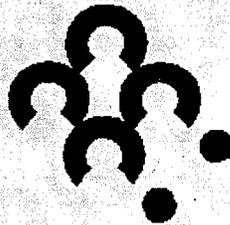

***INITIAL DEVELOPMENT WORK ON AN OBJECTIVE
NAVY ENLISTED ADVANCEMENT SYSTEM LINKED
TO THE TASK FORCE EXCEL MODEL***

Technical Report No. 429

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October, 2003



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Introduction

Background

The Chief of Naval Operations (CNO) initiated an "Executive Review of Navy Training" in fiscal year 2001 to examine the current state of training in the Navy, and to recommend actions that would lead to a 'revolution in training.' The formation of a Task Force for Excellence through Commitment to Education and Learning (EXCEL) was a direct result of that review. Task Force EXCEL's goal is to revolutionize and revitalize Navy training to provide Sailors the opportunity to succeed and prosper in their professional and personal lives. At the heart of this initiative is what is known as "The Sailor Continuum," forming the foundation around which the Navy will identify the knowledge, skills, and abilities (KSAs) that Sailors need to succeed in today's Navy.

The Sailor Continuum incorporates five distinct areas, or "vectors": professional development, personal development, leadership, certifications and qualifications, and job performance. The *Professional Development* vector addresses Enlisted rating and Officer community training, and focuses on a Sailor's ability to acquire job knowledge and skills through such sources as formal schools, correspondence courses, and on-the-job training. *Personal Development* involves such areas as general military training (GMT) and college-level courses that allow Sailors to complete degree programs; it emphasizes "life skills" needed outside the workplace, including physical fitness, core values, and financial-management skills. The *Leadership* vector addresses the tools and critical thinking skills Sailors will need as leaders; it focuses on the ability of an individual to accomplish the mission as well as mentor and develop others. *Certifications and Qualifications* focuses on unit-level and professional requirements with related industry certifications that are directly tied to job proficiencies. It may include industry-recognized standards such as airframe and power plant licenses in the aviation community, Microsoft certifications for those in information technology, and merchant marine qualifications and licenses for deck ratings. The *Performance* vector focuses on the measurement of a Sailor's workplace performance; it takes into account all developmental issues, and assesses Sailors' overall abilities.

As part of this revolution, CNO tasked Commander, Navy Personnel Command (CNPC) with developing and implementing a new and improved system for performance development, appraisal, and advancing/promoting U.S. Navy personnel. In turn, the Task Force Excel Performance Vector was given the responsibility of conducting a scientifically based effort that will completely re-engineer the performance management, performance appraisal, and advancement/promotion criteria within the enterprise's core Human Resource

Management System (HRMS). This ground-breaking effort affects literally every Sailor in the United States Navy.

During Fiscal Year 2002, the Performance Vector team successfully developed a new performance management and appraisal system for all supervisory and non-supervisory personnel in the U. S. Navy. The new "counseling system" is a fundamental shift from the current trait based system to a behaviorally based *performance management system*. It is now known as the Human Performance Feedback and Development (HPFD) model. A new NAVPERS instruction has been written outlining the procedures and implementation of the HPFD model. It is available on the Navy's Knowledge Online website (www.nko.navy.mil), under the Performance Vector tab. It will transition to Navy's core HRMS for Fleet use by May 04. The *performance appraisal* tool utilizes the behaviors identified in the HPFD model, and consists of one form for supervisory-level personnel and a separate form for non-supervisory-level personnel. Deployment of the new appraisal system is scheduled for May 04. Information concerning the development of the performance management and appraisal systems for both supervisory and non-supervisory personnel can be found in a recent report by Hedge, Borman, Bruskiewicz, and Bourne (2002).

Development of an Advancement System

As part of the Task Force Excel transformational revolution, the Performance Vector research team is in the process of developing an *advancement algorithm* that links performance across all five vectors to advancement/promotion to the next paygrade. The algorithm is intended to compute an advancement score based on achievement of defined milestones across all vectors. It will do so by defining the career paths associated with a member's professional development, personal development, leadership abilities, certifications and qualifications, and overall performance.

