Research Report 1478

Making Decisions about Civilian Personnel Management Research in the Army: Part 2 of the Army Road Map

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The objective of this effort was to provide decision makers and researchers with an information-based tool for assessing the general nature and magnitude of research efforts necessary for making long-term improvements in the management of Army civilian personnel. It is part of a follow-up activity to an earlier study that identified potential topics for research in this area. This report's companion document, Establishing Priorities for Civilian Personnel Management Research in the Army, prioritized the research areas identified in the earlier study. The information in this document relates to considerations affecting the decisions of whether (and when) to initiate a given research effort, and includes such factors as the following: (a) the interrelationships among research activities, (b) the preliminary research required before particular research questions can be addressed, (c) the approximate personnel and time needed to complete research tasks, and (d) the efficiencies to be gained by consolidating research activities that are methodologically or conceptually linked.

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Personnel selection	Productivity
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Forecasting	Management training

FOREWORD

Almost 40 percent of the Army's personnel resources are civilians. These 480,000 employees are an integral part of the total Army team and contribute significantly to accomplishing the Army mission.

This research was part of the Civilian Personnel and Management task conducted by the Leadership and Management Technical Area (LMTA) of the Manpower and Personnel Research Laboratory (MPRL). The effort was supported by a Memorandum of Agreement entitled "Support for Army Civilian Personnel Research," dated 5 November 1986. The results of this research were briefed to the Chief, Directorate of Civilian Planning and Evaluation Office (DAPE-CPP), on 23 November 1987. These results provided input for the planning of a recently initiated major research effort that the Army Research Institute is conducting for the Directorate of Civilian Personnel.

Heretofore the possibility of improving the management of these civilian employees through the development of a comprehensive research program has received little attention. This report is part of the second major activity designed to make this idea a reality.

It will take a collaborative effort of policy makers and researchers to realize the lofty goals of this long-term effort. The information in this document will assist both parties in determining the order in which the research tasks necessary for the attainment of these goals should be undertaken.

EDGAR M. JOHNSON
Technical Director

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MAKING DECISIONS ABOUT CIVILIAN PERSONNEL MANAGEMENT RESEARCH IN THE ARMY: PART 2 OF THE ARMY ROADMAP

CONTENTS

LIST OF TABLES

LIST OF FIGURES

MAKING DECISIONS ABOUT CIVILIAN PERSONNEL MANAGEMENT RESEARCH IN THE ARMY: PART 2 OF THE ARMY ROADMAP

INTRODUCTION

In 1985 the U.S. Army's Directorate of Civilian Personnel (DCP) initiated a long-term project aimed at improving the management of the Army's 480,000 civilian employees. Having determined that this improvement could best be accomplished through a comprehensive civilian personnel management research program, DCP negotiated a Memorandum of Agreement with the U.S. Army Research Institute for the Behavioral and Social Sciences (ARI) to collaborate on this multi-year research program.

For the Army the process of identifying research-based solutions to problems is by design a cooperative effort between the proponent/sponsor and an appropriate research institute. The role of the proponent/sponsor that is officially charged with responsibility in a given area is to define problems in that area for which research-based solutions are sought. The role of the research institute is to define those problems in researchable terms and to carry out the research. This framework for cooperation and collaboration was realized in the Memorandum of Agreement between DCP and ARI.

The first major task in this long-term project was to focus the research and to identify specific research needs. To this end, a study was conducted for DCP by Caliber Associates in which key individuals throughout the Army were interviewed. This study produced the October 1986 document, *Army Strategic Plan for Civilian Personnel Management Research: A Roadmap for the Future*. The general areas of research need are identified in *Roadmap* as follows:

- Recruitment
- Retention
- Personnel development
- Organizational productivity
- Motivational productivity
- Military/civilian relations
- Civilian functions
- Future civilian work force needs

Roadmap also provided a useful framework for addressing these needs through a four-step process: (a) developing baseline measures, (b) analyzing the relevant issues, (c) identifying potential strategies for improvement, and (d) testing and evaluating the most promising strategies.

Because DCP wished not only to have research conducted in a systematic manner but also to focus initially on the most important research topics, a procedure for assigning priorities to the research topics reported in the *Roadmap* had to be designed and implemented. The process used to assess the relative importance of these research topics, as perceived by key individuals throughout the Army, is described in the document by Clark, Sweeney, and Savell (in preparation).

A secondary need was to gather information and articulate additional considerations that may affect the decision of whether (and when) to initiate a given research effort. Pertinent information includes the following: (a) the interrelationships among research activities, (b) the preliminary research required before particular research questions can be addressed, (c) the

approximate personnel resources and time requirements needed to complete research tasks, and (d) the efficiencies to be gained by consolidating research activities that are methodologically or conceptually linked. This second activity is the focus of the present document.

GUIDE TO USING THE DECISION-SUPPORT MATERIALS

Overview

Assessing Army-wide perceptions of research priorities for improving the management of Army civilian personnel is an important first step in DCP's determining the relative importance of each research topic, but it is by no means the only factor that must be taken into account. Such decisions cannot be made without the extensive involvement of top decision-makers, since they alone can fully appreciate the constraints as well as the opportunities for potential reward that may affect organizational priorities.

The present effort attempts to provide these decision-makers with useful information for making determinations about which research activities to initiate and in what order. This decision-support information is compiled in Appendix A. The purpose of the main body of the report is to describe the materials in Appendix A, to discuss how these materials may be used, and to point out other factors that decision-makers might consider in acting upon identified research priorities.

Description of Decision-Support Materials

Research topics. The Army's research needs related to civilian personnel management were identified in the *Roadmap* study (Caliber Associates, 1986). The objectives specified for the Army's civilian personnel program in *Roadmap*, together with the specific research suggestions also presented in that document, served as the basis for the research topics that were prioritized in the Clark, Sweeney, and Savell follow-up effort (in preparation). Table 1 lists the 16 topics that were prioritized. The goals associated with these topics represent the major divisions of the decision-support material in Appendix A. In this report, these 16 topics are called "research topics" or "research areas."

Priority rankings. Participants in the Clark et al. investigation were asked to rate each of the 16 research topics on three dimensions, as listed in Table 2. The first two exemplify essentially a benefit and cost assessment--the benefits of making improvements and the costs of not making improvements. The third question addresses the consideration of feasibility--the likelihood that changes which would supposedly result in improvement would actually be implemented. Ratings on a fourth dimension, a composite, were calculated from the other three. A summary of the results of the prioritization process is presented in Table 3.[1] These rankings are also reported individually in the decision-support materials for each of the 16 research topics.

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[1]Details of the prioritization process can be found in Clark, Sweeney, and Savell (in preparation).

Table 1

Research Topics Included in Prioritization Survey

Item code	Item specification
Q1	Attracting high quality candidates for Army jobs
Q2	Selecting candidates who have potential for high performance from the pool of qualified applicants
Q3	Making sure that candidates who are selected actually get hired
Q4	Retaining productive employees
Q5	Separating poorly performing employees
Q6	Dealing with the impact of mission changes on the work force
Q7	Assessing employee performance
Q8	Enhancing individual productivity
Q9	Identifying good candidates for supervisory and managerial positions
Q10	Developing supervisory, managerial, and leadership skills
Q11	Assessing the performance of supervisors and managers
Q12	Increasing the effectiveness, productivity, and image of civilian personnel offices
Q13	Building effective military/civilian relations
Q14	Developing strategies for improving organizational effectiveness
Q15	Determining appropriate functions for civilian employees in peacetime and during mobilization
Q16	Forecasting long-term requirements for the Army civilian work force

Table 2

Questions Corresponding to Rating Dimensions in Prioritization Survey

- How valuable would it be to the Army to improve things in this area?
- How serious are the consequences for the Army of not improving things in this area?
- If additional information on this topic were obtained from research, how confident are you that this information would be used or acted upon?

Table 3

Detailed Summary of Prioritization Results

Item code	Item specification	Rank			
		Need for improvement	Consequences of no improvement	Likelihood of action	Unweighted composite
Q1	Attracting high quality candidates for Army jobs	1	1	7	2
Q2	Selecting candidates who have potential for high performance from the pool of qualified applicants	8	9	6	7
Q3	Making sure that candidates who are selected actually get hired	16	16	4	14
Q4	Retaining productive employees	2	2	1	1
Q5	Separating poorly performing employees	4	4	16	6
Q6	Dealing with the impact of mission changes on the work force	12	12	11	12

Table 3 (continued)

Item code	Item specification	Rank			
		Need for improvement	Consequences of no improvement	Likelihood of action	Unweighted composite
Q7	Assessing employee performance	11	13	5	11
Q8	Enhancing individual productivity	6	6	8	5
Q9	Identifying good candidates for supervisory and managerial positions	5	3	2	3
Q10	Developing supervisory, managerial, and leadership skills	3	5	3	4
Q11	Assessing the performance of supervisors and managers	7	7	10	8
Q12	Increasing the effectiveness, productivity, and image of civilian personnel offices	9	10	12	9
Q13	Building effective military/ civilian relations	10	8	13	10
Q14	Developing strategies for improving organizational effectiveness	15	15	15	16
Q15	Determining appropriate functions for civilian employees in peacetime and during mobilization	14	11	9	13
Q16	Forecasting long-term requirements for the Army civilian work force	13	14	14	15

Note. Areas with highest priority ratings have the smallest numerical ranks.

Research questions. Each of the research topics in Appendix A contains more detailed questions related to that topic. These research questions are typical of those that a researcher investigating the topic might be interested in, and are termed "research questions" in this report. Some of the research questions stem from considerations that are directly related to the research area while others reflect a need for conducting preliminary research (e.g., operationalizing definitions, identifying reliable and valid measures, collecting baseline data).[2]

Research tasks. The activities implied by one or more related research questions in a particular research area are grouped in Appendix A into what are referred to in this report as "research tasks." It is important to understand that the decision-support materials are not intended to contain an exhaustive set of research questions related to the research areas. The research tasks specified for each area suggest a general means of accomplishing the goals. The specific research questions tied to these tasks reflect only *one* possible approach to addressing the underlying problems,[3] but the accompanying information (e.g., assumptions, resource estimates) should give the user a general idea of the nature and complexity of the activities necessary for accomplishing these tasks.

Linkages among research topics. In order to address many of the specific research questions, background work is often necessary before undertaking the research of particular interest. This background work includes activities such as establishing theoretical and conceptual frameworks for investigations; defining terms operationally; assessing the quality and appropriateness of available measures and/or developing and validating new measures of relevant constructs; developing data bases; and gathering baseline data. These required preliminary activities are termed "prerequisites" and are listed as assumptions for the applicable research questions in Appendix A.[4]

The amount of time and money consumed in the research endeavors outlined in the decision-support materials may often be minimized by combining one or more questions into a single activity. In cases where this was deemed advisable, the suggested link is termed a "corequisite" and is listed as an assumption for the appropriate research questions(s).[5] Corequisites are suggested as a way of

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[2]More specific information about the formulation of the research questions can be found in Appendix B in the section entitled "Identification of Research Questions, Research Tasks, and General-Magnitude-of-Effort Estimates."

[3]Details about the process by which this approach was developed can be found in Appendix B in the section entitled "Identification of Research Questions, Research Tasks, and General-Magnitude-of-Effort Estimates."

[4]Codes for prerequisite activities are preceded by the words "completion of" in the assumptions section.

[5]Corequisite activities are preceded by the words "tie to" in the assumptions section.

increasing the efficiency of the entire group of 16 research topics; but, unlike the prerequisites, they are not required for the completion of a particular research question.[6] The linkages among research questions are summarized in Table 4.[7]

Estimates of required resources. Just as the research questions specified in Appendix A represent only one approach to addressing a particular research topic, the estimates of resources required to carry out that particular approach are tied to that approach and constitute only one possible path to solving the research question. In addition, the discussion-to-concensus process by which the subject matter experts (SMEs) who developed these estimates arrived at them underscores their roughness--hence the term "general magnitude of effort" is used to describe these estimates.[8] Note that resource estimates are provided for each research question in each research area with the exception of the last task in each area.[9]

For personnel and calendar time estimates, one professional-person-month (PM) includes one month's full-time-equivalent effort of a senior researcher (experienced master's- or Ph.D.-level professional) plus an appropriate amount of administrative and support staff time. The latter consists of 1/6 month each of administrative/managerial, computer programming, and research assistant support, and 1/4 month of secretarial support. Inasmuch as the calendar month (CM) estimates do not take into account work that may be taking place concurrently, they are not additive across research questions.

Use of the Decision-Support Materials

The decision-support materials in Appendix A have been designed to provide flexibility to the user. Even though the collection of materials can be used as an integrated decision-support tool, individual components can also be extracted and used in a wide range of contexts. That is, if a user decides that particular pieces of information are either irrelevant to his/her immediate concern or are no longer valid, he/she may use other pieces of information

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[6]Defensible reasons may exist for choosing *not* to consider all 16 topics as a unit for which it is desirable to maximize efficiency. Some of these reasons are mentioned in the section entitled "Other Considerations Affecting Decisions."

[7]The process used to identify linkages among research questions is explained in more detail in Appendix B in the section entitled "Identification of Research Questions, Research Tasks, and General-Magnitude-of-Effort Estimates."

[8]More details on the makeup of this group of SMEs and the process by which the research approach and resource estimates were derived can be found in Appendix B in the section entitled "Identification of Research Questions, Research Tasks, and General-Magnitude-of-Effort Estimates."

[9]The last task is a testing and evaluation phase for which the SMEs could not provide informed estimates due to uncertainties regarding the outcomes of the relevant research and the dependence of this phase on those outcomes.

