AD-A046 754   NAVY PERSONNEL RESEARCH AND DEVELOPMENT CENTER SAN D--ETC F/G 5/9
                OCCUPATIONAL SCALES OF THE NAVY VOCATIONAL INTEREST INVENTORY. --ETC(U)
                NOV 77   J E DANN, N M ABRAHAMS

UNCLASSIFIED   NPRDC-TR-78-3   NL

ADA
A046 754

END
DATE
FILMED
12-77
DDC

OCCUPATIONAL SCALES OF THE NAVY VOCATIONAL INTEREST INVENTORY: III. RELATIONSHIP TO JOB SATISFACTION, "A" SCHOOL GRADES, AND JOB PERFORMANCE

D D C

RECEIVED

NOV 28 1977

D

OCCUPATIONAL SCALES OF THE NAVY VOCATIONAL INTEREST
INVENTORY: III.   RELATIONSHIP TO JOB SATISFACTION,
"A" SCHOOL GRADES, AND JOB PERFORMANCE

Joyce E. Dann
Norman M. Abrahams

Reviewed by
Martin F. Wiskoff

Approved by
James J. Regan
Technical Director

DDC

RECEIVED

NOV 26 1977

D

Navy Personnel Research and Development Center
San Diego, California 92152

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER NPRDC-TR-78-3	2. GOVT ACCESSION NO.	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) OCCUPATIONAL SCALES OF THE NAVY VOCATIONAL INTEREST INVENTORY: III. RELATIONSHIP TO JOB SATISFACTION, "A" SCHOOL GRADES, AND JOB PERFORMANCE		5. TYPE OF REPORT & PERIOD COVERED Final Report
		6. PERFORMING ORG. REPORT NUMBER
7. AUTHOR(s) Joyce E. Dann Norman M. Abrahams		8. CONTRACT OR GRANT NUMBER(s)
9. PERFORMING ORGANIZATION NAME AND ADDRESS Navy Personnel Research and Development Center San Diego, California 92152		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS ZPN01.06 ZPN0106
11. CONTROLLING OFFICE NAME AND ADDRESS Navy Personnel Research and Development Center San Diego, California 92152		12. REPORT DATE November 1977
		13. NUMBER OF PAGES 47
14. MONITORING AGENCY NAME & ADDRESS(if different from Controlling Office)		15. SECURITY CLASS. (of this report) UNCLASSIFIED
		15a. DECLASSIFICATION/DOWNGRADING SCHEDULE

16. DISTRIBUTION STATEMENT (of this Report)

Approved for public release; distribution unlimited.

17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)

18. SUPPLEMENTARY NOTES

19. KEY WORDS (Continue on reverse side if necessary and identify by block number)

Navy Vocational Interest Inventory	Job satisfaction
Lambda interest scales	Job performance
Enlisted classification	"A" school grades
Interest measurement	
Interest test validity	

20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

The Navy Vocational Interest Inventory (NVII) is an interest measure which was developed to help guide recruits into the ratings corresponding most closely with their vocational preferences and in which they would probably be most satisfied.

Recently, occupational scales ("lambda" scales) were constructed for the NVII to reflect the degree of relationship between an individual's interests and the interests of men in 15 specific Navy ratings.

DD FORM 1473 1 JAN 73   EDITION OF 1 NOV 65 IS OBSOLETE

390772

The present study evaluated these scales in terms of their classification accuracy and ability to satisfy certain logical relationships and in terms of their association with "A" school performance, job satisfaction, and job performance for individuals in 15 ratings. The scales were also compared with more traditional occupational and homogeneous scales developed several years ago.

Results indicated that the lambda scales were quite effective in a cross-sectional sample in relating to job satisfaction, in classifying individuals into ratings where they were known to be satisfied, and in conforming to certain logical relationships. However, the scales were less promising in a longitudinal sample in terms of all of these criteria and showed little relationship to either "A" school grades or job performance. They also failed to improve upon the previously developed NVII scales.

Considering constraints under the present method of recruit classification, it is suggested that future Navy interest measurement efforts be directed toward development of a transservice interest inventory.

