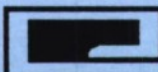PERS-TN-87-007

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PERSONNEL SECURITY AND RELIABILITY: PSYCHOLOGICAL RESEARCH ISSUES

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Martin F. Wiskoff

October 1987

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In response to recommendations of the Department of Defense Security Review Commission also known as the Stilwell Commission, the Defense Personnel Security Research and Education Center (PERSEREC) was established to apply behavioral science research methodology to the problems of personnel security. This paper outlines the research agenda of PERSEREC and reports on recent findings with pre-screening and biographical data.

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PERSONNEL SECURITY AND RELIABILITY:
PSYCHOLOGICAL RESEARCH ISSUES

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Paper presented at Division of Military Psychology
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Released by
Carson K. Eoyang
Director

Preface

Shortly after its establishment, PERSEREC wanted to inform the research community about the work it was undertaking. A paper, "Personnel Security and Reliability: Psychological Research Issues," was presented at the Division of Military Psychology Preconvention Workshop: Psychology and National Security Affairs, American Psychological Association Convention, New York, in August 1987. This paper represented the status of PERSEREC research at that time. It is presented here as a PERSEREC technical note.

PERSEREC will provide similar research updates at future meetings, and occasionally technical notes will be developed from these presentations.

Carson K. Eoyang
Director, PERSEREC

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Introduction

Personnel Security Issues

The issue of personnel security raises a fundamental dilemma in a free society: the need for control of national security versus the equally important requirement to protect the rights of citizens. To some extent these two goals may be viewed as resting on opposite ends of a see-saw, with the weight of governmental and public pressure at any time tipping the balance one way or another.

For example, there was considerable consternation expressed in 1985 by the Senate Permanent Subcommittee on Investigations during their hearings on personnel procedures employed to achieve security of government operations. They found many of the procedures sorely lacking, in particular the fact that security clearances had been handed out to 4.3 million people. Georgia Senator Sam Nunn viewed this as an unmanageable amount that could not be effectively monitored, and he lamented that "the scope of the problem is just unbelievable."

In August 1984 Secretary of Defense Weinberger had expressed concern with respect to the high number of people cleared by DoD for access to classified information. A comprehensive assessment of the situation was undertaken which culminated, about the time of the Nunn/Roth Hearings, with Secretary Weinberger directing an across-the-board 10% reduction in clearances as well as a similar reduction in requests for investigations. Subsequently, DoD has achieved a 39% clearance reduction and is seeking ways to effect further reduction of the still sizable number of clearances, but security problems continue nonetheless.

Newsweek, in a June 1985 feature article, stated that "It has been a dismaying time for the defense establishment. In the last 12 months alone, espionage charges have been brought in eight separate cases, implicating 15 people - including for the first time, an active agent of the FBI..." Two years later, U.S. News & World Report's lead paragraph reads, "Whatever its secret successes have been, the past three years have clearly been the worst of times for America's intelligence community (June 1, 1987). Since January, 1984, no fewer than 20 U.S. citizens have been convicted of stealing national secrets, compared with just four in the previous four-year period."

We do not believe that we are seeing "the tip of the iceberg" nor is there a wholesale increase in hostile

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intelligence penetrations. Rather, we feel that the increase in detection and the resulting convictions can be attributed to heightened DoD counterintelligence effectiveness. We now have significantly increased resources, better techniques (including a passive source program) and more comprehensive follow-up and investigation of persons committing security violations.

Obviously there cannot be any documentation of the number of undiscovered espionage incidents. And while our personnel security investigative system is not fundamentally designed to uncover spies, we are still not satisfied that it is sufficiently sophisticated to identify the character traits and the kind of misconduct making persons vulnerable to espionage approaches.