Table 4

Detailed Summary of Interrelationships Among Research Questions

Item Code	Prerequisites	Corequisites
Q1.II.A	Q2.II.B	Q1.III.A*
	Q7.II.A	Q2.II.C*
	Q7.II.B	
	Q7.II.C	
Q1.II.B	Q1.II.A	Q1.III.C*
	Q2.II.B*	
	Q7.II.A*	
	Q7.II.B*	
	Q7.II.C*	
Q1.II.C	Q1.II.A	
	Q2.II.B*	
	Q7.II.A*	
	Q7.II.B*	
	Q7.II.C*	
Q1.II.D	Q1.II.A	
	Q2.II.B*	
	Q7.II.A*	
	Q7.II.B*	
	Q7.II.C*	
Q1.III.A		Q1.II.A
Q1.III.B	Q1.II.A	
	Q2.II.B*	
	Q7.II.A*	
	Q7.II.B*	
	Q7.II.C*	
Q1.III.C		Q1.II.B
Q1.IV.A		Q1.IV.B*
Q1.IV.B		Q1.IV.A
		Q3.II.B*
		Q3.II.C*
Q1.IV.C	Q1.II.A*	
	Q1.II.B	
	Q1.II.C	
	Q1.III.B	
	Q1.III.C	
	Q2.II.B*	
	Q7.II.A*	
	Q7.II.B*	
	Q7.II.C*	
Q2.II.A	Q1.II.A	
	Q2.II.B*	
	Q7.II.A*	
	Q7.II.B*	
	Q7.II.C*	
Q2.II.B		
Q2.II.C		Q1.II.A
Q2.II.D	Q1.II.A	
	Q1.IV.B	
	Q2.II.B*	
	Q7.II.A*	
	Q7.II.B*	
	Q7.II.C*	
Q3.II.A	Q1.II.A	
	Q2.II.B*	
	Q7.II.A*	
	Q7.II.B*	
	Q7.II.C*	
Q3.II.B		Q1.IV.B
Q3.II.C		Q1.IV.B
Q3.II.D		
Q4.II.A	Q1.II.A*	Q5.II.B*
	Q1.II.B	
	Q2.II.B*	
	Q7.II.A*	
	Q7.II.B*	
	Q7.II.C*	
Q4.II.B	Q1.II.A*	
	Q1.II.B	
	Q2.II.B*	
	Q7.II.A*	
	Q7.II.B*	
	Q7.II.C*	

Table 4 (Continued)

Item Code	Prerequisites	Corequisites
Q4.III.A	Q1.II.A*	Q4.III.B*
	Q1.II.B*	
	Q2.II.B*	
	Q4.II.B	
	Q7.II.A*	
	Q7.II.B*	
	Q7.II.C*	
Q4.III.B		Q4.III.A
Q4.IV.A	Q1.II.A*	Q4.V.A*
	Q1.II.B	
	Q2.II.B*	
	Q7.II.A*	
	Q7.II.B*	
	Q7.II.C*	
Q4.IV.B		
Q4.V.A	Q1.IV.B	Q4.IV.A
	Q3.II.C	
	Q7.II.A*	
	Q7.II.B*	
	Q7.II.C*	
	Q8.III.A*	
	Q8.III.B	
	Q8.III.C*	
	Q8.III.D	
Q4.V.B		
Q4.V.C	Q1.IV.B*	
	Q3.II.C*	
	Q4.V.A	
	Q7.II.A*	
	Q7.II.B*	
	Q7.II.C*	
	Q8.III.A*	
	Q8.III.B*	
	Q8.III.C*	
	Q8.III.D*	
Q5.II.A		
Q5.II.B	Q5.II.A	Q4.II.A
		Q5.II.C*
Q5.II.C		Q5.II.B
		Q6.II.C*
Q5.II.D	Q1.II.A*	
	Q1.IV.B*	
	Q2.II.A	
	Q2.II.B	
	Q2.II.C	
	Q2.II.D	
	Q5.II.C	
	Q7.II.A*	
	Q7.II.B*	
	Q7.II.C*	
Q5.III.A		
Q5.III.B		
Q5.III.C		Q8.III.A
Q5.III.D		Q8.III.A
Q5.III.E	Q5.III.A	
Q6.II.A		
Q6.II.B	Q1.II.A*	
	Q1.II.B*	
	Q2.II.B*	
	Q4.II.B*	
	Q4.III.A	
	Q4.III.B	
	Q7.II.A*	
	Q7.II.B*	
	Q7.II.C*	
Q6.II.C	Q1.II.A*	Q5.II.C
	Q1.II.B*	
	Q2.II.B*	
	Q4.II.B*	
	Q4.III.A*	
	Q4.III.B*	
	Q6.II.B	
	Q7.II.A*	
	Q7.II.B*	
	Q7.II.C*	

Table 4 (Continued)

Item Code	Prerequisites	Corequisites
Q6.II.D	Q1.II.A*	
	Q1.II.B*	
	Q2.II.B*	
	Q4.II.B*	
	Q4.III.A*	
	Q4.III.B*	
	Q6.II.B*	
	Q6.II.C	
	Q7.II.A*	
	Q7.II.B*	
	Q7.II.C*	
Q6.II.E	Q1.II.A*	
	Q1.II.B*	
	Q2.II.B*	
	Q4.II.B*	
	Q4.III.A*	
	Q4.III.B*	
	Q6.II.B*	
	Q6.II.C*	
	Q6.II.D	
	Q7.II.A*	
	Q7.II.B*	
	Q7.II.C*	
Q6.II.F		
Q7.II.A		Q7.II.B*
Q7.II.B		Q7.II.A
Q7.II.C	Q7.II.B	
Q7.II.D		Q14.III.A
Q8.II.A	Q7.II.A	
	Q7.II.B	
	Q7.II.C	
Q8.II.B	Q7.II.A*	
	Q7.II.B*	
	Q7.II.C*	
	Q8.II.A	
	Q14.II.B	
Q8.III.A		Q5.III.C*
		Q5.III.D*
		Q8.III.B*
Q8.III.B		Q8.III.A*
Q8.III.C	Q8.III.A	Q12.III.A*
Q8.III.D	Q7.II.A	Q14.II.C*
	Q7.II.B	
	Q7.II.C	
	Q8.III.A*	
	Q8.III.C	
Q8.III.E	Q7.II.A	
	Q7.II.B	
	Q7.II.C	
	Q8.III.A*	
	Q8.III.B	
	Q8.III.C	
Q8.III.F	Q7.II.A*	
	Q7.II.B*	
	Q7.II.C*	
	Q8.III.A*	
	Q8.III.B*	
	Q8.III.C*	
	Q8.III.D	
	Q8.III.E	
Q8.III.G	Q2.II.C	
Q9.II.A		Q11.II.A
Q9.II.B		Q11.II.A
Q9.II.C		Q11.II.A
Q9.II.D		Q11.II.A
Q9.II.E		Q11.II.A
Q9.II.F	Q2.II.C*	
	Q7.II.A*	
	Q7.II.B*	
	Q7.II.C*	
	Q8.III.A*	
	Q8.III.B*	
	Q8.III.C*	
	Q8.III.D*	
	Q8.III.E*	
	Q8.III.F*	
	Q8.III.G*	
	Q11.II.A	

Table 4 (Continued)

Item Code	Prerequisites	Corequisites
Q10.II.A		
Q10.II.B		
Q10.II.C		Q11.II.A
Q11.II.A	Q2.II.C*	Q9.II.A*
	Q7.II.A*	Q9.II.B*
	Q7.II.B*	Q9.II.C*
	Q7.II.C*	Q9.II.D*
	Q8.III.A	Q9.II.E*
	Q8.III.B	Q10.II.C*
	Q8.III.C	
	Q8.III.D	
	Q8.III.E	
	Q8.III.F	
	Q8.III.G	
Q11.II.B	Q2.II.C*	
	Q7.II.A*	
	Q7.II.B*	
	Q7.II.C*	
	Q8.III.A*	
	Q8.III.B*	
	Q8.III.C*	
	Q8.III.D*	
	Q8.III.E*	
	Q8.III.F*	
	Q8.III.G*	
	Q11.II.A	
Q12.II.A		
Q12.II.B		Q12.II.C*
		Q12.II.D*
Q12.II.C	Q12.II.A	Q12.II.B
Q12.II.D		Q12.II.B
Q12.III.A	Q7.II.A*	Q8.III.C
	Q7.II.B*	Q12.III.D*
	Q7.II.C*	
	Q8.II.A*	
	Q8.II.B*	
	Q12.II.A	
	Q12.II.B	
	Q14.II.A	
	Q14.II.B	
	Q14.II.C	
Q12.III.B	Q7.II.A	
	Q7.II.B	
	Q7.II.C	
	Q8.II.A	
	Q8.II.B	
	Q8.III.A*	
	Q8.III.B*	
	Q8.III.C*	
	Q8.III.D*	
	Q8.III.E*	
	Q8.III.F	
	Q14.II.B*	
Q12.III.C		
Q12.III.D	Q12.II.B	Q12.III.A
Q13.II.A	Q2.II.C*	Q13.II.B*
	Q7.II.A*	Q13.II.C*
	Q7.II.B*	
	Q7.II.C*	
	Q8.III.A	
	Q8.III.B	
	Q8.III.C	
	Q8.III.D	
	Q8.III.E	
	Q8.III.F	
	Q8.III.G	
Q13.II.B		Q13.II.A
Q13.II.C		Q13.II.A
Q14.II.A		Q14.II.B*
Q14.II.B		Q14.II.A
Q14.II.C	Q7.II.A*	Q8.III.D
	Q7.II.B*	
	Q7.II.C*	
	Q8.II.A	
	Q8.II.B	
	Q14.II.B	
Q14.III.A	Q3.II.D	Q7.II.D*
	Q14.II.B	
Q15.II.A		
Q15.II.B	Q15.II.A	Q15.II.C*

Table 4 (Continued)

Item Code	Prerequisites	Corequisites
Q15.II.C		Q15.II.B Q15.II.D*
Q15.II.D		Q15.II.C
Q15.II.E	Q15.II.A* Q15.II.B	
Q15.II.F	Q15.II.A* Q15.II.B* Q15.II.D Q15.II.E	Q16.II.C*
Q15.III.A		
Q15.III.B		
Q15.III.C	Q15.III.B	
Q15.III.D		
Q15.III.E	Q15.II.A* Q15.II.B* Q15.II.D* Q15.II.E* Q15.II.F	Q15.III.F*
Q15.III.F		Q15.III.E
Q16.II.A		
Q16.II.B	Q16.II.A	
Q16.II.C		Q15.II.F
Q16.II.D	Q16.II.A* Q16.II.B Q16.II.C	
Q16.III.A	Q3.II.D* Q7.II.A Q7.II.B Q7.II.C Q14.II.B* Q14.III.A Q16.II.A* Q16.II.B Q16.II.C	
Q16.III.B	Q3.II.D* Q7.II.A* Q7.II.B* Q7.II.C* Q14.II.B* Q14.III.A* Q16.II.A* Q16.II.B* Q16.II.C* Q16.III.A	

Notes.

Codes correspond to numbered research questions in Appendix A.

Prerequisite or corequisite investigations represented by a code without * are primary prerequisites or corequisites (i.e., they are listed as assumptions for a particular research question in Appendix A). Codes followed by * in the Prerequisites column are themselves prerequisites for one or more of the primary prerequisites listed. The investigations represented by codes followed by * in the Corequisites column specify the first-column investigation as a corequisite.

without affecting the integrity of the data. The following describes how the decision-support materials could be used to decide in what order the research areas should be investigated.

1. Decide which set of priority rankings to use. Depending on the perspective of the user and the purpose at hand, one of the four priority dimensions may be more appropriate or useful than the others. For example, if a person considers the positive value of potential research-based improvements in an area as the most important factor in deciding whether to devote resources to one effort rather than another, then he/she should focus on the need-for-improvement ranks. Another person may consider that the problems resulting from *not* making research-based improvement in an area is the most important factor in allocating resources, in which case he/she should focus on the consequences-of-no-improvement ranks. If a person believes that the true test of value to the Army is whether or not the research solutions will be incorporated into the system, the likelihood-of-action ranks should be used. In the absence of a compelling reason to use one set of ranks over another, the composite is recommended as an assessment of the overall importance of a research topic.[10]

2. Select research topic(s) based on this decision. Once the user decides which set of priority rankings to use, he/she can choose the research topic that is ranked the highest as the focus of the first investigation. Depending on considerations such as the resources available, the user can also decide which other topic(s) might be undertaken simultaneously and which can be postponed.[11]

3. Review the details of the suggested approach for the research topic(s) selected. This step involves a consideration of several elements of the decision-support data:

   a. Decide which research tasks need to be accomplished.[12]

   b. Determine whether the suggested research questions are appropriate. Make sure the questions are either ones (a) that are themselves in the best interests of the Army or (b) that have to be answered in order to be able to obtain information or products that are in the best interests of the Army.

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[10]The composite scores referred to in this document are simple sums of the other three scores, but an individual could also define his/her own composite as a weighted sum of the three scores. For instance, he/she might judge that overall importance is best represented by a score in which the need-for-improvement and consequences-of-no-improvement scores count twice as much as the likelihood-of-action scores.

[11]Some other considerations are explored in more detail in the section entitled "Other Considerations Affecting Decisions."

[12]Reasons why it may not be necessary to address every suggested task are discussed in more detail in the section entitled "Other Considerations Affecting Decisions."

c. Note the linkages among potential research efforts. Consider the implications of the information provided in the assumptions section regarding logical relationships among the relevant research questions (i.e., prerequisites and corequisites). (Table 4 provides a broader look at these interrelationships than the individual assumptions sections do.)

Figures 1 and 2 depict how the information about linkages among research questions--within and between research areas--can be used to establish the sequence of suggested steps for addressing one of the research areas. The overall top priority (based on the composite ranks) research goal--Q4, to retain productive employees--has been chosen for this illustration. In Figure 1 only those research questions that relate directly to the accomplishment of Goal Q4 are displayed (i.e., Q4 research activities and their prerequisites). In addition to these core activities, Figure 2 includes all of the research that could be accomplished most efficiently if it were undertaken along with some of the directly related research (i.e., the corequisites).[13]

Although developing such diagrams for each of the 16 research areas might be useful in understanding the interrelationships among research questions and research areas, the calendar-month and professional-person-month information would be of very limited value as a planning device for an overall research program (beyond the initial research area) because of the high incidence of overlap from one research area to another and because activities in different research areas are likely to be concurrent. For example, if one undertook just the activities diagrammed in Figure 2, five years later, work would have been initiated in the pursuit of Goal Q4 and also in six other research areas.

