Research Product 2005-07

Select21 Soldier Job Performance Measurement Tools

Human Resources Research Organization

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Selection and Assignment Research Unit

United States Army Research Institute
for the Behavioral and Social Sciences

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Dr. Trueman Tremble, Contracting Officer's Representative

14. ABSTRACT *(Maximum 200 words)*: Transformation of the U.S. Army into the Future Force involves changes to missions, systems, and organizational structures. To realize the full potential of transformation, the Army must have the means to select and to assign high quality individuals who, as first-term Soldiers, can meet the training and operational demands emerging with transformation to the Future Force.

This report is part of a series of research product reports that provide to potential users information on products resulting from a project titled *New Predictors for Selecting and Assigning Future Army Soldiers (Select21)*. The goal of Select21 is to (a) develop and validate new performance predictor measures and (b) propose use of the most promising measures as a foundation for an entry-level selection and classification system adapted to the demands of the 21st century.

This report describes the tools that will be used to measure the job performance and organizational "fit" of Soldiers participating in the Select21 research. Soldiers' scores on these performance measures will be linked to their scores on experimental pre-enlistment tests to determine how well the pre-enlistment tests might forecast future job performance.

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Human Resources Research Organization

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Foreword

The U.S. Army Research Institute for the Behavioral and Social Sciences (ARI) conducts research to support Army personnel and training goals. In recognition of the changes emerging with the Army's transformation, ARI developed a research program to identify, describe, and address future personnel requirements. This report describes an aspect of an ongoing ARI project, called Select21, concerned with future enlisted Soldiers.

The objective of this project is to provide personnel tests for selecting and assigning entry-level Soldiers to future jobs. This report is part of a series of Product Reports summarizing interim outcomes of this ongoing project.

- ☐ Future job clusters – February 2005
- ☐ Future Army-wide Soldier performance requirements – March 2005
- ☑ Soldier job performance measurement tools – August 2005
- ☐ Select21 experimental selection and classification instruments
- ☐ Select21 validation results and recommendations

This report describes the tools that will be used to measure the job performance and organizational "fit" of Soldiers participating in the Select21 research. Soldiers' scores on these performance measures will be linked to their scores on experimental pre-enlistment tests to determine how well the pre-enlistment tests might forecast future job performance.

Project Select21 is being conducted with support from the Army G-1, Deputy Chief of Staff for Personnel, and from the Army Training and Doctrine Command (TRADOC). ARI has briefed these sponsors, as well as representatives of other offices to include the Army Accessions Command, Human Resources Command, and the Army G-3, Deputy Chief of Staff for Operations. Research sponsors have provided the support and guidance needed for the success of the research.

MICHELLE SAMS
Technical Director

What is Project Select21?

The U.S. Army has undertaken far-reaching changes to transform the current force into one that is more responsive, deployable, agile, versatile, and lethal while being fully survivable and sustainable under all conditions. *New Predictors for Selecting and Assigning Future Force Soldiers (Select21)* is an Army research project focused on the personnel system by which the Army selects entry-level Soldiers and assigns these Soldiers to jobs. Select21 is designed to help ensure that through this system, the Army will acquire new Soldiers with the knowledges, skills, and attributes (KSAs) needed for performing the types of tasks emerging as part of the transformation. More specifically, the objectives of Select21 are to develop measures of these KSAs and to evaluate their potential for integration into the Army's personnel acquisition system.

Figure 1 shows a shematic overview of the Select21 project. To understand how well the experimental selection and classification tests work, we will administer them to a sample of Soldiers and then measure how well these same Soldiers perform their jobs. Select21 will use a "concurrent validation" design. With this design, researchers will administer the experimental tests to a sample of Soldiers with 18 to 36 months time in service and, at the same time, assess the Soldiers' job performance by using specially designed indicators, called *criterion* measures.

