

**Study
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**Factors for Determining the Army's
Role in Supporting Military
Occupational Specialty (MOS)
Design/Re-Design**

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Final Report

**FACTORS FOR DETERMINING
THE ARMY'S ROLE IN SUPPORTING
MILITARY OCCUPATIONAL SPECIALTY (MOS)
DESIGN/RE-DESIGN**



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FACTORS FOR DETERMINING THE ARMY'S ROLE IN SUPPORTING MILITARY OCCUPATIONAL SPECIALTY (MOS) DESIGN/RE-DESIGN

EXECUTIVE SUMMARY

Research Requirements:

Since 1989, the Army Research Institute (ARI) has engaged and sponsored research aimed at developing methods and techniques that can be used to design or re-design Military Occupational Specialties (MOSs). These initiatives have taken place while the pace of MOS design/re-design activity has increased in response to sizeable reductions in the Army's endstrength. While there have been requests for technical support by individual Army personnel proponents and others engaged in the MOS restructuring process, no systematic review has been undertaken nor are there any current data that can be used to determine the extent to which there is an Army-wide need. This research has been undertaken to gather data that can be used to assess the needs for future Army research related to MOS design/re-design, identify who the users of such research would be, and to identify potential payoffs to the Army.

Procedure:

During Spring 1997, ARI sponsored a series of field visits to enlisted personnel proponent offices at which data were gathered about current Army MOS design/re-design practices. Personnel proponent offices that participated in interviews with ARI representatives included those at Aberdeen Proving Ground, Fort Bliss, Fort Gordon, Fort Jackson, Fort Knox, Fort Lee, Fort Sam Houston, and Fort Sill. Field notes documenting responses to a standard set of questions were prepared following each field visit. These field notes have been summarized, first, in terms of the responses the proponents made to questions in 15 different areas pertaining to MOS design/re-design. These summaries were then used to prepare a summary description of the Army's current MOS design/re-design practices. This report is based on those summaries and describes the need for research, the target audience, and the potential payoffs.

Findings:

Assessment of the data collected from the personnel proponents leads to the following findings:

1. The personnel proponents have need for research and technical assistance related to MOS design/re-design.
2. The proponent office analysts are the principal target audience and would be users of research and technical assistance, as evidenced by their requests for help and their commitment to support their MOSs.
3. Although proponents do not have definitive or quantifiable data pertaining to research payoffs, payoffs to the Army appear likely as result of research and technical assistance in terms of significantly

increased productivity among personnel proponent analysts, sounder MOS design/re-design proposals, and restructured MOSs that will more likely meet their objectives.

Utilization of Findings:

The findings reported here can be used by the Army as a basis for determining its future role in MOS design/re-design research and technical assistance. Should the Army continue its efforts in this area, its approach should be compatible with the needs and characteristics of the target audience.

**FACTORS FOR DETERMINING THE ARMY'S ROLE IN SUPPORTING
MILITARY OCCUPATIONAL SPECIALTY (MOS) DESIGN/RE-DESIGN**

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FACTORS FOR DETERMINING THE ARMY'S ROLE IN SUPPORTING MILITARY OCCUPATIONAL SPECIALTY (MOS) DESIGN/RE-DESIGN

Introduction

Since 1989, the Army Research Institute (ARI) has engaged and sponsored research aimed at developing methods and techniques that can be used to design or re-design Military Occupational Specialties (MOSs) (Akman & Haught, 1990; Haught, Akman & Finley, 1990). More recently, in 1994, ARI has taken on responsibility for conducting the Army's occupational survey program (Worstine, 1995). These initiatives have taken place while the pace of MOS design/re-design activity has increased in response to sizeable reductions in the Army's endstrength. While there have been requests for technical support by individual Army personnel proponents and others engaged in the MOS restructuring process, no systematic review has been undertaken nor are there any current data that can be used to determine the extent to which there is an Army-wide need for continued support in the area of MOS design/re-design. The Army faces the following key question:

Should the Army conduct research and provide technical support to personnel planners responsible for MOS design/re-design efforts and, if so, how?

To help answer this question, ARI sponsored a series of field visits during Spring 1997 to enlisted personnel proponent offices and Headquarters, Department of the Army (HQDA) review agencies at which data were gathered pertaining to the needs, customers, and payoffs related to performing research or providing technical assistance in this regard. Personnel proponent offices that participated in interviews with ARI representatives included those at Aberdeen Proving Ground, Fort Bliss, Fort Gordon, Fort Jackson, Fort Knox, Fort Lee, Fort Sam Houston, and Fort Sill. Field notes documenting responses to a standard set of questions were prepared following each field visit.

The purpose of this paper is to provide information, based on the field data collection, to Army management which can be used to determine the needs for research and technical assistance related to MOS design/re-design. The paper first describes the basic approach to data collection and analysis underlying this effort (See Akman, 1997). Then, the need for research and technical assistance is discussed. This is followed by a discussion of who the potential customers, or users, would be including a target audience description. Finally, payoffs to the Army as a result of research and technical assistance are discussed.

There are two appendices. Appendix A presents a description of the MOS design/re-design process. This is based on interpretations and summaries of field notes recorded during the interviews with representatives of the personnel proponent offices and HQDA review agencies. Appendix B summarizes the responses by each proponent to questions asked in 15 areas pertaining to MOS design/re-design; these summaries were used to develop Appendix A.

Data Collection and Analysis Concepts

Figure 1 illustrates the conceptual model underlying the data collection and analysis proposed for determining the Army's research role in MOS design/re-design. There are four factors that the Army should consider: Need, Customer, Payoff, and Money. Insights and understanding these four factors may be based on data pertaining to 15 different process elements which are identified in the figure and described in Table 1.

Need represents a requirement for training, technical support, methodology, data, theory, or other research products that may be developed through basic or applied research and that are needed in order to correct some deficiency in the existing MOS design/re-design process. Need may be identified in two different ways: (1) based on specific requirements stated by one or more participants in the MOS design/re-design process and (2) through assessment of data pertaining to the various process elements.

The second factor, Customer, is a key factor in the Army continuing a research role in MOS design/re-design. Not only must there be Need, but there must be a set of customers who will support the research, at least in terms of providing "live" data and test sites. The customer, also, must be committed to actively accept and use the subsequent products. In the absence of a committed customer community, developing capabilities that will not be readily used will largely be futile.

Third, there must be a significant Payoff to the Army as the result of future Army research efforts. The Payoff may be related to procedural efficiencies or better MOS design/re-design decisions. While determining the nature and likelihood of potential payoffs is usually feasible, its measurement is often not. The consequences of most MOS design/re-design decisions do not play themselves out in the isolation of the laboratory but occur throughout the course of everyday Army activity. Unable to control the environment generally makes measuring payoffs technically and economically infeasible. Therefore, judgments regarding the payoffs resulting from research must and can suffice.

The fourth factor is Money. There must be budgetary resources available to support MOS design/re-design efforts. This is a function both of the Army's budget as well as its priorities. The latter may be influenced by the three preceding factors. Where there is a demonstrated need, a legitimate and engaged customer, and significant payoffs, the case for allocating funds will be stronger.

The data collection and analysis strategies laid out here focus on developing insights to and assessments of Need, Customer, and Payoff. Money enters into the equation independent of the MOS design/re-design process itself.

The Baseline for Assessing the Army's Role

The interplay among three realities --- the Army's on-going requirement to restructure MOSs, the state of Army personnel proponency, and the experience and expertise of the typical personnel analyst --- creates the baseline from which assessments of need for research and technical assistance are made.

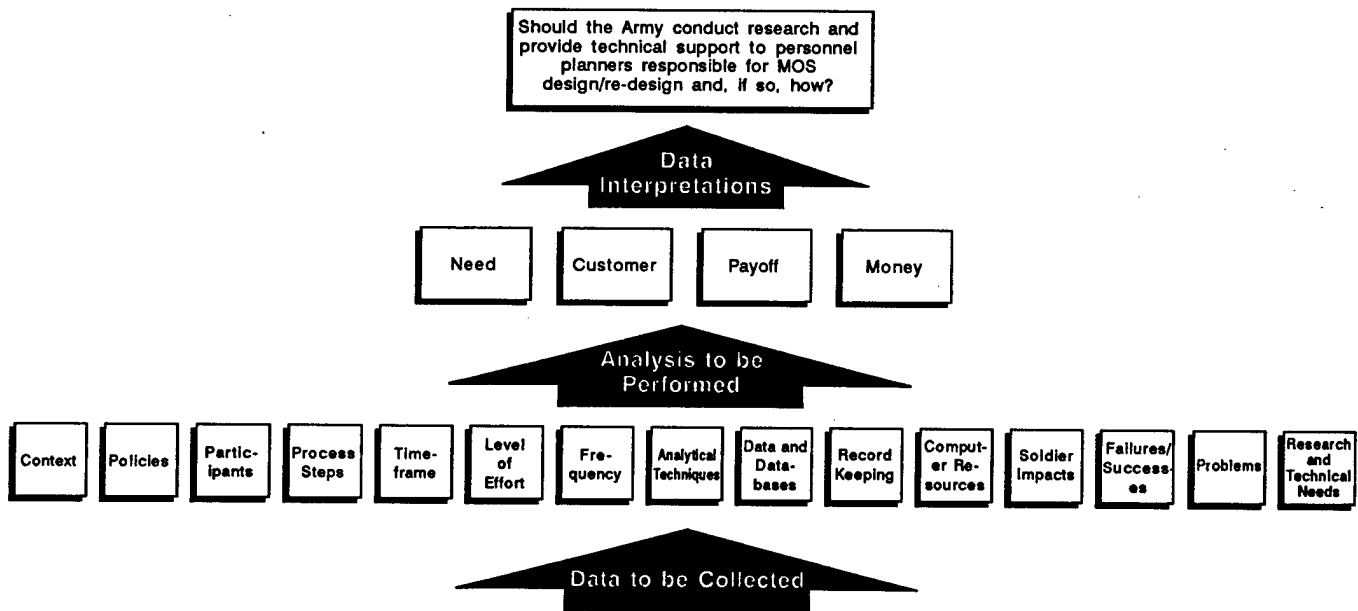


Figure 1. Conceptual framework for determining the Army's needs for support in the area of MOS design/re-design research.

Table 1**Process Element Descriptions**

Context	Scope of MOS design/re-design experience; organizational structure and experience.
Policies	Official Army and local policies and regulations defining MOS design/re-design requirements.
Participants	Identity of participants; characteristics and capabilities; training; reference material; files and records inherited and left behind; impact of staff turnover; difficulties faced.
Process Steps	Procedural steps involved in MOS design/re-design; inputs, outputs, agents; areas of analytical complexity; local practices.
Timeframe	Length of time required for developing proposal; typical interruptions; effects of delay; identity and impact of other time demands.
Level of Effort	Person-hours required for developing proposal; availability of time; identity and impact of other demands.
Frequency	Number of MOS design actions annually; factors influencing frequency.
Analytical Techniques	Techniques and tools used; features; ease of use; availability; additional requirements.
Data and Databases	Data and databases used; features; ease of use; availability; additional requirements.
Record Keeping	Formal record keeping procedures; methods of documentation; record retention; availability; utility as audit trails.
Computer Resources	Computer resources (hardware and software) available and used; types of applications; local capabilities.
Soldier Impacts	Numbers of soldiers whose MOSs are redesigned; nature of impacts, e.g., training, grade structure, duties and tasks, etc.; problems.
Failures/Successes	Successful actions and factors contributing to success; failures and related factors; lessons learned - local applicability and Army-wide; implementation results.
Problems	Problems cited in relation to policy, process, effort, participants, tools, data and databases, record keeping, and computer resources - local applicability and Army-wide.
Research and Technical Needs	Needs for research and technical support cited in relation to policy, process, effort, participants, tools, data and databases, record keeping, and computer resources - local applicability and Army-wide.

While many restructurings today are a result of the Army's downsizing, changes in technology, doctrine, organizational structure, mission, and a variety of other factors also have caused change in the past and will cause change in the future. MOS design/re-design is an on-going requirement facing Army personnel planners just as similar requirements face organizations of all kinds.

Under AR 600-3, The Army Personnel Proponent System, Army personnel proponent offices have responsibility for MOS design/re-design (structure), one of eight personnel life cycle management functions encompassed in Army personnel proponent offices. The personnel proponent offices visited during the field data collection operate at various levels of effectiveness and efficiency. There are one or two which have strong branch support, establish and pursue clear proponent agendas. With these exceptions, most proponent offices operate with tepid branch support, their existence as personnel proponents not entirely understood or supported by their branch, and staffed with analysts who strive to do right but have little internal or external support and who may not even operate in positions authorized to the personnel proponent.

Most personnel analysts in the proponent offices are serious about their responsibilities. They, however, arrive without any prior experience or knowledge of personnel proponent issues and responsibilities, let alone any comprehension for MOS design/re-design. In the absence of any formal training, a year on the job is required, by most estimates, before the analyst has sufficient understanding of the language and issues of proponent to be fully effective. At that point, the analyst may be on-board in the proponent office for another 6-12 months before being reassigned to a field duty position.

When (1) the demands for MOS design/re-design, (2) the state of personnel proponent offices, and (3) the capabilities, responsibilities, and serious commitment of most personnel analysts are considered together, there is a significant gap between the Army's operational requirement for restructuring, on the one hand, and the current resources, capabilities, and commitments, on the other hand. Considering that thousands of soldiers may be affected by structure changes every year, reducing the gap in the overall MOS design/re-design process becomes the focus around which a discussion of the Army's role in research and technical assistance is appropriate. Most participants in the field data collection, although frustrated and cynical because of the circumstances in which they must operate, are looking for help to make their roles effective, meaningful, and productive.

Need for Army Research and Technical Assistance

Based on the field data collection, needs for improving the existing MOS design/re-design process and for technical assistance were identified explicitly by numerous participants in the process. Additionally, when all the information gathered about the MOS design/re-design process is viewed in its totality, there are other needs as well.

The most oft expressed, most credible needs required to fix problems or improve the process are those more global in nature, i.e., have impact in general, broad ways rather than in specific, detailed ways. The nature of the problems that were identified

and the needs that were expressed are very fundamental to the MOS design/re-design process producing credible results. While there may be needs related to a specific analytical technique, data development and analysis, or technical discipline, e.g., statistical analysis, occupational analysis, etc., the focus of the most typical participants in the data collection is not in the detail but in the overall process, requirements, and responsibilities. Most participants in MOS design/re-design are so consumed by understanding and accomplishing the requirements of AR 611 series, Military Occupational Classification and Structure (MOCS), and the MOCS Guide (U.S. Army, 1994) that they rarely are in position to consider the detail. What follows addresses the fundamental needs identified by these participants. That they did not identify more specific needs does not mean they do not exist. Only, that there are bigger, more fundamental areas in which research and technical assistance are needed before there is need to dissect and fine-tune the MOS design/re-design process as it currently functions.

Needs Explicitly Identified by Participants

Requirements identified for research and technical support fall in five areas: training, procedural guidance for performing front-end analysis, "how to" procedural guides, reliable software supporting data analysis, and access to HQDA data.

Formal training programs. Most proponents identify a need for training analysts in proponency and MOS design/re-design. Almost all analysts assigned to enlisted proponent offices are mid-career noncommissioned officers (NCOs). They are often highly rated specialists in terms of their MOS. They are not, however, specialists in proponency or occupational analysis.