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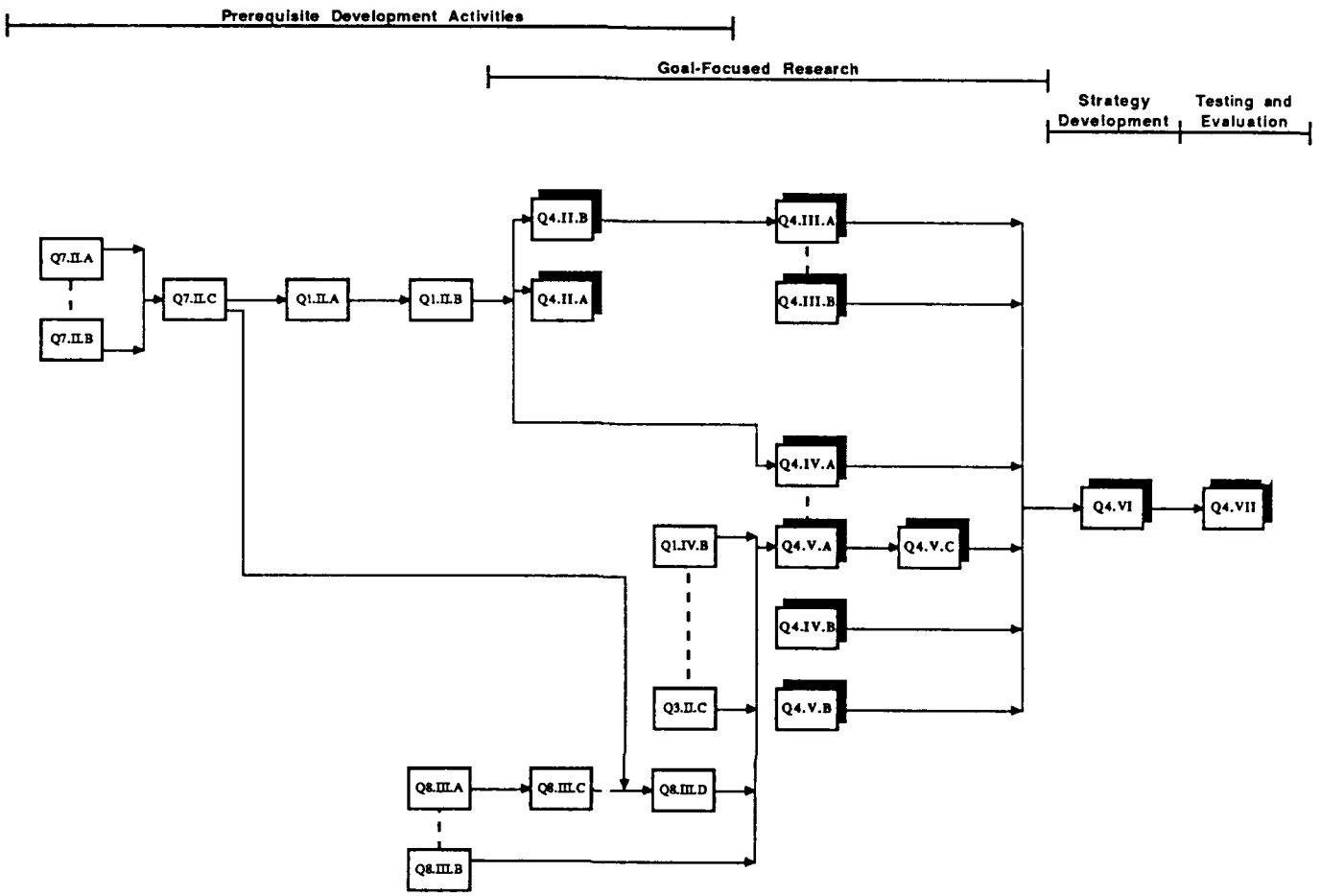
[13]Using these schematics in conjunction with the information in Appendix A, a researcher or decision-maker can learn the following:

(1) The set of research activities directly linked to the pursuit of Goal Q4 (Figure 1), excluding the testing and evaluation phase, would consume a minimum of about 10 years and a total of 24 to 37 professional-person-years.

(2) Expanding the scope to include all corequisites implicit in the maximum efficiency scenario (Figure 2), the minimum calendar time would increase almost another year and the total personnel resources required would increase to between 38 and 55 professional-person-years.

(3) There is a 3-1/2 to 6-1/2 year lag necessary for the accomplishment of development activities before the first Q4 task outlined in Appendix A can logically be undertaken. If a decision-maker is intent on minimizing the amount of money and time expended before beginning the targeted research, then he/she should focus on the prerequisites in the development phase to determine whether or not suitable alternatives might be found.



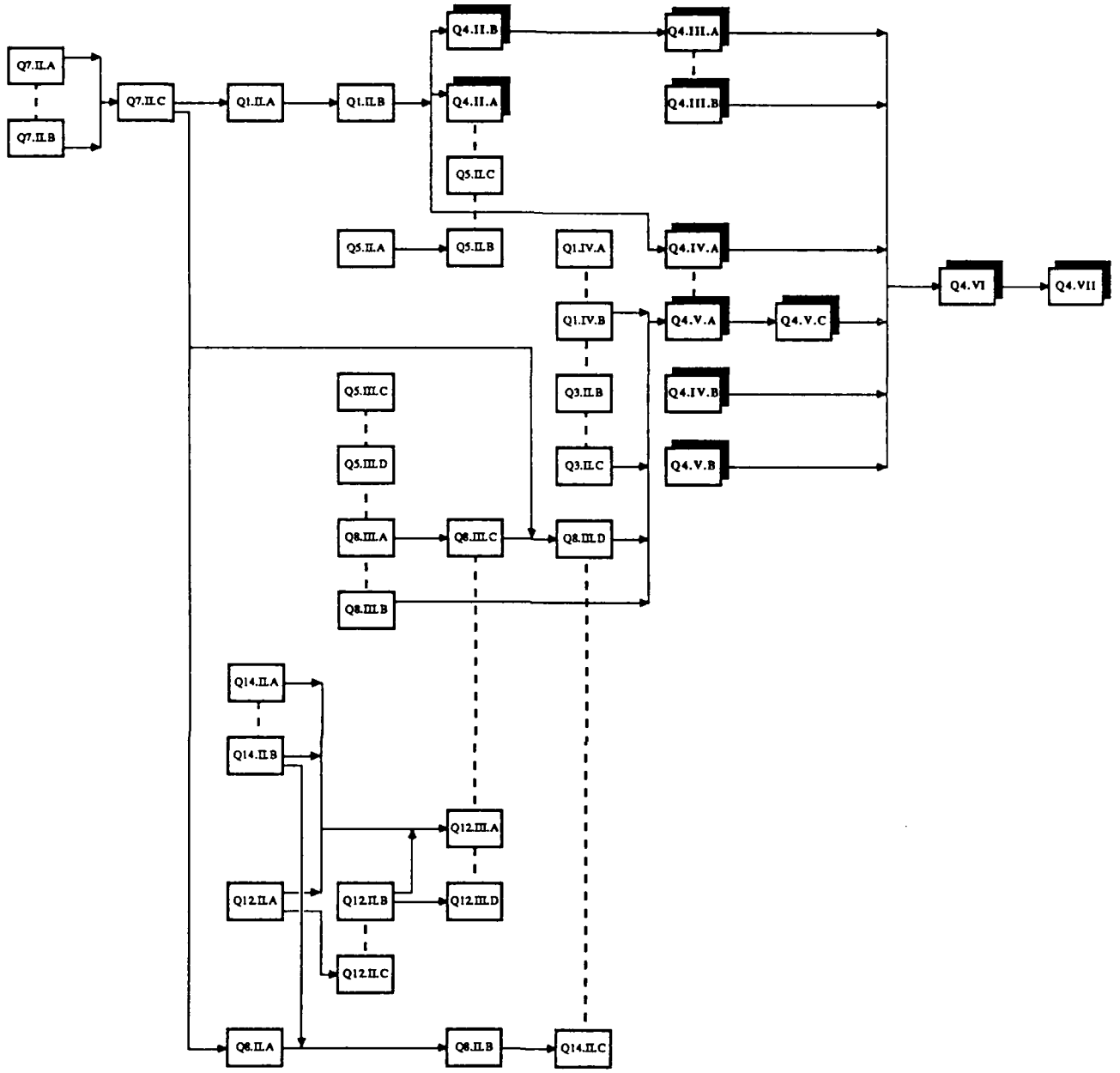
Notes.

See Table 1 for specification of research areas.

Unshaded boxes represent prerequisite research (e.g., identifying and validating baseline measures, data base development); shaded boxes represent the research directly linked to retaining productive employees in Appendix A.

Unbroken lines represent direct links among research activities; broken lines represent corequisites identified in Appendix A.

Figure 1. Illustration of the sequencing of investigations related to retaining productive employees, the research area identified as being the most important in the Prioritization Survey--with only directly related corequisites shown.



Notes.

See Table 1 for specification of research areas.

Unshaded boxes represent prerequisite research (e.g., identifying and validating baseline measures, data base development); shaded boxes represent the research directly linked to retaining productive employees in Appendix A.

Unbroken lines represent direct links among research activities; broken lines represent corequisites identified in Appendix A.

Figure 2. Illustration of the sequencing of investigations related to retaining productive employees, the research area identified as being the most important in the Prioritization Survey--with all corequisites shown.

d. Determine whether or not the original resource estimates are still valid. Note the general-magnitude-of-effort estimates that have been provided regarding the personnel and time resources required for answering the indicated questions. Then find out how these estimates compare with the ones provided by those who will actually be doing the research.

4. Make final decisions about which research questions should be investigated first and which should be postponed. All of the information considered in steps 1, 2, and 3--priority rankings of selected topics, appropriateness of research tasks and research questions, interrelationships among research questions, and current estimates of requirements for personnel and time resources--should affect these decisions.

Other Considerations Affecting Decisions

As already stated, a final determination of the exact nature and sequence of the research to be undertaken cannot be reached without the extensive involvement of top decision-makers. Important issues should be addressed before such decisions are made, some of which have already been introduced. This section outlines several other specific considerations, some of which may be appropriate for the proponent/sponsor and some for the research institute.

Assessing external constraints and internal goals. Several parameters that affect the use of the decision-support materials in this document should be defined:

1. What is the anticipated availability of resources for accomplishing the program of research--in terms of both financial support and time?

2. The research described in Appendix A could consume more than 15 calendar years and between 110 and 150 professional-person-years of effort. If either time or money is expected to be a limiting factor, what criteria can be used to evaluate the merit of various changes to the program?

3. The prerequisites and corequisites specified assume a dual goal of maximum efficiency and scientific integrity. How should the often incompatible factor of the relative priority of the research areas associated with these prerequisites and corequisites be balanced with this dual goal?[14]

Resolving other issues. In addition to the basic questions mentioned above, there are other issues that should be resolved before the information in this document can be used to support decision-making with maximum effectiveness:

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[14]The situation cited above and illustrated in Figures 1 and 2 is a good example of this apparent incompatibility. Even if one can overlook the relative priorities of the prerequisite activities (since they are required for the effective handling of the research questions of primary interest), a justification of the resource commitment for the corequisites (for the sake of efficiency) might prove to be problematic if that commitment requires further postponement of research questions of higher priority.

1. For some of the questions specified, relevant research has already been conducted or is currently under way. One of the greatest potentials for saving time and money in carrying out the civilian personnel management research outlined in Appendix A is to identify information existing outside the program that could be integrated into the program as substitutes for specific research activities.[15] A thorough technical review of the process and products of these alternative inputs should be conducted by qualified researchers, however, so that the scientific integrity of the research program will not be compromised by using information that is either unsuitable for a specific application or that is methodologically inadequate.

2. For what research is it possible to find external sponsorship (i.e., outside DCP or ARI)? For instance, research topics of mutual interest might be undertaken jointly with interested parties in the Department of Defense or other branches of the military service.

3. Are the priorities consistent with other findings in the Army and in other branches of the federal government? If not, how can the differences be reconciled? What adjustments in rank order outcomes can be justified on the basis of new information or information that was unavailable to most of the survey participants who established the priorities?

4. For several research questions, judgments must be made (presumably on the basis of importance, budget, and time) about which subtopics should be addressed and in what order, or about which jobs or job series should be the focus of the research.

5. One of the initial activities implicit in research activities that seek to develop measures of constructs (e.g., employee/applicant quality, individual productivity, individual effectiveness, organizational productivity) is to establish operational definitions of those constructs. The degree to which this activity should be left to the performer of that research (as opposed to the sponsor) should be considered--to insure that these fundamental building blocks are appropriate in the Army culture.

6. For which survey-based activities is it possible (and advisable) to use an existing Army survey, and for which activities is a separate effort warranted?

Limitations of the decision-support materials. In using the material in Appendix A, one should keep in mind that the individual components are not intended to be exhaustive lists of research questions for each research area. Rather, they are meant to be *representative* of the *kinds* of questions a researcher might ask in addressing the underlying problems. Given the broad nature of the issues involved and the scope of the present project, a more comprehensive representation of the necessary research was not feasible.

The approaches to each of the research questions reflected in the general-magnitude-of-effort estimates do not necessarily represent the only approaches to a given issue. The subject matter experts (SMEs) who derived

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[15]Some investigations of potential utility are described in the *Roadmap*; others are described in Appendix C.

these estimates addressed each of the questions with the same thought process commonly used by researchers in formulating proposals for research projects--from deciding what baseline data are already available to determining the personnel and other requirements necessary to carry out the activities they conceptualize to answer the questions. Their perceptions were colored by their own training and experiences, so a different set of SMEs would likely come up with different approaches to addressing the research topics and research questions. The work sessions to determine general-magnitude-of-effort estimates took place before the prioritization process was complete, so no consideration was given to the priorities in linking one investigation to another (through prerequisites and corequisites). Such linkages are based strictly on the theoretical and/or procedural advisability of doing so.