Psychological Research Issues

Evolution of research requirements. There is no need to belabor the point that personnel security problems do exist and that they should be addressed. In April 1982, a Defense Panel review of the DoD Personnel Security Program recommended that a research program be initiated with particular emphasis on the potential use of psychological tests and interviews as a supplement to the investigative process. Shortly thereafter, the Office of the Deputy Under Secretary of Defense (Policy) began efforts to determine the feasibility of and potential support for a centralized DoD personnel security research effort. By mid-1985, it was evident that there was wide-spread support throughout DoD for such an activity. In August 1985, a draft directive proposing a DoD Personnel Security Research and Education Center was coordinated throughout the Department.

In November 1985 the Commission to Review DoD Security Policies and Practices (Stilwell Commission) echoed its support. The report, "Keeping the Nation's Secrets" made the following observations:

Although billions of dollars are spent annually for security, relatively little goes to research activities. Moreover, significant aspects of policy and practice should properly be based upon research. Yet, such research is neither ongoing nor planned.

There logically should be research to determine the optimum structure of background investigations.

There should also be an analysis of the efficacy of the information elicited on personal history statements required to be filled out by clearance applicants; and

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there should be a similar analytic basis underpinning questions being asked of the subjects by DIS investigators. None of this exists.

There should also be research into the efficacy of new techniques to supplement background investigations.

Adjudication policies also beg for a firmer basis in research.

The role of PERSEREC. The Defense Personnel Security Research and Education Center (PERSEREC) was established by the Secretary of Defense in February 1986 to address these and other concerns. PERSEREC's mission is to:

1. Evaluate and improve DoD personnel security procedures, programs, and policies through research and analyses.

2. Provide training, instruction, and advice on selected personnel security subjects to DoD Components.

3. Stimulate joint personnel security research projects that have Defense-wide implications.

4. Identify and collect relevant statistical records and develop data bases for personnel security research.

We are located in Monterey, CA where we draw our logistical support from the Naval Postgraduate School. We derive considerable research analytical support from the west coast branch of the Defense Manpower Data Center (DMDC) situated about one mile from us. Our location also allows us easy access to California military activities with security responsibilities, e.g., Military Entrance Processing Stations (MEPS) and Recruit Training Centers, and private sector contractors employing large numbers of cleared personnel in the Silicon Valley corridor.

We carry out our responsibilities under the direction of the Deputy Under Secretary of Defense for Policy, and we do so with a small permanent professional staff, supplemented by temporary employees, and assistance from universities and private contractors. Although we are only one year old, we are already facing our disestablishment. A sunset clause was written into the implementing directive that indicates that PERSEREC will cease to exist on 30 September 1990 unless at that time the executive agent, the Secretary of the Navy, decides to continue its existence.

Research concerns. Given our uncertain future, we are anxious to generate meaningful products as quickly as possible. Our research agenda can be depicted as a cube whose three dimensions are the populations of interest, the research areas and the types of research conducted (Figure 1).
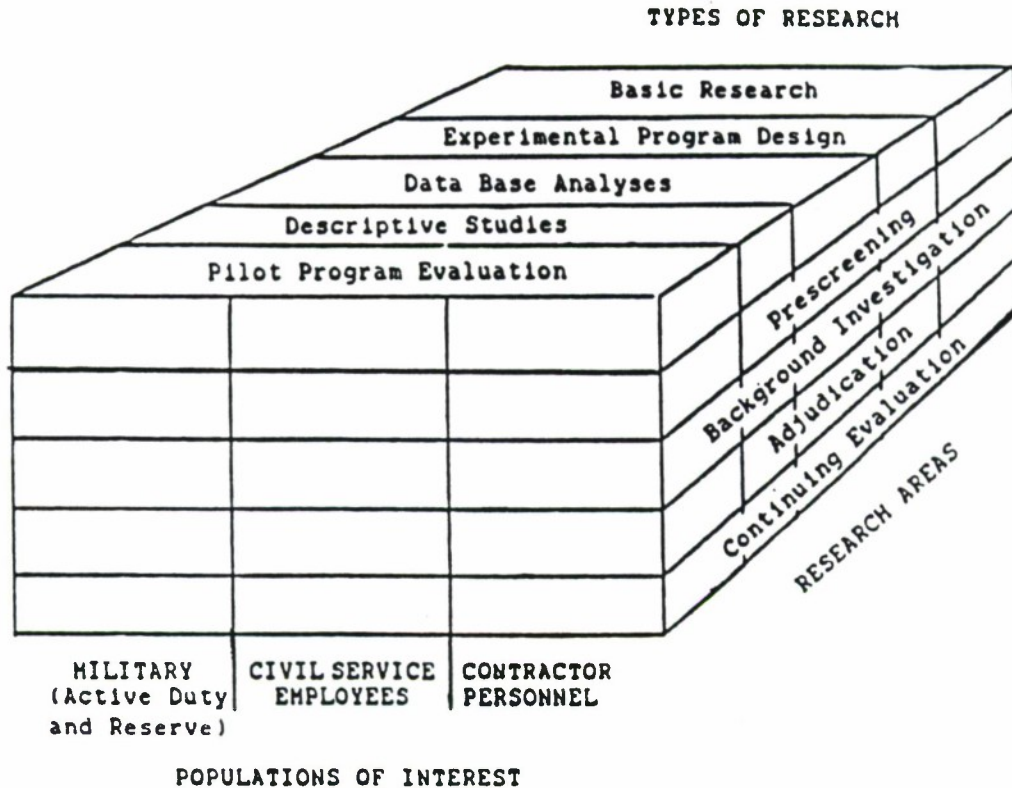
TYPES OF RESEARCH