Their first exposure to personnel proponency issues usually occurs on their first day of arrival in the proponent office. They come without knowledge of the role of the proponent office, their responsibilities, and the language and procedures of proponency. If the proponent has a cadre of analysts with long tenure (as is the case in a few instances), training within the proponent office may occur. More often than not, however, most of the analysts in the proponent office are still finding their way, having been on board for about a year. By two years, they will have left. Under current circumstances, proponent analysts spend almost half their tenure learning how to perform their job by which time they are beginning to focus on their next assignment.

Without exception, a need for training programs was identified by the proponents as critical. They would like to see regularly scheduled formal training. If formal classroom training cannot be established, multimedia-based or distance learning methods should be considered as alternatives.

Front-end analysis. The MOCS Guide states that "the first step [in designing/re-designing an MOS] is to identify the necessity for a change and then clearly define the scope of the problem." Neither the guide nor any other document available in the proponent office offers the analyst any further guidance with respect to how to make such determinations.

The importance of front-end analysis, i.e., identifying the factors that may require an MOS change and developing and analyzing alternative MOS concepts, was

identified by several proponents as critical for a successful restructuring. Usually, the MOS design/re-design concept, however, is the result of an "ad hoc advocacy" process occurring in one or two ways. Either the requirement is directed by higher authority or else it is the product of a series of conferences or meetings of interested parties over an extended period of time during which the issues are identified, debated, and resolved.

Critics of the current situation seek guidance with respect to how to do a front-end analysis, i.e., develop alternative, feasible MOS concepts that will underlie a MOCS proposal. In particular, they want to know what analysis should be done, how to perform the analysis, and what criteria should be met for restructuring MOSs. Given the circumstances under which such front-end studies would likely occur, the proponents need a process embodying straightforward analytical steps producing a few essential elements of information. The front-end process must be designed so that proponent analysts can complete the analysis over relatively short timeframes.

The Task Knowledge Commonality Analysis Method (TKCAM), used by some proponents in the past for this purpose, may be the basis for a front-end process (Akman & Enwright, 1995). While TKCAM does not focus on all issues, the methodology highlights commonalities with respect to "knowledges". These can be interpreted as proxies for other key job design parameters. Its formulation and specification can be made compatible with the proponents' needs for a front-end process.

New procedural guidance. The current MOCS Guide was developed to provide guidance with respect to developing a MOCS proposal. In this respect it has a focus on documenting the proposed MOS changes.

Participants in the field data collection identified a need for a guide with a broader focus, first on developing and analyzing the MOS change concepts and then documenting the changes for Army review, approval, and implementation. With respect to structure, the personnel proponents need a guide documenting a standard operating procedure.

One participant in the field data collection pointedly stated that the existing guide should be "replaced" as opposed to "revised" with a new guide that presents the MOS design/re-design process in a logical, sequential format. Its guidance must focus not only on "what to do" but "how to do". There needs to be more numerous, current examples. The guide's presentation should be geared to the typical analyst, a specialist in his MOS with little or no background in occupational analysis who engages in MOS design/re-design while facing many other proponent demands for time and attention.

Data analysis software. The Change in NCO Structure (CINCOS) study required personnel proponents to analyze the grade structure of all their MOSs. This is typically a time-consuming, tedious undertaking. To facilitate this requirement, the U.S. Total Army Personnel Command (PERSCOM) Military Occupational Structure Division (TAPC-PLC) supplied the ApplyMOC software program which had been informally developed as an aid for its own review of MOCS proposals. While the software was unreliable and undocumented in its initial releases, it was steadily improved during the time CINCOS was in progress. The proponents in the field data collection, while

critical of ApplyMOC's informal origin and level of support, viewed the software as a potentially valuable asset in MOS design/re-design.

There is a need for data analysis software including both its development, distribution, and on-going technical support and maintenance. Since development and application of standards of grade and grade structure analysis pose large demands for time and effort on the proponents, software automating parts or all of this process would contribute significantly to reducing the time and effort required, while enhancing the arithmetical accuracy of the analysis. Use of such software would help proponents reorder the focus of their efforts when engaged in MOS design/re-design away from routine, clerical, counting type tasks, either freeing time to meet other requirements or making time available to engage in more analysis. Evidence to this effect was demonstrated in pilot tests of prototype software at Fort Leonard Wood, Fort Gordon, and Aberdeen Proving Ground in 1991 (Haught, 1992).

Standard, simplified access methods to HQDA databases. Some proponents have dedicated data base managers who have the expertise to retrieve HQDA data, troubleshoot data transfer problems, and organize data. One proponent uses one of its authorized positions to locate an analyst at HQDA to support its data access requirements. More typical, however, are the proponents that lack data base specialists and whose analysts, usually with limited or no skills in computer-based data retrieval and communications, must obtain whatever data are required for their analyses. Obtaining data from HQDA for these proponents can be a time-consuming, difficult task, particularly, when unexpected problems occur.

There is need to standardize and simplify the way in which proponent's have access to HQDA personnel data. While HQDA and the U.S. Army Force Management Support Agency (USAFMSA), in particular, could contribute to more standard, simplified access methods, the source of problems in this regard is the proponents themselves. Proponent offices do not operate with the same set of computer resources, some are more current and capable than others. Neither, as already noted, do they have staffs with similar levels of expertise. Improving data transfer between proponents and HQDA involves creating HQDA interfaces that more realistically accommodate the typical proponent's capabilities in data processing.

Needs Implied by Participant Responses

The preceding five research needs reflect the weight of opinion explicitly expressed by the proponents participating in the field data collection. While these needs were identified in the context of the existing process and organizational structure, the differences between requirements and realities of current Army MOS design/re-design practices lead to a need to consider alternative process and organizational models, particularly if the negative effects of those differences are to be reduced or eliminated.

Alternative organizational models. The current organizational model underlying MOS design/re-design is based on the proponents having responsibility for developing, documenting, and proposing MOS changes and review agencies, particularly at HQDA, reviewing and approving those changes for implementation. In the present structure, proponents have difficulty establishing a cadre of experienced analysts to engage in

MOS design/re-design. They often have no capability in occupational analysis when restructuring MOSs. Some proponents consider that their standards of grade or its application are changed without consultation during the review and/or implementation process.

Some of these problems may be redressed if the Army were to accomplish its MOS design/re-design using a different organizational model. The U.S. Air Force, for example, does its restructuring through a workshop process supported by a permanent headquarters personnel staff agency responsible for standards of grade and position data analysis. Outside the Army's current MOS design/re-design organizational framework, cells of expertise in data processing and occupational analysis, among other expertises, exist.

Are there lessons to be learned with respect to organizational structure from the programs of the other services? Are there opportunities within the Army that could contribute to improving the current organizational model for MOS design/re-design? These are the types of issues that should be addressed when considering alternative organizational models for Army MOS design/re-design.¹

Alternative process models. In view of the difficulties proponent analysts have in understanding how to design/re-design MOSs, a review of the procedural steps and requirements for making a MOCS change proposal is appropriate. Can existing requirements be modified or eliminated to better correspond with the capabilities of the personnel proponent? What procedural tradeoffs, if any, need there be if a front-end analysis process is made more explicit? Are there existing requirements which are out-of-date or ineffective, e.g., references to the Army Occupational Survey Program (AOSP) which has been replaced by the Occupational Data, Analysis, Requirements, and Structure (ODARS) program or current guidance, frequently ignored, to use the Physical Demands Worksheet (DA Form 5643-R)? Efforts should be made to identify and assess alternative process models that might facilitate a better match between process requirements and the proponent's capabilities and resources.

Users of Army Research and Technical Assistance: The Target Audience

In addition to Need, a second element necessary for the Army to engage in research supporting MOS design/re-design is the existence of users. Who are the potential users or consumers of Army research and technical assistance? What are their characteristics, i.e., what is the target audience description? And, finally, what evidence is there that potential users would, in fact, actually use the products resulting from Army research?

¹Process models and descriptions of the Air Force, Navy, and Army job structuring processes were documented as part of the Department of Defense's Training and Personnel Systems Science and Technology Evaluation and Management (TAPSTEM) program. See Akman (1994), Akman (1995a), and Akman (1995b).

The Target Audience

The primary target audience for Army research and technical assistance is comprised of the enlisted analysts in the personnel proponent offices having responsibility for designing/re-designing MOSs and related structure issues. These are the people who prepare MOCS proposals, who generally lack the experience and understanding of MOS restructuring during their initial tenure in the proponent office, and who seek help. In most instances, analysts interviewed during the field data collection expressed the need for help, most often in the form of training but also frequently in terms of procedures and analytical tools.

Target Audience Description

Table 2 presents a target audience description in terms of soldier characteristics and operational characteristics. The former are attributes of the proponent analyst as an individual. The latter characterize the environment in which the analyst functions. Together, these characteristics provide a portrait of the individuals who would be the consumers or users of research products and technical assistance. Such products and technical assistance must be tailored to match features of this target audience.

Important soldier characteristics. Five soldier characteristics should be noted. First, the typical analysts are experts in their MOS, they know the duties and responsibilities that are involved, and they have first hand experience in the field and, often, as instructors as well. They usually are not experts nor do they have experience or training in MOS design/re-design.

Second, the analysts' interest in MOS design/re-design is most often limited to what they need to know in order to get their jobs accomplished in the proponent office. The analysts will generally not be "students" of MOS restructuring. The proponent office demands on their time result in their having a focus usually on what and how to accomplish tasks, not necessarily why a task must be performed.

Third, the tour length for NCOs assigned to personnel proponent offices ranges from one-three years. The proponents seek to keep soldiers for three years. However, keeping soldiers in headquarters staff positions is difficult owing to the soldier's desire to be in the field and the operational needs of the Army. Tour lengths of 18-24 months is relatively common.

Fourth, most analysts have self-confidence and exercise initiative in meeting their responsibilities within the proponent office. They are individuals motivated to accomplish the proponent's mission. When choosing soldiers to join proponent offices, the proponent seeks individuals who are motivated and demonstrate initiative.

Fifth, there are variations in soldier abilities from proponent to proponent reflecting the different qualifications and demands associated with the soldiers' MOSs. Some proponent analysts have strong analytical skills. Others may be more adept at organizing and presenting results. Still others may have few of the skills that are used in MOS design/re-design.

Operational characteristics. Operationally, two characteristics deserve highlighting. One, the general consensus among participants in the field data collection was that, in

Table 2

Target Audience Description: Typical Personnel Proponent Analyst, Potential Users of Army MOS Design/Re-Design Research Products and Technical Assistance

Soldier Characteristics

Noncommissioned officer.

Assigned to personnel proponent office.

10-12 years service prior to assignment to proponent office.

Expert in MOS duties and responsibilities, prior experience as field instructor.

Has no prior experience or training in proponency or MOS design/re-design.

Possesses basic computer literacy, i.e., capable of using commercial-off-the-shelf (COTS) software including word processing, spreadsheets, graphics, database management, and electronic mail under routine circumstances; usually cannot troubleshoot or correct operational problems.

In MOS design/re-design, prefers well-defined, step-by-step procedures rather than broad statements of analytical tasks.

Tour length in proponent office ranges from 1-3 years, with 2 years being the average.

Limited or no expertise in data communications and file transfers.

Generally interested in job structuring only to the extent needed to perform duties in proponent office; usually no theoretical or academic interest.

Committed, dedicated to proponency missions.

Possesses self-confidence and initiative.

Possesses ability to express self verbally and in writing.

Variations in level of soldier abilities from proponent to proponent reflecting variation in MOS qualifications and demands (ASVAB scores, duties and responsibilities).

Operational Characteristics

Operates with minimal internal or external technical support.

Learns proponency and job structuring by performing job; no training (formal or on-the-job) available.

Requires about 1 year on the job to understand proponency mission and job requirements.

MOS design/re-design performed simultaneously with many other competing demands.

the absence of any formal training, a year on the job is required before the soldier understands enough of the language and issues of proponency to be an effective analyst.

Second, the proponent analysts are usually faced with many demands on their time. They often must handle three or four proponent issues simultaneously. One of these might be an MOS design/re-design action. With priorities changing and new issues arising, any specific task such as an MOS action is likely to be interrupted frequently and often delayed as some more urgent matter emerges.

Will the Target Audience be Users?

There are no guaranties that analysts will be users of research products and technical assistance. However, most analysts who participated in the field data collection sought help in terms of training and "how to" procedures. They are, for the most part, a motivated group frustrated by the level of support and technology currently available to them. If research products are designed to match the characteristics and needs of the target audience, the products will likely be used.

Potential Payoffs

A third factor the Army must consider in determining its research role with respect to MOS design/re-design is the potential payoff or benefit that might result. During the course of the field data collection, information was sought in a number of areas such as successes and failures of past actions, level of effort, frequency of actions, length of time, among others. Generally, such information is not developed nor maintained by the proponents. If available, definitive statements about the payoffs resulting from research might be possible. Despite the limitations in data, there are payoffs that will occur in terms of the process and in terms of soldiers whose MOSs are restructured. These can be identified, if not measured.

Process Payoffs

Improvements sought by the proponents --- training, a procedure for front-end analysis, a new guide, analytical tools, and easier access to HQDA data --- will allow the analysts to be more efficient and effective. Given the general consensus that approximately 12 months experience on the job is required before the analyst is effective and that the typical length of assignment to the proponent lasts about 24 months, the analysts operate at about 50 percent effectiveness. If there is training within the first 3 months of their assignment to the proponent office and they are provided with guides and analytical tools that are designed more specifically to fit with the strengths and weaknesses of the target audience, the proponent office analysts should be significantly more effective in their work during a longer period of time.

Soldier Payoffs

Soldier payoffs, if they occur, constitute the more important benefits from efforts to develop research products and provide technical assistance. MOS restructurings occur in order to achieve one or a variety of objectives including the following:

- More efficient training
- Improved job performance
- Improved career opportunities
- Improved grade structure
- Better personnel utilization
- Reduced overhead, among others.

There are no data available from the proponents in the field data collection that permit assessments with respect to whether or how well these objectives are met. If the analysts can perform MOS design/re-design analysis more effectively because of Army research efforts, then, to the extent the realization of such benefits is dependent on the analysis, there is a greater likelihood of meeting the restructuring objectives.

While making a decision to engage in research would be easy if the benefits could be measured and they outweighed the costs, neither the data nor the methodology exist for such a cost-benefit analysis to be done. Instead, one must rely on the belief that an improved process will contribute to better MOS design/re-design decisions. At the least, the proponents involved in the field data collection indicated that thousands of soldiers are effected annually by MOS design/re-design decisions. Strengthening the hand of the proponent office analysts through research and technical assistance, which can be accomplished with modest budgets in relation to the personnel and training costs for the thousands of effected soldiers, should result in significant payoffs to the Army.

Conclusions

This research has been undertaken to gather data which the Army can use to determine the needs for continued research and technical assistance related to MOS design/re-design. Based on the data collected from a representative group of personnel proponent offices and review agencies, there are three important findings:

1. The personnel proponents have need for research and technical assistance related to MOS design/re-design.
2. The proponent office analysts are the principal target audience and would be users of research and technical assistance, as evidenced by their requests for help and their commitment to support their MOSs.
3. Although proponents do not have definitive or quantifiable data pertaining to research payoffs, payoffs to the Army appear likely as result of research and technical assistance in terms of significantly increased productivity among personnel proponent analysts, sounder MOS design/re-design proposals, and restructured MOSs that will more likely meet their objectives.

In sum, the findings reported here can be used by the Army as a basis for determining its future role in MOS design/re-design research and technical assistance. Whether the Army engages in such efforts will depend on resource availability and Army priorities. Should the Army continue its efforts in this area, its approach should be compatible with the needs and characteristics of the target audience.