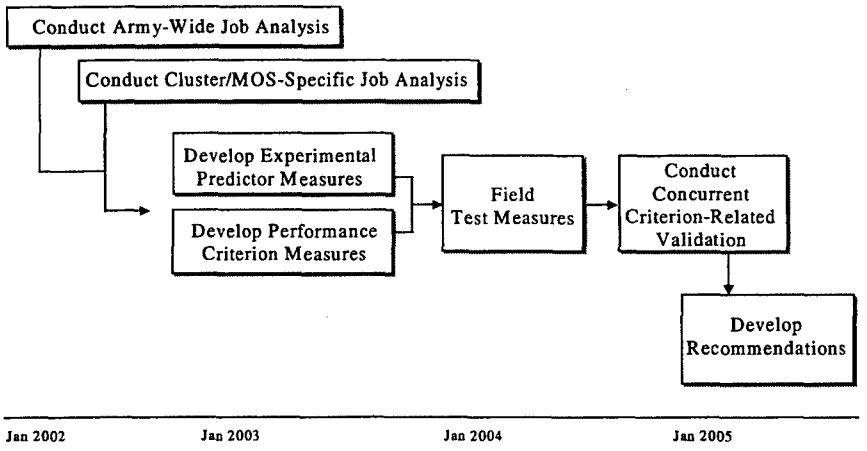


Figure 1. Schematic of the Select21 project plan.

What is this report about?

The job performance criterion measures are the subject of this report. The main purpose is to acquaint Army readers with the purpose, content, and format of these measures by presenting descriptions and examples. A brief overview of the development process is also included. There are five different criterion measures presented:

- Job Knowledge Tests (Army-wide and MOS-specific)
- Criterion Situational Judgment Test (CSJT)
- Personnel File Form (PFF)

- Job Performance Rating Scales (supervisor and peer ratings; includes both Current and Expected Future performance rating scales)
- Army Life Survey (with versions for current and future Army conditions)

Job Performance Criterion Measures

The job performance criterion measures have been finalized in preparation for collecting concurrent validation data in FY05. For test security reasons some of the measures cannot be released in their entirety.

The following pages provide descriptions and examples for each of the instruments. Following this presentation is a brief description of how the instruments were developed. The target population for these measures is Soldiers with 18-36 months service but who have not been promoted to grade E5. With one exception, the instruments are completed by the Soldiers in the target population; the exception being the Job Performance Rating Scales which are designed to be completed by the Soldiers' supervisors and peers.

The following are the measures presented:

- Job Knowledge Tests
- Criterion Situational Judgment Test (CSJT)
- Personnel File Form (PFF)
- Job Performance Rating Scales
- Army Life Survey

Job Knowledge Tests

To help assess first-term job performance, tests were developed that measure both Army-wide and MOS-specific job knowledge. The Select21 job knowledge tests are administered via computer using Perception® testing software. This allows for a more realistic presentation of test problems (e.g., using graphics, illustrations, photographs) than with traditional paper-and-pencil multiple-choice tests. Visual presentations also enhance the performance-orientation of the items and help to reduce the reading requirements.

The content of the tests was derived from performance requirements identified through a future-oriented job analysis of first-term Soldiers. The test blueprints (i.e., test content specifications) reflect the performance requirements that can be captured in a knowledge-based test. The Army-wide test mostly covers critical common soldiering tasks (Common Tasks – Skill Level 1). Tests were also developed for each of the following MOS:

- Infantryman (11B)
- Cavalry Scout (19D)
- M1 Armor Crewman (19K)
- Signal Support Systems Specialist (31U/25U)
- Information Systems Operator/Analyst (74B/25B)
- Intelligence Analyst (96B)

Within some MOS there may be variability of job tasks due to assignment and/or equipment. Therefore, some test questions are tracked so that a Soldier receives questions specific to his/her unit or assignment.

The Army-wide test has 60 questions and the MOS-specific tests have about 50 questions each. The test item formats include a mix of multiple-choice, multiple-response, rank order, and drag and drop questions. Three sample multiple-choice questions are shown below. Each uses visual information to help describe the question or illustrate the response options.