Another implication of this independent classification process is that an integration of all research questions in all 16 research areas into a single master plan would probably contain logical inconsistencies (e.g., in required sequencing). Prerequisites and corequisites were suggested on an individual basis, without making assumptions about the outcomes of the preliminary considerations outlined above. To force the individual tasks into a tight, sequential whole would have undermined one of the guiding principles of this endeavor--flexibility in the case of changing circumstances.

It is also important to remember that general-magnitude-of-effort estimates were not developed for the testing and evaluation phase of each of the 16 research areas. To do this would have required a general idea of the number and nature of the potential strategies that would result from the completion of the relevant research. Consequently, there is a substantial effort in each area that must be added to the total resource estimates.

In using the prioritization results, one should keep in mind the questions raised regarding the respondents' understanding of the third research area, "Making sure that candidates who are selected actually get hired."[16] The ranks relating to this item should be interpreted with caution.

Despite these limitations, the information contained in this document should provide decision-makers and researchers with a usefu tool for assessing the general nature and magnitude of research efforts necessary for making long-term improvements in the management of Army civilian personnel. In addition, the document should serve as a general guide for sequencing that research.

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[16]See the section of Appendix C entitled "Follow-Up Interviews: Interview Results" in Clark, Sweeney, and Savell (in preparation) for a detailed explanation.

REFERENCES

Behavior & society: an abstract newsletter. (various issues, 1986 and 1987). Washington, DC: National Technical Information Service.

Caliber Associates. (1986, October). *Army strategic plan for civilian personnel management research: a roadmap for the future* (Contract No. 903-85-C-0369). Washington, DC: Office of the Deputy Chief of Staff for Personnel, Directorate of Civilian Personnel.

Clark, S.B., Sweeney, D.H., and Savell, J.M. (in preparation). *Establishing priorities for personnel management research in the Army.* (ARI Research Report).

Clement, M.H. and Weseman, M. (1986, August). *Managing reductions in force at U.S. Department of Energy facilities.* Working paper prepared for Office of Industrial Relations, U.S. Department of Energy. Oak Ridge, Tennessee: Oak Ridge Associated Universities.

Defense research, development, test, and evaluation on-line system (DROLS) [Machine-readable data file]. (1987). Washington, DC: Defense Technical Information Center.

Defense Technical Information Center. (1987). *Directory of researchers for human research and development projects.* (DTIC Publication No. AD-A180 400). Washington, DC: U.S. Government Printing Office.

Gratton, L. (1987). How can we predict management potential in research scientists? *R&D Management*, 17(2), 87-97.

APPENDIX A

DECISION-SUPPORT MATERIALS

GOAL Q1: TO ATTRACT HIGH QUALITY CANDIDATES FOR ARMY JOBS

I. Results of prioritization (rank order).

A. Overall: 2

B. Need for improvement: 1

C. *Consequences of no improvement:* 1

D. Likelihood of action: 7

II. Task: To compare the quality of Army civilian personnel with that of other government agencies.

A. What constitutes reliable and valid measures of the quality of Army candidates? Do such measures already exist (and if so, in what form) in the Army civilian personnel system?

1. Scenario 1: suitable measures (or proxies) already exist

a. Assumptions: completion of Q2.II.B, Q7.II.A, Q7.II.B, and Q7.II.C

b. General magnitude of effort: 3-6 PM[1]; 6 CM[2]

2. *Scenario 2:* suitable measures (or proxies) do not exist

a. Assumption: completion of Q2.II.B, Q7.II.A, Q7.II.B, and Q7.II.C

b. General magnitude of effort

(1) For one occupational series: 24 PM; 15-18 CM

(2) For five occupational series: 84-96 PM; 30-36 CM

B. To what extent do the "best and brightest" come to the Army? When they do not choose the Army, to what other government agencies and private industries do they go and to what extent?

1. Assumption: completion of Q1.II.A

2. General magnitude of effort: 6-8 PM; 8 CM

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[1]PM = professional-person-months: one month's full-time-equivalent effort of a senior researcher (experienced master's- or Ph.D.-level professional) plus an appropriate amount of administrative and support staff time (1/6 month each of administrative/managerial, computer programming, and research assistant support, and 1/4 month of secretarial support).

[2]CM = calendar-months. Inasmuch as the calendar month estimates do not take into account work that may be taking place concurrently, they are not additive across research questions.

C. Has the quality of new hires in key Army occupations changed over the last ten years or so?

1. Assumption: some reliable and valid measures of the quality of applicants have been identified and exist on a computerized data file (Q1.II.A), and some will have to be derived from other sources

2. General magnitude of effort: 12-14 PM; 12-15 CM

D. How does the use of mandatory placement programs (e.g., DOD's Priority Placement Program, OPM's Displaced Employee Program, local command's Re-employment Priority List) affect the quality of new entrants into a position?

1. Assumption: completion of Q1.II.A

2. General magnitude of effort: 6-9 PM; 12 CM

III. Task: To develop a viable system for monitoring the Army's recruitment success in key occupations.

A. What key occupations should be in the focus of this effort?

1. Assumption: tie to Q1.II.A

2. General magnitude of effort: increase Q1.II.A by 4 PM; 4 CM

B. How can a viable system for tracking recruitment success be designed and implemented?

1. Assumption: completion of Q1.II.A

2. General magnitude of effort: 18-24 PM; 24 CM

C. How does the Army's recruitment success in key occupations compare to that of other government agencies and to private industry?

1. Assumption: tie to Q1.II.B

2. General magnitude of effort: increase Q1.II.B by 6-8 PM; 2 CM

IV. Task: To identify strategies to improve the Army's ability to compete with other government agencies and with private industry for high quality personnel.

A. What are the relative effectiveness and incidence of use of existing mechanisms by which applicants for Army positions learn about openings? Are there any differences in the effectiveness of these mechanisms for different types of individuals (e.g., differences in education level, occupation, minority status)? How do these mechanisms differ for overseas positions?

1. Scenario 1: restrict investigation to current Army employees

   a. Assumption: none

   b. General magnitude of effort: 24-36 PM; 15 CM

2. Scenario 2: include non-Army personnel that were offered Army employment but chose not to accept (instituting a new survey--not a retrospective analysis)

   a. Assumption: none

   b. General magnitude of effort: 36-48 PM; 21 CM

B. What are the key factors (e.g., compensation, mobility and rotation requirements, work environment, the image of the civil servant, spouse's employment) that affect an applicant's decision of whether or not to accept an offer of employment from the Army, and what is their relative importance for different types of individuals (e.g., different with regard to education level, occupation, marital status)?

   1. Assumption: tie to Q1.IV.A

   2. General magnitude of effort: increase Q1.IV.A by 3-5 PM; 0 CM

C. How do the approaches to recruiting and marketing used by the Army and those used elsewhere compare? How do selection and training procedures for Army recruiters compare to thoser used by other organizations, both public and private?

   1. Assumption: completion of Q1.II.B, Q1.II.C, Q1.III.B, nd and Q1.III.C

   2. General magnitude of effort: 12-18 PM; 12 CM

V. Task: To identify alternative strategies for improving the ability of the Army to attract high quality candidates for its positions, based on the outcomes of the above investigations; to select the most promising strategies; and to develop the conceptual design for testing and evaluating the selected strategies.

   A. Assumption: completion of the above research

   B. General magnitude of effort: 21-27 PM; 12 CM

VI. Task: To carry out the testing and evaluation design developed above and to make necessary modifications to the strategies.

GOAL Q2: TO SELECT CANDIDATES WHO HAVE POTENTIAL FOR HIGH PERFORMANCE FROM THE POOL OF QUALIFIED APPLICANTS

I. Results of prioritization (rank order).

A. Overall: 7

B. Need for improvement: 8

C. Consequences of no improvement: 9

D. Likelihood of action: 6

II. Task: To evaluate present criteria used in employee selection.

A. What general evidence is there that the quality of a new hire, as reflected in his/her credentials, is associated with his/her adequacy (e.g., in terms of productivity) as an employee? If so, what differences exist according to characteristics such as education level, occupation, etc.?

1. Assumption: completion of Q1.II.A

2. General magnitude of effort: 3 PM; 6 CM

B. Are present criteria used in employee selection reliable and valid determinants of probable future success?

1. Assumption: appropriate data will be gathered (but not retrospectively) through an expansion of the ACCESS data base

2. General magnitude of effort: 12-15 PM; 18 CM

C. How sufficient are existing job descriptions in reflecting the actual duties of satisfactory incumbents? How adequate are current qualifying criteria for jobs in reflecting the skills necessary for success in those jobs?

1. Assumption: tie to Q1.II.A

2. General magnitude of effort

a. For one occupational series: increase Q1.II.A by 21 PM; 8 CM

b. For five occupational series: increase Q1.II.A by 105 PM; 12 CM

D. What kinds of recruits (including U.S. citizens and citizens of host countries) make the most satisfactory employees for overseas positions (in different job categories and at different levels)?

1. Assumptions: completion of Q1.II.A and Q1.IV.B

2. General magnitude of effort: 34-38 PM; 30-33 CM

III. Task: To identify alternative strategies for selecting candidates who have potential for high performance from the pool of qualified applicants, based on the outcomes of the above investigations; to select the most promising strategies; and to develop the conceptual design for testing and evaluating the selected strategies.

A. Assumption: completion of the above research

B. General magnitude of effort: 9 PM; 6 CM

IV. Task: To carry out the testing and evaluation design developed above and to make necessary modifications to the strategies.

GOAL Q3: TO ASSURE THAT CANDIDATES WHO ARE SELECTED ACTUALLY GET HIRED

I. Results of prioritization (rank order).

A. Overall: 14

B. Need for improvement: 16

C: Consequences of no improvement: 16

D. Likelihood of action: 4

II. Task: To investigate the policies and procedures which affect the timing and nature of job offers.

A. What evidence is there that the time required to extend an offer to an applicant negatively impacts the Army's ability to hire high quality employees (in different occupations, grades, and locations)?

1. Assumptions:

a. Completion of Q1.II.A

b. Availability of data at individual civilian personnel offices

2. General magnitude of effort: 6 PM; 9 CM

B. How much flexibility exists in Army starting salaries? How does it compare to other government agencies?

1. Assumption: tie to Q1.IV.B

2. General magnitude of effort: increase Q1.IV.B by 1 PM; 0 CM

C. What kinds of incentives does (or should) the Army offer to attract candidates for "hardship" sites?

1. Assumption: tie to Q1.IV.B

2. General magnitude of effort: increase Q1.IV.B by 12 PM; 0 CM

D. How can personnelists' concerns (e.g., about the legal/regulatory ramifications of hiring or not hiring certain applicants) be balanced with managers' needs to find quality people in a timely manner?

1. Assumption: none

2. General magnitude of effort: 18 PM; 9-12 CM (Note: might be able to decrease effort if work is added to task Q12.II.C.)

III. Task: To identify alternative strategies for improving the ability of the Army actually to hire the candidates identified as offering the most potential; based on the outcomes of the above investigations; to select the most promising strategies; and to develop the conceptual design for testing and evaluating the selected strategies.

A. Assumption: completion of the above research

B. General magnitude of effort: 6 PM; 6 CM

IV. Task: To carry out the testing and evaluation design developed above and to make necessary modifications to the strategies.

GOAL Q4: TO RETAIN PRODUCTIVE EMPLOYEES

I. Results of prioritization (rank order).

A. Overall: 1

B. Need for improvement: 2

C. Consequences of no improvement: 2

D. Likelihood of action: 1

II. Task: To compare turnover in the Army with that of other organizations.

A. How do turnover rates for high-performing and low-performing employees compare? Are these rates (and the overall turnover rate) any different in the Army than in other government and nongovernment organizations? Is there any evidence that high quality personnel are leaving the Army in any greater numbers than other government and nongovernment organizations experience?

1. Assumption: completion of Q1.II.B

2. General magnitude of effort: 22-27 PM; 12-14 CM

B. What are the characteristics of those high quality personnel that choose to leave the Army (e.g., perception of supervisor, reason given for leaving, length of employment, occupation, education)?

1. Assumption: completion of Q1.II.B

2. General magnitude of effort (depending on approach)

a. For retrospective study: 12-15 PM; 15 CM

b. For design and implementation of ongoing survey: 16-17 PM; 24-26 CM

III. Task: To assess the impact on the Army of losing productive employees.

A. What is the impact on the Army of turnover in specific categories of highly skilled technical positions?

1. Assumption: Completion of Q4.II.B

2. General Magnitude of effort: 41 PM; 21 CM (Note: this only covers the analysis of one job series).

B. What is the impact on the Army of high quality personnel leaving the Army to go elsewhere?

1. Assumption: tie to Q4.III.A

2. General magnitude of effort: increase Q4.III.A by 12 PM; 0 CM

IV. Task: To investigate the reasons why employees choose to leave the Army and to develop a system for monitoring these reasons.

A. What are the characteristics of the organizations that these employees go to (e.g., size, salary levels, mission, benefit packages)? What are future trends likely to be?

1. Assumption: completion of Q1.II.B

2. General magnitude of effort: 21 PM; 12 CM

B. How can data about reasons why employees leave the employment of the Army be standardized, collected, computerized, and analyzed in a systematic manner without causing undue hardship on managers and supervisors?

1. Assumption: none

2. General magnitude of effort: 3-5 PM; 4-6 CM

V. Task: To evaluate methods by which organizations and groups try to increase the retention of productive employees.

A. What kind of programs (e.g., financial rewards, recognition, promotion incentives, recreational opportunities) have been found to contribute to retention of productive employees in the Army, in other government agencies, and in private industry? Are some of these attractive features more successful for some types of employees (e.g., different in occupation, length of service, location) than for others?

1. Assumptions

a. Completion of Q1.IV.B, Q3.II.C, Q8.III.B, and Q8.III.D

b. Tie to Q4.IV.A

2. General magnitude of effort: increase Q4.IV.A by 9 PM; 0 CM

B. How can changes in rules about and provisions for retirement affect the retention of productive Army employees? What would likely be the short-term and long-term impacts on turnover of such changes.