This model will predict the advancement/promotion potential for recruit, apprentice, journeyman, and master-level personnel across every occupation in the U.S. Navy, and will yield data to communicate the advancement/promotion potential of an individual to both the member and promotion boards. The new scoring system will translate individual progress in these five vectors into an overall ranking, similar to the final multiple produced after today's Navy-wide examinations. While the current system has been effective, advances in theory and technology should contribute to significant improvements in the process. Currently, advancement to E4 - E6 consists of the examination standard score, performance, service in paygrade, awards, and passed-not-advanced (PNA) points. For advancement to E7, the system consists of just two components -- the examination standard score and performance, which provides a means to determine who will appear before a formal promotion board. For advancement to E-8 and E-9, a full record review is conducted during a selection board process. The system under development will provide a much more comprehensive way of looking at who is 'fully qualified', and identify them as the individuals who should advance/promote to the next paygrade.

Overview of Research Plan

Several primary phases comprise the basics of this research plan. Phase 1 involves a policy capturing study we conducted, where workshop participants were presented with profiles of Sailors, both Officer and Enlisted, with preset "scores" on the different Vectors and asked to rate the promotability of each "Sailor." Results of this research for the Enlisted personnel are the focus of this report. The results for the Officer personnel will be presented in a separate report. Analyses of data from these workshops essentially determined the relative weight of each vector in the advancement algorithm. These relative weights were generated for multiple Enlisted career stages (i.e., junior, mid-level, and senior). Phase 2 involves gathering information to identify a list of possible

scorable factors, reflecting Officer or Enlisted standing on each of the five vectors.

A third phase involves working with small cadres of individuals representing Enlisted and Officer job groupings, to develop statistical algorithms that assign weights to each advancement factor, based on the results of the policy capturing study. The last phase provides a "reality-test" of the scoring algorithms using the records of actual Officers and Enlisted personnel. This step will identify and score relevant personnel records, and evaluate the pattern of factor and final scores that are obtained.

Results of this research will be a set of validated algorithms organized within the Task Force Excel 5 Vector Model. This model will be capable of scoring Officer and Enlisted members on advancement/promotion factors, and display them as a relative measurement, known as the Human Capital Index, against their appropriate peer groups. Further goals include making the scoring system transparent such that personnel can view their own record at any time *and* assess what they might do in their career to improve their relative standing for future advancement/promotion. Also, these results would be used by future promotion boards to guide their selections.

Current Focus: Phase 1 – Policy Capturing

As mentioned, the objective of Phase 1 was to gather the perspectives of a cross-section of Navy personnel concerning how accomplishments in each of the five vectors contribute to overall Enlisted promotability. This objective was accomplished by developing profiles of mock Enlisted individuals with preset “scores” on different vectors and asking the participants in the study to rate the promotability of each “Sailor.”

During the policy capturing workshops, participants were presented with 120 of these mock profiles that represented a snapshot of Sailors’ accomplishments or level of performance on each of the five vectors. Different workshops focused on different levels of Enlisted (e.g., for Enlisted, recruit to apprentice, apprentice to journeyman, etc.), but the 120 profiles were the same for all workshops.

Each profile depicts how that individual was assessed on a 7-point scale (1 = low; 7 = high) regarding accomplishments on each of the 5 vectors. The task of the participants was to review each profile, consider how that individual’s score on all of the individual vectors *together* contribute to an assessment of the Enlisted member’s overall promotability, and then rate their overall level of promotability using the 7-point scale.

Participants were told that when using the 7-point promotability scale, it might be helpful to apply the following rule-of-thumb:

- 6-7: outstanding accomplishments; definitely promotable
- 3-4-5: average level of accomplishment; consider promoting
- 1-2: below average accomplishments; should not be promoted at this time

A sample profile is presented below.

Sample Profile								
Vector	Mean	Vector Ratings						
		1	2	3	4	5	6	7
Professional Development	5.0							
Personal Development	5.9							
Leadership	5.6							
Qualifications and Certifications	6.2							
Performance	4.9							
Overall Promotability for Sample Profile (Please circle your choice):		1	2	3	4	5	6	7

Data Collection

Several workshops were conducted to capture the policies of the participants, using the protocol just described. The policy capturing task was done for each of the three career stages for Enlisted personnel: recruit to apprentice; apprentice to journeyman; and journeyman to master. To make the task more concrete, we provided participants with representative ranks for each of the three levels. They were recruit to apprentice (E-1 to E-3); apprentice to journeyman (E-4 to E-6); and journeyman to master (E-7 to E-9).