Figure 1. Potential research areas.

The PERSEREC charter encompasses research on all DoD personnel, which includes active duty and reserve military, civil service employees and contractor personnel with security clearances.

We primarily attend to four substantive personnel security research areas. The first of these, prescreening, involves the actions taken by agencies to identify and eliminate high security risk individuals prior to the formal

processing for a security clearance. I will explore several components of military prescreening programs later on.

The second area addresses the background investigation that is conducted as a prerequisite to granting a top secret and above clearance for assignment to highly sensitive positions. The investigation consists of various record checks, i.e. of federal agencies, police, credit, educational and employment sources plus interviews of references and often an interview with the person being investigated. We will discuss some of our research to evaluate and improve background investigation procedures.

Adjudication refers to the process by which a decision is made whether to grant a security clearance. This process uses information from the background investigation and possible additional sources and is performed by the agency making the request for clearance.

Continuing evaluation, as the term implies, is the requirement to reevaluate individuals periodically to determine whether they should continue to be granted a clearance and at what level. Our research on adjudication and continuing evaluation has only been recently initiated and we will not describe it today.

Within these areas our research interests cross the spectrum from basic to applied. A basic research proposal we have received suggested investigating new physiological measures as indices of personnel reliability. A highly applied example would be the testing and field evaluation of a pilot program for the conduct of continuing evaluation. Between these extremes, we are concerned with designing experimental programs, large scale analyses of existing data bases, creation of new data bases, conduct of surveys and descriptive studies of unique populations of interest.

Research Approaches in Prescreening Personnel

As I indicated earlier, prescreening involves efforts to weed out high risk individuals prior to incurring the cost of conducting a background investigation. To date we have concentrated on the enlisted military population, primarily because of the availability of excellent data bases at DMDC, experimental test information that has already been collected and the accessibility of subject populations.

I would like to describe four methodological research approaches to this area:

1. Mapping the domain of enlisted prescreening.

2. Evaluating existing administrative procedures, e.g., assessing implications of "moral waiver" policies.

3. Performing predictive analyses with existing experimental data, e.g., predicting security criteria (issue case status) from a biodata instrument, the Armed Services Adaptability Profile (ASAP).

4. Developing research programs for emerging security issues, e.g., selecting and evaluating Marine Corps Security Guards.

Mapping the Domain of Enlisted Prescreening

Prescreening could be represented as a lens to which filters are attached to screen in or screen out individuals at several points in enlisted processing. The policies and procedures for enlisted prescreening for high security occupations or the Personnel Reliability Program (PRP) have evolved over the years to meet the unique needs of each service.