1. Assumption: none

2. General magnitude of effort: 15-18 PM; 15-18 CM

C. How does the non-monetary recognition and rewards system for civilian employees compare to that for military personnel? What is the impact on retention of any differences?

1. Assumption: completion of Q4.V.A

2. General magnitude of effort: 11-12 PM; 12 CM

VI. Task: To identify alternative strategies for retaining productive employees, based on the outcomes of the above investigations; to select the most promising strategies; and to develop the conceptual design for testing and evaluating the selected strategies.

A. Assumption: completion of the above research

B. General magnitude of effort: 18-24 PM; 12 CM

VII. Task: To carry out the testing and evaluation design developed above and to make necessary modifications to the strategies.

GOAL Q5: TO SEPARATE POORLY PERFORMING EMPLOYEES

I. Results of prioritization (rank order).

A. Overall: 6

B. Need for improvement: 4

C. Consequences of no improvement: 4

D. Likelihood of action: 16

II. Task: To investigate the incidence and characteristics of involuntary terminations in the Army and to compare them to other organizations.

A. How have involuntary separations undertaken and completed changed in the Army over time? Why?

1. Assumption: that relevant data are available at individual civilian personnel offices

2. General magnitude of effort: 12-14 PM; 6 CM

B. How do these trends in turnover and involuntary separation compare with those in other government agencies and in private industry?

1. Assumptions

a. Completion of Q5.II.A

b. Tie to Q4.II.A

2. General magnitude of effort: increase Q4.II.A by 2 PM; 2 CM

C. What are the characteristics of terminated employees (e.g., job type, occupation, education level)? How have these characteristics changed over time? How do these trends compare with those in other government agencies and in private industry?

1. Assumption: tie to Q5.II.B

2. General magnitude of effort: increase Q5.II.B by 10 PM; 6-8 CM

D. Can likely candidates for dismissal be identified on the basis of data available at the time of employment application?

1. Assumption: completion of Q2.II and Q5.II.C

2. General magnitude of effort: 12-15 PM; 13-15 CM

III. Task: To review, to consider the effects of, and to identify possible improvements in, the Army's current policies and procedures regarding involuntary termination.

A. How does the process of terminating nonproductive individuals in the Army differ from that in other government agencies and private industry? How do the minimum requirements for separation actions imposed by OPM compare to those used in the Army? How can Army regulations be simplified and still comply with OPM regulations?

1. Assumption: none

2. General magnitude of effort: 6 PM; 6 CM

B. How much time of each of the individuals involved is required to bring about an involuntary separation for different job types?

1. Assumption: scope of effort would involve a sample of 6 job types and 5 civilian personnel offices

2. General magnitude of effort: 15-18 PM; 12-15 CM

C. What is the impact on the supervisors and managers and on the co-workers of the "targeted" employee of the termination procedure (e.g., morale, required documentation)?

1. Assumption: tie to Q8.III.A

2. General magnitude of effort: increase Q8.III.A by 9 PM; 4-5 CM

D. Is there any evidence that the difficulty of the termination process itself serves as a deterrent to undertaking such procedures and as a contributing factor to the retention of nonproductive employees? If so, what is the impact of this situation (e.g., on morale, quality of work environment)?

1. Assumption: tie to Q8.III.A

2. General magnitude of effort: increase Q8.III.A by 9-15 PM; 6-9 CM

E. How can the data required for terminating an employee be better integrated into the normal evaluation process to make such data gathering less cumbersome for supervisors and managers?

1. Assumption: completion of Q5.III.A

2. General magnitude of effort: 3 PM; 3-4 CM

IV. Task: To identify alternative strategies for separating poorly performing Army employees, based on the outcomes of the above investigations; to select the most promising strategies; and to develop the conceptual design for testing and evaluating the selected strategies.

A. Assumption: completion of the above research

B. General magnitude of effort: 6 PM; 6 CM

V. Task: To carry out the testing and evaluation design developed above and to make necessary modifications to the strategies.

GOAL Q6: TO DEAL WITH THE IMPACT OF MISSION CHANGES ON THE WORK FORCE

I. Results of prioritization (rank order).

A. Overall: 12

B. Need for improvement: 12

C. Consequences of no improvement: 12

D. Likelihood of action: 11

II. Task: To study the impact of current responses to mission changes.

A. How prevalent are reductions-in-force (RIFs) in the Army now compared to previous times? How do these patterns compare with those of other government agencies?

1. Assumption: none

2. General magnitude of effort: 9 PM; 9-12 CM

B. What is the impact of the current RIF process on the quality of Army civilian personnel?

1. Assumption: completion of Q4.III

2. General magnitude of effort: 9-12 PM; 12 CM

C. What are the characteristics of the Army's RIFed employees (e.g., occupation, length of service, quality of previous work)?

1. Assumptions

a. Completion of Q6.II.B

b. Tie to Q5.II.C

2. General magnitude of effort: increase Q5.II.C by 6 PM; 6 CM

D. What are the costs and benefits of RIFing different types of employees versus retraining them for different jobs?

1. Assumption: completion of Q6.II.C

2. General magnitude of effort: 36-45 PM; 30 CM

E. What other avenues (besides RIF) currently exist for dealing with changes in mission? Are there any additional viable alternatives?

1. Assumption: completion of Q6.II.D

2. General magnitude of effort: 6 PM; 6 CM

F. How can changes in mission be anticipated by Army policy makers and managers?

1. Assumption: none

2. General magnitude of effort: 3 PM; 3 CM

III. Task: To identify alternative strategies for dealing with the impact of mission changes on the work force, based on the outcomes of the above investigations; to select the most promising strategies; and to develop the conceptual design for testing and evaluating the selected strategies.

A. Assumption: completion of the above research

B. General magnitude of effort: 6 PM; 6 CM

IV. Task: To carry out the testing and evaluation design developed above and to make necessary modifications to the strategies.

GOAL Q7: TO IMPROVE THE ASSESSMENT OF EMPLOYEE PERFORMANCE

I. Results of prioritization (rank order).

A. Overall: 11

B. Need for improvement: 11

C. Consequences of no improvement: 13

D. Likelihood of action: 5

II. Task: To evaluate the Army's current system of assessing employee performance, including productivity, and to identify possible improvements.

A. What measures of individual performance are currently used in the Army? Are they reliable and valid? If not, based on what is being done outside the Army, what appropriate measures could be used in the Army? How do OPM requirements affect performance evaluations? At what point in time should the performance of an employee be assessed? Does it vary by job type? What is the relationship among the concepts (and measures) of individual performance and productivity? What evidence is there that reliable and valid performance assessments increase productivity?

1. Assumption: none

2. General magnitude of effort: 30-42 PM; 24-27 CM

B. How do (and should) existing measures relate to job descriptions and qualifications criteria specified for the individual being evaluated? to job classifications? to employee quality? What is (and should be) the relationship between "success" and "failure" measures (e.g., promotions, changes in salary, time in grade, recognition, termination) and current measures of individual performance?

1. Assumption: tie to Q7.II.A

2. General magnitude of effort: increase Q7.II.A by 3-4 PM; 0 CM

C. To what use are current measures of individual performance being put in the Army?

1. Assumption: completion of Q7.II.B

2. General magnitude of effort: 6-12 PM; 6 CM

D. Is the current assessment system "supervisor-friendly"? How can an optimal balance between effectiveness and ease of use be achieved?

1. Assumption: tie to Q14.III.A

2. General magnitude of effort: increase Q14.III.A by 3-4 PM; 3 CM

III. Task: To identify alternative strategies for improving the assessment of employee performance, based on the outcomes of the above investigations; to select the most promising strategies; and to develop the conceptual design for testing and evaluating the selected strategies.

A. Assumption: completion of the above research

B. General magnitude of effort: 10-12 PM; 8 CM

IV. Task: To carry out the testing and evaluation design developed above and to make necessary modifications to the strategies.

GOAL Q8: TO ENHANCE INDIVIDUAL PRODUCTIVITY

I. Results of prioritization (rank order).

A. Overall: 5

B. Need for improvement: 6

C. Consequences of no improvement: 6

D. Likelihood of action: 8

II. Task: To investigate the relationship between individual productivity and organizational productivity.

A. In the Army, how is individual productivity linked to costs?

1. Assumptions

a. Completion of Q7.II.A, Q7.II.B, and Q7.II.C

b. Conceptualization of linkages would be tested empirically on two Army functions

2. General magnitude of effort: 12 PM; 12-15 CM

B. What interrelationships can be shown to exist between measures of individual productivity and measures of organizational productivity?

1. Assumptions

a. Completion of Q8.II.A and Q14.II.B

b. Same two organizational units will be examined as in Q8.II.A

2. General magnitude of effort: 15-18 PM; 10-12 CM

III. Task: To investigate the relationship between individual productivity and individual motivation.

A. What factors can be shown to affect motivation (e.g., compensation, benefits, job rotation and mobility, autonomy, job enrichment opportunities, match between work assignments and personal interests, quality of work environment, physical fitness)? Are they different for different types of employees (e.g., different in occupation, experience, education level, urban versus rural background)? What is the relative importance of each of these factors?

1. Assumption: effort would include a longitudinal survey with two data collection points 18 months apart.

2. General magnitude of effort: 26-30 PM; 30-36 CM (Note: costs could be reduced if survey were integrated with existing civilian personnel survey activities.)

B. Are there differences in the kinds of incentives that are effective for different groups (e.g., different in occupation, education level, experience, urban versus rural background, military or civilian status)?

1. Assumption: tie to Q8.III.A

2. General magnitude of effort: increase Q8.III.A by 6 PM; 4 CM

C. What are reliable and valid measures of motivation that can be used in the Army? How do other government and nongovernment organizations enhance individual motivation and productivity? Is there evidence that such actions result in an increase in productivity?

1. Assumption: completion of Q8.III.A

2. General magnitude of effort: 4-6 PM; 5-6 CM

D. What relationships exist between organizational structure and supervisor/leader layering and ratios on the one hand and individual motivation and individual productivity on the other?

1. Assumptions: completion of Q7.II.A, Q7.II.B, Q7.II.C, and Q8.III.C

2. General magnitude of effort: 15-21 PM; 15 CM

E. What is the relationship between individual motivation and individual productivity in the Army?

1. Assumptions: completion of Q7.II.A, Q7.II.B, Q7.II.C, Q8.III.B, and Q8.III.C

2. General magnitude of effort: 6 PM; 6-8 CM

F. Can trends in individual motivation and productivity in the Army be identified? If so, how do they compare to trends in other government and nongovernment organizations? What has been the impact of these changes on employees' career decisions?

1. Assumption: completion of Q8.III.D and Q8.III.E (Note: survey should be conducted annually for five years before the present project is funded.)

2. General magnitude of effort: 15-21 PM; 12-15 CM

G. For which Army job categories can standards for individual productivity be developed?

1. Assumption: completion of Q2.II.C

2. General magnitude of effort

a. For conceptualization and design: 15 PM; 9 CM

b. Additional for application to one job series: 6 PM; 6 CM

IV. Task: To identify alternative strategies for enhancing individual productivity, based on the outcomes of the above investigations; to select the most promising strategies; and to develop the conceptual design for testing and evaluating the selected strategies.

A. Assumption: completion of above research

B. General magnitude of effort: 21-27 PM; 12 CM

V. Task: To carry out the testing and evaluation design developed above and to make necessary modifications to the strategies.

GOAL Q9: TO IDENTIFY GOOD CANDIDATES FOR SUPERVISORY AND MANAGERIAL POSITIONS

I. Results of prioritization (rank order).

A. Overall: 3

B. Need for improvement: 5

C. Consequences of no improvement: 3

D. Likelihood of action: 2

II. Task: To review the present process by which Army civilian employees are identified for supervisory and managerial positions and the outcomes of that process.

A. What valid indicators of high supervisory and managerial potential be used in the Army? Are they different for different areas (e.g., professional, administrative, technical, clerical)?

1. Assumption: tie to Q11.II.A

2. General magnitude of effort: no additional resources required

B. What are the most common shortcomings of below-average supervisors and managers? What problems may result from a high-performing technical employee becoming a supervisor based solely on his/her technical expertise? How do the problems compare with the benefits?

1. Assumption: tie to Q11.II.A

2. General magnitude of effort: no additional resources required

C. What are the characteristics (e.g., personality, education, training, experience) of supervisors and managers who go on to become successful upper-level leaders? Are they different for different areas (e.g., professional, administrative, technical, clerical)? Can these characteristics be identified early enough in an individual's career to make an intensified, accelerated training program useful in developing leadership potential?

1. Assumption: tie to Q11.II.A

2. General magnitude of effort: no additional resources required

D. Are the characteristics of effective supervisors and managers reflected in the job descriptions and qualifications criteria for these positions?

1. Assumption: tie to Q11.II.A

2. General magnitude of effort: increase Q11.II.A by 1 PM; 2 CM

E. What is the impact of having (or not having) well-defined career paths for supervisors and managers?

1. Assumption: tie to Q11.II.A

2. General magnitude of effort: no additional resources required

F. What reliable indicators of an individual's ability to adapt to changing environments can be identified (e.g., to pursue opportunities evolving from a willingness to be mobile)?

1. Assumption: completion of Q11.II.A

2. General magnitude of effort: 3 PM; 3 CM

III. Task: To identify alternative strategies for choosing good candidates for supervisory and managerial positions, based on the outcomes of the above investigations; to select the most promising strategies; and to develop the conceptual design for testing and evaluating the selected strategies.

A. Assumption: completion of the above research

B. General magnitude of effort: 6 PM; 6 CM

IV. Task: To carry out the testing and evaluation design developed above and to make necessary modifications to the strategies.

GOAL Q10: TO DEVELOP SUPERVISORY, MANAGERIAL, AND LEADERSHIP SKILLS

I. Results of prioritization (rank order).

A. Overall: 4

B. Need for improvement: 3

C. Consequences of no improvement: 5

D. Likelihood of action: 3

II. Task: To investigate the effectiveness of the Army's current development programs.

A. How effective are the Army's present programs aimed at developing supervisory, managerial, and leadership skills? What are the characteristics of these programs (e.g., topics, level of expenditures, participants)? How do the Army's present programs compare to those in other government agencies and in private industry?