FOREWORD

This research was conducted in support of Advanced Development Subproject ZPN01.06 (Advanced Navy Recruiting System) under the sponsorship of the Navy Recruiting Command. The present report is the third in a series relating to ZPN01.06. The first two reports were NPRDC TR 74-4, Occupational Scales of the Navy Vocational Interest Inventory: I. Development and NPRDC TR 74-5, Occupational Scales of the Navy Vocational Interest Inventory: II. Reliability.

It should be noted that, when the present investigation began, virtually all Navy recruit classification decisions were made during recruit training. Under such circumstances, a Navy interest inventory (NVII) could be individually administered, machine-scored, and used in a systematic, centralized fashion. However, at present, most classification decisions--in the form of technical school guarantees--are made prior to Navy entry and are based on a joint service testing program. Under this system, a joint service interest inventory amenable to decentralized use would appear more appropriate than the NVII. Results of the present research could provide useful information in the development of such an inventory.

However, the NVII might be useful in its present form with recruits who (1) were not guaranteed an "A" school at enlistment but are being considered for "A" school during recruit training or (2) are destined for immediate fleet assignments.

J. J. CLARKIN
Commanding Officer

SUMMARY

Problem

Thousands of recruits enter the Navy each year and must indicate which ratings they would like to pursue--a decision that, in many instances, dictates the course of their military careers. Often, however, these recruits are inadequately informed about Navy ratings and do not adequately understand their own vocational interests. The Navy Vocational Interest Inventory (NVII) was developed to help these recruits determine the ratings that correspond most closely with their vocational preferences and, thus, in which they would probably be most satisfied. In this manner, the inventory could benefit the Navy in terms of more efficient utilization of manpower and, by enhancing the individual's job satisfaction, could increase his chances of reenlisting or of electing a Navy career.

Objective

The objective of this research was to evaluate newly developed occupational interest scales ("lambda scales") for the Navy Vocational Interest Inventory (NVII) in terms of (1) their classification accuracy, (2) their ability to satisfy certain logical relationships, and (3) their association with "A" school performance, job satisfaction, and job performance. The scales had already shown adequate internal consistency reliability and test-retest stability over a period of 4 to 6 years (Dann & Abrahams, 1973b). A further objective involved comparing the mathematically more sophisticated lambda scales with sets of traditional occupational and homogeneous scales.

Approach

Both cross-sectional and longitudinal samples of men in 15 ratings were used. The cross-sectional sample consisted of individuals with approximately 4 to 6 years of Navy experience who completed the NVII and a job satisfaction questionnaire in 1971. The lambda scales' classification accuracy, ability to satisfy certain logical relationships (e.g., that satisfied individuals receive high scores on the scale for their own rating and higher scores on their own than on other scales), and relationship to job satisfaction were evaluated on subgroups of this sample.

The longitudinal sample included men who completed the NVII as recruits at the three naval training centers in 1969-71. Subgroups from this sample were used to evaluate the lambda scales' ability to predict "A" school grades, job satisfaction, and job performance; their classification accuracy; and their ability to satisfy logical relationships. The longitudinal subgroups also formed the basis for comparing the lambda scales (1) with the existing NVII occupational scales in terms of classification accuracy and (2) with the present occupational and area scales in terms of their relationship to job satisfaction.

Preceding Page Blank

Findings

1. The lambda scales were quite effective in classifying men from the cross-sectional sample into ratings in which they were known to be satisfied.

2. Results in the longitudinal sample were less promising, but were still better than chance.

3. Most satisfied rating groups in both the longitudinal and cross-sectional samples obtained their highest mean score on their own scale.

4. The lambda scales were highly related to job satisfaction in the cross-sectional sample, but less related in the longitudinal sample.

5. For most ratings, the lambda scales were not highly correlated with either "A" school grades or job performance.

6. The lambda scales were similar to Clark's occupational scales in their classification accuracy for pairs of ratings, and were similar to Clark's occupational and area scales in their degree of relationship to job satisfaction.

Conclusions

The use of lambda scales for recruit classification could probably increase slightly the proportion of individuals who would experience satisfaction with their rating.

However, the lambda scales as constructed here represent little improvement over the original Navy Vocational Interest Inventory scales. Scales formed using the men-in-general method and current data might yield more improvement.

