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General Accounting Office

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Needed--A More Complete Definition Of A Quality First-Term Enlisted Person

Since the inception of the All-Volunteer Force, debates about its success or failure have centered around the "quality" of first-term enlisted persons recruited into the Force. Neither the Secretary of Defense nor the services have officially defined a "quality" enlisted person.

This report points out the limitations of the usual measures of quality--high school graduation and mental aptitude--and recommends that the Secretary formally define quality. GAO suggests a possible DOD-wide definition.

The recommendations in the report should help DOD officials improve their understanding of first-term enlisted force quality and more adequately advance research efforts directed at the quality issue.



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UNITED STATES GENERAL ACCOUNTING OFFICE
WASHINGTON, D.C. 20548

FEDERAL PERSONNEL AND
COMPENSATION DIVISION

B-157371

The Honorable Harold Brown
The Secretary of Defense

Dear Mr. Secretary:

This report discusses those general factors important to the services in determining who makes a quality enlisted person. It also points out what research is underway or planned to better understand quality and discusses the current usage of high school graduate and mental category attributes in measuring quality.

This report contains recommendations to you on pages 21 and 22. As you know, section 236 of the Legislative Reorganization Act of 1970 requires the head of a Federal agency to submit a written statement on actions taken on our recommendations to the Senate Committee on Governmental Affairs and the House Committee on Government Operations not later than 60 days after the date of the report and to the House and Senate Committees on Appropriations with the agency's first request for appropriations made more than 60 days after the date of the report.

We are sending copies of this report to the Director, Office of Management and Budget; the Chairmen, House and Senate Committees on Appropriations and Armed Services; the Chairman, House Committee on Government Operations; and the Chairman, Senate Committee on Governmental Affairs.

Sincerely yours,

A handwritten signature in cursive script, appearing to read "H. L. Krieger".

H. L. Krieger
Director



D I G E S T

In congressional debates and public discussions about the success or failure of the All-Volunteer Force, the quality of enlisted recruits is a major concern. But who a "quality" first-term enlisted person is, the Department of Defense (DOD) has yet to define.

Quality has been debated and discussed in terms of the number of high school graduates recruited and their mental aptitudes as measured by the Armed Services Vocational Aptitude Battery. High school graduation and mental aptitude data have been shown as the best current indicators of an individual's ability to be trained or to complete enlistment. There are, however, other factors which should be measured and their importance considered.

With the help of DOD and using various data, GAO determined factors considered most important to quality. In addition to trainability and completion of enlistment, the other factors were freedom from discipline problems, adaptability, and job performance. Regarding one aspect of the discipline factor--absent without leave--GAO reported on March 30, 1979, that for those individuals in the first-term force who went absent without leave, it was more cost effective to recruit high school graduates than non-high-school graduates (FPCD-78-52). The last two factors are harder to measure, and it generally has not been shown how indicative high school graduation and mental aptitude are to these factors. Considerable research on these other factors is underway within each of the services to better understand quality.

Considering these factors, GAO concluded that a quality enlisted person performs effectively in military training and job environments and behaves at an acceptable level, contributing to mission accomplishment. Although general in nature, this is useful as a possible DOD-wide definition. A more useful definition, considering its application across all services' first-term enlisted force, probably should be more closely related to at least the primary job performance requirements in each of the services' occupational areas.

The derived definition emphasizes the need for indicators of individual performance effectiveness that are as precise as can be developed. Essential to the development of these predictors would be reasonably accurate job/skill performance standards and measurement criteria. GAO recognizes the difficulties in developing predictors based on job performance standards and measurement criteria but believes that DOD needs to make a firm commitment to the effort.

Currently there exists at the Office of the Secretary of Defense level a mechanism for coordinating DOD's personnel research and development efforts. However, more formal procedures are needed at this level to coordinate the research independently planned by the individual services or to include specific projects considered important or critical at the level of the Office of the Secretary.

GAO also recognizes the magnitude of DOD's task in hiring about 315,000 new active force enlisted personnel a year. The efforts of the Secretary and the services to advance their understanding of such a complex issue as enlisted force quality are noteworthy.

RECOMMENDATIONS

To improve the understanding of quality and enhance the research, the Secretary of Defense should:

- (1) --Require that the use of high school diploma graduate and mental category data are placed in proper context so as to make clear that they currently have been shown as indexes of some factors of quality rather than all factors of quality.
- (2) --Establish a formal DOD-wide definition of enlisted member quality that the services can use to further refine.
- (3) --Require the services to develop additional quality criteria that include job performance.
- (4) --Require that research proposals on the quality issue clearly identify the relationship to an official DOD definition.
- (5) --Require that enlistment standards take into account results from research on the factors included in a quality definition.
- (6) --Establish formal procedures to ensure that results of service research projects are fed back to the Under Secretary of Defense for Research and Engineering for coordination purposes.
- (7) --Define more clearly the roles and responsibilities of the Under Secretary of Defense for Research and Engineering and the Assistant Secretary of Defense (Manpower, Reserve Affairs and Logistics) so as to enhance the research effort on quality.
- (8) --Establish a formal procedure for ensuring that research priorities of the Assistant Secretary of Defense (Manpower, Reserve Affairs and Logistics) are coordinated

Tear Sheet

with the Under Secretary of Defense Research and Engineering, thereby providing the Under Secretary with the information necessary to assess whether Manpower, Reserve Affairs and Logistics priorities are being addressed.