We have initiated a project to systematically document the current prescreening procedures used by each service in terms of:

(1) current organizational responsibilities (e.g., Recruiting Commands, Service classifiers, USMEPCOM and OSD Accession Policy).

(2) the prescreening information collected by each service (e.g., data forms, questionnaires, interview schedules).

(3) the decision processes used by each service.

(4) the interaction points within and across services as well as potential opportunities for consolidation.

The following paradigm is a useful starting point for considering the various prescreening components.

Interaction	Location	Decision	Instruments
Applicant-Recruiter	Recruiting Environment	Moral Waiver	Enlistment Application
Applicant-Classifier/ Counselor	MEPS	Assignment Eligibility	Varies by Service
Recruit-Counselor	Recruit Training	Assignment Eligibility	Varies by Service

The first prescreening interaction is when the applicant and a recruiter discuss enlistment in a particular military service. If there are negative indicators in the applicant's history, such as an arrest record or drug usage, the recruiter can request a "moral waiver" to allow entrance into military service.

When the applicant arrives at a MEPS and is being considered for an occupation that requires top secret or above clearance, there is a screening out process based on background information and an interview. Each service operates in a unique manner and using different information and procedures. MEPS screening often occurs twice. The first is when the applicant is being processed for an occupational guarantee. A second interaction occurs if the individual has been placed in a delayed entry status and actually reports for service several months to a year after receiving the guarantee.

During the recruit training period, recruits who have been selected for high security occupations are screened once more prior to initiating the formal process of a background investigation for security clearance.

We feel that there are many opportunities to perform empirical evaluation of the above scenarios and to introduce methodological improvements. We hope to complete an initial study by the end of this fiscal year that could then be scrutinized for policy implications by the services.

Evaluating Existing Administrative Procedures: Moral Waivers

The initial decision point on acceptance for military service and/or assignment to sensitive occupations is at the recruiter/applicant interface. Approximately 16 to 17 percent of the yearly non-prior service enlisted accessions are granted moral waivers to enter military service across all occupations. Moral waivers are granted for the following reasons. The predominant numbers are for traffic violations, misdemeanors, and preservice drug use.

Waiver Type: Minor traffic
                Minor non-traffic
                Other non-minor misdemeanors
                Felony, Adult
                Felony, Juvenile
                Preservice drug
                Preservice alcohol

A 1983 study compared moral waiver and non-moral waiver groups in terms of their subsequent military behavior such as attrition from military service and unsuitability discharge (Means, 1983). Differences were found favoring the nonwaiver group, e.g., the loss rate for accessions with waivers for one or two minor misdemeanors was significantly higher than that for their non-waiver counterparts.

Given the expense incurred in conducting background investigations, in training programs for top secret and SCI jobs, and of attrition from these jobs, we conducted a specific investigation of moral waivers for high security occupations.

We selected the entry year groups of 1980, 1981 and 1982 as the most recent cohorts that would allow analysis of behavior during a full four year term of service and capturing the first reenlistment decision. For these years we established the total population of enlisted accessions who were included in the Defense Central Index of Investigations (DCII) data base and on whom BI's had been initiated at some time during their military careers. Two sub-populations were then created, those on whom waivers had been granted and those without waivers.

The relatively large number of Marine waivers in Table 1 was due to a stricter Marine Corps policy concerning traffic violations. A higher percentage of waivers were in the top three mental categories I-IIIA, 70% versus 62% for non-waivers. On the other hand, only 84% of waivers were high school graduates compared to 91% for non-waivers.

The waiver group tended to spend less time in the delayed entry program, which probably reflects their usage to fill up shortage occupations. Waivers are utilized most heavily in occupational codes 1 (Electronic Equipment Repairers), and 2 (Communications and Intelligence Specialists).