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ACRONYMS

AFATDS	Advanced Field Artillery Tactical Data System
AOSP	Army Occupational Survey Program
AR	Army Regulation
ARI	U.S. Army Research Institute
ASVAB	Armed Services Vocational Aptitude Battery
CINCOS	Change in NCO Structure
CMF	Career Management Field
COL	Colonel
COTS	Commercial, Off-the-Shelf
CPT	Captain
EDAS	Enlisted Distribution Assignment System
HQDA	Headquarters, Department of the Army
JSERTS	Job Sets for Efficiency in Selection Recruiting and Training
KSA	Knowledge, Skill, and Ability
LAN	Local Area Network
LTC	Lieutenant Colonel
MAJ	Major
MARKS	Modern Army Record Keeping System
MOCS	Military Occupational Classification Structure
MOS	Military Occupational Specialty
NCO	Noncommissioned Officer
ODARS	Occupational Data, Analysis, Requirements, and Structure
OJT	On-the-Job Training
PDAT-JA	Position Data Analysis Job Aid
PERSCOM	U.S. Total Army Personnel Command
PERSO	Personnel Officer
PMAD	Personnel Management Authorization Document
POI	Program of Instruction
PPAOW	Personnel Proponent Action Officer Workshop
STP	Soldier Training Procedures
TAADS	The Army Authorization Documents System
TAPC-PLC	PERSCOM Military Occupational Structure Division
TDA	Table of Distribution and Allowances
TDY	Temporary Duty
TKCAM	Task Knowledges Commonality Analysis Method
TOE	Table of Organization and Equipment
TRADOC	U.S. Army Training and Doctrine Command
USAFMSA	U.S. Army Force Management Support Agency
WO	Warrant Officer

Appendix A

Summary Description: MOS Design/Re-Design Practices

Introduction

This appendix presents a description of Military Occupational Specialty (MOS) design/re-design practices based on summaries and interpretations of field notes recorded during interviews that took place from January through April 1997. Approximately 30 members of seven Army personnel proponent offices and a half-a-dozen members of Headquarters, Department of the Army (HQDA) personnel participated in interviews. This appendix's purpose is to provide a descriptive baseline which can be used to identify key factors in order to address the following question:

Should the Army conduct research and provide technical support to personnel planners responsible for MOS design/re-design efforts and, if so, how?

The individuals interviewed had different experiences as a result of the support provided by their branches, the length of time spent in the proponent office, and the scope of work they had performed. These variations resulted in a variety of different answers and, sometimes, no answers to the same questions. Some participants viewed existing practices and procedures as being very satisfactory; others saw problems and difficulties. Depending upon the issue and based on their experiences, certain individuals provided more informed, insightful responses than others. The presentation here is based on a summary and interpretation of what was offered by these various people.

MOS Design/Re-Design Practices

The concept for determining the Army's role in supporting MOS design/re-design was based on collecting information with respect to 15 process elements, which taken together, provide a comprehensive picture of current practices. These elements can be used to understand four key factors: the need for research and technical support, the Army customer or user of such support, the payoffs, and the costs. Following are discussions of each of the process elements.

Context

What experience and responsibility has the interviewee had in restructuring MOSs and what is his understanding of the process?

The purpose of this first question was to determine how the respondents based on their experience understand and perceive MOS design/re-design. For example, none of the respondents was familiar with the specific term, "MOS design/re-design" but used

"MOS restructuring", "MOS consolidations", and "MOCS actions", among other terms.¹ Regardless of the specific words, "MOS design/re-design", at a minimum, always involved the preparation and approval of the military occupational classification structure (MOCS) proposal. Some respondents, generally those with more years of experience and expertise, indicated that analysis preceding development of the MOCS proposal, i.e., front-end analysis, during which alternative restructuring concepts are first formulated and their feasibility analyzed is also a part, a critical step, of MOS design/re-design. The interpretation of the information provided by the respondents that follows is generally based in this broader context.

Looking at the seven personnel proponent offices that were visited, there is ample evidence that most proponent offices (as well as the proponency system in general) struggle to be effective, with a few notable exceptions, amidst a general lack of branch-level and HQDA support. The proponents do not have the resources nor, often, the experience to weigh the issues and analyze the consequences of restructuring MOSs. Nonetheless, the need for "fixing" MOSs persists. So, proponents undertake MOS design/re-design, not necessarily as they would like or should, but as best they can.

Of the approximately 30 personnel proponent office staff members who participated in the field data collection, their experience, expertise, understanding, and interest varied across the spectrum. At the time of the data collection, the Change in Noncommissioned Officer (NCO) Structure (CINCOS) study was on-going, pre-occupied many of the respondents, and was the sum total of their experience in MOS design/re-design. Most had less than two years experience (many with less than a year) as members of a proponent office. Since, in the absence of any training, most stated that at least a year of work in the proponent office is required before an individual understands the language, the issues, the methods, and roles of proponency, not all of the respondents were informed commentators on the process.

Included among the respondents to the data collection were a handful of individuals among the proponent offices with many years experience in proponency and, in particular, MOS design/re-design; these individuals had much to offer in terms of explaining the process and its strengths and weaknesses.

While accepting the opinions and answers of some with credibility while not others, the comments and views of all participants have been regarded here as representative of the people in whom the Army has given responsibility for MOS design/re-design. Therefore, the experience and expertise, or the lack thereof, are very relevant to the portrait presented here.

¹While the term "MOS design/re-design" is not commonly used by the personnel proponent offices, its use in this research stems from its use by the government in the title of the formal statement of work and in the description of the work to be performed.

Policies and Guidance

What official Army and local policies are followed when MOS design/re-design occurs? Are current copies available within the office?

All proponents operate from the same set of Army regulations (AR 611 series), particularly with respect to the content of MOCS proposals, timelines, and MOS descriptions. Operationally, the MOCS Guide, published by the U.S. Total Army Personnel Command (PERSCOM) Military Occupational Structure Division (TAPC-PLC), is the key source of guidance. No formal local policies exist although some proponents have their own informal guidelines, usually pertaining to the qualifications of staff members.

Participants/Organizational Structure

How is the personnel proponent organized for purposes of MOS design/re-design and who are the key participants in doing the analysis and developing a MOCS proposal?

In terms of participants and organizational structure, there is a common theme although there are significant differences in the detail. The proponents are organized to varying degrees. In the most structured situations, there are officer, warrant, and enlisted divisions or sections within the proponent office. The enlisted sections have analysts responsible for single MOSs, a number of MOSs, or whole career management fields (CMFs). There are proponent offices that are staffed through "borrowed" authorizations, i.e., they do not have their own authorized positions.

The analysts are assigned to the proponent for 2-3 years. Sometimes, the analysts are close to retirement. The proponent offices with stronger organizational support resist this occurrence and actively seek to find mid-career officers and NCOs who would be committed, dedicated analysts. When the proponent offices can select analysts, the criteria generally include soldiers with 10-12 years experience, table of organization and equipment (TOE) and Table of Distribution and Allowances (TDA) assignments, good writing and speaking skills, and computer skills. Some proponent offices push the qualifications further seeking NCOs who have had HQDA or PERSCOM (TAPC-PLC) assignments and/or experience as training developers. Some heads of proponenty screen NCOs for assignment while others accept those NCOs who are assigned.

The more stable personnel proponent offices that more often are capable of producing good MOS design/re-design products tend to have civilians (retired military) on their staffs. These people are present long term and provide a degree of continuity that can be valuable in training new staff members and in the productivity of the proponent office. Civilians were present, however, in less than half the proponent offices visited.

There is no training available for the analysts. The general consensus is that a year on the job is required before there is sufficient understanding of concepts and language for the NCOs to be effective as personnel proponent analysts. The analysts

are experts in their job specialties, almost always without exception --- that is their expertise and value as analysts in the personnel proponent office. None, however, are personnel specialists or analysts by training or education.

Personnel proponent offices with experienced staff conduct internal training or mentoring to help new analysts. Some send their analysts to the Personnel Proponent Action Officer Workshop (PPAOW); however, attendance at the workshop is not regarded as a training opportunity.

The personnel proponents have had varying experiences with PERSCOM (TAPC-PLC) and ARI. With respect to PERSCOM (TAPC-PLC), some proponents consider the organization and its analysts as a good source for technical assistance and as an ally in processing MOS design/re-design proposals. Other proponents view PERSCOM (TAPC-PLC) negatively, consider that their proposals get unilaterally modified, and that the PERSCOM (TAPC-PLC) analyst is not supportive. Proponents with more experience, longer tenured staffs (including civilians), tend to view PERSCOM (TAPC-PLC) as just another step in the process and simply work the situation as best they can in their own favor.

ARI is considered helpful sometimes and at other times not, particularly when ARI responds with months-long research projects. ARI field units, although substantially reduced in number, have left residual positive feelings among proponents who previously benefitted from the units' research support.

Process Steps

What steps are involved in developing an MOS design/re-design proposal?

Examination of the process by which personnel proponents restructure MOSs highlights the wide range of capabilities and significant differences in the ways they see the MOS design/re-design process. A few proponents operating with substantial, long-term support from their branch view the process as an opportunity to strengthen their career fields and focus on the job design issues; they use PERSCOM (TAPC-PLC) and USAFMISA support where it is helpful but rely upon their own resources for the most part. Most proponents operating without the benefit of branch support generally approach MOS design/re-design with the restructuring concept as a "given" and focus their efforts on developing standards of grade and grade structure analysis; PERSCOM (TAPC-PLC) and USAFMISA support varies, sometimes being helpful, particularly when their counterparts at HQDA are supportive, while, at other times, being of little help and even threatening (when changes are made unilaterally to proponent's proposals).

MOS design/re-design efforts are either initiated by directive of higher authority or as result of a perceived need to "fix" MOSs as recognized either by the proponent itself or soldiers in the field.

Most proponents see the process as involving analysis of TOE/TAD extracts to establish an accurate, current authorizations baseline, development of standards of grade and its application to The Army Authorization Documents System (TAADS) and

personnel management authorization document (PMAD), and grade structure analysis. Many analysts are challenged by the difficulty of understanding standards of grade analysis, the acquisition of data, and performing the analysis itself.

Development of other information required to be included in a MOCS proposal occurs generally in casual, informal ways, i.e., copy or revise existing documentation, by the proponent or off-line by others, including the training department, the combat developers, and doctrine. For instance, physical demands requirements often are copied from those of the original MOSs. If a question about physical demands is raised, the proponent analyst may arrange to visit a training site to observe soldiers performing tasks with high physical demands.

Training departments are relied upon usually to assess and report training impacts. Development of task lists including critical tasks is done by planners involved in developing doctrine.

Most of the descriptive information pertaining to duties and responsibilities, tasks, training, and other issues finds its way into MOCS proposals as boilerplate material, included to satisfy requirements of the MOCS Proposal Checklist (DA Form 7174). There is limited analysis and integration of this information.

A few proponents undertake formal front-end studies to develop alternative restructuring concepts and establish their feasibility. None has a standard method for doing such analysis. Usually, such front-end studies involve working groups meeting periodically to flush out and negotiate issues until there is a consensus. For these proponents, preparation of the documentation comprising a MOCS proposal usually involves substantially less time and effort than the front-end study.

When engaged in MOS design/re-design activities, the proponents generally do not establish work plans and timelines although all proponents are aware of the MOCS window, the period in time during which proposals will be received by PERSCOM (TAPC-PLC). The MOCS Proposal Checklist is often used to identify the work that needs to be done.

Once a proposal is submitted to PERSCOM (TAPC-PLC), reviewed, and approved for implementation, the proponent rarely reviews the impacts of the change unless new problems emerge. The analysts responsible for the action usually have departed the proponent. And, if there are problems, a new action may be initiated. Rarely does the proponent look at past actions to glean lessons learned.

Timeframe

How long, on average, does preparing a MOCS proposal take and what factors drive the timeline?

In regards to the length of time required for initiating and completing an MOS design/re-design action, there are two distinct views based on experience and impressions. Those proponents who view the process as including front-end analysis estimate typical proposals require 1-1½ years in elapsed time, a small portion of which being required for preparing the MOCS proposal itself. Those proponents who see an

action as primarily the development of standards of grade and grade structure analysis see the process requiring 4-6 months. In either case, no records are maintained pertaining to the length of time required for preparing MOCS proposals.

Level of Effort

How many hours of work, on average, does preparing a MOCS proposal take?

None of the proponents maintains records showing the amount of hours required for MOS design/re-design efforts. Notwithstanding the lack of documentation, most proponents consider that MOS design/re-design is a major activity requiring a large proportion of their resources.

Frequency

How many MOS design/re-design actions are initiated annually and is there a list of actions that will be taken in the future?

Proponents do not maintain schedules of future actions. Most anticipate there will be 1-2 major actions annually.

Analytical Techniques

What analytical tools, techniques, rules of thumb, and decision rules are used or needed to support MOS design/re-design?

Few examples of analytical techniques, i.e., computer models, decision rules, etc., were identified, perhaps reflecting the non-analytical backgrounds of most proponent analysts as well as the absence of explicit analytical requirements in developing MOS restructuring concepts.

There is a heavy emphasis in the current process on standards of grade development and position data analysis. These requirements drive the development of existing techniques as well as the proponents' desire for computer software supporting such analysis.

The MOCS Guide was identified as a source of analytical methods which was commonly used by the proponents. The guide provides examples of standards of grade development and application as well as grade structure analysis. Opinions of its adequacy varied from its being completely satisfactory to its being mostly useless. The informed view may be that it is helpful but needs to be updated with more examples and more extensive explanations regarding how to do analysis, particularly in formulating the initial restructuring concepts or alternatives.

There was some, limited awareness of ARI sponsored research and products, primarily with respect to the Task Knowledge Commonality Analysis Method (TKCAM), the Position Data Analysis Job Aid (PDAT-JA), and, in one instance, the Job Sets for Efficiency in Selection Recruiting and Training (JSERTS).

Some proponents acknowledged that timely, reliable occupational survey data would be useful; however, none were aware of the Army Occupational Data, Analysis, Requirements, and Structure (ODARS) Program, which to date due to funding levels has largely been made available by ARI to training departments rather than personnel proponents.

Data and Databases

What sets of data are used or needed in performing MOS design/re-design?

Access to HQDA data occurs in a variety of ways with varying ease depending upon the download capabilities and skill levels of the analyst seeking the data. Some proponents have developed high-speed, reliable methods for downloading the required data while others can barely master today's data transfer technology, particularly when unexpected glitches occur. One proponent uses one of its authorized positions to assign an analyst to USAFMISA to insure its data needs can be met in a timely way.

The most standard, explicit data requirements are for TOE/TAD extracts, TAADS extracts, and PMAD extracts. This focus is attributable to the proponent's general view of MOS restructuring in which the most well-defined steps involve development of standards of grade and grade structure analysis. The proponents all work with these data with a certain degree of skepticism in terms of their inherent accuracy.

Because there are much less well-defined or understood requirements to consider other aspects of the MOS such as job performance, task frequency, training emphasis, knowledges, skills, and abilities (KSAs), among others, the proponents do not routinely seek nor have need for such data. When the need arises, some have used FOOTPRINT as a source, although PERSCOM (TAPC-PLC) is terminating its operation, effective in FY 1998. Proponents also seek training and task data from their local training and doctrine departments.

Record Keeping

What requirements exist for maintaining files and records associated with MOS design/re-design actions?