- (9) -- Establish the Armed Services Vocational Aptitude Battery organization as a formal committee supported by members' full-time participation or members' part-time participation, with assignments to the committee being designated as a priority responsibility.

C o n t e n t s

	<u>Page</u>
DIGEST	i
CHAPTER	
1 INTRODUCTION	1
Scope of review	2
2 WHAT CONSTITUTES QUALITY?	4
Factors considered important to define quality	5
Trainability	6
Adaptability to military service and work environment	6
Performance on the job	7
Freedom from discipline problems	9
Completion of first-term tour	9
3 STATE-OF-THE-ART RESEARCH EFFORTS TO BETTER PREDICT SUCCESS IN MILITARY LIFE	11
Service research efforts to identify, select, and retain successful enlistees	11
How quality definition could benefit research	12
4 OFFICE OF THE SECRETARY OF DEFENSE'S INVOLVEMENT WITH SERVICE RESEARCH EFFORTS	17
Under Secretary of Defense for Research and Engineering	17
Assistant Secretary of Defense (MRA&L)	18
5 CONCLUSIONS AND RECOMMENDATIONS	20
Conclusions	20
Recommendations	21

ABBREVIATIONS

ASVAB Armed Services Vocational Aptitude Battery
DOD Department of Defense
GAO General Accounting Office
MRA&L Manpower, Reserve Affairs and Logistics
NPS Nonprior service
OSD Office of the Secretary of Defense
SQT skill qualification test

CHAPTER 1

INTRODUCTION

Since the inception of the All-Volunteer Force, serious debates in the Congress and throughout the Nation have taken place on whether it has succeeded or failed. One of the central issues in the debate has been the quality of non-prior-service (NPS) enlisted personnel recruited into the military.

The services use many attributes to determine a recruit's enlistment eligibility, including moral, physical, and mental attributes and educational attainment. Indexes of quality have been based primarily on two of these attributes: educational attainment and mental level. Therefore, enlisted recruit quality has frequently been discussed in terms of graduates from high school and mental category. The mental categories are determined by scores obtained on selected subtests of the Armed Services Vocational Aptitude Battery (ASVAB).

Service analyses of obtainable recruit demographic and biographic information indicate that these characteristics correlate (show a relationship) at a high enough level to be useful as predictors of such factors as trainability and completion of enlistment. The use of educational level and mental category information as predictors of trainability and enlistment completion provides the services with a method to select recruits from the applicant pool. However, these selection indexes have not been proven as total measures of quality when considering the total first-term military environment. Although trainability and tour completion are important, we believe the concept of quality should include other factors which are harder to measure, such as job performance.

One of the major objectives of the Department of Defense (DOD) is to have an effective enlisted force, one that consists of quality individuals, regardless of the accession system used--draft or volunteer. We feel the quality individual is one who performs in the military environment (training and on the job) and behaves at an acceptable level, thereby contributing to unit effectiveness and mission accomplishment. We believe this emphasizes the need for as precise a predictor(s) of individual performance effectiveness as can be developed so as to more adequately identify and select potential recruits from the available supply. Essential to the development of

the predictor(s) would be reasonably accurate job/skill performance standards and measurement criteria.

We recognize the difficulty in developing predictors based on job standards and measurement criteria. However, we feel a strong DOD commitment should be made to develop and test such predictors for possible operational use.

As mentioned on page 1, the public debate about quality in the first-term enlisted force has centered about mental category and high school diploma graduates as indicators of quality.

This debate has involved the executive branch, including DOD; the legislative branch, including both members and committees; and private research institutions, as well as academia and advisory committees. They have used high school graduate and mental category data to argue that the quality of the first-term enlisted force has gone up, declined, or remained the same. Conclusions reached ranged from the All-Volunteer Force is successful, a qualified success, less than successful or a failure, that it is or is not sustainable, too costly, or that other modes of staffing the first-term enlisted force should be evaluated or tried.

The accessibility of these data and the many studies correlating them with completion of the enlisted tour, incidences of disciplinary problems, and successful completion of advanced training have probably been major reasons for debating quality in this limited framework.

These data to date, however, have not been correlated with job performance. Therefore, the data as currently used in the debate on quality has not been proven as reasonably accurate indexes of total individual effectiveness.