TABLE 1

Population of Non-Prior Service Enlisted Personnel (1980-1982) with Background Investigations (DCII File)

Service	Waiver	Non-waiver	Total
Army	964	23,435	24,399
Navy	4,515	20,466	24,981
Air Force	1,040	42,724	43,764
Marines	2,654	2,591	5,245
All Services	9,173	89,216	98,389

We compared the groups on three clearance criteria. Almost twice as many waivers as non-waivers were made issue cases during the background investigation (16.9% to 8.5%). An issue case means that potentially derogatory information is uncovered during the normal investigative procedure, which then requires an expanded investigation. This finding is no surprise, since the waiver group had exhibited some pre-service behavior that required adjudication.

A second measure was the level of clearance granted. Data were available only for the Army and Air Force. A considerably lower percentage of waivers in both services were granted the higher security level, Top Secret with eligibility for access to SCI, compared to non-waivers. Looking at clearance status, Army waivers had their clearances denied or subsequently revoked more frequently than non-waivers (7.6% to 4.6%). Air Force waivers had their clearance process terminated or cancelled more frequently than non-waivers (7.6% to 4.6%), and therefore were not awarded clearances.

Our final evaluation was attrition from service. Waivers attrited more slowly than non-waivers in the first two years but the numbers equalized by the end of four years. There were no differences in unsuitability discharge for the two groups.

We are completing our analyses of the data and plan to issue a report early in FY 88.

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Performing Predictive Analyses with Existing Experimental Data: The Armed Services Applicant Profile (ASAP)

The second prescreening stage, as we have seen, occurs at the Military Entrance Processing Stations. Over many years, the services had independently conducted research on biodata instruments for potential use in enlistment screening. A 1982 Government Accounting Office report recommended development of a common background information inventory for MEPS military service screening. The Armed Services Applicant Profile (ASAP) was constructed consisting of the following types of items:

Content Clusters for Items on the Armed Services Applicant Profile

1. Self description
2. School background
3. Work history
4. Minor misbehaviors
5. Social activities
6. Enlistment influences
7. Service perceptions
8. Childhood/family experiences
9. Self-esteem
10. Athletic activity
11. General perceptions
12. Alcohol/tobacco use
13. Hobbies/interests
14. Family's socio-econ. status

From December 1984 to February 1985 the ASAP was administered to over one hundred thirty thousand active duty applicants, of whom approximately 56,000 became non-prior service accessions. Many of these individuals had subsequently applied for high security risk jobs; many were eliminated through prescreening. By June 1986 there were 3,275 enlisted personnel who had both ASAP data and a completed background investigation, i.e. about 6% of total accessions. We asked the Navy Personnel R & D Center, San Diego, the ASAP developers, to conduct a study to evaluate its utility in personnel security prescreening (Crawford & Trent, 1987).

The BI subsample of 3,000 plus differed from the total accession sample by having fewer minorities, more females, more high school graduates and higher AFQT scores.

The primary criterion variable was the classification of a BI as an issue case. Approximately 12% of the BI's were identified as issue cases with considerable variation across services. In general, the issue case rates were very similar across the different demographic categories such as gender, race and AFQT. However high school graduates received

significantly fewer issue cases than non-graduates or those with alternative credentials.

In addition to issue case status, the results of BI adjudication/clearance decisions were available for Army and Air Force personnel. This was used as a second criterion.

Statistical analyses were performed to develop an empirical scoring key for ASAP items against the issue case criterion. Standard key development procedures were employed with the total sample split approximately equally into key development and cross validation groups. Item response differences between high and low criterion groups of 5% were used to select keyed items. Forty-one items emerged from this analysis with a cross validated biserial r of .36.