Sample: What is the shape of an NBC contamination sign?

A. Square

B. Triangle

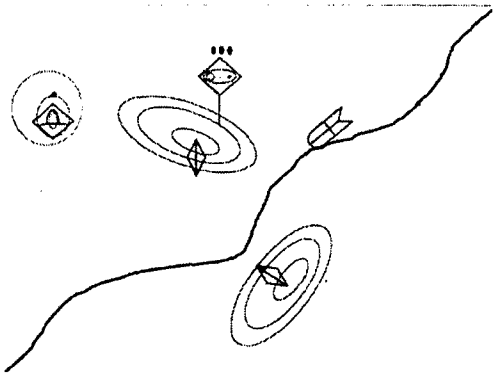
C. Circle

D. Pentagon

Sample: Which MOPP level is shown in the figure below?

A. MOPP 1
B. MOPP 2
C. MOPP 3
D. MOPP 4

Sample: An enemy armor platoon (reduced strength) has established a strong point defense along an avenue of approach. The enemy commander has arrayed his forces to maximize his current assets to delay or stop an opposing light infantry company. What is the HVT?



A. AT missile
B. T-72 tank
C. SA-missile squad
D. Mortar platoon

Criterion Situational Judgment Test (CSJT)

The Criterion Situational Judgment Test (CSJT) measures a Soldier's ability to make effective judgments about how to handle problems commonly encountered in their jobs. The target population for this test is Soldiers who have been in the Army 18–36 months. Each question consists of a description of a problem situation and a list of four alternative actions that a Soldier might take in that situation. However, instead of selecting the "correct" action, Soldiers rate the effectiveness of each of the choices offered. A sample item, with instructions, is shown below.

Instructions: Your task is to rate the effectiveness of each of these actions using a 1–7 rating scale, where 7 is highly effective and 1 is completely ineffective. Imagine that you are in the situation; use the scale to indicate how effective or ineffective you believe each action to be.

Sample Question: You are a member of second squad, First Platoon. You have noticed that a member of third squad has begun to let job performance and military appearance slip. Once very punctual, this soldier has been late to two formations in the last week. What should you do?

a. Tell the soldier that the whole platoon will suffer if he/she doesn't change.

b. Try to talk to the soldier and see if he/she has a problem that you may be able to help with.

c. Tell the soldier's squad leader.

d. Don't interfere. It's up to this soldier's squad or chain-of-command to take care of this.

The CSJT is designed to measure a Soldier's judgment in situations typically experienced by Soldiers in their initial term. During the development of the test, NCOs described actual situations that are experienced by Soldiers in this group. The test development process had several iterations of writing, editing, pilot testing, and analysis.

Although the test measures judgment in general, items were written to specifically target the following areas identified in the job analysis:

- Adaptability to Changing Conditions
- Effective Self-Management
- Exhibiting Effort and Initiative on the Job
- Relating to and Supporting Peers
- Teamwork

A Soldier's performance on an item might reflect a variety of dimensions related to the Soldier's knowledge, skill, and personality. Thus, only a single overall score is computed.

Personnel File Form (PFF)

The Personnel File Form (PFF) serves as a self-report on selected job performance criterion measures. Parts of the PFF closely parallel the Administrative Points content of the Army Semi-Centralized NCO Promotion Point Worksheet (PPW). In comparison to the PPW however, the PFF gathers more detailed information and covers an expanded number of performance categories. Scale scores are collected in the following areas:

- Awards, decorations, honors, certificates
- Memoranda, letters of commendation, achievement
- Army Physical Fitness Test performance
- Weapons qualification
- Flag actions, Article 15s
- Counseling statements, civilian/military arrests/citations
- Accelerated advancements
- Initial entry training (IET) performance
- Additional skill identifiers (ASI)

In addition, a composite score that simulates achievement on a 500-point PPW (less Duty Performance Evaluation and Board Points) is calculated from the Soldiers' scale scores.