Enlisted Workshops

For two of the three levels, we conducted two workshops. For the third, a single workshop was conducted. The numbers of participants were 14 and 13 for the recruit to apprentice; 18 and 14 for apprentice to journeymen; and one workshop with 30 participants for the journeyman to master level. Demographics for participating personnel appear in Table 1.

Table 1
Demographics for Enlisted Level Workshops

	Recruit-Apprentice		Apprentice-Journeyman		Journeyman-Master	
	N	Percent	N	Percent	N	Percent
Rate						
E-5	0	0.0	1	3.1	0	0.0
E-6	1	3.7	0	0.0	0	0.0
E-7	15	55.6	15	46.9	0	0.0
E-8	4	14.8	4	12.5	0	0.0
E-9	3	11.1	12	37.5	30	100.0
Location						
AirPac	14	51.9	0	0.0	0	0.0
3 rd Fleet Coronado	13	48.1	0	0.0	0	0.0
Bangor Subase	0	0.0	18	56.3	0	0.0
NAS Whidbey Island	0	0.0	14	43.7	0	0.0
Millington	0	0.0	0	0.0	30	100.0

Table 1 (continued)

	Recruit-Apprentice		Apprentice-Journeyman		Journeyman-Master	
	N	Percent	N	Percent	N	Percent
Work Activity						
Aviation	11	40.8	6	18.8	1	3.3
Surface Force	10	37.0	0	0.0	2	6.7
Submarine	0	0.0	10	31.3	2	6.7
Shore-based	1	3.7	11	34.4	12	40.0
Other	5	18.5	5	15.5	13	43.3
Gender						
Male	22	81.5	28	87.5	28	93.3
Female	5	18.5	4	12.5	2	6.7
Ethnic Origin						
American Indian	1	3.7	0	0.0	0	0.0
Asian	2	7.4	2	6.3	2	6.7
Black	3	11.1	4	12.5	1	3.3
Pacific Islander	0	0.0	0	0.0	1	3.3
Spanish/Hispanic	3	11.1	1	3.1	3	10.0
White	18	66.7	24	75.0	22	73.3
Educational Background						
Less than High School	0	0.0	0	0.0	1	3.3
High School Diploma/GED	2	7.4	5	15.6	7	23.3
Some College	8	29.7	16	50.0	8	26.7
Two-year College Degree	2	7.4	4	12.5	5	16.7
Four-year College Degree	9	33.3	2	6.3	4	13.3
Some Graduate School	3	11.1	4	12.5	2	6.7
Graduate Degree	3	11.1	1	3.1	3	10.0

Note. Totals may not add to 100 percent due to missing data.

Analyses

Essentially, the policy capturing methodology is a general procedure designed to describe statistically the unique information processing strategies or behaviors of individual raters. Multiple regression analysis is used to calculate the extent to which overall ratings are predictable given scores on separate dimensions or components (in the current situation, vectors), and the relative importance of each component in determining overall ratings (Naylor & Wherry, 1965).

Thus, the policy capturing analyses provide estimates of each participant's weights for each of the five vectors. These weights can be interpreted as the importance the participant believes should be given to each vector in making advancement decisions to the next paygrade at that Enlisted level. The analyses also provided an index of consistency of policy for each participant. Only 7 of the 89 participants in the Enlisted study were inconsistent in their policies, and these were dropped in subsequent analyses.

Results

Table 2 presents the pooled, summary results of the policy capturing study for Enlisted advancements. As the table indicates, for advancement from recruit to apprentice level, job performance is clearly the most important factor, followed by professional development, leadership, and certifications/qualifications. For advancement from apprentice to journeyman, performance is still the most important factor, but leadership increased considerably in importance, and the weight for professional development decreased. Finally, regarding advancement from journeyman to master, participants weighted leadership and performance about equally important, with the rest of the vectors accounting for less than 20%.