All proponents officially maintain files in accordance with the Modern Army Record Keeping System (MARKS). In reality, most do not have the time to carefully file and retain records in an organized systematic way. At a minimum, most have copies of past proposals; these may be used for training new analysts as well as for examples. Since little opportunity exists for performing impact assessments, the files do not serve this purpose. On occasion, a few proponents use their original proposals to verify that the MOS changes were implemented by PERSCOM (TAPC-PLC) as the proponent originally proposed.

Computer Resources

What computer equipment (hardware and software) is available to support MOS design/re-design?

The proponents operate with local area network (LAN)-based 486 or Pentium computers operating under Windows 3.1.1 or Windows95 and running Microsoft OFFICE. Those operating 486 computers generally anticipated or desired to be operating Pentium computers; however, from an equipment perspective, the available capabilities were considered satisfactory.

The proponent staff members generally have the ability to use standard commercial, off-the-shelf (COTS) software to meet their routine data processing needs. More sophisticated computer skills required to troubleshoot problems, perform complicated data transfers from HQDA files, and tailor software for specific needs do not commonly exist although some proponents may have one or two analysts with higher level skills.

Development of software locally does not occur except in an informal, ad hoc fashion. No local products exist in any form that would make them suitable for use elsewhere. And, in most cases, if such software exists, its use often does not and cannot extend beyond its creator because of the informal nature of the software and the absence of any supporting documentation.

During CINCOS, all proponents had experience and developed opinions about ApplyMOC, a computer program supplied by PERSCOM (TAPC-PLC) to assist in development of standards of grade and grade structure analysis. Most proponents believed that the development of standards of grade and position data analysis in CINCOS would not have been possible without ApplyMOC. Although the software was initially unreliable and difficult to use, improvements during the course of CINCOS resulted in a workable package which most proponents would like to see improved and supported in the future. However, PERSCOM (TAPC-PLC) has indicated that future support is not planned.

Soldier Impacts

What have been the impacts on soldiers of MOS design/re-design actions?

Proponents generally do not have formal records documenting the numbers of actions and the numbers of soldiers affected by MOS design/re-design actions nor do proponents track the impacts unless problems result from a restructuring.

The proponents generally appeared to have undertaken a major action involving 2-3 MOSs and 2,000-4,000 soldiers every year or so. On the low side, only 1,000-2,000 soldiers might be involved while on the high side as many as 10,000-20,000 soldiers may be effected.

While the proponents generally seek to improve career and promotion opportunities through their MOS design/re-design efforts, they do not generally monitor

the results of their proposals through any formal or informal evaluation process. In the absence of any requirement or incentive to assess impact, the proponents' limited staffing, other proponenty demands, and the long time required for implementation are all factors virtually precluding any post-evaluation. Usually, the analysts responsible for an action have left the proponent office by the time the action is fully implemented. New analysts lack the perspective to put new and emerging MOS problems in past contexts.

Failures/Successes

What successes and failures have occurred when MOSs have been re-designed?

For the most part, participants in the field data collection had not had enough experience to be able to identify successes or failures. "Success" in the eyes of most proponents is an approved MOCS proposal. The keys to achieving success in this sense include: (1) development of proposals in accordance with AR 611 series requirements and the MOCS Guide, (2) identification of billpayers, and (3) support and cooperation from PERSCOM (TAPC-PLC). From this perspective, the proponents have all generally been successful in their MOS restructuring efforts. A few failures were identified; these were related to inadequate identification of billpayers.

"Success" in the broader sense of achieving programmatic or personnel objectives that underlie an MOS restructuring is not generally a focus of concern. A few proponents stated that such success depends upon conducting front-end studies in which the development, analysis, and staffing of alternative MOS concepts occurs prior to documenting changes in the form of a MOCS proposal.

Among the seven proponents, one past restructuring action that had been implemented was under review because the resulting MOS (a consolidation of four existing MOSs) was not working. The source of its problems, by some observers, is the absence of the training that was prescribed as part of the restructuring proposal. There was extensive front-end analysis leading to this MOS action.

Problems

What strengths and weaknesses are associated with the MOS design/re-design process and what problems result?

The lack of a formal training program for proponent analysts is the most oft-cited problem. Analysts typically are not specialists in proponenty or MOS design/re-design and their average length of time at the proponent office is about two years. In the absence of any formal training, most observers believe 12 months on the job by the analyst is required before there is sufficient understanding of the language, concepts, and methods of proponenty. During this time, the analysts must learn as best they can as they carry on their work.

A second problem is the current state of user documentation and guidance with regards to MOS design/re-design. The MOCS Guide does not place enough emphasis or provide enough guidance with respect to front-end analysis, its presentation is not

sequential, its procedural explanations need to address more "how to do" than "what to do", and it is not written in a manner sensitive to what the analyst knows and needs to know when the analyst first joins the proponent. One proponent urged that the MOCS Guide be replaced rather than revised.

Access to as well as the quality and accuracy of TAADS and PMAD data were cited by proponents as affecting their ability to perform MOS design/re-design efficiently and accurately. The proponents had varying experiences in regards to the accessibility of these data and varying capabilities in handling data transfers.

The length of time, usually 3-4 years, for preparing an MOS design/re-design proposal, staffing the proposal, and implementing the changes was considered too long by most proponents, particularly those whose MOSs involve rapidly changing technology. The general view among proponents was that PERSCOM (TAPC-PLC)'s recent policy change resulting in a single MOCS window each year will further add to the delays associated with making MOS changes.

Finally, most proponents were critical of the distribution and reliability of ApplyMOC. While sympathetic to its origins and appreciative of the efforts underlying its development, the proponents were frustrated by its unreliability and the absence of a commitment to support such software beyond its immediate use in CINCOS.

Research and Technical Needs

In what areas would research and technical support be most beneficial to MOS design/re-design? What specific research products and technical support would be most helpful?

The explicit requirements identified for research and technical support fall in five areas: training, procedural guidance for performing front-end analysis, "how to" procedural guides, reliable software supporting data analysis, and access to HQDA data.

Most proponents identify a need for training analysts in proponenty and MOS design/re-design. If formal classroom training cannot be established, multimedia-based or distance learning methods should be considered as alternatives.

The importance of front-end analysis, i.e., developing and analyzing alternative MOS concepts in response to needs for restructuring, was identified by several proponents. There is an absence of procedures and methods for performing such analysis. A good front-end analysis, fully staffed, can be a major factor in achieving a successful restructuring. There is a need for procedural guidance specifying what analysis should be done and how the analysis should be done.

The current MOCS Guide needs to be replaced with a new guide that presents the MOS design/re-design process in a logical, sequential format. Its guidance must focus not only on "what to do" but "how to do". There needs to be more numerous, current examples. The guide's presentation should be geared to the typical analyst, a specialist in his MOS with little or no background in occupational analysis.

Much of the work in preparing a MOCS proposal requires analysis and annotation of TOE/TAD extracts, TAADS, and PMAD. The proponents often perform this step manually without the benefit of computer aids except as they might create a piece of software locally. During CINCOS, PERSCOM (TAPC-PLC) supplied the proponents with ApplyMOC. While the software was not initially reliable nor documented, its utility improved during the course of the study. The proponents need software facilitating data analysis.

There is need, finally, to standardize the way in which proponent's have access to HQDA personnel data. There should be standard methods and procedures available to all proponents so all have equal access.

The preceding five areas reflect the weight of opinion expressed by proponents. There were proponents, to be sure, who did not identify any research needs. None of these were considered credible in this respect. They either spoke with limited insight and experience or, in one instance, with a commitment to self-sufficiency borne of past frustrations when help was sought.

In addition to requirements explicitly identified by the proponents, their entire experience and circumstances point to a need to identify and analyze alternative process and organizational models for conducting MOS design/re-design efforts. When (1) demands for MOS design/re-design, (2) the state of personnel proponent offices, and (3) the capabilities, responsibilities, and serious commitment of most personnel proponent analysts are considered together, there is a significant gap between the Army's operational requirement for restructuring, on the one hand, and the organization and procedures underlying the current process. There is a need to create a closer match between requirements and the Army's capabilities and resources.

Appendix B

Summary of Personnel Proponent Responses to Field Data Collection: MOS Design/Re-Design Practices

Introduction

During the period of January through April 1997, approximately 30 members of seven Army personnel proponent offices participated in interviews, the purpose of which was to determine current practices in designing and re-designing Military Occupational Specialties (MOSs) and the need for research and technical support. The group included the personnel proponent offices at Fort Bliss, Fort Sill, Aberdeen Proving Ground, Fort Gordon, Fort Sam Houston, Fort Jackson, and Fort Gordon. This group represented two combat arms, two combat support, and three combat service support branches.

This appendix presents a summary of the information the interviewees provided based on field notes recorded at the time of the meetings. Questions were asked in 15 areas, or process elements, pertaining to MOS design/re-design practices. The following documentation includes an overall summary and interpretation of the information provided by the seven personnel proponents as well as a summary of the responses of each individual proponent. This material has been used to develop the summary description of MOS design/re-design processes (Appendix A). Copies of the complete field notes are available in the project files maintained by the Army Research Institute (ARI).

Context

Summary/Interpretation

Of the approximately 30 personnel proponent office staff members who participated in the field data collection, their experience, expertise, understanding, and interest varied across the spectrum. At the time of the data collection, the Change in Noncommissioned Officer (NCO) Structure (CINCOS) study was on-going, pre-occupied many of the respondents, and was the sum total of their experience in MOS design/re-design. Most had less than two years experience (many with less than a year) as members of a proponent office. Since, in the absence of any training, most stated that at least a year of work in the proponent office is required before an individual understands the language, the issues, the methods, and roles of proponenty, the views of the respondents were based on widely, diverse experiences.

Included among the respondents to the data collection, however, were a handful of individuals among the proponent offices with many years experience in proponenty and, in particular, MOS design/re-design; these individuals had much to offer in terms of explaining the process and its strengths and weaknesses.

Looking at the seven personnel proponent offices that were visited, there is ample evidence that most proponent offices (as well as the proponenty system in general) struggle to be effective, with a few notable exceptions, amidst a general lack of branch-level and HQDA support. The proponents do not have the resources nor, often, the experience to weigh the issues and analyze the consequences of restructuring MOSs. Nonetheless, the need for "fixing" MOSs persists. So, proponents undertake MOS design/re-design, not necessarily as they would like or should, but as best they can.

None of the respondents was familiar with the specific term, "MOS design/re-design" but used "MOS restructuring", "MOS consolidations", and "MOCS actions", among other terms. Regardless of the specific words, "MOS design/re-design", at a minimum, always involved the preparation and approval of the military occupational classification structure (MOCS) proposal. Some respondents, generally those with more years of experience and expertise, indicated that analysis preceding development of the MOCS proposal, i.e., front-end analysis, during which alternative restructuring concepts are first formulated and their feasibility analyzed is also a part, a critical step, of MOS design/re-design.

Office of the Chief of Air Defense (OCADA), Fort Bliss

Three respondents from the personnel proponent office, all enlisted personnel, with 1-2 years tenure including the chief of personnel proponenty provided information. None viewed MOS design/re-design as an issue requiring close attention or significant effort. They consider that MOS design/re-design issues are rare occurrences. Their knowledge and experience with MOS design/re-design has been acquired through their day-to-day work. Most answers to this survey were based on the staff's recent experience performing the CINCOS study.

Field Artillery Proponency Office (FAPO), Fort Sill

Most information was provided by a warrant officer with 6 years experience in the proponency office and reflected experience conducting warrant officer restructure studies. Chief of office, an officer, with less than 2 years at the proponency office sat in but indicated that MOS design/re-design matters were responsibility of staff. Head of enlisted proponency, who had prior U.S. Total Army Personnel Command (PERSCOM) Military Occupational Structure Division (TAPC-PLC) experience, was on temporary duty (TDY); his analysts, however, sat in and provided some information.

Office of the Chief of Ordnance Enlisted Proponency (OCO), Aberdeen Proving Ground

Five respondents, all enlisted, including the chief of enlisted proponency, provided information. The longest tenure represented by these individuals was 10 months; most had been in the proponency office for 3-4 months. Their responses to questions were based entirely on their experience preparing their CINCOS proposal. An MOS restructure study was in process at the time; however, the analysis was performed by an ad hoc study group separate from the personnel proponency office. Therefore, these respondents had no first hand experience in MOS design/re-design other than their CINCOS experience.

Office of the Chief of Signal Enlisted Proponency (OCOS), Fort Gordon

Most information was provided by two senior members of the enlisted proponency office, one civilian with 13 years experience and the senior NCO and head of the office with 6 years experience. They both had strong, informed views of the problems and needs of the proponency office in regards to MOS design/re-design based on their many years of experience. "MOS design/re-design" encompasses the development and analysis of restructuring alternatives as well as the preparation of MOCS proposals. Their information was not based on any specific restructuring actions but reflected the accumulation of experience over the years. Their views and ideas were made with significant credibility and substantial conviction.

Army Medical Department (AMEDD) Personnel Proponency Directorate, Enlisted Division, Fort Sam Houston

Two respondents, both retired military and now civilian employees with 15 and 8 years experience in the enlisted proponency office, provided information. Among other responsibilities, they perform "MOS revisions" as necessary and consider such actions as opportunities to improve the grade structure and distribution for their MOSs. Their experience is used to train and support new members of the proponency staff. Given the proponency's opportunistic approach and limited external support in the past, this office aims to be self-sufficient in regards to training and assisting the newer members of its staff.

Adjutant General School Personnel Proponent, Fort Jackson

Information was provided by two enlisted career management NCOs (one with 3+ years experience and the other with 1+ years) who have responsibility for MOS design/re-design issues. "MOS design/re-design" largely deals with preparing MOCS proposals where the restructuring concept has already been identified.

Office of the Quartermaster General (OQMG) Enlisted Personnel Proponent Office, Fort Lee

Information was provided by the chief of enlisted proponency, who was weeks away from retirement after five years in the office. With the exception of two other enlisted analysts who have been in the proponent office for 16 and 6 months, all other staff members have been on-board for only weeks. The retiring chief viewed "MOS design/re-design" as encompassing front-end analysis leading to restructuring concepts through the preparation of the MOCS proposal.

Policies and Guidance

Summary/Interpretation

AR 611 series are relied upon, particularly with respect to the content of MOCS proposals and timelines, and MOS descriptions. No formal local policies exist although some proponents have their own informal guidelines, usually pertaining to the qualifications of staff members.

Operationally, the MOCS Guide is a key document. The views of proponents ranged from the guide being perfectly adequate to it being dated and largely useless. The informed view may be that it is helpful but needs to be updated with more examples and more extensive explanations regarding how to do analysis, particularly in formulating the initial restructuring concepts or alternatives.

Basically, all the proponents operate from the same set of Army regulations (AR 611 series). The variable in the equation, however, is the level of experience that exists within each staff. More experienced staffs consider regulations and guidance as largely satisfactory. Less experienced staffs, while accepting of the regulations, generally do not consider the MOCS Guide as an adequate source of guidance.

Office of the Chief of Air Defense (OCADA), Fort Bliss

AR 611-1, AR 611-101, AR 611-112, and AR 611-201 are the official Army policies that underlie the proponent's efforts to restructure MOSs. Their work is performed within the larger framework of AR 600-3. Existing policy is adequate; no requirements were identified for additional policy.

The MOCS Guide is the principal reference document and is heavily relied upon to determine exactly how to perform particular analytical steps or develop a particular piece of a MOCS proposal.

There are no formal, local policies or regulations. However, the chief of personnel proponency has established his own policy regarding the required qualifications for personnel to serve in his office.