SCOPE OF REVIEW

We identified several general factors suggested by the services as being important in assessing what makes a quality enlistee. These factors were identified through several interviews with key personnel within the Offices of the Assistant Secretary of Defense (Manpower, Reserve Affairs and Logistics (MRA&L)) and the Under Secretary of Defense for Research and Engineering; each of the service's manpower and personnel organizations; the Navy Personnel Research and Development Center, San Diego, California; the Air Force Human Resources Laboratory, Air Training

Command, and Military Personnel Center, San Antonio, Texas; and the Army Research Institute for the Behavioral and Social Sciences, Alexandria, Virginia. We also reviewed the services' research plans and programs to ascertain their relationship in assessing who makes a quality enlisted person.

CHAPTER 2

WHAT CONSTITUTES QUALITY?

Neither the Office of the Secretary of Defense (OSD) nor the individual services have an official definition of what constitutes a quality first-term enlisted person. This fact was also noted by the Rand Corporation in a 1977 staff paper entitled "The All-Volunteer Force: Five Years Later." In that paper Rand stated:

"In a general sense, 'quality' refers to those aspects and attributes of military personnel that are deemed desirable and contribute to a more productive, capable, and better motivated force. The problem, of course, is that there is no ready measure of quality, let alone a precise definition. In the absence of such measures, quality has come to be interpreted in terms of certain measurable attributes possessed by those in or entering into the military, such as mental aptitude and educational attainment."

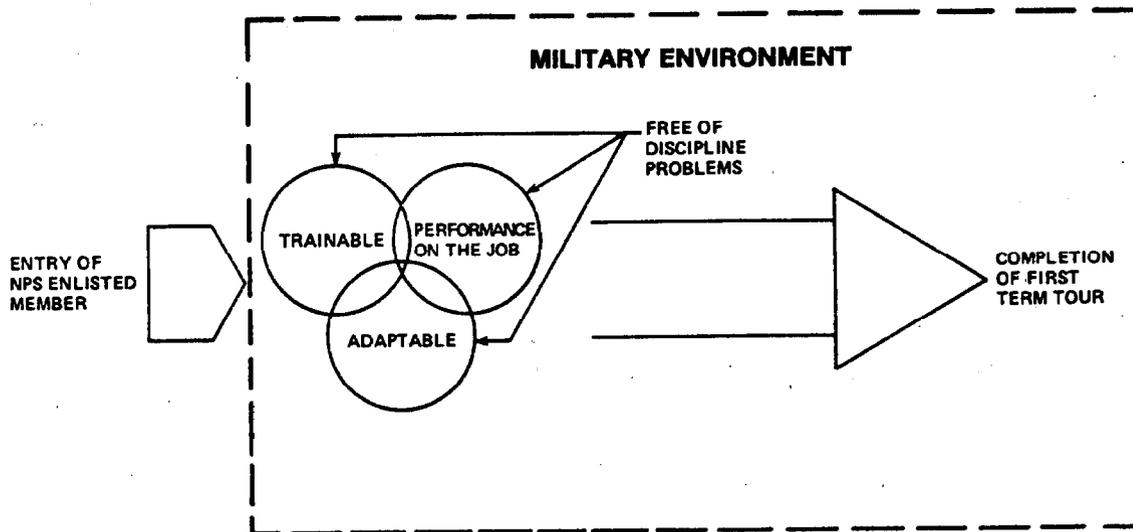
Since there was no official definition of "quality" enlisted personnel, we derived a definition with the help of DOD officials and various data. One constraint we placed on the definition was that it should result in a clearer understanding of the individual's contribution toward the unit's ability to accomplish its mission. Our definition of a "quality enlisted member" is one who performs effectively in the military environment (training and on the job) and behaves at an acceptable level. Based on this definition, the quality issue is much more complex than mental category or educational attainment levels. The derived definition is of a generalized nature and its applicability across all services' first-term enlisted force is undetermined. A more useful definition may be more closely related to at least the primary job performance requirements in each of the services' major occupational areas, but such aggregated data is not collected in this manner. Army data, for example, might be obtained and aggregated from the Soldier's Manuals and performance tests, such as the skill qualification test (SQT), provided such tests are reasonable measures of actual job performance. We feel our definition is of value for further refinement, if needed, and as a departure point for further concentrated research.

FACTORS CONSIDERED IMPORTANT
TO DEFINE QUALITY

Because there was no official definition of quality, we interviewed various manpower and personnel officials in OSD and each of the services, including the research laboratories, and asked what factors they considered most important in defining a quality enlisted person. The most common factors cited or agreed to were

- trainability,
- adaptability to military service and work environment,
- performance on the job,
- freedom from discipline problems, and
- completion of enlistment term.

These factors are, to some extent, interrelated, but we could not determine the degree of dependence. The general relationships of these factors can be illustrated by the following simplified diagram.



The following describes these factors and their importance.