Soldiers complete a detailed questionnaire that takes them through each one of the areas listed. All of the information requested is a matter of record. However, obtaining it from Soldiers' records would be both costly and time consuming. Previous comparative studies have shown that Soldier self-reports in these areas are highly accurate; at times, more accurate and up-to-date than the actual records.

Job Performance Rating Scales

The job performance rating scales are designed to be completed by the supervisors and peers of the Soldier being evaluated. Raters make ratings on both a Soldier's current performance and on anticipated performance under conditions that seem likely in 2015. All Soldiers are rated on Army-wide scales, both current and future. Additionally, Soldiers in target MOS (i.e., 11B, 19D, 19K, 31U/25U, 74B/25B, and 96B) are rated on both current and future performance rating scales that are specific to their MOS.

Current Performance Rating Scales

The Army-wide current performance scales include ratings for performance on several dimensions applicable to all entry-level Soldiers regardless of MOS (e.g., Communication, Professionalism and Personal Discipline, Adaptability). MOS-specific scales use the same format, but the dimensions being rated are specific to the MOS. A sample Army-wide scale is shown in Figure 2 below.

Demonstrates Professionalism and Personal Discipline on the Job The extent to which the Soldier exhibits selfless service orientation, exhibits integrity and discipline on the job, and follows instructions, rules and regulations		
– Fails to adhere to Army standards and values	– Generally adheres to Army standards and values	– Consistently adheres to Army standards and values
– Is disrespectful toward superiors; may ignore or refuse to follow orders	– Follows direct orders with little or no complaint and is usually respectful to superiors	– Follows orders willingly; is always respectful to superiors
– Usually displays poor military bearing	– Usually maintains good military bearing	– Consistently maintains excellent military bearing
– Does not put in effort to meet team goals, even when given encouragement	– Puts in effort to achieve team goals, but may need some encouragement	– Willingly puts in required effort to ensure team goals are achieved
– Takes part in prohibited activities	– Usually resists temptation to take part in prohibited activities, but might succumb to peer pressure	– Resists even strong peer pressure to take part in prohibited activities
– Exhibits little or no self-control or discipline on the job	– Generally exhibits self-control and discipline on the job	– Exhibits strong self-control and discipline on the job
Below Expectations	Meets Expectations	Exceeds Expectations
1 2	3 4 5	6 7

Figure 2. Sample Army-wide current performance rating scale.

Future Expected Performance Rating Scales

Analysis of projected Future Force initiatives identified several important ways in which the Army is expected to place new or increased demands on first-term Soldiers. Army-wide rating scales that describe each of the following four future conditions have been developed:

- A learning environment in which Soldiers must take greater responsibility for their own training and development.
- Increased need for disciplined initiative.
- Changes in the nature and frequency of communications with others.
- Increased individual pace and intensity of work.

We have also developed rating scales specific to selected MOS. Before completing these scales, raters are given a brief visual and text slide presentation about projected Future Force developments. Then the raters read a brief description of each of the relevant future conditions. They then rate how well they believe the Soldier would perform in the context described. A sample condition and scale is shown in Figure 3 below.

Future Condition: Increased Individual Pace and Intensity

Future operations will likely involve new aspects of physical, psychomotor, and mental skills. Future conflicts are expected to involve intense and sustained operations that will require physical and mental stamina to conduct high paced operation over long periods. Individuals must be capable of cycling between periods of work and rest instantaneously and at unpredictable intervals. Mental sharpness will be important and individuals will be required to process, sort, and prioritize digital information and data flow without becoming overwhelmed, even when fatigued or stressed. Soldiers must be able to recognize and respond to mental cues and images (such as icons and graphics) rather than real-life visual or sound stimuli.

Soldiers will undergo rapid transitions in mission types and operational environments. Situational conditions, such as rules of engagement, hostile forces, threat intent, and force mission can change daily. Adaptability will be key. There will be less time for transition and experience learning as Soldiers can go from a peacetime, home centered, CONUS environment to full combat activities in a matter of a few days.

