.38	1.71
54	49	84	12.1	24	3.4	17	2.4	217	31.3	115	16.6	90	13.0	147	21.2	4.60	1.86
55	48	68	9.8	16	2.3	20	2.9	201	28.9	116	16.7	112	16.1	162	23.3	4.82	1.79
56	49	73	10.5	19	2.7	20	2.9	225	32.4	106	15.3	99	14.3	152	21.9	4.69	1.81

APPENDIX E

PERCENTAGE FREQUENCY DISTRIBUTION OF RESPONSES TO SYSTEM
EFFICACY QUESTIONS, PART III OF THE QUESTIONNAIRE

TABLE 59

"FULL" PERCENTAGE FREQUENCY DISTRIBUTION OF ITEM MANAGER RESPONSES
TO THE DO62 SYSTEM'S EFFICACY MEASUREMENT CRITERIA

	Extremely	Quite	Slightly	Neither one or the other	Slightly	Quite	Extremely
Timely	13.4	53.6	10.3	1.1	11.5	6.5	2.7
Accurate	14.3	63.3	6.6	1.1	8.5	3.8	1.5
Useful	59.3	35.4	2.5	1.0	1.5	.1	.1
Clear	27.3	59.8	4.7	2.6	3.3	1.6	.6
Dependable	15.6	59.3	11.7	2.8	4.9	3.2	2.5
Mean	26.2	54.1	7.1	2.1	5.9	3.0	1.5
							Mean

TABLE 60

"FULL" PERCENTAGE FREQUENCY DISTRIBUTION OF ITEM MANAGER RESPONSES
TO THE DO32 SYSTEM'S EFFICACY MEASUREMENT CRITERIA

	Extremely	Quite	Slightly	Neither one or the other	Slightly	Quite	Extremely
Timely	15.1	52.4	11.1	4.1	8.4	5.2	2.9
Accurate	16.1	65.2	7.8	2.8	5.1	1.4	.8
Useful	43.7	46.5	6.6	1.2	1.0	.4	.6
Clear	18.4	61.7	10.4	2.2	3.6	1.9	1.9
Dependable	16.6	60.6	12.8	3.4	4.8	1.2	1.2
Mean	22.6	57.1	9.7	2.7	4.5	2.0	1.4
							Mean

TABLE 61
 "FULL" PERCENTAGE FREQUENCY DISTRIBUTION OF ITEM MANAGER RESPONSES
 TO THE D143B SYSTEM'S EFFICACY MEASUREMENT CRITERIA

	Extremely	Quite	Slightly	Neither one or the other	Slightly	Quite	Extremely	
Timely	10.3	45.0	13.8	14.4	7.1	5.5	3.8	Untimely
Accurate	10.2	51.6	10.1	11.6	7.5	4.6	3.4	Inaccurate
Useful	19.4	44.4	16.8	10.8	3.1	2.7	2.7	Useless
Clear	9.9	46.4	14.2	11.6	9.2	4.5	4.1	Vague
Dependable	10.7	48.6	13.1	12.1	7.5	4.0	3.0	Undependable
Mean	12.2	47.2	13.8	12.3	6.9	4.2	3.4	Mean

APPENDIX F

LARGE SAMPLE PARAMETRIC TEST OF THE EQUALITY OF
THE MEANS OF TWO RANDOM VARIABLES

This appendix provides the statistical formula and a sample calculation illustrating the method used in testing the means of high and low groups in Chapter VII.

APPENDIX F

LARGE SAMPLE PARAMETRIC TEST OF THE EQUALITY OF THE MEANS OF TWO RANDOM VARIABLES

Sample Calculation: Systems Efficacy Low and High Groups

Distributions: Part VI, Question 7

Let X, Y be random variables which give the response of members of the low and high populations, respectively. The mean m_x of X has the observed value $\bar{x} = 1.84$ and the mean m_y of Y has the observed value $\bar{y} = 2.52$, in both cases from samples of 148 persons. Since the samples are large, we may accept the observed standard deviations $s_x = .87$ and $s_y = 1.18$ as estimates of the actual standard deviations σ_x and σ_y respectively. Also we may regard the random variables $\bar{X}$ and $\bar{Y}$, which give the means of samples of 148 persons, as being closely approximated by their asymptotic distributions $N\left(m_x, \frac{\sigma_x}{\sqrt{148}}\right)$

and $N\left(m_y, \frac{\sigma_y}{\sqrt{148}}\right)$. We wish to test the null hypothesis (H_0) that $m_x \geq m_y$, in

which case $Z = \bar{Y} - \bar{X}$ has the asymptotically normal distribution $N(a, \sigma)$, where

$$a \leq 0 \text{ and } \sigma = \sqrt{\left(\frac{\sigma_x}{\sqrt{148}}\right)^2 + \left(\frac{\sigma_y}{\sqrt{148}}\right)^2} = \sqrt{\frac{\sigma_x^2 + \sigma_y^2}{148}} =$$

$$\sqrt{\frac{(.87)^2 + (1.18)^2}{148}} = 0.1205. \text{ The observed value of } Z \text{ is } \bar{y} - \bar{x} = 2.52 -$$

1.84 = 0.68, and $(Z - a)/\sigma$ has the asymptotic distribution $N(0,1)$, so

from tables of the normal distribution we find that $P(Z - a \geq .68 - a) =$

$$P\left(\left|\frac{Z - a}{\sigma}\right| \geq \frac{.68 - a}{0.1205}\right) \leq P\left(\left|\frac{Z - a}{\sigma}\right| \geq 5.64\right) < .0001. \text{ Thus we can}$$

reject H_0 with a significance level of $\alpha = .0001$, and we conclude that

$$m_x < m_y.$$

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13. ABSTRACT			
This is a descriptive study of the Air Force economic order quantity (EOQ) item manager role and its relationships with the automated systems which provide information for the performance of various stock control functions. Some basic role theory concepts were used to examine the item manager's role behavior and attitudes relating to the automated systems environment. A mail survey questionnaire provided the primary data for analysis. The study was designed to test the proposition that ADP systems can be a source of role conflict and ambiguity for some item managers. Results indicated that a majority of item managers did not directly perceive automated systems as primary sources of role conflict. Primary sources of role conflict were related to the more general situational factors such as: (1) excessive work load, (2) too little authority for the responsibility, and (3) a lack of knowledge about promotion possibilities. However, subgroups rating ADP systems relatively unnecessary and ineffective also indicated significantly more job dissatisfaction and ADP systems related role conflict than the subgroups which rated ADP systems as being highly necessary and effective. KEY WORDS: EOQ Item Manager Role Analysis Role Conflict ADP Systems as a Source of Role Conflict EOQ Item Manager Relationships with ADP Systems			

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