Recommendations

Based on these somewhat negative results and on the difficulty of implementing a computer-scored interest inventory under the present classification system, it is recommended that future Navy efforts in the development of interest measures be coordinated with interest measurement work in the other Armed Services. A transservice interest inventory that could be administered and scored along with the Armed Services Vocational Aptitude Battery would be desirable in many respects.

CONTENTS

LIST OF TABLES

INTRODUCTION

Problem and Background

Thousands of recruits enter the Navy each year and must indicate what ratings they would like to pursue--a decision which, in many instances, dictates how they will spend most of their military careers. These recruits are often inadequately informed about Navy ratings and do not adequately understand their own vocational interests. To help combat this situation, Clark (1961) developed the Navy Vocational Interest Inventory (NVII), a questionnaire designed to measure an individual's interests and to help guide him into a rating where his chances of job satisfaction would be high.

Clark used Strong's (1943) men-in-general method to construct 19 occupational scales reflecting an individual's interest in 19 diverse ratings. The men-in-general method contrasts the interest inventory responses of satisfied members of a given rating with the responses of a reference group of people from many different ratings. An individual's score for a particular rating reflects the extent to which he differs from the reference group in the same way as members of that rating. In addition to his occupational scales, Clark formed nine homogeneous or area scales assessing an individual's interest in general fields such as mechanics, electronics, and food service.

In a subsequent evaluation of the NVII for possible use in recruit classification, both types of scales differentiated well among men in various Navy "A" schools (Abrahams, Lau, & Neumann, 1968; Lau & Abrahams, 1969), and predicted such criteria as "A" school achievement (Abrahams, Lau, & Neumann, 1968) and reenlistment (Lau, Lacey, & Abrahams, 1969). The scales also showed substantial test-retest reliabilities for reenlistees and nonreenlistees over a period of 4 to 6 years (Lau & Abrahams, 1970; 1971).

Based upon these favorable results, the Navy began a large-scale effort in 1971 to update and expand the number of NVII scales using more current samples of enlisted men. Occupational scales were constructed for 15 diverse ratings[1] (Dann & Abrahams, 1973a) using Clemans' (1958) method of scale construction. This method yields scores, called lambda coefficients, that are based upon a modification of the point-biserial correlation between an individual's interests and the interests of men in a particular rating.

This lambda method was selected over the men-in-general method because Kuder (1968) found that it yielded fewer classification errors for occupations that he studied and because it circumvents unresolved methodological problems in constituting a men-in-general group. The lambda scales have already shown substantial internal consistency reliability and test-retest reliability over a period of 4 to 6 years (Dann & Abrahams, 1973b). However, they did not augment the Basic Test Battery in regression equations designed to predict "A" school grades (Dann, Note 1).

---

[1]These ratings were: Air Controlman (AC), Aviation Electrician's Mate (AE), Aviation Ordnanceman (AO), Boiler Technician (BT), Commissaryman (CS), Data Processing Technician (DP), Electrician's Mate (EM), Electronics Technician (ET), Enginemen (EN), Equipment Operator (EO), Hospital Corpsman (HM), Quartermaster (QM), Radioman (RM), Sonar Technician (ST), and Storekeeper (SK).

Purpose

The primary objective of this effort was to evaluate the lambda scales in terms of (1) their ability to satisfy certain "logical relationships" that should obtain if the scales are to be useful in recruit classification, (2) their ability to correctly classify individuals, and (3) their relationship to job satisfaction, "A" school grades, and job performance. The logical relationships referred to above include the following:

1. A satisfied individual should receive a high score on the relevant scale for his rating. Further, that score should be higher than those he obtains on scales for the other ratings.

2. A satisfied individual in a given rating should obtain a higher score on the scale for his rating than would satisfied individuals in other ratings.

3. A satisfied individual in a given rating should receive a high enough score on the relevant scale for his rating so that he would have been counseled into that rating as a recruit.

A secondary objective was to compare the lambda scales with Clark's occupational and area scales with respect to classification accuracy and/or their relationship to job satisfaction.