Table 2
Relative Weights for Enlisted Personnel Advancement

Vector	Enlisted Level 1: Recruit to Apprentice (Percent)	Enlisted Level 2: Apprentice to Journeyman (Percent)	Enlisted Level 3: Journeyman to Master (Percent)
Professional Development	17.78	10.62	9.33
Personal Development	1.98	3.47	2.60
Leadership	12.26	31.26	41.23
Certifications/Qualifications	9.99	10.05	6.09
Performance	57.99	44.60	40.75

Discussion and Next Steps

The policy capturing research described here provided a scientifically sound approach for pooling the judgment and wisdom of experienced Enlisted personnel regarding the relative weights that should be placed on each of the Task Force Excel vectors in making advancement decisions. This study provided a way for the Fleet to collectively give us their judgment about advancement/promotion policy in the U.S. Navy.

The basic finding was that job performance is overall the most important factor, but as rank progresses, within the Enlisted corps, leadership becomes increasingly important, to a point where performance and leadership are roughly equally important. Professional development is also an important factor, especially early in a Navy career, while certifications/qualifications have some importance at the lower and middle advancement/promotion levels. Finally, personal development was afforded very little importance toward the advancement of Enlisted personnel.

These policy capturing results form the basis of a advancement algorithm that will capture and then operationalize the Fleet's view of advancement/promotion policy within the Task Force Excel model. To realize this Fleet vision of advancement/promotion, each of the vectors must now identify or develop measures of performance that can be employed to measure success on the vector.

As an example, the performance vector used extensive Fleet input to develop non-supervisory and supervisory models of all important performance-related behaviors that in turn defined comprehensively the performance elements in these two types of jobs. The resulting behavior-based performance categories (e.g., Knowledge and Support of Unit/Command Objectives, Initiative and Self-Development for the non-supervisory model) were then used to produce a new performance appraisal system that will provide the metrics for the performance vector. This new system produces a more accurate measure of performance *over time* because it both creates a standard performance score based on the last five years for all Sailors, and normalizes the score across years and reporting seniors and allows for a comparative rating across peer groups. In addition, these scores are then converted to percentiles for easy interpretation.

Analogously, the leadership vector might identify a number of Navy leadership courses and assign points to them according to the courses perceived to be effective for developing leader skills. Individuals would earn points for performance in the course, such as scores for tests of situational judgment.

The general point is that each vector must identify or develop indicators of success, as well as accompanying metrics, to score individuals on the vector with enough granularity to provide variability amongst their peer group. When these scoring systems are developed within each vector, overall advancement scores can be computed using the policy capturing results. Specifically, if a Sailor is, for

example, being considered for advancement from apprentice to journeyman, the scores within a vector are weighted by the policy capturing weights. Thus, his/her professional development score is weighted by a factor of 10.62, his/her leadership score by a factor of 31.26, and so on. This approach fully utilizes the individual vectors' scoring systems, but the overall advancement score is computed using the policy weights.

One last point about development of the vectors' algorithms and scoring systems involves how generalizable these algorithm scoring systems might be. The performance vector work was designed from the start to be generalizable, respectively, across all non-supervisory and all supervisory positions. The leadership and personal development vectors also may find that a single algorithm and scoring system is appropriate for most positions.

However, the remaining two vectors will almost certainly need to tailor these algorithms/scoring systems according to the type of job, perhaps at the associated Center of Excellence level. Thus, the additional challenge for these vectors is to include indicators that are relevant for the content of individual jobs or job groupings, and, at the same time, scored so that the difficulty levels (i.e., how difficult or easy it is to obtain high scores) are similar across different communities and jobs.

In sum, the policy capturing work has provided a framework for advancement algorithms that will reflect the Fleet's conception of what is important for promotion, across a Sailor's career stages, at each level of advancement/promotion. The specific advancement algorithms and scoring systems are now ready to be built. What is needed is to identify or develop indicators of success within each vector and equitable scoring systems. The resulting advancement/promotion system will be performance based, will represent the Fleet's values of individual effectiveness, and will be consistent with the Task Force Excel model.

References

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