Figure 2 shows that almost 24% of those individuals having the lowest 20% of the ASAP scores had issue case background investigations. Contrast this with the highest 20% of ASAP scorers where only 4.4% were classified as issue cases. In operational terms, if we eliminated the lowest 20% of the ASAP scorers, about 42% of the issue cases would be eliminated.
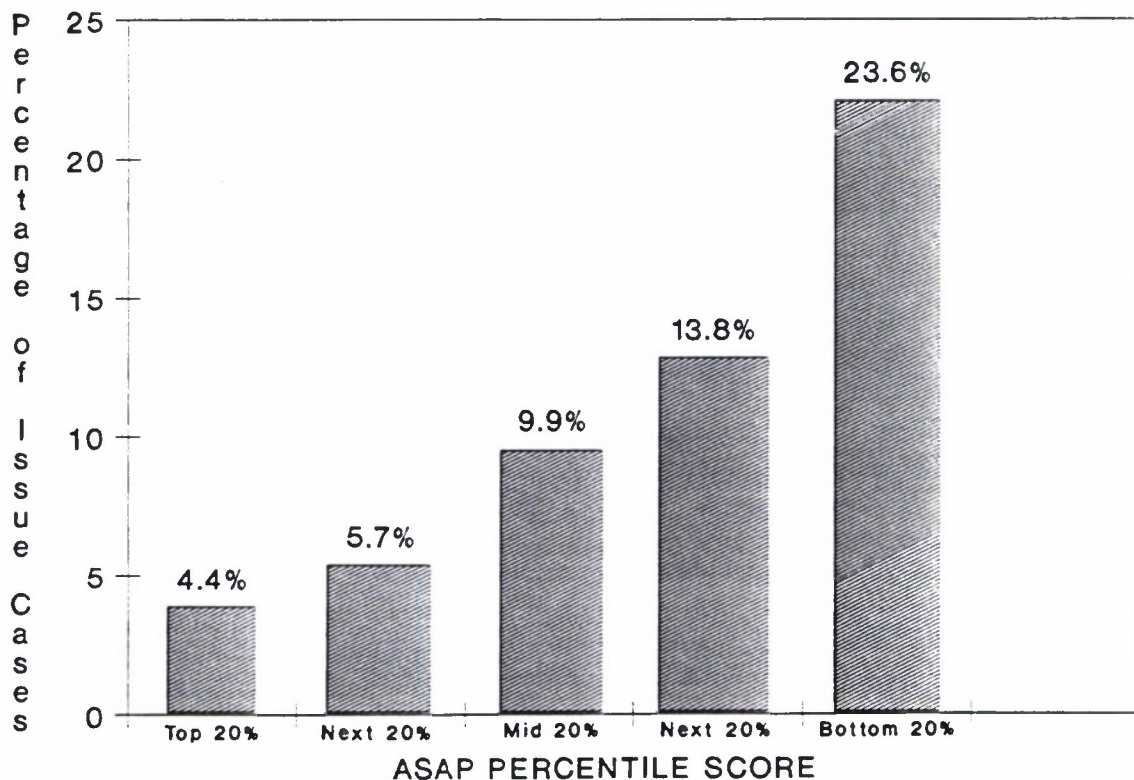

Figure 2. Issue case rate by ASAP score quintiles for cross validation group (N=1,578).

Table 2 displays the rank order of different content categories of biodata items by the degree to which they discriminated between issue case and non-issue cases.

TABLE 2

Rank Order of Content Categories
by Mean Item Discrimination

Content Rank	Content Cluster	Number of Items	Mean Item Discrimination[a]
1	Tobacco Use	2	60.95
2	Minor Misbehaviors	8	30.24
3	Work History	9	22.00
4	School Background	12	19.18
5	Service Perceptions	7	16.57
6	Social Activities	9	15.46
7	Enlistment Influences	6	13.27
8	Athletic Activity	5	12.90
9	Hobbies/Interests	3	12.23
10	Self Descriptions	13	12.01
11	Childhood/Family Experiences	6	11.95
12	General Perceptions	1	11.90
13	Self Esteem	3	7.23
--	Total Scored Items	84	18.91

[a] This measure represents the absolute value of the percentage differences between the issue case and non-issue case groups summed across response choices in a content cluster and then divided by the number of items in that cluster.

Clearly the content cluster with highest discrimination was tobacco use. This was followed by minor misbehaviors, then work history and school background. The typical individual with an issue case background had problems both in school and on the job which suggests a general factor of unreliability. This apparently had not been picked up during the service prescreening procedures.