PROCEDURE

Instrument

The NVII contains 190 items, each including three short descriptions
of tasks performed in a variety of Navy ratings. An individual indicates
his preferences within each item by noting the activity he likes best and
the activity he likes least. For example, one item on the NVII includes
the following tasks:

		Like		Dislike
a.	Install a telephone	(L)	a	●
b.	Make a written report of a month's work.	●	b	(D)
c.	Draw a detailed terrain map.	(L)	c	(D)

An individual might respond as shown, indicating that he likes activity
"b" best and activity "a" least, or he might choose some other combination.

Scoring

The individual's responses are then scored to yield lambda coefficients
indicating the degree of similarity between the individual's interests and
those of personnel in each of 15 ratings.

To compute a lambda coefficient, the proportion of a rating criterion
group endorsing each of the NVII's 1140 possible response alternatives is
determined. (There is one "like" and one "dislike" alternative for each of
the three tasks comprising each of the 190 NVII items.) These proportions
constitute the continuous variable for calculating a point-biserial correla-
tion, while the individual's selection or nonselection of a response alter-
native constitutes the dichotomous variable. The correlation is divided by
the maximum point-biserial correlation of the same sign that an individual
could obtain with the criterion group. The maximum positive correlation
would occur if an individual selected the criterion group's modal response
to each item and the maximum negative correlation if he selected the criterion
group's least frequent response to each item. A positive or negative sign
is given the result according to the sign of the individual's actual correla-
tion with the criterion group. The lambda scores thus generated may assume
values between -1.00 and 1.00. (For a more complete discussion of the develop-
ment of lambda scales of the NVII, see Dann & Abrahams, 1973a.)

Predictors

Lambda scores were used as predictors for the analyses in this study.
In some cases, the scores were dichotomized to reflect the way they would be
recommended for operational use, since this would provide the best indication
of their probable operational effectiveness (Dann & Abrahams, Note 2). That
is, scores within the .01 standard error of measurement confidence interval

3

(i.e., .06) of an individual's highest score were considered to indicate ratings he might like and formed one category of the dichotomy. Scores below this confidence interval represented the second category--ratings in which the individual's chances of satisfaction were expected to be lower. In a few analyses, the difference between an individual's scores on two scales (neither of which was necessarily his highest) provided the most appropriate predictor.

Samples

The data analyses were based upon a cross-sectional sample and a longitudinal sample--each comprised of men in the 15 ratings for which there are lambda scales. The men in the cross-sectional sample were nearing the end of their first enlistment or beginning their second enlistment and had completed the NVII by mail in 1971. Those in the longitudinal sample were administered the NVII between 1969 and 1971 as recruits at the Great Lakes, Orlando, and San Diego naval training centers. Sample members indicated whether their work was typical for their rating and noted their degree of satisfaction with their rating by answering the following questions:[2]

1. Which of the following statements is more true of the work you have been doing in the Navy?

    a. My work is like that of most other men in my rating (for example, a shipfitter who does welding and soldering, pipefitting, and similar tasks).

    b. My work is different from that of most other men in my rating (for example, a shipfitter who does recruiting for the Navy).

2. If you could start over again and choose any Navy rating you wanted, what would you do?

    a. I would choose my present rating.

    b. I would choose a different rating, but it would be in the same general area (i.e., mechanical, clerical, medical, etc.) as my present rating.

    c. I would choose a different rating in a completely different area from my present rating.

3. If you could start over again and choose any Navy rating you wanted, (including your present rating), which rating would you choose?

---

[2]Items from a satisfaction questionnaire that was administered to members of the cross-sectional sample concurrently with the NVII, and to members of the longitudinal group 2 or 3 years after recruit training.

Individuals who indicated (via question 1) that they were doing work atypical for their rating were excluded from the final samples. The two-thirds of the original cross-sectional sample that was used in scale development (Dann & Abrahams, 1973) was also excluded. Table 1 shows the distribution of the final samples by rating and indicates how members responded to question 2.

Analyses

Ability of Lambda Scales to Satisfy Logical Relationships

Those men in both the final cross-sectional and longitudinal samples who indicated that they preferred their present rating to any other (N = 1376 and 1292 respectively) were used to evaluate the lambda scales' ability to satisfy the logical relationships noted previously.