TRAINABILITY

Except in rare circumstances, all service-enlisted recruits receive basic military training. Training in and beyond basic training varies from service to service as to type and length, depending on the job/skill being taught. The training given contributes to the individual's learning a skill and applying this skill on the job. Currently, ASVAB is the tool used for predicting a trainable recruit within a particular job occupation. ASVAB has been validated against advanced individual training school completion and is, therefore, a tool for predicting school completion. However, information about the ASVAB indicates it may not be as good a predictor of trainability for the Army's needs.

According to DOD, research to correlate the results of aptitude measures with an individual's performance on the job has not been accomplished; therefore, minimum aptitude cutoff scores established for people taking the ASVAB show only potential training completion and not performance on the job.

ASVAB is also used as a tool for classifying and assigning recruits into various skill occupations. Each service uses different combinations of ASVAB subtest scores (composites) as part of the process to determine the occupation. However, the actual assignment and classification of recruits generally is based on the supply and demand for individuals in particular skills assuming the attainment of a minimum ASVAB score for the occupation.

Actions underway to associate the ASVAB with job performance are discussed on page 8.

ADAPTABILITY TO MILITARY SERVICE AND WORK ENVIRONMENT

The change from civilian life to military life can present problems to which a recruit must adjust; that is, discipline, exposure to diverse backgrounds and values of other military people, the lack of individual freedom in a military environment and the need to follow orders, training school regimentation and testing, everyday job pressures--particularly since this may be the first job the individual has held; different stateside and overseas living and working environments--each with varying customs and values; and separations from family and friends. In this context an adaptable individual is one who can undergo such changing conditions and still perform what is minimally required.

All military jobs can exert some stress. However, some military jobs exert extraordinary pressures that must be dealt with, such as life and death situations for both the individual and associates. Scientists contend there is a significant gap between a recruit's qualifications as measured by military enlistment standards and a recruit's response to the military environment (adaptation) and the effect organizational factors have on the individual.

According to research scientists, there are no instruments currently available for operational use in preenlistment screening to assess adaptability. Scientists say that the major reasons for not using such techniques in preenlistment screening in the past were

--the state of the art in predicting adaptability had not been sufficiently advanced and

--they could require obtaining additional, and, in some cases, sensitive background information about potential recruits which would be difficult to obtain.

PERFORMANCE ON THE JOB

Job performance is critical in that it probably has the most direct relationship with the unit being able to accomplish its stated mission based on the individual's efforts. However, since most job objectives or standards are not precisely or specifically stated, there is little or no data with respect to how well individuals actually perform on the job.

According to the researchers, individual performance is affected by the organizational environment, the training processes, and abilities to adapt and be motivated to do the job. In their opinion, this is demonstrated partially by the individual's performance ratings and skill level progression and promotion--all of which are based to some degree on subjective or anecdotal evidence.

The difficulty in establishing performance criteria is illustrated in the following statement from a Navy research project plan:

"While many small-scale, partial measurement efforts are ongoing, no comprehensive system for the measurement of the job performance capabilities of individuals exists in today's Navy. The main shortcomings of ongoing efforts appear

to be: (1) Evaluations tend to be made in global terms rather than in terms of specific deficiencies. (2) Typically, evaluations are based upon paper-and pencil tests or supervisors' ratings rather than actual job performance tests. (3) Personnel assigned to design and administer these efforts are often not properly trained in performance testing methodology. (4) Some of these programs attempt to test the entire population involved rather than relying on sampling techniques; consequently, they become overwhelmed by the size of the effort. (5) Often evaluations are carried out on board ship where various practical and/or administrative considerations compromise the types of evaluations which can be conducted. Before precise, reliable information can be obtained concerning the job performance capabilities of Navy enlisted personnel, all of these deficiencies will have to be corrected and small-scale efforts will have to be integrated into a comprehensive assessment system."

Although difficult, all the services are attempting to better measure performance on the job. These efforts are at varying stages of research and/or implementation. For example, Army officials say they have made some advances in the actual measurement of individual job performance. This has been accomplished by the establishment of SQTs which are based on job requirements outlined in the Soldier's Manuals. Soldier's Manuals contain the critical job tasks, the behavior required to perform the tasks, the job conditions, and the standards of performance. The manuals define the jobs, listing the major tasks in a job specialty that soldiers are responsible for performing. SQT has three parts: (1) written--questions about how a task is performed, (2) hands-on--actual performance of tasks, and (3) task certification--unit commander observes soldiers' performance and reports abilities to perform.

SQTs are scheduled to gradually replace the Army's Military Occupational Specialty Test which was a paper and pencil test. Currently, the Army projects that, by the end of fiscal year 1979, about 68 percent of Active Army enlisted personnel will be covered by SQTs.

The Army Research Institute for the Behavioral and Social Sciences is conducting research to determine the relationship between ASVAB and performance on SQTs. If such a relationship can be determined and assuming that

the SQTs do adequately measure job performance requirements, the ASVAB results could be a predictor of job performance. However, the project is a long-range, difficult, and complex assignment, and near-term use should not be expected.