1. Assumption: effectiveness can be assessed from existing data

2. General magnitude of effort: 8-12 PM; 6-9 CM

B. How feasible is it to integrate training needs for civilian supervisors and managers into existing military programs?

1. Assumption: none

2. General magnitude of effort: 4-6 PM; 6-8 CM

C. Is there any evidence that mobility and job rotation opportunities contribute to the development of supervisory and managerial skills?

1. Assumption: tie to Q11.II.A

2. General magnitude of effort: no additional resources required

III. Task: To identify alternative strategies and delivery systems for developing supervisory, managerial, and leadership skills, based on the outcomes of the above investigations; to select the most promising strategies; and to develop the conceptual design for testing and evaluating the selected strategies.

A. Assumption: completion of the above research

B. General magnitude of effort: 15-18 PM; 12-15 CM

IV. Task: To carry out the testing and evaluation design developed above and to make necessary modifications to the strategies.

GOAL Q11: TO IMPROVE THE ASSESSMENT OF SUPERVISOR AND MANAGER PERFORMANCE

I. Results of prioritization (rank order).

A. Overall: 8

B. Need for improvement: 7

C. Consequences of no improvement: 7

D. Likelihood of action: 10

II. Task: To investigate current methods by which supervisors and managers are evaluated.

A. What knowledge, skills, and abilities characterize effective supervisors and managers in the Army?

1. Assumption: completion of Q8.III

2. General magnitude of effort: 34-38 PM; 18-24 CM

B. What measures of the effectiveness of leaders and managers with varying responsibilities already exist within the Army? Are they reliable and valid? How do other government agencies and private industries assess the effectiveness of supervisors and managers? How do their systems compare with those of the Army?

1. Assumption: completion of Q11.II.A

2. General magnitude of effort: 12-15 PM; 9 CM

III. Task: To identify alternative strategies for assessing the performance of supervisors and managers, based on the outcomes of the above investigations; to select the most promising strategies; and to develop the conceptual design for testing and evaluating the selected strategies.

A. Assumption: completion of the above research

B. General magnitude of effort: 9-12 PM; 9-12 CM

IV. Task: To carry out the testing and evaluation design developed above and to make necessary modifications to the strategies.

GOAL Q12: TO INCREASE THE EFFECTIVENESS, PRODUCTIVITY, AND IMAGE OF CIVILIAN PERSONNEL OFFICES

I. Results of prioritization (rank order).

A. Overall: 9

B. Need for improvement: 9

C. Consequences of no improvement: 10

D. Likelihood of action: 12

II. Task: To define the appropriate roles for Army personnelists and managers in fulfilling the responsibilities associated with the personnel function.

A. How do other government and nongovernment organizations describe the roles of personnelists and managers? Are Army personnelists different from other federal government personnelists? If so, how?

1. Assumption: none

2. General magnitude of effort: 9-15 PM; 6-12 CM

B. What responsibilities and interrelationships are currently established for Army personnelists and managers? How does the formality compare with practice? How do managers communicate their needs and expectations to personnelists? To what extent can any differences between the responsibilities of personnelists and managers in the Army and those outside the Army be accounted for by the uniqueness of the demands of the Army? What are the expectations of various groups in the Army with regard to the personnelists they deal with? How do these expectations relate to the job descriptions of the personnelists and the personnelists' perceptions of what the expectations are? How is the image of the personnelists affected by any discrepancies that exist?

1. Assumption: none

2. General magnitude of effort: 30-36 PM; 20-24 CM

C. What are the appropriate roles and responsibilities for personnelists, managers, and line supervisors in the recruitment and hiring process? Is there any evidence of a need for managers having greater input into the recruitment process?

1. Assumptions

a. Completion of Q12.II.A

b. Tie to Q12.II.B

2. General magnitude of effort: increase Q12.II.B by 6 PM; 6 CM

D. What additional training and/or skills do personnelists need that are not now required or provided for through available training mechanisms?

1. Assumption: tie to Q12.II.B

2. General magnitude of effort: increase Q12.II.B by 3 PM; 0 CM

III. Task: To identify means of monitoring CPO effectiveness and to explore ways of improving both the perception and reality of that effectiveness.

A. How do civilian personnel offices monitor their effectiveness and motivate their employees? What reliable and valid measures of effectiveness can be used to monitor the quality of the job CPOs are doing? What measures of effectiveness are in use by other government agencies and by private industries? What incentives do CPOs offer their employees to do a good job? What other kinds of incentives can be offered to employees to improve their motivation?

1. Assumptions

a. Completion of Q12.II.A, Q12.II.B, and Q14.II

b. Tie to Q8.III.C

2. General magnitude of effort: increase Q8.III by 12-15 PM; 10-12 CM

B. What are the linkages between mobility and job rotation experience and the productivity of personnelists and the personnel function?

1. Assumptions: completion of Q7.II.A, Q7.II.B, Q7.II.C, Q8.II.A, Q8.II.B, and Q8.III.F

2. General magnitude of effort: 15 PM; 15-18 CM

C. What are the characteristics of an ideal automated system that can support civilian personnel offices? How well does the present system address the needs of local commanders, managers, and personnelists?

1. Assumption: none

2. General magnitude of effort: 12 PM; 12 CM

D. What reliable and valid measures of the image of CPOs can be used? What image measures are in use by other government agencies and by private industry? What factors affect the image of CPOs? How do other organizations improve their images?

1. Assumptions

a. Completion of Q12.II.B

b. Tie to Q12.III.A

2. General magnitude of effort: increase Q12.III.A by 3 PM; 3 CM

IV. Task: To identify alternative strategies for increasing the effectiveness, productivity, and image of civilian personnel offices, based on the outcomes of the above investigations; to select the most promising strategies; and to develop the conceptual design for testing and evaluating the selected strategies.

A. Assumption: completion of the above research

B. General magnitude of effort: 21-27 PM; 15-24 CM

V. Task: To carry out the testing and evaluation design developed above and to make necessary modifications to the strategies.

GOAL Q13: TO BUILD EFFECTIVE MILITARY/CIVILIAN RELATIONS

I. Results of prioritization (rank order).

A. Overall: 10

B. Need for improvement: 10

C. Consequences of no improvement: 8

D. Likelihood of action: 13

II. Task: To assess the attitudes of Army civilian and military personnel about each other's culture.

A. What are the key differences in military and civilian work forces (e.g., occupational, cultural, motivational, statutory)? How aware of the other group's characteristics are these two work forces? How does this awareness vary by location, occupation, job level, etc.? What evidence is there that Army civilians feel that they are "second class citizens" compared to their military counterparts? What causes of any negative perceptions can be identified?

1. Assumptions

a. Completion of Q8.III

b. Effort would involve a survey of military and civilian employees (about 10,000) and supplementary interviews at about 10 representative sites.

2. General magnitude of effort: 18-21 PM; 15-18 CM (Note: costs could be reduced by tying survey to existing Army survey activities.)

B. What evidence is there that negative perception of, and/or a lack of knowledge about, the system that controls the other part of the Army work force affects the productivity of the military and civilian components of the work force?

1. Assumption: tie to Q13.II.A

2. General magnitude of effort: increase Q13.II.A by 6-8 PM; 6-8 CM

C. What special problems exist, if any, related to the supervision of civilians by military personnel and vice versa (including performance appraisals, disciplinary actions, etc.)?

1. Assumption: tie to Q13.II.A

2. General magnitude of effort: increase Q13.II.A by 6-9 PM; 9-12 CM

III. Task: To identify alternative strategies for building effective military/civilian relations, based on the outcomes of the above investigations; to select the most promising strategies; and to develop the conceptual design for testing and evaluating the selected strategies.

A. Assumption: completion of the above research

B. General magnitude of effort: 10-12 PM; 10-12 CM

IV. Task: To carry out the testing and evaluation design developed above and to make necessary modifications to the strategies.

GOAL Q14: TO IMPROVE ORGANIZATIONAL EFFECTIVENESS

I. Results of prioritization (rank order).

A. Overall: 16

B. Need for improvement: 15

C. Consequences of no improvement: 15

D. Likelihood of action: 15

II. Task: To understand the concept of organizational productivity as it relates to the Army and to develop a system for monitoring it at various levels.

A. What measures of organizational productivity are in use in other government and nongovernment organizations? Are they applicable to the Army? What is the relationship between the concepts (and measures) of organizational effectiveness and organizational productivity?

1. Assumption: none

2. General magnitude of effort: 14-17 PM; 8-11 CM

B. What measures currently exist for assessing organizational productivity in the Army? Are they reliable and valid? How do they relate to mission statements?

1. Assumptions

a. The number of mission statements would be limited

b. The number of current measures would be small

c. Tie to Q14.II.A

2. General magnitude of effort: increase Q14.II.A by 6 PM; 6 CM

C. How do overall organization and position structures influence productivity? What are the characteristics of productive government and nongovernment organizations? What are the implications for the Army's organizational structure?

1. Assumptions

a. Completion of Q8.II and Q14.II.B

b. Tie to Q8.III.D

2. General magnitude of effort: increase Q8.III.D by 2 PM; 2 CM

III. Task: To investigate the effects of selected Army policies and procedures on organizational productivity.

A. What are the positive and negative impacts on organizational productivity of the paperwork currently associated with accomplishing necessary personnel actions (e.g., related to classification, appraisal, recruitment, and hiring strategies)?

1. Assumptions: completion of Q3.II.D and Q14.II.B

2. General magnitude of effort: 10-12 PM; 6-8 CM

IV. Task: To identify alternative strategies for improving organizational effectiveness, based on the outcomes of the above investigations; to select the most promising strategies; and to develop the conceptual design for testing and evaluating the selected strategies.

A. Assumption: completion of the above research

B. General magnitude of effort: 21-27 PM; 12 CM

V. Task: To carry out the testing and evaluation design developed above and to make necessary modifications to the strategies.

GOAL Q15: TO DETERMINE APPROPRIATE FUNCTIONS FOR CIVILIAN EMPLOYEES IN PEACETIME AND DURING MOBILIZATION

I. Results of prioritization (rank order).

A. Overall: 13

B. Need for improvement: 14

C. Consequences of no improvement: 11

D. Likelihood of action: 9

II. Task: To evaluate the Army's current approach to classifying positions as appropriate for military, civilian, or contractor personnel.

A. How are these classification decisions currently being made?

1. Assumption: none

2. General magnitude of effort: 3 PM; 3 CM

B. What reliable and valid indicators can be devised to determine the appropriateness of such classifications?

1. Assumptions

a. That a stated policy exists about what the general nature of the distinction among the classifications is

b. Completion of Q15.II.A

2. General magnitude of effort: 18-21 PM; 15-18 CM

C. How should the criteria differ for overseas positions?

1. Assumption: tie to Q15.II.B

2. General magnitude of effort: increase Q15.II.B by 9-12 PM; 6-9 CM

D. How should the criteria differ during mobilization?

1. Assumption: tie to Q15.II.C

2. General magnitude of effort: increase Q15.II.C by 18-24 PM; 12-15 CM

E. How can the interchangeability of military and civilian designations be assessed?

1. Assumption: completion of Q15.II.B

2. General magnitude of effort: 18-24 PM; 18 CM

F. How can a comprehensive modeling system be developed which will take relevant factors into account (e.g., civilian, military, and reserve manpower availability; financial considerations) under different mobilization scenarios?

1. Assumptions: completion of Q15.II.D and Q15.II.E

2. General magnitude of effort: 42-48 PM; 18-24 CM

III. Task: To assess the impacts of different military-civilian-contractor personnel mixes on selected Army functions.

A. What are the costs and benefits of the Army's current civilianization effort?

1. Assusmption: none

2. General magnitude of effort: 36 PM; 12-15 CM (Note: required resources could be decreased if survey effort could be tied to an existing survey activity.)

B. How can the effectiveness of a contractor monitor be measured?

1. Assumption: none

2. General magnitude of effort: 9-12 PM; 9-12 CM

C. What level and type of Army personnel make the most effective contract monitors?

1. Assumption: completion of Q15.III.B

2. General magnitude of effort: 14-17 PM; 15 CM

D. What are the incremental effects of adding contractor monitoring responsibilities to an Army employee's duties?

1. Assumption: none

2. General magnitude of effort: 18-21 PM; 15-18 CM

E. How well specified and well understood by the affected parties are the changes in employment mixes and job responsibilities under different mobilization scenarios? Have effective strategies been developed to address these changing needs?

1. Assumption: completion of Q15.II.F

2. General magnitude of effort: 11-12 PM; 11-12 CM

F. What are the attitudes of civilian and contractor personnel with regard to mobilization? How would these attitudes affect the Army's ability to mobilize quickly and effectively?

1. Assumption: tie to Q15.III.E

2. General magnitude of effort: increase Q15.III.E by 10 PM; 2 CM

IV. Task: to identify alternative strategies for determining appropriate functions for civilian employees in peacetime and during mobilization, based on the outcomes of the above investigations; to select the most promising strategies; and to develop the conceptual design for testing and evaluating the selected strategies.

A. Assumption: completion of the above research

B. General magnitude of effort: 9-15 PM; 9 CM

V. Task: To carry out the testing and evaluation design developed above and to make necessary modifications to the strategies.

GOAL Q16: TO FORECAST LONG-TERM REQUIREMENTS FOR THE ARMY CIVILIAN WORK FORCE

I. Results of prioritization (rank order).

A. Overall: 15

B. Need for improvement: 13

C. Consequences of no improvement: 14

D. Likelihood of action: 14

II. Task: To evaluate the Army's current forecasting strategies.

A. What techniques are presently being used by the Army to project its future manpower needs in the context of the anticipated characteristics of the general work force? What techniques are being used by other government and nongovernment organizations to forecast changes in skill needs and in the availability of those skills? How can the Army make use of these efforts?

1. Assumption: none

2. General magnitude of effort: 9 PM; 7-8 CM

B. To what degree can the Army anticipate future needs based on the likely impact of changes in the technological, societal, cultural, and political realms?