The following analyses were conducted:

1. To determine whether satisfied individuals receive high scores on the relevant scale for their rating, the mean score for each satisfied rating group on its own scale was compared with the group's means on other scales. Second, the percentage of satisfied individuals obtaining their highest score on their own scale was determined.

2. To determine whether satisfied individuals in a given rating score higher on their own scale than satisfied individuals in other ratings, the mean scores of satisfied individuals on their relevant scale were compared with mean scores of other rating groups on that scale. (For example, the mean for Quartermasters on the Quartermaster scale was compared with means of the other 14 rating groups on the Quartermaster scale.)

3. The proportion of satisfied individuals who would have been guided into their current rating based upon their lambda scores was estimated from the percentage of such individuals who obtained their highest score (or a score within .06 of it) on their relevant scale. For the cross-sectional sample, this analysis reflected the proportion of men who would have been counseled toward their rating as recruits only to the degree that individuals' interests, as measured 4 to 8 years after Navy entry, resembled their interests at the time of recruitment.

Ability of Lambda Scales to Correctly Classify Individuals

The same subgroups described above were used to evaluate the lambda scales' ability to correctly classify individuals.

Table 1

Distribution of Final Samples by Rating and by Response to Job Satisfaction Item

	Rating	Cross-sectional Sample				Longitudinal Sample			
		N	Choose Same Rating	Choose Similar Rating	Choose Different Rating	N	Choose Same Rating	Choose Similar Rating	Choose Different Rating
(AC)	Air Controlman	283	180	27	76	106	90	4	12
(AE)	Aviation Electrician's Mate	410	100	214	96	125	56	39	30
(AO)	Aviation Ordnanceman	489	53	155	281	35	7	10	18
(BT)	Boiler Technician	430	29	178	223	418	33	152	233
(CS)	Commissaryman	411	79	56	276	175	51	13	111
(DP)	Data Processing Technician	298	180	47	71	92	62	16	14
(EM)	Electrician's Mate	407	72	202	133	274	70	117	87
(ET)	Electronics Technician	367	124	157	86	397	180	138	79
(EN)	Engineman	326	71	152	103	203	52	99	52
(EO)	Equipment Operator	172	91	38	43	30	19	7	4
(HM)	Hospital Corpsman	248	126	44	78	575	433	48	94
(QM)	Quartermaster	388	71	68	249	98	28	18	52
(RM)	Radioman	450	69	224	157	691	152	251	288
(ST)	Sonar Technician	427	68	223	136	132	26	52	54
(SK)	Storekeeper	379	63	151	165	154	33	41	80
		5485	1376	1936	2173	3505	1292	1005	1208

6

This relationship was studied in two ways. First, satisfied men in all 15 ratings were "assigned" to the rating corresponding to their highest NVII score, and these assignments were compared with the individuals' actual ratings to determine accuracy. Men assigned to their own rating were considered "hits"; those assigned to ratings very similar to their own, "near hits"; and those assigned to unrelated ratings, "misses."[3] Since some ratings could yield many hits simply because people in general score high on those scales, base rate information was obtained on the percentage of a representative sample of 30,273 recruits who scored highest on each scale. This percentage for a given scale was then compared with the percentage of "hits" for the rating group corresponding to that scale.

Second, the percentage of correct classifications for satisfied individuals in each possible pair of the 15 ratings was determined, where equal numbers of men were assumed in each rating. For example, if the Electronics Technician and Commissaryman ratings were being considered, satisfied individuals in those ratings would be classified as Electronics Technicians if they received a higher score on the ET than on the CS interest scale, and as Commissarymen if they scored higher on the CS than on the ET scale. These classification decisions were then compared with the individuals' actual ratings to determine accuracy. In this way, the lambda scales' ability to differentiate between both closely related and very dissimilar ratings was determined. A point-biserial correlation related to each classification situation was computed by assuming a dichotomy on the true rating and an underlying continuum on the interest variable. This continuum was the algebraic difference between an individual's lambda scores on the two scales relevant to the particular classification decision.