Field Artillery Proponency Office (FAPO), Fort Sill

The proponent follows the AR 611 series. The MOCS Guide is used, primarily for its examples. There are no formal or informal local policies. No requirements exist for additional policies except for changing back to two MOCS windows rather than one.

Office of the Chief of Ordnance Enlisted Proponency (OCO), Aberdeen Proving Ground

The proponent follows the AR 611 series. Because of the staff's limited experience, the MOCS Guide is very important although they noted there are some inconsistencies with the regulations, some material is out-dated, and there is a need for more instructive examples. No formal or informal local policies were identified.

Office of the Chief of Signal Enlisted Proponency (OCOS), Fort Gordon

The proponent follows the AR 611 series. No formal or informal local policies were identified. The MOCS Guide is used by junior staff members; more experienced analysts consider the guide dated and "very basic".

Army Medical Department (AMEDD) Personnel Proponent Directorate, Enlisted Division, Fort Sam Houston

The proponent follows the AR 611 series. No formal or informal local policies were identified. The MOCS Guide is deemed useful; however, the proponent has long tenured civilian staff who no longer depend on the guide.

Adjutant General School Personnel Proponent, Fort Jackson

The proponent follows the AR 611 series. There are no formal or informal policies guiding the proponent's MOS restructuring efforts. The MOCS Guide is used but considered too terse in its presentation. DA Form 7174, the MOS Proposal Checklist, was considered the most useful piece of information with respect to identifying what needs to be done in preparing a MOCS proposal.

Office of the Quartermaster General (OQMG) Enlisted Personnel Proponent Office, Fort Lee

The proponent follows the AR 611 series. The respondent also identified numerous other manpower, personnel, and training regulations which he considered provided additional context and guidance for MOS design/re-design efforts. No formal or informal local policies were identified. The MOCS Guide is definitely used, is very helpful, and does not have any shortcomings.

Participants/Organizational Structure

Summary/Interpretation

In terms of participants and organizational structure, there is a common theme although there are significant differences in the detail. The proponents are organized to varying degrees. In the most structured situations, there are officer, warrant, and enlisted divisions or sections within the proponent office. The enlisted sections have analysts responsible for single MOSs, a number of MOSs, or whole career management fields (CMFs). There are proponent offices that are staffed through "borrowed" authorizations, i.e., they do not have their own authorized positions.

The analysts are assigned to the proponent for 2-3 years. Sometimes, the analysts are close to retirement. The proponent offices with stronger organizational support resist this occurrence and actively seek to find mid-career officers and NCOs who would be committed, dedicated analysts. When the proponent offices can select analysts, the criteria generally include soldiers with 10-12 years experience, table of organization and equipment (TOE) and Table of Distribution and Allowances (TDA) assignments, good writing and speaking skills, and computer skills. Some proponent offices push the qualifications further seeking NCOs who have had HQDA or PERSCOM (TAPC-PLC) assignments and/or experience as training developers. Some heads of proponenty screen NCOs for assignment while others accept those NCOs who are assigned.

The more stable personnel proponent offices that more often are capable of producing good MOS design/re-design products tend to have civilians (retired military) on their staffs. These people are present long term and provide a degree of continuity that can be valuable in training new staff members and in the productivity of the proponent office. Civilians were present, however, in less than half the proponent offices visited.

There is no training available for the analysts. The general consensus is that a year on the job is required before there is sufficient understanding of concepts and language for the NCOs to be effective as personnel proponent analysts. The analysts are experts in their job specialties, almost always without exception --- that is their expertise and value as analysts in the personnel proponent office. None, however, are personnel specialists or analysts by training or education.

Personnel proponent offices with experienced staff conduct internal training or mentoring to help new analysts. Some send their analysts to the Personnel Proponent Action Officer Workshop (PPAOW); however, attendance at the workshop is not regarded as a training opportunity.

The personnel proponents have had varying experiences with PERSCOM (TAPC-PLC) and ARI. With respect to PERSCOM (TAPC-PLC), some proponents consider PERSCOM and its analysts as a good source for technical assistance and as an ally in processing MOS design/re-design proposals. Other proponents view PERSCOM (TAPC-PLC) negatively, consider that their proposals get unilaterally modified, and that the PERSCOM (TAPC-PLC) analyst is not supportive. Proponents with more experience, longer tenured staffs (including civilians), tend to view

PERSCOM (TAPC-PLC) as just another step in the process and simply work the situation as best they can in their own favor.

ARI is considered helpful sometimes and at other times not, particularly when ARI responds with months-long research projects. ARI field units, although substantially reduced in number, have left residual positive feelings among proponents who previously benefitted from the units' research support.

Office of the Chief of Air Defense (OCADA), Fort Bliss

The proponent has one analyst for each enlisted MOS and a warrant officer to deal with warrant officer and general officer issues. The current chief of proponency recruits personnel to the staff who are willing to commit for three years, who are at mid-career point, who can work with computers, and who will be active advocates for their MOSSs.

The proponent staff members receive no formal training with respect to MOS design/re-design although the proponent tries to provide an orientation to new staff members upon their arrival. The staff also meets once or twice weekly for training.

Field Artillery Proponency Office (FAPO), Fort Sill

The office is headed by a lieutenant colonel (LTC) who is responsible for officer restructuring. There is a warrant officer (WO) who deals with warrant issues. The proponent attempts to have one analyst for each enlisted MOS; however, the office sometimes "borrows" personnel because it does not have sufficient authorizations of its own for this level of staffing. The office has one senior civilian, retired military, who provides continuity and depth of experience.

Analysts learn on the job. There is no formal training. Usually new staff members are given piecemeal assignments to promote their understanding. After about one year, the analysts are fully functional. Personnel usually stay for two years although the proponent would like to see three year assignments. Some assigned personnel come to the proponent as the final assignment in their careers, i.e., they are looking ahead to retiring.

Office of the Chief of Ordnance Enlisted Proponency (OCO), Aberdeen Proving Ground

The proponent office was recently re-established. Nobody including the chief of enlisted proponency has been on-board for more than 10 months. There are no authorized positions. Enlisted analysts have been assigned from other offices. There are three analysts, each responsible for approximately eight MOSSs. Only one has computer skills. The sum total of their experience has been exclusively on CINCOS. The staff has no prior experience dealing with personnel matters and are learning as they do their jobs. The objective, once authorizations are obtained, is to retain or seek mid-career NCOs who would be available for at least two years.

In the absence of any training or in-house experience, the staff initially relied upon PERSCOM (TAPC-PLC) for support. However, the assigned PERSCOM (TAPC-PLC) analyst was also new to the assignment and, therefore, not tremendously helpful.

Office of the Chief of Signal Enlisted Proponency (OCOS), Fort Gordon

The proponent office has a long tradition of strong advocacy for its MOSs. There has been a civilian cadre on board for many years, people who formerly had had full enlisted careers in the Army. There are NCOs with 10-12 years experience. Most have been with the proponent two years and are beginning to cycle out. The chief of enlisted proponency is trying to stabilize assignments of three year duration.

The civilian leaders provide training to the new analysts who are given small projects initially until they have acquired enough of an understanding to assume more responsibility. The analysts essentially learn by doing. At least a year on-site is required before the analysts begin to be really effective and can work independently.

The proponent attempts to send one or two analysts annually to the Personnel Proponent Action Officer Workshop; however, this is not viewed as a training opportunity.

The proponent recruits analysts who have had a good variety of field assignments, who are technically experienced in their field, who have been involved in training, and who are senior NCOs, i.e., E-7s, E-8s. They must be able to write and speak well. Because of the nature of the proponent's MOSs, most of its analysts have computer experience.

There was an ARI field unit in operation at one time. The personnel proponent found the unit a valuable resource, particularly in addressing more technical personnel issues. Since its closing, there has been a significant decline in the proponent's ability to deal with more complex personnel issues.

Army Medical Department (AMEDD) Personnel Proponent Directorate, Enlisted Division, Fort Sam Houston

The proponent has a formal organization structure including identifiable divisions for officer, civilian, enlisted, and other functions. It has clear and explicit support from the organizations above. Its mission for advocacy and sustainment of its MOSs is clear and opportunistic. There are both civilian and military personnel, with the former being retired NCOs. The enlisted division is headed by a colonel (COL) unlike most enlisted proponent shops. Each analyst has responsibility for 2-3 MOSs.

While there is no formal training for the analyst, the proponent uses a mentoring process led by senior civilians to train new enlisted analysts. Learning the proponency language and concepts usually takes about a year. During that period, a senior member of the proponent supervises the new staff members, handing out small assignments, reviewing the work, and serving as an in-house subject matter expert. After the first year, the new analyst will be sent to the Force Integration course, helping the analyst to understand the Army's structure.

When recruiting new staff members, the proponent seeks enlisted NCOs with both TOE and TDA experience, a willingness and ability to communicate field experience, and an ability to use computers. The proponent prefers NCOs with prior

HQDA or PERSCOM (TAPC-PLC) experience. NCOs who can fit into the proponent's pro-active setting are sought.

Adjutant General School Personnel Proponent, Fort Jackson

There is an analyst responsible for each CMF in this proponent. There is also a warrant and an officer responsible for their respective personnel. The NCOs are all mid- to late career soldiers, one about to retire and the other two to be reassigned in the next 6-12 months.

There is no training available to the analysts. When they arrive at the proponent, they generally have no previous experience in personnel analysis and management and the entire set of responsibilities are foreign. They learn on the job, with efficiency being realized after 1½ years.

The analysts do not regard their relationship with PERSCOM (TAPC-PLC) positively. Past experience has resulted in PERSCOM (TAPC-PLC) making unilateral changes to the proponent's proposals.

Qualifications for new analysts include TOE and TDA experience, an understanding of grade structures, 10-13 years experience, an analytical mindset, former experience as instructor or in training development. However, personnel are selected for the proponent by the assignment managers and there is no guaranty that any criteria will be followed.

Office of the Quartermaster General (OQMG) Enlisted Personnel Proponent Office, Fort Lee

The personnel proponent office is headed by a LTC as its chief and a GS-13 civilian as deputy. There are sections for officer proponenty staffed by a major (MAJ) and two captains (CPTs), for warrant officer proponenty staffed by a single warrant, and for enlisted proponenty staffed by five NCOs, each of whom has responsibility for matters pertaining to his own MOS.

When developing MOS restructuring proposals, the proponent enlists the support and assistance of training developers and others within the school who have a vested interest in the proposed change. When concurrence is reached, the proposal is sent on to PERSCOM (TAPC-PLC) for review, approval, and implementation.

There is no formal training or on-the-job training (OJT) available. NCOs who have previously shown initiative and motivation are selected into the office. Enlisted staff members seem to stay about two years before being reassigned. For technical assistance, the staff relies on personnel who have been at the proponent the longest; they also seek help from PERSCOM (TAPC-PLC) and USAFMSA.

Process Steps

Summary/Interpretation

Examination of the process by which personnel proponents restructure MOSs highlights the wide range of capabilities and significant differences in the ways they see the MOS design/re-design process. A few proponents operating with substantial, long-term support from their branch view the process as an opportunity to strengthen their career fields and focus on the job design issues; they use PERSCOM (TAPC-PLC) and USAFMSA support where it is helpful but rely upon their own resources for the most part. Most proponents operating without the benefit of branch support generally approach MOS design/re-design with the restructuring concept as a "given" and focus their efforts on developing standards of grade and grade structure analysis; PERSCOM (TAPC-PLC) and USAFMSA support varies, sometimes being helpful, particularly when their counterparts at HQDA are supportive, while, at other times, being of little help and even threatening (when changes are made unilaterally to proponent's proposals).

MOS design/re-design efforts are either initiated by directive of higher authority or as result of a perceived need to "fix" MOSs as recognized either by the proponent itself or soldiers in the field.

Most proponents see the process as involving analysis of TOE/TAD extracts to establish an accurate, current authorizations baseline, development of standards of grade and its application to The Army Authorization Documents System (TAADS) and personnel management authorization document (PMAD), and grade structure analysis. Many analysts are challenged by the difficulty of understanding standards of grade analysis, the acquisition of data, and performing the analysis itself.

Development of other information required to be included in a MOCS proposal occurs generally in casual, informal ways, i.e., copy or revise existing documentation, by the proponent or off-line by others, including the training department, the combat developers, and doctrine. For instance, physical demands requirements often are copied from those of the original MOSs. If a question about physical demands is raised, the proponent analyst may arrange to visit a training site to observe soldiers performing tasks with high physical demands.

Training departments are relied upon usually to assess and report training impacts. Development of task lists including critical tasks is done by planners involved in developing doctrine.

Most of the descriptive information pertaining to duties and responsibilities, tasks, training, and other issues finds its way into MOCS proposals as boilerplate material, included to satisfy requirements of the MOCS Proposal Checklist (DA Form 7174). There is limited analysis and integration of this information.

A few proponents undertake formal front-end studies to develop alternative restructuring concepts and establish their feasibility. None has a standard method for doing such analysis. Usually, such front-end studies involve working groups meeting

periodically to flush out and negotiate issues until there is a consensus. For these proponents, preparation of the documentation comprising a MOCS proposal usually involves substantially less time and effort than the front-end study.

When engaged in MOS design/re-design activities, the proponents generally do not establish work plans and timelines although all proponents are aware of the MOCS window, the period in time during which proposals will be received by PERSCOM (TAPC-PLC). The MOCS Proposal Checklist is often used to identify the work that needs to be done.

Once a proposal is submitted to PERSCOM (TAPC-PLC), reviewed, and approved for implementation, the proponent rarely reviews the impacts of the change unless new problems emerge. The analysts responsible for the action usually have departed the proponent. And, if there are problems, a new action may be initiated. Rarely does the proponent look at past actions to glean lessons learned.

Office of the Chief of Air Defense (OCADA), Fort Bliss

MOS design/re-design actions are often initiated at the direction of higher authority. Absent a directive to restructure, the proponent addresses such issues as they emerge during the course of its routine activities. There is no formal or structured process leading to an MOS design/re-design concept. If there is consensus regarding a concept, then a MOSC proposal is prepared in accordance with the requirements set forth in AR 611 series and the MOCS Guide.

The proposal development process focuses on preparing responses and documentation in conformity with the regulations and guidebook. There is an emphasis on analyzing force structure assignments and authorizations, i.e., developing standards of grade and analyzing grade structure. Issues related to "job design" generally are not addressed, particularly now that the proponent's MOSs are relatively distinct from one another.

The process involves TOE/TAD analysis, NCO grade change analysis, standards of grade table development, The Army Authorization Documents System (TAADS) analysis and standards of grade application, personnel management authorization document (PMAD) analysis and standards of grade application, grade structure analysis, and finally staffing. Training issues including training strategies, program of instruction (POI), course administrative data, and training base impact are addressed by the training department. Combined arms and tactics department prepares MOS descriptions and task lists for the proposal.

Development of the standards of grade table is the most difficult for the proponent to perform because the basic concepts are hard to understand. This step also requires the most time and effort.

When necessary, the proponent calls on its PERSCOM (TAPC-PLC) analyst for technical assistance. USAFMSA is contacted for assistance with respect to personnel data. The proponent considered this outside support useful and adequate.

Field Artillery Proponency Office (FAPO), Fort Sill

MOS design/re-design actions are initiated when an accumulation of evidence points to the need for restructuring existing MOSs. No formal process or review occurs rather an action is the result of an evolution.

Developing documentation for the MOCS proposal in accordance with the AR 611 series can be accomplished quickly once the front-end analysis is completed. However, performing the front-end analysis and developing MOS design/re-design concepts are difficult and time-consuming. Furthermore, there is little guidance with respect to how to perform this analysis.