FREEDOM FROM DISCIPLINE PROBLEMS

Discipline problems range from minor aberrations of military norms or standards to violations of either military regulations or the Uniform Code of Military Justice. According to the scientists interviewed, the more frequent the occurrence of the offense, defined in terms of discipline problems, the more the degradation of mission accomplishment. Moreover, those to whom we talked generally felt that individual discipline problems had an adverse effect on the other individuals in a particular unit.

Research has centered on determining the relationship between the more serious discipline problems (those which result in less than honorable discharges) and the number of high school/non-high-school diploma graduates that fail to complete the first tour.

We recently completed a study of those individuals in the first-term force who went absent without leave and found that it was more cost effective to recruit high school graduates than non-high-school graduates. Little data is available and/or accessible as to how the individual's behavior is influenced by the organization and/or the environment or whether an unacceptable behavioral pattern existed before enlistment. The services recognize these needs and have research efforts underway to increase their understanding of the issue.

COMPLETION OF FIRST-TERM TOUR

The remaining criteria cited as being associated with enlistment success is completion of the first-term enlistment tour in that the services generally contend that the individual has displayed a stick-to-it behavior. They say that the high school diploma graduates have already displayed this by the mere fact that they completed high school. The data collected indicates that high school diploma graduates complete their enlistment term at a greater rate than non-high-school graduates.

We were told that the high school graduate diploma is the single best predictor of tour completion, and

several studies have verified this fact. Current military recruiting practices, therefore, emphasize the selection of military qualified high school graduates.

The factors of "age at time of enlistment" and "completion of college preparatory courses during high school" are also reported to correlate well with the above definition of a successful enlisted person. Research scientists explain that most applicants in the 17-year-old group tend to be high school dropouts with lower aptitudes. This younger age group is more likely not to complete basic training than older age recruits. Completing college preparatory courses during high school may, the scientists say, imply high individual motivation.

Other items suggested by various services as likely preservice factors indicating probable completion of tour included such things as job performance in civilian occupations, attainment of a general education diploma after attending adult education courses, detailed background on the types of courses attended by the individual, and literacy level. However, the amount of data on these factors varies.

We are studying the cost and management of attrition by enlistees during the first term and analyzing it in terms of trends, causes, and needed improvements.

CHAPTER 3

STATE-OF-THE-ART RESEARCH EFFORTS TO BETTER

PREDICT SUCCESS IN MILITARY LIFE

Within each of the services, considerable personnel management research is either planned or underway. This includes basic, exploratory, and other research and development programs in such areas as personnel selection, classification, retention, performance evaluation, and individual adaptability. These research efforts, in an overall sense, address many of the quality factors identified in chapter 2 and have an effect on the services' means for identifying, measuring, and forecasting quality attributes of individuals. However, because there is no common "quality" definition, it is difficult to assess the extent to which the research efforts address all the factors needing examination. After defining quality, OSD and the services need to ensure that research efforts address those factors determined as essential to effective individual military performance.

SERVICE RESEARCH EFFORTS TO IDENTIFY, SELECT, AND RETAIN SUCCESSFUL ENLISTEES

Each service has a need for research in personnel and training. The Army, Navy, and Air Force have personnel research laboratories that conduct much of their research. The Marine Corps uses the Navy Laboratory and monitors and adapts the efforts of the other services as opposed to having its own laboratory. All of the services, to varying degrees, contract with various private research concerns for some of their research. The services' research efforts generally are classified as basic research, exploratory development, and advanced development programs. Basic and exploratory research are not intended to result in operational solutions; they generally involve advancing the frontier of knowledge. Exploratory development programs should succeed in advancing the state of the art and produce products which will be implemented into advanced development projects.

Within these three stages, the services' personnel research plans include programs to improve personnel effectiveness and efficiency and, through its research, develop a better means of selecting, classifying, and retaining potentially effective service members.

Although some of the research is applicable to common problems among the services, other research addresses problems peculiar to the individual service. Much of the effort is long range and generally addresses measuring the relationship between individual behavior and organizational goals.

Although research efforts to date have shown the importance of high school diploma and higher aptitude levels, much remains unknown regarding the psychological and environmental characteristics which enable an individual in the military to adapt, perform the job, and complete the enlistment tour. This may also be true in the civilian work environment. The services recognize the importance of the above unknown characteristics/attributes and the improvements that are needed and are seeking improvements to the selection and classification testing process. Subjects such as literacy levels, motivation, expectations, job satisfaction, job performance, and the ability to handle stress are being researched at varying stages of research and development in an effort to better understand their role in a recruit's success and ultimate completion of tour.

HOW QUALITY DEFINITION COULD BENEFIT RESEARCH

We made a limited review of the services' major personnel research efforts to get a better understanding of what was being assessed and its relevance to the quality issue. Since there was no official definition of quality, we were unable to specifically identify the research efforts to the factors outlined in chapter 2. The services, however, had ongoing projects and research plans which generally related to these factors. We did not determine the extent to which these factors were being researched by individual services. The services contend that much of their research efforts in the area addresses problems concerning their particular needs.