Relationship Between Lambda Scales and Job Satisfaction

Members of both the cross-sectional and longitudinal samples were used to evaluate the lambda scales' relationship to job satisfaction. The longitudinal subgroup was the same as that used in previous analyses. However, the cross-sectional subgroup was expanded to include individuals of all degrees of job satisfaction (N = 5485) (see Table 1).

Four analyses were conducted. The first compared mean scores on the relevant scale for men in each rating who would choose the same, a similar, and a completely different rating. The second compared the percentage of individuals in each satisfaction group who obtained their highest score on the relevant scale; the percentage having their highest score or a score within .06 of it on the relevant scale was also determined to parallel recommended use of the NVII.

---

[3]"Near hits" categorizations were based . . rceptions of large numbers of first-term enlistees regarding rating int. . .ationships. Men with 2-3 years of Navy experience (N = 12,507) were a: .d to indicate their present ratings and up to four other ratings they considered very similar to these ratings. A weighted average similarity value was obtained for each pair of ratings, and ratings with average similarities above a fixed cutoff were classified "near hits" in relation to each other.

The third and fourth analyses employed a dichotomous job satisfaction criterion, categorizing individuals who would choose the same or a similar rating into one group and those who would choose a different rating into a second. The decision on how to dichotomize (i.e., which job satisfaction categories to group together) was based upon the similarity in mean lambda scores of men in the cross-sectional sample who would choose the same and a similar rating.[4] The dichotomy was created to linearize the relationship between interest scores and job satisfaction.

The third analysis considered biserial correlations for each rating between job satisfaction and 15 continuous interest scores designed to reflect the recommended .06 criterion. The interest scores were computed by determining the difference between an individual's highest score and his score on each of the 15 scales.

The fourth analysis compared the percentage of satisfied individuals in each rating under the present system with the percentage that could be expected under a hypothetical classification system based on interests. Figures for the present system are merely the percentages of satisfied individuals in the cross-sectional and longitudinal samples, respectively. (The percentages are based on men doing typical work for their rating. As indicated previously, those doing atypical work were excluded because of the ambiguous meaning of their job satisfaction responses.) Figures for the interest classification system are the percentages of satisfied individuals among men who received a high score (i.e., within .06 of their highest) on the relevant scale. This method of estimating hypothetical job satisfaction, like any other, makes certain assumptions, including the following:

1. Quotas and the distribution of abilities and interests in the general recruit population would permit individuals to be assigned a rating appropriate to their interests.

2. Recruits with interests appropriate for a particular rating would have the same degree of job satisfaction if assigned to that rating as analogous individuals presently in the rating.

Relationship Between Lambda Scales and "A" School Grades

The remaining analyses described in this report were based on longitudinal subsamples. The lambda scales' relationship to "A" school grades was assessed using 4221 men in 11 ratings who were administered the NVII as recruits and for whom "A" school grades were available. These ratings were selected because they had corresponding NVII scales and adequate sample sizes. A combined sample was formed for each rating offering parallel "A" school training at different locations. Table 2 lists the 11 ratings and indicates sample sizes.

---

[4]The degree of similarity was evaluated by computing a mean score on the relevant scale for men in each rating who would choose the same, a similar, and a different rating. The median differences in means were then determined between men who would choose the same and a similar rating and between men who would choose a similar and different rating. They were .04 and .12, respectively. (Results for the longitudinal sample were not yet available at the time the decision to dichotomize was made.)

Table 2

Distribution of "A" School Grade Sample by Rating

	Rating	Sample Size
(AC)	Air Controlman	188
(AE)	Aviation Electrician's Mate	281
(AO)	Aviation Ordnanceman	181
(CS)	Commissaryman	152
(EM)	Electrician's Mate	315
(ET)	Electronics Technician	398
(HM)	Hospital Corpsman	1319
(QM)	Quartermaster	156
(RM)	Radioman	826
(ST)	Sonar Technician	126
(SK)	Storekeeper	279

The criterion for this portion of the study was Final School Grade (FSG), which is comprised of weighted sums of (1) scores earned on daily or weekly quizzes, (2) performance measures, and (3) final examination marks. Grades were standardized within each "A" school because schools for the same rating at different locations vary widely in their grade distributions. Such differences would artificially attenuate interest-grade relationships when schools from different locations are combined for analysis.