While there is no formal work plan, they do whatever tasks are necessary to prepare the proposal. Mindful of the single MOCS window, the proponent gears its efforts and establishes overall milestones accordingly .

Once the proposal is sent to PERSCOM (TAPC-PLC), the proponent considered that it had little control over the final form of the MOS changes. PERSCOM (TAPC-PLC) made changes without coordination with the proponent. Given this view, the proponent felt that the documentation process, i.e., preparing the MOCS proposal, should be more automated and that PERSCOM (TAPC-PLC) could have this responsibility since PERSCOM (TAPC-PLC) changes their proposals anyway.

Office of the Chief of Ordnance Enlisted Proponency (OCO), Aberdeen Proving Ground

The proponent's view was based on experience only with CINCOS. MOS design/re-design actions are directed and, sometimes, stem from the introduction of new equipment. MOS design/re-design is seen as basically a documentation process in accordance with the MOCS Guide; there is an assumption that the design issues have already been resolved when the proponent begins its efforts which largely focus on standards of grade and grade structure analysis applied to TAADS and PMAD.

The proponent formulated a work plan designed to meet CINCOS milestones and requirements. This focused on standards of grade and grade structure analysis and was built around application of ApplyMOC.

The proponent viewed PERSCOM (TAPC-PLC) as a valuable source of technical support.

Outside the proponent office, there was a front-end MOS design study examining the feasibility of restructuring MOSs. The study's methodology was grounded in economic feasibility analysis tied in with other considerations, particularly with regards to training impact.

Office of the Chief of Signal Enlisted Proponency (OCOS), Fort Gordon

MOS design/re-design for this proponent is largely driven by equipment modernization. While, on the one hand the catalyst is clear, on the other hand, the long process from inception to implementation of new MOSs often renders the changes

ineffective because of the more rapid changes in technology. The proponent is continuously monitoring equipment developments to identify needs for restructured MOSs.

In preparing a proposal, the proponent follows steps necessary to respond to all the items on the MOCS Proposal Checklist. The office has analysts with many years experience and relies upon these individuals for laying out a work plan. They consider the MOCS Guide inadequate, out of date, and out of order with respect to the steps that must be performed. They gear their efforts to meeting the single MOCS window.

The proponent considers the front-end analysis and assessment of training impacts as the most difficult steps, compounded by the absence of any procedural guidance with regards to how to do such analysis. These steps also require the most time and level of effort.

Army Medical Department (AMEDD) Personnel Proponent Directorate, Enlisted Division, Fort Sam Houston

The major factor leading to MOS design/re-design efforts is recognition that an MOS is experiencing problems. The proponent is continuously monitoring its MOSs. In recent times, problems (as well as opportunities) often stem from the reduction in force and the related budgetary pressures.

When the need for an action is recognized, a 6-24 month study period begins during which the problems are assessed, alternatives are identified and analyzed. There is usually no formal work plan although there is usually an agenda and timeframe.

The proponent's front-end study involves identifying the potential changes, validating the need, developing alternatives, and identifying the best course of action. Once all this is done, the MOCS proposal is prepared. This is considered a documentation process and does not require much time, usually 30-60 days mostly for developing and applying new standards of grade.

At one time, developing and applying standards of grade was the most difficult, time consuming task. However, the proponent has developed a strong capability for data access and analysis, using one of its authorized positions to place at analyst at USAFMSA, to support its data needs. Presently, the front-end analysis is the most difficult and tends to last until a resolution of the issues emerges.

Because the proponent has senior staff with many years experience, they do not depend upon PERSCOM (TAPC-PLC) for support. The proponent does, however, monitor what PERSCOM (TAPC-PLC) does with its proposals, making sure unwanted changes do not occur.

Adjutant General School Personnel Proponent, Fort Jackson

The proponent's MOS actions are usually directed as result of some structural problem. As a consequence, the problem and solution are basically given and the focus of the proponent's efforts is preparing the MOCS proposal for the given solution.

There are no formal work plans; however, the MOCS Proposal Checklist, is used to identify what has to be done. The analysts prepare a response to each of its items with the effort focusing largely on standards of grade, application of grading patterns, and grade structure analysis using TAADS and PMAD data. There is little occupational analysis involved.

The TAADS and PMAD analysis are considered the most difficult because the proponent's access to the required data is limited and, until ApplyMOC became available this past year, there was no computer support.

The proponent depends upon PERSCOM (TAPC-PLC) for technical support, particularly with respect to obtaining TAADS and PMAD data. Aside from this assistance, the proponent sometimes takes exception with PERSCOM (TAPC-PLC)'s practice of modifying MOCS proposals without seeking the concurrence of the proponent.

**Office of the Quartermaster General (OQMG) Enlisted Personnel Proponent Office,
Fort Lee**

MOS design/re-design actions are initiated as result of some need being recognized by the proponent or from the field. When the need is confirmed, the major focus of an action is a front-end study which can last over an extended period of time, sometimes 1-2 years. This is an analytical and decision-oriented process. When completed a MOCS proposal is prepared; this is a documentation process requiring limited time and effort.

While there is no formal work plan, there is usually a timeline and a set of tasks to be performed. Since each action is different, the specific tasking varies.

The most difficult task in the process is developing data supporting the front-end study. Much of the required data such as task commonality, task frequency, training emphasis, among others, are not readily available in existing Army data bases and must be gathered and developed.

Technical support and assistance are sought from PERSCOM (TAPC-PLC) and USAFMSA.

Timeframe

Summary/Interpretation

In regards to the length of time required for initiating and completing an MOS design/re-design action, there are two distinct views based on experience and impressions. Those proponents who view the process as including front-end analysis estimate typical proposals require 1-1½ years in elapsed time with a small portion required for preparing the MOCS proposal itself. Those proponents who see an action as primarily the development of standards of grade and grade structure analysis see the process requiring 4-6 months. In either case, no records are maintained pertaining to the length of time for preparing MOCS proposals.

Office of the Chief of Air Defense (OCADA), Fort Bliss

The proponent considers that preparation of typical proposals take about 4-6 months. This estimate is based on a restructuring concept already in place and the focus of effort being on documenting the concept in a MOCS proposal. No records are maintained with respect to the length of time required.

Field Artillery Proponency Office (FAPO), Fort Sill

Estimated length of time for preparing MOS design/re-design proposals is approximately 1-1½ years, with most of the time required for conducting the front-end study. Documentation of the proposal itself requires approximately one month. Aside from the debate and negotiation underlying a proposal, the proponent considers the lack of automation and difficulties obtaining data as the primary drivers of time. There are no records regarding length of time.

Office of the Chief of Ordnance Enlisted Proponency (OCO), Aberdeen Proving Ground

The proponent staff, being new, estimated that developing MOCS proposals would require 5-6 months time based on their CINCOS experience which they anticipated would require 12 months before completed. These estimates do not include any front-end concept development. Factors driving the timeline include data access, limited automation, and inconsistent guidance from the PERSCOM (TAPC-PLC) analyst. No records of the length of time are kept.

Office of the Chief of Signal Enlisted Proponency (OCOS), Fort Gordon

The proponent's view includes both the front-end analysis as well as the back-end implementation. To do a front-end study and prepare a proposal, about one year is required; another two-three years are need for implementation. Implementation is far too long, particularly, for the proponent whose requirements are technology driven. The technology is changing faster than new MOSs can be implemented. The study and proposal development phase could be shortened if there were standard procedures to follow. The proponent does not keep records regarding the length of time.

Army Medical Department (AMEDD) Personnel Proponent Directorate, Enlisted Division, Fort Sam Houston

The proponent considers the process to develop a proposal requiring 6-24 months depending upon the issues, number of MOSs, and complexity. Another two years are required for implementation. The most time consuming step is the front-end analysis although the proponent does not have a standard procedure that is always followed. No records are maintained.

Adjutant General School Personnel Proponent, Fort Jackson

The proponent, whose view focuses on standards of grade and grade structure analysis, expects a proposal to take 12-18 months. Matching and marking up TAADS and PMAD are the most time consuming tasks. No records are maintained.

Office of the Quartermaster General (OQMG) Enlisted Personnel Proponent Office, Fort Lee

The proponent believes that an MOS design/re-design action requires 1-1½ years with most effort focused on the front-end study. The documentation of the MOCS proposal itself requires a small portion of that time. Automation and analyst training could shorten the time. No records are maintained.

Level of Effort

Summary/Interpretation

None of the proponents maintains records showing the amount of hours required for MOS design/re-design efforts. Notwithstanding the lack of documentation, most proponents consider that MOS design/re-design is a major activity requiring a large proportion of its resources.

Office of the Chief of Air Defense (OCADA), Fort Bliss

There are no records kept pertaining to the hours worked on a proposal. Usually, the analyst spends most of his time, 4-6 months, working a proposal; however, the proponent has no idea how much effort is required by others.

Field Artillery Proponency Office (FAPO), Fort Sill

There are no records. The proponent could not estimate the level of effort provided by all those involved in an MOS action.

Office of the Chief of Ordnance Enlisted Proponency (OCO), Aberdeen Proving Ground

The proponent staff has had no prior experience building MOCS proposals. There are no records.

Office of the Chief of Signal Enlisted Proponency (OCOS), Fort Gordon

There are no records. Estimates placed the level of effort at approximately 25 percent of the staff's time. Automation and more accurate data would reduce the level of effort.

Army Medical Department (AMEDD) Personnel Proponent Directorate, Enlisted Division, Fort Sam Houston

While no records are maintained, the majority of the proponent's staff's time is devoted to MOS restructuring. However, the staff members are doing many things throughout the day and do not account for their time with respect to specific activities such as MOS design/re-design.

Adjutant General School Personnel Proponent, Fort Jackson

The single largest block of a proponent analyst's time is devoted to preparing MOCS proposals. There are no records, however, of exactly how many hours are involved and by whom.

**Office of the Quartermaster General (OQMG) Enlisted Personnel Proponent Office,
Fort Lee**

No records are maintained. Estimates place approximately 60 percent of the staff's time involved in developing MOCS proposals. When an action is being processed, 100 percent of the analyst's time is required.

Frequency

Summary/Interpretation

While proponents do not maintain schedules of future actions, most anticipate there will be 1-2 major actions annually.

Office of the Chief of Air Defense (OCADA), Fort Bliss

The proponent estimates that there may be one major action annually. There is no current list of future actions.

Field Artillery Proponent Office (FAPO), Fort Sill

There is no schedule or list of future actions. The proponent estimates that there is a major action every year or two.

Office of the Chief of Ordnance Enlisted Proponency (OCO), Aberdeen Proving Ground

There is no schedule of future actions and none specifically anticipated; however, there will probably be additional actions as this proponent has been significantly effected by the downsizing and changes in doctrine.

Office of the Chief of Signal Enlisted Proponency (OCOS), Fort Gordon

There is no schedule of future actions; however, the proponent monitors new equipment development and introduction, which are major drivers of MOS changes. The proponent expects there to be 1-2 actions annually over the next 3-5 years.

Army Medical Department (AMEDD) Personnel Proponent Directorate, Enlisted Division, Fort Sam Houston

There is no schedule of future actions. The proponent estimates that there will be 1-2 major actions annually although the number may be less owing to CINCOS and HQDA limitation on additional actions until 2000.

Adjutant General School Personnel Proponent, Fort Jackson

There is no schedule of future actions. There has been one major action during each of the three preceding years. The proponent expects of the frequency of actions to decline over the coming years.

Office of the Quartermaster General (OQMG) Enlisted Personnel Proponent Office, Fort Lee

Estimates are for 1-4 major actions annually. There is, however, no schedule of future actions.

Analytical Techniques

Summary/Interpretation

Few examples of analytical techniques, i.e., computer models, decision rules, etc., were identified, perhaps reflecting the non-analytical backgrounds of most proponent analysts as well as the absence of explicit analytical requirements in developing MOS restructuring concepts.

There is a heavy emphasis in the current process on standards of grade development and position data analysis. These requirements drive the development of existing techniques as well as the proponents' desire for computer software supporting such analysis.

The MOCS Guide was identified as a second source of analytical methods which was commonly used by the proponents. The guide provides examples of standards of grade development and application as well as grade structure analysis. Opinions of its adequacy varied from its being completely satisfactory to its being mostly useless. The informed view may be that it is helpful but needs to be updated with more examples and more extensive explanations regarding how to do analysis, particularly in formulating the initial restructuring concepts or alternatives.

There was some, limited awareness of ARI sponsored research and products, primarily with respect to the Task Knowledge Commonality Analysis Method (TKCAM), the Position Data Analysis Job Aid (PDAT-JA), and, in one instance, the Job Sets for Efficiency in Selection Recruiting and Training (JSERTS).

Some proponents acknowledged that timely, reliable occupational survey data would be useful; however, none were aware of the Army Occupational Data, Analysis, Requirements, and Structure (ODARS) Program, which to date due to funding levels has largely been made available by ARI to training departments rather than personnel proponents.

Office of the Chief of Air Defense (OCADA), Fort Bliss

Despite initial problems that have since been resolved, ApplyMOC has been a very valuable analytical tool supporting development of standards of grade and its application to TAADS and PMAD. With the exception of TKCAM, none of the ARI developed methods has been used; TKCAM proved a positive experience and would be used again when the situation presents itself. The proponent was unfamiliar with ODARS. The MOCS Guide is the major source of guidance; the proponent had no suggestions for its improvement. The proponent had no analytical tools, decision rules, or rules of thumb of its own invention.

Field Artillery Proponency Office (FAPO), Fort Sill

ApplyMOC was used for CINCOS and found helpful although unreliable in its existing form; the proponent is concerned about its long-term support and documentation. The proponent had no awareness of the ARI developed methods

except that the staff had used the results of the earlier TKCAM-based advanced field artillery tactical data system (AFATDS) study positively. ODARS was unknown; occupational surveys were viewed as dated, generally unavailable, and incomplete. The MOCS Guide is used for its examples; the staff considers its presentation illogical and disorganized.

Office of the Chief of Ordnance Enlisted Proponency (OCO), Aberdeen Proving Ground

ApplyMOC was used for CINCOS with difficulty; the proponent believes the software should have been more developed and better tested before released for use. Without its availability, however, the CINCOS study would not have been possible. There is no awareness of ARI developed methods although a separate restructuring study used methodology similar and probably based on TKCAM. The staff was unfamiliar with ODARS. The MOCS Guide is an important source of user documentation. There are no analytical methods that have been developed locally.

Office of the Chief of Signal Enlisted Proponency (OCOS), Fort Gordon

ApplyMOC was used for CINCOS. The proponent believes that once the software is refined that it will be a valuable tool supporting MOS restructuring. There is no knowledge of the ARI developed tools. The proponent looked upon ODARS positively and considered the availability of its data as very valuable in understanding what the soldier experiences in the field operationally and from a training perspective. The MOCS Guide is useful in the absence of better documentation but it has very serious flaws lacking a sequential, consistent description of the analytical process, its total omission of front-end analysis procedures, its lack of currency, and errors.

Army Medical Department (AMEDD) Personnel Proponent Directorate, Enlisted Division, Fort Sam Houston

ApplyMOC was useful to an extent during CINCOS but the software's limited ability to deal with TDA units is a weakness. If PERSCOM (TAPC-PLC) would support ApplyMOC's complete development and provide operational support, the software could be very helpful. With respect to ARI developed tools, the proponent had some recollection of PDAT-JA as a limited prototype; otherwise, there was no familiarity with the various tools and methods. The proponent also was unaware of ODARS; however, a quick, turnaround, efficient survey system unlike the former Army occupational survey program would be helpful. The MOCS Guide is considered satisfactory in its present form but the proponent does not put much reliance on the guide because its key staff members have many years of experience which is the principal source of guidance within the office. At one time, an attrition rate model was developed to project tradeoffs between Armed Services Vocational Aptitude Battery (ASVAB) scores and attrition; no documentation exists and the model is generally not used.