A common definition of quality would be useful because it would allow OSD and the individual services to assess research efforts against the factors identified in the definition to

- determine the extent of research coverage made on each of the defined factors;
- identify those areas where additional research may be warranted; and

--establish a frame of reference where one service, if applicable, could better build on another service's efforts.

Specific examples of research underway in the services follow.

Examples of research efforts addressing improvement of enlisted member quality

Following are a few examples of personnel research efforts, at various stages, being done to better identify, select, classify, and retain potentially effective service members.

The services measure aptitude through ASVAB. Composite scores from ASVAB are, at present, the best indicators of a person's ability to learn specific military skills. Jointly the services and OSD are constantly updating and validating ASVAB, which currently consists of several different equivalent versions. Successor versions are being developed. Each of the services is also revalidating its composites. One evaluation of these data is being made to determine the feasibility of common composites which could provide improved differential classification and facilitate aptitude comparisons among the services.

The Army uses a general interest measure, the Army Classification Inventory--included as part of ASVAB--at enlistment for selection and classification. Measures of occupational interests when used as a part of assignment criteria have been shown to predict later job satisfaction and to correlate with performance in training. The Navy, Marine Corps, and Air Force do not use an interest measure. However, all the services are studying the feasibility of including an Air Force-designed interest measure called Vocational and Occupational Interest Career Examination as part of the screening administered at the time of applicant testing.

OSD has tasked each service with responsibilities for Computerized Adaptive Testing. The Navy acts as executive agent and manages and coordinates the research efforts. An earlier analysis has indicated that adaptive tests are more efficient and precise than conventional pencil and paper tests. With this system the individual applicant answers questions posed by the computer. After only a few questions, the computer can quickly focus on the aptitude level of that individual and then test intensely.

Research on the Army's Military Applicant Profile was originally initiated in 1974 to better predict an individual's chance of adjusting to and completing training. Drawing on biographic information such as home, school, and work experience and attitude, the profile attempts to identify individuals who would have difficulty adapting. The Army has developed two improved forms of the profile to be administered for enlistment screening.

The Air Force's Motivational Attrition Prediction Model was developed in 1976 as an enlistment selection device. This model is to help reduce the number of involuntary separations while not disqualifying an inordinate number of potentially successful applicants. The model weights certain selection criteria identified during the existing screening process as correlating to an individual's potential for successfully completing the military tour. Some of these factors include age, ASVAB subtest scores, completion of certain high school courses and activities, and vocational interests. The prediction technique is being applied in the Air Force's Improved Military Airmen Guidelines for Enlistment project. Implemented during the fall of 1978, the project attempts to apply a motivational-based enlistment standard to certain enlistees as a means of better predicting their chances of completing the tour.

Another Air Force research project will help develop a screening device for identifying people who will have problems adapting to the military. The project is based on a biographic inventory used in identifying enlistees who attrited for emotional and drug-related reasons. The current effort further refines the inventory and incorporates demographic and aptitudinal elements. Selected 1975 Air Force enlistees and 1977 enlistees of all the services will be tracked to determine which enlistees fail to adapt and complete their tour.

The Marine Corps, through its Paris Island Recruit Assimilation Training Exercise study, looked at the feasibility of presenting a realistic film on training conditions to basic trainees. It studied the recruits' prior expectations of basic training and any changes that occurred after, to help reduce attrition through matching expectations with reality. Results indicate this is a way to help recruits better adapt to initial military training.

The preceding examples generally deal with the historical definitions of success as completion of the first tour and of failure as attrition during the first tour.

The following example is treated in greater detail because it deals specifically with performance on the job.

The Navy Personnel Research and Development Center is studying methods of obtaining adequate job performance criteria through its Performance Proficiency Assessment System project. According to the project plan, the general purpose of the effort is to study the feasibility of a Performance Proficiency Assessment System. Also, if feasible, the system would provide various decisionmakers with information concerning the degree to which fleet personnel are capable of performing the critical aspects of their jobs. Such a system would support various selection, training, and assignment decisions and, in addition, would provide a basis for judging the adequacy of individual performance in relation to operational requirements.

The plan states that the system, when developed, would be patterned after industrial quality control systems. The basic question which this advanced-development program would attempt to answer is: Can a cost-effective system for obtaining job performance information be developed which will provide valid and reliable information on the effectiveness of the personnel processes which bring individuals to their assignments in the Navy's man-machine system? Specific questions to be answered in the development of the system follow.

1. What is the best procedure for identifying critical shipboard tasks?
2. How can appropriate performance criteria be established for the critical tasks that are identified?
3. What are the most appropriate sampling procedures for both tasks and job incumbents?
4. What procedures are currently used to gather performance data and how effective are these procedures?
5. What procedures can be developed for measuring the performance of job incumbents in quantifiable terms?
6. How can performance data be analyzed and related to pertinent portions of the personnel system?