Individual Pace and Intensity *How effectively would you expect the Soldier to meet these future requirements?*		
Not likely to meet the Soldier demands described.	Likely to be generally successful, but will struggle to meet the Soldier demands described.	Likely to successfully meet or exceed the Soldier demands described.
LOW	MODERATE	HIGH
1 2	3 4 5	6 7

Figure 3. Sample Army-wide future expected performance rating scale.

Army Life Survey

The Army Life Survey assesses Soldiers' attitudes about life in the Army. It was created in part because we are unable to examine a major criterion of interest, first-term attrition, in the planned concurrent validation. The Army Life Survey consists of 16 scales that measure two main categories of attitudes related to attrition and reenlistment decisions. The first category includes three scales that measure intentions to remain in the Army, including attrition intentions, re-enlistment intentions, and intentions to make the Army a career. The second category includes measures of several attitudinal variables that research suggests are related to career decisions. These include satisfaction with various aspects of Army life (e.g., supervision, pay and benefits, work itself), organizational commitment, perceived fit with MOS and the Army in general, perceived stress, and attitudes about the core Army values.

The Army Life Survey consists of 99 items. Respondents rate each item on a 5-point scale with response anchors appropriate to the item and scale dimension. Below are the instructions for the survey and five sample items. Note that the confidentiality of responses is stressed.

Instructions: The following survey includes several questions regarding your attitudes, impressions, and thoughts about life in the Army. Please read each set of instructions and questions carefully. Be assured that your responses will remain completely confidential, and will be used for research purposes only. Your individual responses will not be reported. It is important that you respond to each question honestly.

Sample Items:

1. How satisfied are you with the way your supervisor(s) handle Soldiers in your unit?
2. How satisfied are you with the amount of challenge in your work?
3. I am proud to tell others that I am in the Army.
4. I find life as a Soldier to be stressful.
5. How confident are you that you will complete your current term of service?

There is also a version of the Army Life Survey that is future-oriented. This presents brief descriptions of conditions projected to be characteristic of the Army in the 2015 timeframe. Respondents are asked how these conditions might affect their interest in remaining in the Army, their satisfaction indicators with the Army under these projected conditions, and other relevant job-related attitudes given forecasted developments.

Job Performance Criterion Measures Development

The goal of the criterion measures is to cover all possible aspects of "job performance" for Soldiers. As a result, multiple measures were developed, each requiring unique development procedures and strategies. The development steps included the following major activities.

Job Analysis - Identification of Performance Requirements. The Select21 job analysis used performance requirements to define job demands at the Army-wide level and for six target MOS.[1] At the Army–wide level, the performance requirements consist of:

- 19 Army-wide performance dimensions,
- 59 common tasks, and
- Anticipated future conditions applicable Army-wide.

Job-specific demands were defined by:

- MOS tasks organized into task categories and
- Anticipated future condition applicable to each of two job clusters

The results of this job analysis procedure are detailed in the second Product Report in this series: *Future Army-Wide Soldier Performance Requirements.*

The Measurement Plan. The job analysis defined the scope of the Soldier job that needed to be measured. To cover this performance domain, we proposed a series of measures and cross-walked them with the list of performance dimensions identified through the job analysis. It was important to include both so-called "can-do" and "will-do" type measures. Measures also covered several aspects of organizational fit which are precursors to turnover behavior (e.g., job attitudes). Teams were formed to pursue development of the measures identified in the plan and for the construction of the specific instruments.

Army Input and Review. Each measure was prepared with extensive Army involvement. Members of the Select21 Subject Matter Expert Panel (a representative group of senior NCOs) were briefed in detail on the measures and offered many suggestions. During actual instrument development, various workshops were held with Army NCOs to help finalize content. Army reviewers performed suitability and readability checks of final draft instruments.

Pilot and Criterion Field Testing: Instruments were pilot tested and reviewed by Soldiers and NCOs. A field test, targeting Soldiers from the sample set, was conducted as a final tryout of all measures before the concurrent validation planned for 2005[2].