Adjutant General School Personnel Proponent, Fort Jackson

With respect to computer skills, the proponent staff members are non-technical users, i.e., they have sufficient computer literacy to use applications as long as the

applications function correctly. With this level of skill, ApplyMOC proved very difficult to use. The proponent supports the concept of ApplyMOC and would benefit from a fully developed software package. There was no familiarity with ARI sponsored research products or ODARS. The MOCS Guide is considered the only resource for illustrating how to prepare a MOCS proposal.

**Office of the Quartermaster General (OQMG) Enlisted Personnel Proponent Office,
Fort Lee**

ApplyMOC was used for CINCOS. While its initial versions were "rough" to use, subsequent versions were significantly improved and the proponent considers that the software may be very helpful in the future. The proponent had some recollection of PDAT-JA and some limited use but otherwise was unaware of ARI sponsored research with one exception. A previous MOS restructuring study used JSERT to identify and isolate unique tasks and common tasks. The proponent noted the large reliance on office automation, e.g., data base, spreadsheet, word processing, etc. The MOCS Guide is considered an adequate source of guidance and is satisfactory in its present form.

Data and Databases

Summary/Interpretation

Access to HQDA data occurs in a variety of ways with varying ease depending upon the download capabilities and skill levels of the analyst seeking the data. Some proponents have developed high-speed, reliable methods for downloading the required data while others can barely master today's data transfer technology, particularly when unexpected glitches occur. One proponent uses one of its authorized positions to assign an analyst to USAFMSA to insure its data needs can be met in a timely way.

The most standard, explicit data requirements are for TOE/TAD extracts, TAADS extracts, and PMAD extracts. This focus is attributable to the proponent's general view of MOS restructuring in which the most well-defined steps involve development of standards of grade and grade structure analysis. The proponents all work with these data with a certain degree of skepticism in terms of their inherent accuracy.

Because there are much less well-defined or understood requirements to consider other aspects of the MOS such as job performance, task frequency, training emphasis, knowledges, skills, and abilities (KSAs), among others, the proponents do not routinely seek nor have need for such data. When the need arises, some use FOOTPRINT as a source. Proponents also seek training and task data from their local training and doctrine departments.

Office of the Chief of Air Defense (OCADA), Fort Bliss

TOE/TAD extracts, TAADS extracts, and PMAD extracts are the major data sets used in preparing MOCS proposals. These data are acquired from Enlisted Distribution Assignment System (EDAS) and are used for development of standards of grade and grade structure analysis. Training data are acquired from the training developers. Task and physical demands data are provided by combat developers. The proponent does not see a need for occupational survey data. FOOTPRINT is used occasionally to obtain data about the MOSs under study.

Field Artillery Proponency Office (FAPO), Fort Sill

The proponent has a civilian who has specialized in obtaining and providing data to its analysts. When restructuring actions occur, the data specialist directly downloads TOE/TAD extracts and PMAD extracts, as well as reenlistment and recruitment data, from USAFMSA. TAADS data cannot be directly downloaded for obtained from the HQDA personnel officer (PERSO). The data specialist formats the data into spreadsheets which can then be used by the proponent's analysts to do their work. There is no familiarity with ODARS data and a negative view of the Army Occupational Survey Program (AOSP) data (as being dated and generally unavailable). FOOTPRINT is used to obtain historical data and MOS characteristics.

Office of the Chief of Ordnance Enlisted Proponency (OCO), Aberdeen Proving Ground

Based on the analysts' CINCOS experience alone, the data that are used include TOE/TAD extracts, PMAD, and TAADS. Since CINCOS did not involve any occupational issues, the proponent did not and has not used other types of data such as task, training, physical demands, knowledges and skills. In a separate MOS restructuring study conducted outside the proponent office, there was a heavy focus on task and training data. FOOTPRINT is used as a source of descriptive MOS data. No need was identified for ODARS data. Since the proponent's analysts had only worked on CINCOS, there was not enough experience among the analysts to identify any broader pattern of data usage.

Office of the Chief of Signal Enlisted Proponency (OCOS), Fort Gordon

The proponent uses TOE/TAD extracts, PMAD, and TAADS and can obtain all these data from HQDA without difficulty. The level of error and data mismatches in PMAD and TAADS often cause additional effort on the part of the proponent. There is an interest in having task data such as produced by ODARS to identify and quantify what work the soldiers are actually performing. The proponent also has interest in manpower, personnel, and training data related to new equipment for which its MOSs are responsible. These type data are limited making assessment of MOS restructuring alternatives difficult when changes are driven by the introduction of new equipment.

Army Medical Department (AMEDD) Personnel Proponent Directorate, Enlisted Division, Fort Sam Houston

The proponent recruits analysts with prior HQDA experience and uses one of its authorizations to staff a position at USAFMSA directly supporting its data requirements in order to insure its access to the data required for conducting its business. The proponent uses TOE/TAD extracts and PMAD, which can be directly downloaded from HQDA. TAADS are received from HQDA twice yearly in tape format but more current extracts can be obtained if necessary. These data are used for developing and applying standards of grade and grade structure analysis. The proponent has an interest in occupational survey data, particularly characterizing work being performed; however, past experience with AOSP has not resulted in these data being readily available. Other task, training, knowledge, skill, and ability (KSA) data are used by training developers to address training impacts and strategies.

Adjutant General School Personnel Proponent, Fort Jackson

Data used by the proponent in MOS design/re-design are TOE/TAD extracts, PMAD, and TAADS, which are generally obtained from HQDA in hardcopy format. For CINCOS, they obtained these data in computer files; however, lacking strong database skills, the data were difficult to work with. Other data such as occupational survey data, task data, KSA data are not used. The training developers use training data to assess the impacts of potential restructurings.

**Office of the Quartermaster General (OQMG) Enlisted Personnel Proponent Office,
Fort Lee**

The key data sets used by the proponent are TOE/TAD extracts, TAADS, and PMAD which are obtained from HQDA electronically. Task data, not routinely available but developed as needed, are used for assessing task commonality. Knowledge data, extracted from soldier training procedures (STPs), have been used for developing job descriptions. Occupational survey data, obtained from surveys, are very helpful, if available, in understanding work actually performed. Obtaining data from HQDA in an automated fashion is generally satisfactory but, if problems arise, the analysts often do not have the computer skills necessary to troubleshoot and resolve the difficulties.

Record Keeping

Summary/Interpretation

All proponents officially maintain files in accordance with the Modern Army Record Keeping System (MARKS). In reality, most do not have the time to carefully file and retain records in an organized systematic way. At a minimum, most have copies of past proposals and these are used for training new analysts as well as for examples. Since little opportunity exists for performing impact assessments, the files do not serve this purpose. On occasion, a few proponents use their original proposals to verify that the MOS changes were implemented by PERSCOM (TAPC-PLC) as the proponent originally proposed.

Office of the Chief of Air Defense (OCADA), Fort Bliss

Files are maintained in accordance with Army regulations. Copies of past proposals are kept; the working papers, however, usually are not. The analysts also maintain files pertaining to the MOSs for which they have responsibility. The files are used for examples and historical purposes.

Field Artillery Proponency Office (FAPO), Fort Sill

Files are maintained in accordance with Army regulations. Copies of past proposals and working papers are kept. Individual analysts maintain their own files. In addition to hardcopy, they are beginning to maintain files on computer diskettes. The files are used for examples and lessons learned.

Office of the Chief of Ordnance Enlisted Proponency (OCO), Aberdeen Proving Ground

Since the proponent office is in the process of being re-established, there were no existing files and there has not been any formal record keeping system established yet.

Office of the Chief of Signal Enlisted Proponency (OCOS), Fort Gordon

The proponent maintains files of all past actions. The proposals are used for training purposes and as examples. The proponent does not consider them useful to identify lessons learned because implementation of actions takes so long and there are other intervening circumstances to confound the eventual results of a restructuring. Nonetheless, copies of past actions are retained.

Army Medical Department (AMEDD) Personnel Proponent Directorate, Enlisted Division, Fort Sam Houston

The proponent maintains files in accordance with Army regulations. Copies of all proposals are retained. They are used to verify that PERSCOM (TAPC-PLC) has implemented the MOS changes as proposed and for training new analysts. Individual analysts maintain their own files which they turn over to their successors.

Adjutant General School Personnel Proponent, Fort Jackson

The proponent maintains files in accordance with Army regulations. There is a file or notebook for each past proposal. Included are the proposal as well as working papers, correspondence, and memoranda pertaining to the action.

**Office of the Quartermaster General (OQMG) Enlisted Personnel Proponent Office,
Fort Lee**

While the proponent's official policy is to maintain files in accordance with Army regulations, the reality is that there is limited time for organizing files. Consequently, records and documentation pertaining to past actions is not complete nor well-organized. The files become further dis-organized because analysts search the files for background material but do not necessarily take the time to re-file material. The old proposals are used for training and as examples.

Computer Resources

Summary/Interpretation

The proponents operate with local area network (LAN)-based 486 or Pentium computers operating under Windows 3.1.1 or Windows95 and running Microsoft OFFICE. Those operating 486 computers generally anticipated or desired to be operating Pentium computers; however, from an equipment perspective, the available capabilities were considered satisfactory.

The proponent staff members generally have the ability to use standard commercial, off-the-shelf (COTS) software to meet their routine data processing needs. More sophisticated computer skills required to troubleshoot problems, perform complicated data transfers from HQDA files, and tailor software for specific needs do not commonly exist although some proponents may have one or two analysts with higher level skills.

Development of software locally does not occur except in an informal, ad hoc fashion. No local products exist in any form that would make them suitable for use elsewhere. And, in most cases, if such software exists, its use often does not and cannot extend beyond its creator because of the informal nature of the software and the absence of any supporting documentation.

During CINCOS, all proponents had experience and developed opinions about ApplyMOC, a computer program supplied by PERSCOM (TAPC-PLC) to assist in development of standards of grade and grade structure analysis. Most proponents believed that the development of standards of grade and position data analysis in CINCOS would not have been possible without ApplyMOC. Although the software was initially unreliable and difficult to use, improvements during the course of CINCOS resulted in a workable package which most proponents would like to see improved and supported in the future. However, PERSCOM (TAPC-PLC) has indicated that future support is not planned.

Office of the Chief of Air Defense (OCADA), Fort Bliss

The proponent operates with one Pentium/33 computer and 486/33 computers, all running Windows 3.1.1. Equipment includes printers and scanners as well. Software includes WORD, EXCEL, FORMFLOW, and WordPerfect, the latter of which is being used for compatibility purposes with PERSCOM (TAPC-PLC). The proponent is using ApplyMOC. The staff members all are able to work with computers and the standard software. No software has been developed locally.

Field Artillery Proponency Office (FAPO), Fort Sill

The proponent has a mix of Pentium and 486 computers tied together over a LAN. This setup is considered to be fundamentally quite adequate. They are using Windows 3.1.1; incompatibilities preclude use of Windows95. Microsoft OFFICE including ACCESS, EXCEL, WORD, POWERPOINT, COREL, and FORMFLOW are being used. In support of CINCOS, the proponent used ApplyMOC provided by

PERSCOM (TAPC-PLC); however, the software was considered unreliable and inefficient. The staff includes one database manager who is skilled in transferring data from Army databases; the other staff members all computer literate and able to use the standard COTS software that is available in the office. No software has been developed locally.

Office of the Chief of Ordnance Enlisted Proponency (OCO), Aberdeen Proving Ground

The proponent has a set of networked 486 computers and are in the process of upgrading their equipment to Pentiums. They run both Windows 3.1.1 and Windows95 along with WORD, ACCESS, and EXCEL, among other software. They used ApplyMOC in support of CINCOS but found the software unreliable. There is one analyst with computer expertise; the others have basic computer literacy enabling them to use standard COTS software. No software has been developed locally.

Office of the Chief of Signal Enlisted Proponency (OCOS), Fort Gordon

The proponent has a mix of 386, 486, and Pentium computers operating on a LAN. They used Microsoft OFFICE including WORD, ACCESS, and EXCEL, among other software. With difficulty, they used ApplyMOC in support of CINCOS. The staff members all have basic computer skills enabling them to work with the software and data; a few are highly skilled computer users able to troubleshoot problems such as occurred with ApplyMOC as well as effectively transfer data from DA personnel files in support of MOS design/re-design efforts. At times in the past, some software has been developed locally, particularly to support position data analysis; however, none has been developed as part of a formal effort and currently there is no operational software of local origin.

Army Medical Department (AMEDD) Personnel Proponent Directorate, Enlisted Division, Fort Sam Houston

All proponent analysts work with Pentium computers and use Microsoft OFFICE. ApplyMOC was used in support of CINCOS; with its latest fixes, the proponent believes ApplyMOC is close to being operational. The proponent has two programmers on staff who are responsible for retrieving and formatting data so that the other analysts can use the data with standard COTS software. The other analysts are all have basic computer skills when they are recruited and, if not, are sent for training. At various times, software routines may be developed locally; however, these are special purpose and are not formally developed or subsequently maintained.

Adjutant General School Personnel Proponent, Fort Jackson

All proponent analysts work with Pentium computers, Windows95, and Microsoft OFFICE. The analysts have basic computer skills enabling them to work with standard COTS software; they are unable, however, to troubleshoot when problems occur and have minimum ability to work databases and transfer data from HQDA.

**Office of the Quartermaster General (OQMG) Enlisted Personnel Proponent Office,
Fort Lee**

The proponent operates a LAN-based set of 486 computers under Windows95 and running Microsoft OFFICE. Analysts are recruited who have computer backgrounds and are expected to be able to use Microsoft OFFICE including spreadsheets, word processing, and database functions. While the staff can handle standard data transfers and communications, the skill level of most analysts is not high enough to cope with non-routine situations.

Soldier Impacts

Summary/Interpretation

Proponents generally do not have formal records documenting the numbers of actions and the numbers of soldiers affected by MOS design/re-design actions nor do proponents track the impacts unless problems result from a restructuring.

The proponents generally appeared to have undertaken a major action involving 2-3 MOSs and 2,000-4,000 soldiers every year or so. On the low side, only 1,000-2,000 soldiers might be involved while on the high side as many as 10,000-20,000 soldiers may be effected.

While the proponents generally seek to improve career and promotion opportunities through their MOS design/re-design efforts, they do not systematically monitor the results of their proposals through any formal or informal evaluation process. In the absence of any requirement or incentive to assess impact, the proponents' limited staffing, other proponency demands, and the long time required for implementation are all factors virtually precluding any post-evaluation. Usually, the analysts responsible for an action have left the proponent office by the time the action is fully implemented. New analysts lack the perspective to put new and emerging MOS problems in past contexts.

Office of the Chief of Air Defense (OCADA), Fort Bliss

Typical MOS restructurings involve 1-2 MOSs and approximately 1,000 soldiers. The goal of restructurings generally are to improve promotion and career opportunities. There is no formal effort made to monitor actions once implemented for their effectiveness. If problems arise, these may lead to new actions.