7. What procedures can be used to provide personnel managers with appropriate and understandable reports?
8. How much would the implementation of such a system cost and how much could it be expected to benefit the personnel system?

The plan states a hypothesis that, while such a system might not be implemented for all or even a great number of Navy ratings, it would prove to be cost effective. Also, the assessment system would meet with user acceptance when applied to skills that Navy decisionmakers perceive to be extremely important, especially those skills that deal with the mission effectiveness of combat ships.

The plan further states that the need for such information is indicated in the Chief of Naval Operations Manpower Training and Personnel Plan and that a training system requires feedback and evaluation procedures so that the quality of its output may be measured and improvements generated. Without such information, manpower managers cannot know whether or not manpower requirements are being met. Specific objectives of the personnel plan that are directly related to this advanced development research are to

- develop and sustain an evaluation system for the quality control of training that will provide information about the products of training and their adequacy in meeting manpower requirements,
- implement and sustain a communication system for conveying job performance data to various manpower system managers, and
- provide procedures for obtaining job performance evaluations of personnel to obtain feedback data to validate training and career development effectiveness.

CHAPTER 4

OFFICE OF THE SECRETARY OF DEFENSE'S

INVOLVEMENT WITH SERVICE RESEARCH EFFORTS

Within OSD, the Under Secretary of Defense for Research and Engineering and the Assistant Secretary of Defense (MRA&L) are responsible for coordinating service research efforts and for providing policy on the development and use of ASVAB. We noted a lack of formal procedures for ensuring feedback of research results to enhance coordination and limited manpower resources to coordinate all the services' research efforts and a lack of designation as to the priorities of the manpower and personnel research needed at the OSD level. Details of these issues follow.

UNDER SECRETARY OF DEFENSE FOR RESEARCH AND ENGINEERING

Research and Advanced Technology

Within the Office of the Deputy Under Secretary for Research and Engineering, the Research and Advanced Technology section is responsible for coordinating the services' personnel and training research efforts. It also reviews the budget of most of the services' research projects for duplication and overlap. Within this office, one individual is responsible for checking duplication, determining whether proposals are true research, and ensuring that research proposals are coordinated among the services and other interested organizations, including the Office of the Assistant Secretary of Defense (MRA&L).

Because of congressional concern that such research might not be adequately coordinated and some might be duplicative, the Secretary of Defense, in 1977, required each service to annually report its research projects to the Deputy Under Secretary by the areas (1) Human Factors, (2) Training Methodology, (3) Training Devices and Simulators, and (4) Manpower and Personnel. The services also list the research and development projects' funding categories--basic, exploratory, advanced, prototype development, management and support, or operation system development--so as to identify the stage of the research.

It is questionable whether one individual in the Office of the Deputy Under Secretary can (1) develop the technological expertise to gain a detailed understanding of all the research projects and (2) keep abreast of the

development and advancement of all these research efforts. This office reviews the services' research proposals to determine whether the proposals are actually research and should be funded. We found no evidence that formal procedures existed for feedback information on the status of the research, so as to help in the coordinating process. However, there did exist memorandums which formally requested the services to provide such data. The need for a formal feedback system was recognized in our previous report, "Human Resources Research and Development Results Can Be Better Managed." (FPCD-77-43) Also, we found no evidence that formal procedures existed between the Under Secretary of Defense for Research and Engineering and Office of the Assistant Secretary of Defense (MRA&L) to ensure that the latter's research priorities were specifically identified and used in coordinating the services research proposals.

ASSISTANT SECRETARY OF DEFENSE (MRA&L)

Program Development

The Research and Advanced Technology section of the Under Secretary of Defense provides Program Development (MRA&L) with information concerning the services' manpower and personnel research projects and proposals. In turn, Program Development provides this information to component organizations within MRA&L. After reviewing the information, these organizations provide feedback to Program Development on the need to interface with the respective service to solve identified problem areas. These concerns are then directed to the Under Secretary of Defense for Research and Engineering for enlisting the support of the services' research organizations in focusing on these problems. Subsequently, meetings or conferences generally are held with the respective parties to attempt resolution of the concerns. OSD officials said that these meetings usually resulted in recommendations on how the affected parties could work to solve the research problem.

Military Personnel Policy

The Office of the Assistant Secretary of Defense (MRA&L) has established the ASVAB Steering Committee to provide oversight for the ASVAB program. Chaired by the Deputy Assistant Secretary of Defense, Military Personnel Policy, and composed of the Commander, Military Enlistment Processing Command, and service flag officers from their respective offices of the Deputy Chief of Staff for Personnel, the committee's main function is to provide policy

recommendations on ASVAB development and use to the Assistant Secretary of Defense (MRA&L). The ASVAB Steering Committee meets when called by the Assistant Secretary of Defense (MRA&L) or at the request of one of its members.