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[1] These MOS are: 11B (Infantryman), 19D (Cavalry Scout), 19K (Armor Crewman); 31U/25U (Signal Support Specialist), 74B/25B (Information Systems Operator/Analyst, and 96B (Intelligence Analyst). The selection and grouping of these target MOS is discussed in a companion product report (Product Report 1): *Future Job Clusters.*

[2] The goal for field testing was to access 640 Soldiers including target MOS Soldiers. However, deployment priorities during FY2004 negatively impacted planned troop support requests, particularly in some of the target MOS. We are continuing to make adjustments to the research design to correspond with Army operational priorities.

Other Potential Applications

The five performance criterion measurement instruments have the potential to be used by others in the Army who are looking for tools to assist in measuring Soldier job performance. In these applications they should be viewed primarily as diagnostic guides to be used in training, counseling, and as supplements to the process of Soldier performance evaluations. Some specific considerations are discussed below.

Job Knowledge Tests. While the job knowledge test questions cannot be released while the Select21 Project is still using them as criteria, they may be releasable at a later time. The Army-wide content serves as a good diagnostic of Soldier competencies in the Common Task areas and could serve to focus training, as a cost-effective preparation for the Common Tasks Test (CTT), or used by Soldiers as part of a self-analysis program for promotion or for preparation for the Primary Leadership Development Course (PLDC). Although restricted to only a small number of Army jobs, the MOS-specific knowledge tests could serve a similar purpose.

Criterion Situational Judgment Test (CSJT). Like the Job Knowledge Tests, the CSJT test items are not immediately releasable. In the future, however, these items have the potential to serve as excellent training tools in developing awareness in emerging leaders in the areas covered – Adaptability, Self-Management, Effort and Initiative, Peer Support, and Teamwork. Because of variability and acceptability of responses, they can be used to elicit discussions and rationales during leadership training. They are compatible with companion leadership doctrinal sources such as FM 7-21.13 (*The Soldier's Guide*), FM 7-22.7 (*The Noncommissioned Officer Guide*), and FM 22-100 (*Army Leadership: Be, Know, Do*).

Personnel File Form (PFF). The PFF serves as a handy self-analysis worksheet for Soldiers who are anticipating promotion. It can also be used as a tool by supervisors in assessing and counseling their Solders in areas to concentrate to improve their promotion potential.

Job Performance Rating Scales. The Current Performance Rating Scales serve as an excellent counseling and guidance instrument for supervisors to use in developing their junior Soldiers. The areas covered – Professionalism and Personal Discipline, Communication, Adaptability, Information Management, Effort and Initiative, Problem Solving and Decision Making, Common Task Performance – are all developmental areas of concern for conscientious supervisors. The behaviorally anchored examples provide excellent discussion points and allow for specific goal-setting for improving Soldier performance in the targeted areas.

Army Life Survey. The Army Life Survey is a useful tool for measuring overall unit cohesion and morale and in identifying problem areas within a unit. Although it measures individual Soldier satisfactions, if administered within a unit (company or battalion) and results consolidated, it can provide leaders indicators of overall satisfaction indices, many of which are locally influenced. Such surveys, administered at regular intervals, provide leaders with comparative measures of the attitudes and opinions within the unit. Because of the sensitivity of

topics and the reliance on candid responses, it is essential that steps be taken to ensure respondent anonymity.

Who is involved in this work?

Select21 research and products will ultimately result in recommendations to the Assistant Secretary of Defense for Manpower and Reserve Affairs. The offices sponsoring this project are the Army G-1 and the Training and Doctrine Command (TRADOC). The U.S. Army Research Institute for the Behavioral and Social Sciences (ARI) is conducting the research, largely through work performed under contract to the Human Resources Research Organization (HumRRO).

How to contact us and for more information

Your reactions and suggestions for these Product Reports are important and we solicit input and participation in the Select21 project. We also will try to answer any questions you might have. If you have any input or want to learn more about Select21 and its current status, please contact:

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