Field Artillery Proponency Office (FAPO), Fort Sill

MOS design/re-design actions involve anywhere from 1,000-2,000 soldiers up to 6,000-7,000. The proponent does not monitor past actions and considers identification of impacts difficult because many factors are operational at any time, not simply the effects of a restructuring. The restructuring goals focus on better promotion and career opportunities. Restructuring, at times, may be a negative for the proponent if positions are regraded downward.

Office of the Chief of Ordnance Enlisted Proponency (OCO), Aberdeen Proving Ground

The proponent, owing to its staff's limited experience, did not have any knowledge of impacts from past actions. Its MOSs generally are some of the largest in the Army and can involve thousands of soldiers, anywhere from a few thousand up to 20,000.

Office of the Chief of Signal Enlisted Proponency (OCOS), Fort Gordon

MOS design/re-design actions undertaken by the proponent usually involves thousands of soldiers, ranging typically from 2,000 to 7,000. Observing the specific impacts of past actions is very difficult because of the long time involved from study to implementation, usually 3-4 years. The analysts often have rotated out of the proponent office before implementation has occurred. If problems subsequently arise, there may be a new action.

Army Medical Department (AMEDD) Personnel Proponent Directorate, Enlisted Division, Fort Sam Houston

The number of soldiers impacted by an MOS action depends on the number of MOSs and their authorizations. No generalizations were made.

Adjutant General School Personnel Proponent, Fort Jackson

The two most recent MOS design/re-design actions undertaken by the proponent have involved approximately 11,000 soldiers each. Since implementation of the actions will not be completed for approximately two years, there is no way to assess the impact.

Office of the Quartermaster General (OQMG) Enlisted Personnel Proponent Office, Fort Lee

While there is no typical action, a major action undertaken by the proponent involved 21,000 soldiers in four MOSs when the proposal was prepared. One MOS resulted which, after reductions in force and the restructuring, now has authorizations of 12,000. While the proponent does not have the staff resources to routinely monitor the impact of past actions, when problems result a new MOS action may be initiated.

Failures/Successes

Summary/Interpretation

For the most part, participants in the field data collection had not had enough experience to be able to identify successes or failures. "Success" in the eyes of most proponents is an approved MOCS proposal. The keys to achieving success in this sense include: (1) development of proposals in accordance with AR 611 series requirements and the MOCS Guide, (2) identification of billpayers, and (3) support and cooperation from PERSCOM (TAPC-PLC). From this perspective, the proponents have all generally been successful in their MOS restructuring efforts. A few failures were identified; these were related to inadequate identification of billpayers.

"Success" in the broader sense of achieving programmatic or personnel objectives that underlie an MOS restructuring is not generally a focus of concern. A few proponents stated that such success depends upon conducting front-end studies in which the development, analysis, and staffing of alternative MOS concepts occurs prior to documenting changes in the form of a MOCS proposal.

Among the seven proponents, one past restructuring action that had been implemented was under review because the resulting MOS (a consolidation of four existing MOS) was not working. The source of its problems, by some observers, is the absence of the training that was prescribed as part of the restructuring proposal. There was extensive front-end analysis leading to this MOS action.

Office of the Chief of Air Defense (OCADA), Fort Bliss

Factors contributing to successful actions include "luck", active roles by SMEs, knowledge of the equipment soldiers work with, understanding PERSCOM (TAPC-PLC) proposal requirements, and motivated analysts. Support and cooperation from the PERSCOM (TAPC-PLC) analyst is also important.

Field Artillery Proponency Office (FAPO), Fort Sill

A successful action depends on there being a strong rationale for the restructuring, clean documentation, and full staffing where all interested parties have an opportunity to review, comment, and concur.

Greater success might be realized if the timeframe for proposal development and implementation could be shortened, better alignment of TAADS and PMAD data, and simplification of data handling.

Office of the Chief of Ordnance Enlisted Proponency (OCO), Aberdeen Proving Ground

The proponent did not have experience preparing MOCS proposals. Based on its CINCOS experience, however, there is a need for consistent guidance when actions are directed from HQDA.

Office of the Chief of Signal Enlisted Proponency (OCOS), Fort Gordon

Successful actions are ones in which career opportunities for soldiers are enhanced and the grade structure is made more equitable.

Army Medical Department (AMEDD) Personnel Proponent Directorate, Enlisted Division, Fort Sam Houston

The key to a successful action is the front-end. During the time the concepts for the MOS revision are being developed and validated, involvement of all interested and vested parties is essential. Also, billpayers must be identified.

In addition, strongly motivated analysts are important. The proponent considers every action an opportunity to enhance grade structure. The challenge is for the analyst to figure out how to accomplish this.

Adjutant General School Personnel Proponent, Fort Jackson

No views were expressed. Analysts have been responsible for two actions which are now in the process of being implemented. Neither analyst will be with the proponent when the impact may be gauged.

Office of the Quartermaster General (OQMG) Enlisted Personnel Proponent Office, Fort Lee

An action is successful if most of its original objectives are met. One important factor is timeliness. Given rapid technological development, if an action is not implemented within a reasonable timeframe, its implementation may no longer be warranted. Any structure changes require billpayers.

Problems

Summary/Interpretation

The lack of a formal training program for proponent analysts is the most oft-cited problem. Analysts typically are not specialists in proponenty or MOS design/re-design and their average length of time at the proponent office is about two years. In the absence of any formal training, most observers believe 12 months on the job by the analyst is required before there is sufficient understanding of the language, concepts, and methods of proponenty.

A second problem is the current state of user documentation and guidance with regards to MOS design/re-design. The MOCS Guide does not place enough emphasis or provide enough guidance with respect to front-end analysis, its presentation is not sequential, its procedural explanations need to address more "how to do" than "what to do", and it is not written in a manner sensitive to what the analyst knows and needs to know when the analyst first joins the proponent. One proponent urged that the MOCS Guide be replaced rather than revised.

Access to as well as the quality and accuracy of TAADS and PMAD data were cited by proponents as affecting their ability to perform MOS design/re-design efficiently and accurately. The proponents had varying experiences in regards to the accessibility of these data and varying capabilities in handling data transfers.

The length of time, usually 3-4 years, for preparing an MOS design/re-design proposal, staffing the proposal, and implementing the changes was considered too long by most proponents, particularly those whose MOSs involve rapidly changing technology. The general view among proponents was that PERSCOM (TAPC-PLC)'s change to a single MOCS window will only add to this problem.

Finally, most proponents were critical of the distribution and reliability of ApplyMOC. While sympathetic to its origins and appreciative of the efforts underlying its development, the proponents were frustrated by its unreliability and the absence of a commitment to support such software beyond its immediate use in CINCOS.

Office of the Chief of Air Defense (OCADA), Fort Bliss

The proponent considers ApplyMOC, EDAS, and PERSCOM (TAPC-PLC) support as the strongest attributes of the current process. The length of time required for staffing MOS design/re-design proposals takes too long.

Problems cited include the lack of formal training in MOS design/re-design, the lack of high-speed capabilities for accessing EDAS, and the absence of more current computers capable of operating Windows95.

Field Artillery Proponency Office (FAPO), Fort Sill

The proponent regards as the strongest features of its MOS design/re-design efforts its commitment and execution of front-end studies to develop sound MOS concepts as well as the school's strong commitment to proponency.

Problems include concerns with accessibility, quality, and accuracy of TAADS and PMAD data, the establishment of a single MOCS windows (sometimes delaying changes for extra year), the length of time needed for proposal development and implementation (particularly, in relation to the rapid changes in technology and equipment).

There is an absence of more formal training, guidance, and technical support with respect to proponency as well as MOS restructuring. Given that analysts are turning over every two years, more training opportunities need to be available. The ability for conducting proponency and MOS restructuring is further undermined by the lack of DA and TRADOC support; approximately half the proponent's analysts represent "borrowed" authorizations.

While ApplyMOC was a step in the right direction, its unreliability and problems limited its effectiveness. However, the software needs to be more supportive of the analyst's work, more reliable, and better documented.

Lack of standardization and compatibility with existing computer equipment forces the proponent to use software that works on the least current equipment. This limits use of Windows95 and related applications software.

Office of the Chief of Ordnance Enlisted Proponency (OCO), Aberdeen Proving Ground

Since the proponent was in the process of re-establishing itself and its experience with MOS design/re-design was based on CINCOS, no problems were cited except those specific to CINCOS such as ApplyMOC's unreliability, changing HQDA guidance, and difficulties obtaining reliable TAADS and PMAD data.

Office of the Chief of Signal Enlisted Proponency (OCOS), Fort Gordon

The proponent considers the concept, i.e., developing a model of the promotion flow and career progression, underlying the development of the MOCS proposal to be sound. The shortfall occurs in the lack of formal, analyst training and inadequate procedures and guidance for achieving the overall objective.

The most significant problems include absence of institutionalized training; inadequacy of MOCS Guide (do not revise but replace); absence of supporting software; lack of "how to" procedures for doing front-end analysis and other requirements stated generically in the MOCS Guide.

The process takes too long, 3-4 years. TAADS and PMAD data need to be cleaner and more reliable.

Army Medical Department (AMEDD) Personnel Proponent Directorate, Enlisted Division, Fort Sam Houston

The proponent considers its analysts as its strongest attribute in the current process. Much is invested in selecting NCOs who are motivated and have the aptitude to operate in proponency. All other elements are secondary.

Problems cited include inefficient access to TAADS data and the absence of reliable ApplyMOC-type software.

Where the proponent may face other problems encountered by other proponents, e.g., lack of analyst training, the proponent operates opportunistically and draws upon its own resources to achieve its proponency objectives and to work around problems faced by others. For example, its senior personnel (with many years experience unlike most proponents that have no cadre) train new analysts.

Adjutant General School Personnel Proponent, Fort Jackson

Problems cited include difficult access to TAADS and PMAD data, the length of time required for preparing and implementing MOCS changes, the absence of training in proponency and MOS design/re-design, and the absence of reliable software with capabilities such as ApplyMOC.

Office of the Quartermaster General (OQMG) Enlisted Personnel Proponent Office, Fort Lee

Two strengths of the current process are the availability of authorizations and requirements data on a timely and accurate basis and the existing and potential automation support.

The most critical problem is the lack of training for personnel proponent staff in the personnel life cycle management functions.

Research and Technical Needs

Summary/Interpretation

The explicit requirements identified for research and technical support fall in five areas: training, procedural guidance for performing front-end analysis, "how to" procedural guides, and access to HQDA data.

Most proponents identify a need for training analysts in proponenty and MOS design/re-design. The typical analysts are specialists in their MOS but know and understand little about the Army personnel system with respect to MOS restructuring. The analyst's effectiveness and productivity are limited during the first year until they develop an understanding. A training package could greatly aid new analysts. If formal classroom training cannot be established, multimedia-based or distance learning methods should be considered as alternatives.

The importance of front-end analysis, i.e., developing and analyzing alternative MOS concepts in response to needs for restructuring, was identified by several proponents. There is an absence of procedures and methods for performing such analysis. A good front-end analysis, fully staffed, can be a major factor in achieving a successful restructuring. There is a need for procedural guidance specifying what analysis should be done and how the analysis should be done.

The current MOCS Guide needs to be replaced with a new guide that presents the MOS design/re-design process in a logical, sequential format. Its guidance must focus not only on "what to do" but "how to do". There needs to be more numerous, current examples. The guide's presentation should be geared to the typical analyst who is a specialist in regards to his MOS but has little experience regarding personnel analysis.

Much of the work in preparing a MOCS proposal requires analysis and annotation of TOE/TAD extracts, TAADS, and PMAD. The proponents often perform this step manually without the benefit of computer aids except as they might create a piece of software locally. During CINCOS, PERSCOM (TAPC-PLC) supplied the proponents with ApplyMOC. While the software was not initially reliable nor documented, its utility improved during the course of the study. The proponents need software facilitating data analysis.

There is need, finally, to standardize the way in which proponent's have access to HQDA personnel data. There should be standard methods and procedures available to all proponents.

The preceding five areas reflect the weight of opinion expressed by proponents. Not all proponents saw need for research and technical support in the same ways. Some proponents did not cite any needs for research or technical support; their lack of need was not viewed as credible, however, based on the proponent's circumstances, e.g., the proponent may have limited insight because of its level of activity, experience, or branch support. In one case where the proponent stated no need, the proponent, with strong branch support, has achieved a high level of independence and self-reliance so

that it can pursue its branch's interests without dependence on outside resources or technical support.

In addition to requirements explicitly identified by the proponents, their entire experience and capabilities in MOS restructuring point to a need to identify and analyze alternative process and organizational models for conducting MOS design/re-design efforts. Various proponents identified the importance of front-end analysis. There is also a need often for a more substantive, explicit occupational analysis component to underlie restructuring proposals. To achieve these qualities, there needs to be a way to bring analytical resources or capabilities into the MOS design/re-design process that are generally not available to the proponents, particularly with the level of branch, U.S. Army Training and Doctrine Command (TRADOC), and HQDA support typically available.

Office of the Chief of Air Defense (OCADA), Fort Bliss

The proponent was satisfied with existing MOS design/re-design policies, procedures, and practices. No research or technical needs were identified.

Field Artillery Proponency Office (FAPO), Fort Sill

A training package for new analysts, greater automation support (using ApplyMOC as foundation but geared for proponent use), and better access to TAADS data were identified as needs.

The proponent, from time to time, has needs for personnel research but needs results more quickly than is normally possible from ARI.

Office of the Chief of Ordnance Enlisted Proponency (OCO), Aberdeen Proving Ground

The MOCS Guide needs to be more current and include more examples. ApplyMOC needs to be made more reliable and more supportive of the proponent's needs.

Office of the Chief of Signal Enlisted Proponency (OCOS), Fort Gordon

The proponent identified requirements in three major areas: front-end analysis, a procedures guide to MOCS analysis, and institutionalized training.

The current MOCS Guide, in presenting the format for a MOCS proposal identifies as the first item, an explanation of why the change is being proposed. There is no guidance telling the analyst "how" to arrive at this explanation. What factors should be identified and addressed? How should such analysis be conducted? What criteria must be met to restructure MOSs?

The MOCS Guide should be discarded and replaced with a new procedures guide. The procedures guide should lay out a process for preparing the MOCS proposal in a clear, sequential, logical manner, A to Z. For each step, there should be an explanation of why and how. There should be examples of both correct and

incorrect documentation. Past efforts to revise the MOCS Guide have simply resulted in a perpetuation of its principal defects. The information should also be current, reflecting the latest Army policies and regulations.

There is also need for institutionalized training. Analysts usually are in the proponent shop for 2-3 years. That means new people are arriving all the time. At present, there is no training. Training should be provided on a recurring basis, so that analysts could be walked through an entire action in a workshop-type setting.

Army Medical Department (AMEDD) Personnel Proponent Directorate, Enlisted Division, Fort Sam Houston

No needs for research or technical support were cited.

Adjutant General School Personnel Proponent, Fort Jackson

The proponent expressed strongest interest in a training package that would help new analysts in understanding their responsibilities in proponentcy and the "whys" and "how" of developing MOCS proposals.

There is need for reliable software supporting position data analysis; good software might offset some of the shortfalls due to the lack of familiarity with occupational analysis and job structuring.

In addition, access to HQDA data in better formats so that the proponent analysts can retrieve and work with the data more efficiently.

Office of the Quartermaster General (OQMG) Enlisted Personnel Proponent Office, Fort Lee

The proponent singled out the area of training. With all the expertise and technology today related to training delivery, there should be a package developed that could be used to support the staff of the personnel proponent office. Even if resources do not exist for regular courses, multi-media and distance learning make the development of training packages feasible.