Accordingly, the grades obtained by graduates over a 2-year period from each "A" school were standardized with a mean of 50 and a standard deviation of 10.[5]   (For example, one standardization group included graduates of the Hospital Corpsman School, San Diego, in 1969 and 1970; a second, graduates of the Hospital Corpsman School, Great Lakes, during 1969 and 1970; and a third, graduates of the Hospital Corpsman School, Great Lakes, in 1971 and 1972.)[6]

---

[5]Two years worth of input was used for each standardization group only because the data was obtained from biennial Basic Test Battery (BTB) Validation studies that had standardized in this way.

[6]The standardization groups included all individuals in the appropriate schools whose "A" school grades were provided to the Navy Personnel Research and Development Center under the reporting procedure established for BTB validations in 1964. Thus, individuals who graduated from "A" school between 1969-72 were included in the standardization groups whether or not they had completed the NVII.

Biserial correlations between standardized Final School Grades and lambda scores dichotomized at the .06 point were then determined for each of the 11 "A" school groups. No corrections were made for possible restriction of range on interest variables due to self-selection.

Relationship Between Lambda Scales and Job Performance

Longitudinal subsamples from six ratings were used to evaluate the lambda scales' relation to job performance. Approximately 2 years after men from these ratings entered the Navy, their immediate supervisors had completed a confidential special-purpose questionnaire evaluating the men's job performance in relation to (1) others of the same rating and paygrade and (2) others of the same rating and next higher paygrade. (A copy of the questionnaire is provided in the Appendix.) The "next higher paygrade" evaluation was included to increase the variability in performance marks, while the confidential special-purpose format was designed to elicit more objective evaluations than are usually obtained operationally.

The analyses included only men who had worked at least 3 months for their evaluating supervisor. Table 3 lists the 6 ratings and their sample sizes.[7]

Table 3

Distribution of Job Performance Sample by Rating

Rating	Sample Size
(AT) Aviation Electronics Technician	124
(AD) Aviation Machinist's Mate	96
(AM) Aviation Structural Mechanic	92
(ET) Electronics Technician	158
(HM) Hospital Corpsman	353
(RM) Radioman	316

For each rating, biserial correlations were determined between 15 interest scores dichotomized using the .06 rule and the two job performance evaluations. No corrections were made for possible range restriction on the interest variables.

---

[7]The samples used for this analysis were collected as part of another study and are not as complete as would be desired. However, they are included to provide a tentative indication of the lambda scales' relationship to job performance.

Comparison of Lambda Scales with Clark's Occupational and Area Scales

Samples used for these comparisons were basically the same as longitudinal samples used to evaluate the lambda scales' classification accuracy and relationship to job satisfaction. Thus, Clark's area scales were related to job satisfaction in 15 ratings. However, his occupational scales were compared with the lambda scales using only the eight ratings having scales in both sets. This limited comparisons of the occupational scales to the following ratings and corresponding scales: Boiler Technician, Electrician's Mate, Electronics Technician, Engineman, Hospital Corpsman, Quartermaster, Radioman, and Storekeeper.

Comparisons of the classification accuracy of the lambda scales and Clark's occupational scales were based on the percentage of correct classifications for each possible pair of the eight ratings, where an individual was placed in the rating corresponding to the higher of his scores on the two relevant scales. A point biserial correlation was also determined for each rating pair, using true rating as the dichotomy and the difference between an individual's scores on the two relevant scales as the continuum.

Finally, all three types of scales were compared in their prediction of job satisfaction for eight ratings based on biserial correlations between dichotomized job satisfaction[8] and Clark's occupational scales, the lambda scale differences between an individual's highest score and his score on the scale for each rating, and Clark's area scales. (Correlations were also computed between Clark's area scales and satisfaction for the remaining 7 of the 15 ratings.)

---

[8]The dichotomy was created by combining individuals who would choose the same or a similar rating in one category and the remaining individuals, who would choose a different rating, in the other.

RESULTS AND DISCUSSION

Ability of Lambda Scales to Satisfy Logical Relationships

Table 4 shows mean NVII scores for cross-sectional and longitudinal sub-samples of satisfied men. With only two exceptions--longitudinal samples of Electrician's Mates and Storekeepers--the men obtained their highest mean scores on the relevant scale. However, many rating groups obtained lower mean scores on their own scale than other rating groups obtained on that scale.