1. Assumption: completion of Q16.II.A

2. General magnitude of effort: 8-9 PM; 9-12 CM

C. How can the changing demands that would be necessitated by mobilization be taken into account in the forecasting process?

1. Assumption: tie to Q15.II.F

2. General magnitude of effort: increase Q15.II.F by 6-12 PM; 6-12 CM

D. How can forecasting strategies be tailored to serve the planning needs of individual installations?

1. Assumptions

a. Completion of Q16.II.B and Q16.II.C

b. That system can be "downloaded" to individual installations

2. General magnitude of effort: 6-9 PM; 6-9 CM

III. Task: To investigate the impact of a changing work force on selected Army policies and procedures.

A. What are the implications of changes in the future civilian work force on the Army's organizational structure and on its position classification and grading systems?

1. Assumptions: completion of Q7.II.A, Q7.II.B, Q7.II.C, Q14.III.A, Q16.II.B, and Q16.II.C

2. General magnitude of effort: 24-30 PM; 12-15 CM

B. For what specialties is the Army likely to have to rely on its own training programs for qualified personnel, rather than drawing upon a previously trained pool of workers?

1. Assumption: completion of Q16.III.A

2. General magnitude of effort: 12-15 PM; 12 CM

IV. Task: To identify alternative strategies for forecasting long-term requirements for the Army civilian work force, based on the outcomes of the above investigations; to select the most promising strategies; and to develop the conceptual design for testing and evaluating the selected strategies.

A. Assumption: completion of the above research

B. General magnitude of effort: 6-9 PM; 6-9 CM

V. Task: To carry out the testing and evaluation design developed above and to make necessary modifications to the strategies.

APPENDIX B

DETAILS OF DEVELOPMENT OF DECISION-SUPPORT MATERIALS

Identification of Research Areas: Prioritization Survey

Three major objectives and eight enabling objectives are specified in the *Roadmap* for the Army's civilian personnel program. These objectives, together with approximately 150 research suggestions also in that document, served as the basis for the 16 items included in the Prioritization Survey. In order that the items (and the dimensions on which each item was to be evaluated) be presented in terms meaningful to the wide variety of Army personnel in the survey population, the proposed items and rating dimensions were reviewed by subject matter experts (SMEs) at the Army Research Institute (ARI) and the Directorate of Civilian Personnel (DCP), and by members of the Special Advisory Group (SAG) for the project. The latter group consisted of the same individuals who comprised the Study Advisory Group for the *Roadmap* study.[17]

Identification of Research Questions, Research Tasks, and General-Magnitude-of-Effort Estimates

Preliminary identification of questions. First, each of the specific comments and research suggestions contained in the *Roadmap* was assigned to one or more of the 16 research areas. Next, the larger sets of questions were examined for redundancy and organized into logical sequences. Finally, an assessment was made regarding the general methodological feasibility of answering each research question. This process resulted in the addition of a number of research endeavors which are essentially the basic research or baseline prerequisites necessary for research in the areas mentioned in the *Roadmap*.

Panel of SMEs. In order to enhance the validity of the above information and to expand its scope, a panel of six subject matter experts (SMEs) was formed to review the material. Collectively, these individuals had almost 80 years of experience in research planning, development, execution, and management in a variety of organizations including the Army, the Office of Personnel Management, the Department of Energy, the Department of Labor, the Nuclear Regulatory Commission, the National Science Foundation, universities, and the private sector. Relevant areas of specialty for this group included the following:

- Civilian personnel research
- General personnel research
- Research planning
- Management analysis
- Social sciences research
- Human resources research
- Job analysis
- Manpower analysis and forecasting

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[17]More complete information on the development and administration of the Prioritization Survey, the method of prioritization, and the results can be found in Clark, Sweeney, and Savell (in preparation).

- Needs assessment, development, and implementation of training programs
- Research design
- Psychological measurement and assessment of individuals
- Survey research
- Evaluation
- Productivity improvement
- Technological change and employment implications
- Labor economics research
- Managerial economics
- Computer applications
- Benefit-cost analysis
- Worker mobility

Role of SME panel. The preliminary list of research questions served as the starting point for a series of work sessions in which the following tasks were undertaken by the SMEs: (a) to review the preliminary questions for completeness and appropriateness of assignment to one of the 16 research areas, (b) to estimate personnel and time requirements for conducting each investigation, (c) to determine sequencing requirements (i.e., the logical progression of research in an area), (d) to point out conceptual and methodological overlaps between and within research areas that would permit increases in overall efficiency if the related tasks were undertaken concurrently, and (e) to estimate the relative magnitude of the effort necessary for decision-makers to develop strategies for incorportating the results of the research activities to achieve the goal associated with each research area, and to develop the conceptual design for testing and evaluating those strategies.

Completion of these tasks necessitated a consideration of the approach to be used for answering each research question, including the likely availability of baseline data, the quality of existing information, etc. Prior to the work sessions, the SMEs developed their own ideas about the proper way to approach the research questions and about the required personnel and time resources. During the work sessions, they discussed alternative approaches and compared resource estimates. In some cases these discussions led to agreement about the most desirable approach. In other cases such agreement was not reached. In both cases the reported resource estimates reflect any diversity of final opinion (reported as ranges of professional-person-month and/or calendar-month estimates). The widest ranges tend to reflect fundamentally different approaches to addressing the research question. In a few cases the outcomes of significant decisions or the availability of certain data could not be speculated upon. The SMEs described more than one scenario or research path in these instances (e.g., Q1.II.A).

Development of research tasks. After the SMEs had modified the research questions (e.g., additions, deletions, changes in assigned research area) and had determined the optimum sequencing of the components within a research area, the resulting investigations were organized around several more general tasks for each research area in order to clarify the interrelationships among research questions.

Review of Decision-Support Materials

In addition to the review of the Appendix A material as it was being expanded in the SME-panel work sessions, DCP and ARI staff and the SAG members reviewed the material. Some of the suggested changes were significant enough (e.g., addition and expansion of research questions) to necessitate additional input from the SME panel.

APPENDIX C

INFORMATION ABOUT SELECTED RELEVANT ACTIVITIES

Introduction

The *Roadmap* document contains information about a wide variety of activities that are related to the research issues identified there. This information is rather comprehensive and includes references to investigations then under way in the Army, the other branches of the military, the Department of Defense, the federal government in general, universities and the private sector, in addition to published books, articles, and reports. One of the objectives of the present activity was to supplement this information. This appendix represents the result of that effort.

Since the literature review in the *Roadmap* was extensive, the present effort is focused on investigations currently under way (within the government, primarily) and on articles and reports that have recently been completed or have recently been made available. The primary "public access" sources for this information were the Defense Technical Information Center's Defense Research, Development, Test, and Evaluation On-Line System (DROLS) and publications of the National Technical Information Service (NTIS). In addition, some information was obtained in person from individuals knowledgeable in the field. Because the sources were varied, the type and completeness of information gathered also varied. Rather than standardize the content and format of these entries (thereby losing potentially useful information), a judgment was made to include all information obtained. The entries are organized by topical area.

Recruitment/Retention

PROJECT TITLE: Program Enhancements for Calibration Technicians: Identification, Selection, and Indoctrination for Overseas Needs

PERFORMING ORGANIZATION: Navy Personnel Research and Development Center

PRINCIPAL INVESTIGATOR: Greebler, C. S.

STATUS: Recent

TECHNICAL OBJECTIVE: Develop procedures for selecting, acquiring, and training civilian calibration technicians to compensate for the high attrition, aging work force, and paucity of female applicants.

APPROACH: Develop procedures for selecting, acquiring, and training. Identify job requirements and design selection instrument/criteria. Identify reasons for high attrition and develop preparatory programs to reduce attrition. Identify applicant pool in public, military, and private sectors, and design recruiting strategy for target population. Develop training program. Implement recruiting effort, hire trainees, and initiate training. Evaluate recruiting, selection, and training programs.

SOURCE: DROLS

REPORT TITLE: Motivation: A Necessary Personnel Management Tool in the Air Force

AUTHOR: Pytlik, W. F.

ORGANIZATION: Air War College

REPORT DATE: May, 1985

NTIS CODE: AD-A159 308/6/WBS

ABSTRACT: This report explores the factors which influence the attitudes of today's labor force--attitudes which equally affect individuals in the military. It will further provide a synopsis of present behavioral and motivational theories. Since actions and attitudes of senior managers substantially impact the action of subordinates, this report includes a survey of senior Air Force officers' (Air War College class of 1985) job attitudes. An analysis of the survey is presented. The report concludes with some observations and recommendations about the role of motivation in Air Force personnel management.

SOURCE: DROLS

PROJECT TITLE: A Study to Determine and Test Factors Impacting on the Supply of Minority and Women Scientists, Engineers, and Technologists for Defense Industries and Installations

DOD ORGANIZATION: Army Research Institute

PERFORMING ORGANIZATION: Huston-Tillotson College

PRINCIPAL INVESTIGATOR: Kay, N.

STATUS: Current

TECHNICAL OBJECTIVE: Shortages of qualified scientists and engineers have affected DOD's ability to recruit and retain civilian and military scientists and engineers in critical mission-related disciplines, resulting in escalating personnel costs on defense contracts.

The greatest resources available to DOD to compensate for these shortfalls of civilian and military scientists and engineers are minorities and women. This research will investigate the problem of how to increase the participation of women and minorities in science and engineering careers.

APPROACH: (1) To analyze the pertinent literature and representative programs for increasing minority and female participation in science and engineering and to identify variables important to such participation. (2) To conduct field interviews to validate and extend the findings of the first stage of the research. (3) To develop a research design for testing the efficacy of the most promising approaches to increasing minority and female participation in science and engineering careers.

SOURCE: DROLS

Separating Employees

REPORT TITLE: Managing Reductions in Force at U.S. Department of Energy Facilities

AUTHORS: Clement, M. H., & Weseman, M.

PERFORMING ORGANIZATION: Oak Ridge Associated Universities

DATE: August 1986

ABSTRACT: During the early 1980s over five million workers were displaced; this is about 1 percent of the U.S. civilian labor force each year. In comparison, work force reductions at GOCO facilities have been even more severe. During the 18 months covered in this study, GOCO employment was reduced by 4,363, which is 4 percent of the total work force.

GOCOs contacted in this study, primarily personnel directors, cite "maintaining positive employee relations" as the primary reason for conducting worker displacement programs. Worker displacement programs serve to mitigate the negative effects of reductions in force on all parties involved. The experience of DOE contractors and the private sector indicates that a rapid transition to new employment facilitated by a worker displacement program eliminates serious financial and personal problems for the worker, lessens the financial obligations of the employer, and raises the company's image in the eyes of the community.

GOCO and private sector programs were alike in many respects. Most GOCO programs contained selected elements from each of the major categories of interventions found in private sector programs. Major differences between the programs were that GOCO programs (1) were less likely to have strong union participation, (2) did not offer extended insurance benefits, (3) did not use job clubs to assist in outplacement, and (4) made much wider use of VRIF programs.

Key elements typically found in GOCO worker displacement programs are plans to reduce the number of involuntary layoffs, stress and financial counseling, development of employees' job seeking skills, and job placement activities.

SOURCE: ORAU

Performance/Productivity Measurement or Improvement

PROJECT TITLE: Pearl Harbor Naval Shipyard - Productivity Improvement Program

PERFORMING ORGANIZATION: Navy Personnel Research and Development Center

PRINCIPAL INVESTIGATOR: Crawford, K.

STATUS: Recent

TECHNICAL OBJECTIVE: Design, develop, test, and evaluate a group wage incentive system directed at increasing productivity of civilian workers.

APPROACH: Implement a group wage incentive system in a shipyard production shop for a trial period. Obtain data by means of questionnaires, interviews, and archival information. Focus research on potential changes in productivity, quality, job satisfaction, and work group cohesiveness and morale.

SOURCE: DROLS

REPORT TITLE: Performance Appraisal: A Process Approach

AUTHOR: Barnes-Farrell, J. L.

ORGANIZATION: University of Connecticut

DATE: February 1987

NTIS CODE: AD-A178 754/8/WBS

ABSTRACT: Performance appraisal systems play an important role in the effective functioning of any large organization. However, in spite of their relevance and the increasing demand for effective performance appraisal systems, our ability to improve these systems seems to have reached a plateau. In order to advance beyond our present state with regard to performance appraisal, it is necessary to have a better understanding of the psychological processes involved as one person makes judgments about the performance of another. The theoretical positions which have been developed in the field of social cognition provide a useful framework for examining these processes, since performance appraisal is essentially a cognitive task performed within the social and motivational constraints of a particular type of social situation. Therefore, the purpose of this one-year research contract was to adopt a process view to performance appraisal and then explore and test assumptions from this framework with empirical research. Variables that have been identified as important to appraisal were manipulated and/or measured, in order to explore those factors that influence the accuracy of performance appraisals.

SOURCE: NTIS Behavior & Society: An Abstract Newsletter

PROJECT TITLE: Development of Performance Measures

PERFORMING ORGANIZATION: Air Force Human Resources Laboratory

STATUS: Current

TECHNICAL OBJECTIVE: The overall objective of this project is to develop, modify, and evaluate a new "hands-on" job performance measurement technique (WTPT), and to compare this technique with other measures of on-the-job performance. In turn, these methods will be used on a large scale basis for validation of operational Air Force military and civilian selection, classification, and training procedures. Products will permit the Air Force to get the most for its manpower dollar by placing the best qualified person in each job. Also the criterion measures will be used to evaluate and streamline the training systems, meet the recently imposed legal requirements for selection systems, and increase the probability of avoiding expensive litigation and adverse judgments.

APPROACH: Research will be conducted on enlisted jobs to (1) develop job performance measurement systems, (2) train test administrators, (3) collect data and develop data base, (4) conduct comparative analyses between the hands-on method and other evaluation methods developed in the 6.2 effort, and (5) validate/evaluate operational Air Force selection, classification, and training programs. The hands-on testing approach will involve development of hands-on performance data, and performance standards associated with each instrument. Both instrument and standards development will utilize guidelines developed in a prototype 6.2 effort. Other contract work will focus on training program development linked to operationalizing the performance measures and validating selection, classification, and training procedures, task-level aptitude requirements, and on-the-job performance measures. Finally, performance data will be collected and used to validate operational Air Force selection, classification, and training procedures.