Table 3 presents ASAP mean scores for four categories of adjudication results: (1) clearance denied, (2) pending – which usually implies discovery of some adverse information, (3) Secret clearance – which could either reflect that the current job did not require a higher security classification or that a higher classification was denied, and (4) Top Secret/SCI. It can be seen that there are large mean differences among the categories in the expected direction. A statistically significant F test was obtained, primarily due to the large differences between the Top Secret/SCI category and the other three.

TABLE 3

Comparison of ASAP Scores
by Different Adjudication Categories

| Clearance | ASAP Scores | | F |
	N	Mean	
Denied	21	38.8	
Pending Adjudication	108	47.9	
			20.12 (p<.001,df=3,2097)
Secret	141	57.3	
Top Secret/SCI	1,831	78.8	

In sum, this exploratory study has shown great promise for the prescreening use of a biodata instrument for predicting security criteria.

Developing Research Designs for Emerging Security Issues: Marine Corps Security Guards

The final prescreening program I will discuss relates to the Marine Corps and their embassy security guard responsibilities. Certainly there has been no lack of recent publicity surrounding the Marine guards in Moscow and other sensitive locations. The program for use of Marines as security guards in overseas foreign posts was initiated in December 1948 by a formal Memorandum of Agreement between the Department of State and Secretary of the Navy. At the present time there are about 1250 Marines on duty at Embassies and Legations.

Each year approximately 900 relatively young Marines enter security guard training and about 70 percent graduate. A much smaller number of senior non-commissioned officers are also trained for assignment as Marine Security Guard (MSG) supervisors and points of contact with State Department regional security officers.

In response to a request to assist in evaluating and improving the program, we have formulated a three-pronged approach. The first is to analyze data on Marines who entered training at the Marine Security Guard School in Quantico, VA. during the past several years. There are extensive trainee records that have been carefully recorded and stored, but never studied; a veritable goldmine of information for empirical analysis.

The following types of data are available:

Background Information	Screening Board Evaluation
Personal Qualities	Personal Attitudes
Training Record	Financial Statement
Peer Evaluation	Military Service Record
Supervisor Evaluation	Psychometric Results

A second undertaking will be to establish the operating parameters of Marine Security Guard duties. The formal tasking is "to provide security services to the embassies, legations and consulates." The services involve: (a) internal security guard, e.g., building access control; (2) off-post guarding of residences of high ranking dignitaries; (3) crisis or emergency reactions; and (4) protocol function such as parades and military rituals. In addition, the Marine duties include considerable social and intercultural interactions with embassy, State Department and foreign officials.

We will seek to develop two types of performance indices. The first will be designed for use as criteria against which to validate predictors for selecting Marines and to evaluate the training program. A second set of performance measures will be constructed as guidelines for continuing evaluation of Marine on-job performance and behavior off the job.

Our third effort will respond to the serious questions that have been raised as to the qualifications of the Marines being sent to Embassy Guard duty, especially to Eastern Bloc nations and other trouble spots. Management actions have already been taken to improve screening and assignment procedures. However for the most part these are responses without the benefit of empirical analysis.

Marines apply for and are selected for the MSG program at their current duty stations. As such, assessment center screening and selection measures are infeasible and we will have to resort to more traditional paper and pencil type measures. Fortunately, there is an existing test battery that has been repeatedly validated over many years for selecting Marines to special assignments such as recruiting duty and as basic training drill instructors (Atwater, Abrahams & Trent, 1986). The battery consists of a tailored background inventory, two adjective check lists and the Strong-Campbell Interest Inventory. Validities against both training and on-job performance indices are of operational significance and hold promise for MSG school and job prediction.

Our goal is to design a two stage prediction system. The first, using the test battery and other background information at time of application to the program, will emphasize school performance and reduction of training attrition. A secondary assessment will be conducted at the school and will include both empirical and clinical assessment of trainees. We are evaluating personality, motivation, stress measures and peer/supervisory evaluations.

In sum, I believe that our behavioral science methodologies have applicability to the Marine Security Guard program and to its improvement. It provides us an excellent opportunity to exhibit the power of our technologies to address a critical and highly visible national issue.

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