An ASVAB Working Group has also been established. Its chairman is designated by the ASVAB Steering Committee, and its membership consists of service testing policy staff officers, scientists representing each of the services' personnel research activities, and representatives of the Military Enlistment Processing Command. The ASVAB Working Group is responsible for resolving ongoing problems in ASVAB research and development and for its implementation and maintenance. While the ASVAB Working Group is a joint activity, its members represent the position of and are responsible to their individual services. Meetings generally are held quarterly or when called by the chairman.

The Air Force has been designated executive agent for all ASVAB research and development. The Air Force Human Resources Laboratory serves as the lead research laboratory for all research and development on the ASVAB in coordination with personnel research activities of the other services through the auspices of the ASVAB Working Group.

In addition to the research responsibilities noted above, the working group is responsible for assuring that the selection and classification development efforts recommended by the former Defense Manpower Commission are initiated promptly and that implementation is consistent with improved procedures. We believe the ad hoc nature of the Steering Committee and Working Group organizations, the part-time involvement by members of these organizations (particularly at the service level), and lack of direct control over research efforts are barriers to effective operations.

CHAPTER 5

CONCLUSIONS AND RECOMMENDATIONS

CONCLUSIONS

Neither OSD nor the services have officially defined what constitutes a quality enlisted member. Lacking such a definition, the debate about the quality of the force has centered around mental categories and high school graduates. Various studies and analyses have used these enlistment standards as inherent strengths or weaknesses of the existing force.

These characteristics correlate, to some extent, with training school completion and tour completion. As such, they are important for selection purposes, but they have not been related to actual job performance. Consequently, the quality debate is more complex than indicated by the emphasis placed on attained level of education and mental category of enlistees.

OSD and service officials agree that there is more to assessing quality than mental category and high school graduate statistics. As a result of their suggestions and various data, we derived a definition for the quality question. One constraint we placed on the definition was that it should result in a clearer understanding of the individual's contribution toward the unit's ability to perform its mission. Generally, the definition of a quality enlisted member is one who performs effectively in the military environment (training and on the job) and behaves at an acceptable level. The definition is general in nature and is not specifically related to particular job occupation standards, but it does show that the question is more complex than indicated. We believe it is useful as a possible Defense-wide definition and as a departure point for further research.

OSD and service officials agree that more information is needed to understand quality. DOD should officially define what constitutes a quality first-term enlisted member. Further, DOD has research efforts underway or planned which should help to better understand the issue. Much of this research appears to be based on individual service perception of the issue with independent approaches.

Our review suggests that the factors of quality, in addition to being complex, are, to some extent, interrelated, but we did not determine the degree of dependence of the variables in the definition.

Currently there exists at the OSD level, a mechanism for coordinating the DOD research efforts. This is at the Office of Under Secretary of Defense for Research and Engineering and the Office of Assistant Secretary of Defense (MRA&L). At the Under Secretary level, one individual is charged with the responsibility, and at the level of Assistant Secretary, the Inter-Service ASVAB Steering Committee, chaired by the Deputy Assistant Secretary, Military Personnel Policy, and supported by the ASVAB Working Group, is charged with the responsibility. However, at neither level are the responsibilities clear so as to help in coordinating and/or enhancing the research independently planned by the individual services or to include specific projects considered important or critical at the OSD level.

We recognize the magnitude of DOD's task in hiring about 315,000 new active duty enlisted personnel a year. We believe the efforts of OSD and the services to advance their understanding of such a complex issue as enlisted force quality is noteworthy. In addition, OSD is to be commended for recognizing the need and subsequently establishing a mechanism for coordinating the services' personnel management research. We believe the recommendations proposed in this report can help DOD improve management of first-term enlisted force quality and more adequately advance research efforts directed at the issue.

RECOMMENDATIONS

We recommend that, to improve the understanding of quality and enhance the research, the Secretary of Defense:

- Require that the use of high school diploma graduate and mental category data are placed in proper context so as to make clear that they currently have been shown as indexes of some factors of quality rather than all factors of quality.
- Establish a formal DOD-wide definition of enlisted member quality that the services can use to further refine.
- Require the services to develop additional quality criteria that include job performance.
- Require that research proposals on the quality issue clearly identify the relationship to an official DOD definition.

- Require that enlistment standards take into account results from research on the factors included in a quality definition.
- Establish formal procedures to ensure that results of service research projects are fed back to the Under Secretary of Defense for Research and Engineering for coordination purposes.
- Define more clearly the roles and responsibilities of the Under Secretary of Defense for Research and Engineering and the Assistant Secretary of Defense (MRA&L) so as to enhance the research effort on quality.
- Establish a formal procedure for ensuring that research priorities of the Assistant Secretary of Defense (MRA&L) are coordinated with the Under Secretary of Defense for Research and Engineering, thereby providing the Under Secretary with the information necessary to assess whether Manpower, Reserve Affairs and Logistics priorities are being addressed.
- Establish the Armed Services Vocational Aptitude Battery organization as a formal committee supported by either members' full-time participation or members' part-time participation, with assignments to the committee being designated as a priority responsibility.

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