SOURCE: DROLS

PROJECT TITLE: Contributive Research in Performance and Training Evaluation

PERFORMING ORGANIZATION: Air Force Human Resources Laboratories

STATUS: Current

TECHNICAL OBJECTIVE: Selection, classification, and training of Air Force personnel. Extensive job performance criterion measures are essential to the validation and revision of enlisted, officer, and civilian selection, training, and other personnel programs. Since costs of selecting, training, and maintaining Air Force people comprise half the Air Force budget, even small gains in these areas would produce significant savings. This effort will develop and evaluate candidates job performance measurement technologies for enlisted, civilian, and officer occupations. Each of the technologies will be reviewed for scientific defensibility.

Investigations will be conducted on salient research issues which impact on the effectiveness of measurement techniques. In addition, measurement process characteristics (e.g., test administration and evaluator training) will be developed and evaluated to create the best measurement system for each occupational area. Once developed, these technologies will be evaluated for personnel/training applications. Products will permit the Air Force to get the most for its manpower dollar by placing the best qualified person in each job. Also the criterion measures will be used to evaluate and streamline training systems, meet the recently imposed congressional and DOD requirements for selection systems, and increase the probability of avoiding expensive litigation and adverse judgments.

APPROACH: Job performance measurement systems developed for enlisted specialties will be evaluated for their applicability to civilian and officer specialties. The strengths and weaknesses of performance measurement technologies will be identified and, if necessary, modified or alternative measures developed. Factors influencing performance or its measurement will be evaluated. Ultimately, cost-effective measurement technologies will be recommended for advanced development R&D. The candidate measurement

technologies, evaluator training, and data collection procedures which provide accurate performance data will be determined, and the influence of personnel and situational factors on performance and its measurement will be assessed.

SOURCE: DROLS

Supervisor Selection and Development

ARTICLE TITLE: How Can We Predict Management Potential in Research Scientists?

AUTHOR: Gratton, L.

ORGANIZATION: P.A. Personnel Services, London

ABSTRACT: The success of an R&D operation depends on selecting the right specialists to occupy management positions. Errors of selection mostly arise because the choice is made on the basis of candidates' current performance as a scientist and technologist. However, the author makes the point that persons likely to make good R&D managers differ qualitatively from good researchers.

The organization's problem is therefore to find reliable ways of predicting management potential with sufficient but not exclusive regard to current performance. The author recommends the use of a Career Aspirations Program, based on exposure to the processes operating in an Assessment Center. This is a systematic procedure using an array of personnel evaluation techniques through which a person is made aware of the demands of a management job and managers made aware of the likelihood of that person's meeting them.

At the end of the process a course of personal development is agreed upon. In concrete terms this means for the potential manager that promotion may follow. Especially important if the verdict is that he or she is to continue as a technical specialist, the job may be redesigned to give it more scope and impact, or the person concerned may be retrained or placed under the care of a senior colleague acting as a mentor.

SOURCE: *R&D Management*, 1987, 17(2), pp. 87-97

PROJECT TITLE: Assessment of Air Force Managerial Abilities

DOD ORGANIZATION: Air Force Human Resources Laboratory Force Acquisition

PERFORMING ORGANIZATION: Texas A&M Research Foundation

STATUS: Recent

TECHNICAL OBJECTIVE: To develop prototype instruments for identifying and measuring managerial abilities, then to develop experimental designs for assessing those instruments. Work will contribute directly to planned 6.2 and 6.3 research to develop individual job performance criterion measures for validation of selection systems as well as assist development of operational managerial assessment instruments and management training programs.

APPROACH: Contractor will summarize existing relevant literature, develop prototype data collection instruments, and develop an experimental design for assessing those instruments. The experimental design will include descriptions of the sample selections, administration procedures, and analysis procedures. In short, contractor will develop an experimental plan and data collection instruments.

SOURCE: DROLS

PROJECT TITLE: Requirements for Civilian Supervisors

PERFORMING ORGANIZATION: Army Research Institute

PRINCIPAL INVESTIGATOR: Oliver, L. W.

STATUS: Current

TECHNICAL OBJECTIVE: To provide the Army with a scientific basis for making decisions about the policies and management of its civilian supervisors. Focus is on first-line supervisors and the identification of job requirements to be used in the selection and development of supervisors.

APPROACH: A multi-method approach will be used to gather relevant information, including literature review, survey, interview, and direct observation. Existing technologies will be identified and evaluated for utility to the DA civilian population.

SOURCE: DROLS

PROJECT TITLE: Job Requirements for Civilian Supervisors

DOD ORGANIZATION: Army Research Institute

PERFORMING ORGANIZATION: Human Resources Research Organization, Inc.

PRINCIPAL INVESTIGATOR: Riegelhaupt, B.

STATUS: Current

TECHNICAL OBJECTIVE: The purpose of this research is to provide information about important supervisory behaviors and competencies. This information will be used to develop procedures for the improved selection of civilian first-line supervisors in the U.S. Army.

APPROACH: This contract requires the development and analysis of a survey of first-line supervisors and subsequent meetings with subject-matter experts to identify the competencies required for effective supervision.

SOURCE: DROLS

Forecasting Technology

PROJECT TITLE: Forecast of Construction Technology

DOD ORGANIZATION: Construction Engineering Research Laboratory

PERFORMING ORGANIZATION: The Futures Group

PRINCIPAL INVESTIGATOR: Goodrich, W.

STATUS: Current

TECHNICAL OBJECTIVE: The objective is to produce forecasts of technological change relating to military and civilian construction and to assess the impact of those changes on future military construction. The forecasts will span the next 15 years or so and will be directed to specific technologies of importance to the military.

APPROACH: Examine recent opinion concerning the prospects for construction technology. Select key technologies for detailed study. Conduct structured interviews of carefully selected individuals in order to identify appropriate technological indicators, potential events, issues, and barriers to progress in this field. Prepare an interim report highlighting interview results and identifying significant elements for incorporation in phase II.

SOURCE: DROLS

Manpower Modeling

PROJECT TITLE: Navy Laboratories Staffing Model

DOD ORGANIZATION: Director of Naval Laboratories

PERFORMING ORGANIZATION: Navy Personnel Research and Development Center

PRINCIPAL INVESTIGATOR: Medearis, B.

STATUS: Recent

TECHNICAL OBJECTIVE: Develop a macro model to represent the Navy Research Laboratory staffing requirements in order to meet a congressional requirement for full manpower requirements coverage for the entire shore establishment under the Navy Manpower Engineering Program (NAVMEP) by December 1985. The model will project, with reasonable accuracy, the quantity of scientists, engineers, and technicians required to support a specific level of funding.

APPROACH: A feasibility study will be conducted and, if feasible, a model will be designed. The model design will be done in two concurrent phases: (1) design of the mathematical structure, and (2) development of the software specifications. The actual model development will begin after the model design is complete. Policy variables will be applied to the model consisting of such things as in-house vs. contract ratios. productive ratios, and ceiling constraints. The model will be tested and evaluated by the director of Navy laboratories and implemented.

SOURCE: DROLS

PROJECT TITLE: Total Force Manpower Tradeoffs

PERFORMING ORGANIZATION: Navy Personnel Research and Development Center

PRINCIPAL INVESTIGATOR: Shoecraft, M. R.

STATUS: Current

TECHNICAL OBJECTIVE: Develop and test techniques to evaluate the efficiency and effectiveness of the programmed levels of military and civilian manpower. Analyze total force manpower requirements and trade-off decisions considering manpower policy and external constraints that would affect the composition of the programmed manpower mix.

APPROACH: Develop econometric models to project future force levels and support manpower requirements. Assess the allocation of authorizations to requirements by defense planning and programming category (DPPC) and resource sponsor. Evaluate the tradeoff of military and civilian manpower resources and recommend an optimal manpower mix.

SOURCE: DROLS

PROJECT TITLE: Development of Military/Civilian Manpower Requirements: Projection and Allocation Models

DOD ORGANIZATION: Navy Personnel Research and Development Center

PERFORMING ORGANIZATION: Mathtech Inc.

PRINCIPAL INVESTIGATOR: Hudak, P.

STATUS: Recent

TECHNICAL OBJECTIVE: Develop, test, and evaluate manpower requirements and allocation data systems and models for use in Navy's planning, programming, and budget systems (PPBS) and develop civilian work force management models.

APPROACH: Use econometric models to estimate levels and classes of manpower based on fleet size and configuration. Develop civilian personnel data bases to support civilian resource allocation and work force flow model development.

SOURCE: DROLS

PROJECT TITLE: Army Manpower Cost System (AMCOS)

DOD ORGANIZATION: Army Research Institute

PERFORMING ORGANIZATION: Systems Research and Applications Corp.

PRINCIPAL INVESTIGATOR: Hunter, R.

STATUS: Current

TECHNICAL OBJECTIVE: To quantitatively estimate the life cycle manpower costs of enlisted, reserve/national guard, officer, and civilian personnel from recruitment to retirement and death. These estimates can be used to determine manpower costs associated with the life cycles of particular weapons systems, will help plan and forecast manpower costs to the Army, and assist in making efficient man-machine trade-off decisions.

APPROACH: To construct quantitative and comprehensive cost models to estimate the Army's cost of recruitment, training, pay allowances, bonuses, educational and medical benefits, retirement, permanent change of station, and death benefits by military occupational specialty and pay grade. Economic, budget, and life cycle costs will be estimated. Specific algorithms will be developed for automated use on personal computers.

SOURCE: DROLS

PROJECT TITLE: Host Nation Support Study

PERFORMING ORGANIZATION: Air Force Center for Studies and Analysis

PRINCIPAL INVESTIGATOR: Ms. Carnes, D.

STATUS: Recent

TECHNICAL OBJECTIVE: To gain an understanding of the categories of personnel sources available to support U.S. Air Force units in combat operations in Europe, and in the process to identify shortfalls and develop a process to assist managers in planning, negotiating, and assigning wartime host nation support (WHNS) to selected support skills. This process will enable managers to better assess the potential for using WHNS and determine an appropriate mix of WHNS and the U.S. force structure.

APPROACH: Identify current and planned requirements/capabilities in wartime of each U.S. Air Force support functional area in Europe. Establish if and where shortfalls exist and the contribution of various personnel sources (to include HNS) to the force structure. The assignments of these personnel resources will be modeled using a linear programming method to maximize the values of assigning available support area/personnel source combinations to support requirements.

SOURCE: DROLS

Mobilization Issues

PROJECT TITLE: Civilian Skills Report

PERFORMING ORGANIZATION: Air Force Human Resources Laboratory

STATUS: Recent

TECHNICAL OBJECTIVE: To conduct a study and write a report on the level of skilled labor available in the civilian labor force to meet mobilization requirements.

APPROACH: The study will examine existing data bases and will also request a detailed distribution of occupations by regions of the country and selected demographic/economic variables. Gaps and weaknesses in the data will be noted and suggestions made for correcting problems.

SOURCE: DROLS

PROJECT TITLE: Host Nation Support Study
(see details under "Manpower Modeling" section)

Large-Scale Longitudinal Surveying

PROJECT TITLE: Computerized Networking Survey System (CENSUS)

DOD ORGANIZATION: Office of the Secretary of Defense

PERFORMING ORGANIZATION: Navy Personnel Research and Development Center

PRINCIPAL INVESTIGATOR: Doherty, L. M.

STATUS: Current

TECHNICAL OBJECTIVE: To test the feasibility of implementing a nationwide computerized survey network to assess attitudes of Navy civilian personnel in a timely manner.

APPROACH: The approach includes: (1) developing computer software to collect and analyze survey results in a timely and efficient manner, (2) developing sophisticated sampling plans so that results can be used to predict behavior, (3) integrating survey and personnel data bases longitudinally to assess the impact of policies, and (4) adapting principles from cognitive psychology on the most effective way to collect survey responses.

SOURCE: DROLS

General

ARTICLE TITLE: Research Integration: An Essential for Military Psychological Research

AUTHOR: Oliver, L. W.

ORGANIZATION: Army Research Institute

DATE: June 1986

NTIS CODE: AD-A177 807/5/WBS

ABSTRACT: This article encourages military psychologists to learn about and apply nontraditional (quantitative) approaches to research integration in topical areas of interest to military psychology. Various research integration approaches (literary, vote-counting, combining significance levels, and meta-analytic) are summarized. Also discussed are the advantages of meta-analytic approaches to research integration as well as some of the problems posed by the use of such quantitative procedures. Implications for military psychology include more complete reporting of research results, integration of research in areas of interest to military psychologists, and identification of research gaps. Cross-service collaborative efforts are urged to accomplish the research integration step and to plan programmatic research to fill the gaps in our cumulative knowledge.

SOURCE: NTIS Behavior & Society: An Abstract Newsletter

REPORT TITLE: Recommendations for "People Research and Development" Actions to Improve Army Reserve Component Readiness

AUTHOR: Bynum, J. A., & Fischi, M. A.

ORGANIZATION: Army Research Institute

DATE: February 1986

NTIS CODE: AD-A172 678/5/WBS

ABSTRACT: Data and documentation published by the U.S. Army Forces Command (FORSCOM) Headquarters were reviewed, FORSCOM staff personnel were interviewed, and other Department of Defense documents were reviewed and personnel interviewed. MOS qualification and personnel were cited as the most critical Manpower, Personnel, and Training issues limiting Reserve Component (RC) readiness in FY83. Manpower strength may be more a function of policy and budget constraint, but there are indications that recruiting and retention are becoming problems. Training was not cited as a critical factor impeding readiness in the RC; however, the potential profit from training and human factors research and development is significant. A planned, systematic program of research and development in recruiting, retention, motivation, and morale would benefit the RC. The RC would benefit from a plan that would apply currently available training and human factors technology to the RC's unique troop and individual ready reserve issues, while simultaneously providing for testing and applying high technology as it becomes available.

SOURCE: NTIS Behavior & Society: An Abstract Newsletter