Table 5 shows that from 15 to 87 percent (median of 31 percent) of men in the cross-sectional rating group received their highest score on the relevant scale, compared to from zero to 60 percent (median of 15 percent) of the longitudinal sample. These percentages compare with a median of 6 percent of a random recruit sample who obtain their highest score on any particular scale.

The percentage of men whose relevant scores were within .06 of their highest score (a situation more closely related to recommended use of such scales) ranged from 52 to 93 percent (median of 76 percent) in the cross-sectional sample and from 26 to 87 percent (median of 59 percent) in the longitudinal sample. The median percentage for a representative recruit group, whose members will experience varying degrees of job satisfaction once they enter their ratings, is 33 percent. The longitudinal results are especially relevant to recruit counseling, since they indicate the percentages of individuals who are satisfied with their rating after 2 to 3 years in the Navy and who would have been counseled toward that rating in light of their recruit interests. In 11 of the 15 ratings, over half of the men would have been guided toward the rating in which they are currently satisfied.

Ability of Lambda Scales to Correctly Classify Individuals

Table 6 indicates the accuracy with which lambda scales classify satisfied individuals into their own ratings based upon the single highest of their 15 lambda scores.

In the cross-sectional sample, 15 to 87 percent (median of 31 percent) of the rating groups obtained their highest score on their own scale and would be considered "hits," and 13 to 83 percent (median of 57 percent) were "misses," reflecting many classification errors when decisions are based upon the single highest score. Similar results for the longitudinal sample were 0 to 41 percent "hits" (median of 15 percent) and 33 to 100 percent "misses" (median of 63 percent).

Perspective on these results may be gained by comparing them with the percentage of a random recruit group who obtained their highest score on each scale. As shown in Table 6, on the average, about five times more satisfied individuals in the cross-sectional sample than recruits obtained their highest score on the relevant scale and would thus have been classified into a particular rating. The average was about three times more for the longitudinal sample.

13

Table 4

Mean NVII Scores of Satisfied Men in 15 Ratings on Each Lambda Scale

		Cross-sectional Sample														
	Sample	Lambda Scale														
Rating	Size	AC	AE	AO	BT	CS	DP	EM	ET	EN	EO	HM	QM	RM	ST	SK
AC	180	.47	.38	.40	.34	.32	.41	.36	.39	.34	.36	.27	.46	.42	.40	.26
AE	100	.49	.60	.56	.54	.35	.47	.59	.57	.54	.53	.24	.49	.54	.59	.21
AO	53	.44	.46	.49	.47	.36	.40	.46	.43	.47	.47	.20	.44	.44	.45	.23
BT	29	.42	.51	.54	.55	.35	.40	.53	.47	.55	.53	.16	.42	.46	.49	.21
CS	79	.24	.19	.24	.19	.36	.23	.19	.18	.20	.23	.16	.25	.19	.19	.19
DP	180	.39	.34	.35	.30	.30	.45	.33	.34	.29	.30	.23	.39	.38	.36	.33′
EM	72	.43	.55	.53	.52	.32	.41	.56	.53	.53	.51	.19	.44	.49	.54	.17
ET	124	.48	.56	.51	.48	.31	.47	.55	.58	.48	.47	.26	.49	.52	.58	.19
EN	71	.45	.55	.58	.60	.39	.42	.57	.50	.61	.59	.17	.46	.48	.52	.21
EO	91	.42	.46	.51	.50	.36	.39	.48	.42	.50	.52	.17	.43	.43	.44	.23
HM	126	.30	.16	.15	.08	.23	.23	.13	.20	.08	.12	.51	.30	.19	.20	.15
QM	71	.41	.32	.35	.29	.28	.38	.31	.33	.29	.31	.24	.43	.38	.35	.28
RM	69	.43	.42	.40	.35	.30	.42	.40	.42	.34	.35	.22	.43	.48	.44	.29
ST	68	.46	.52	.48	.44	.32	.43	.51	.53	.44	.44	.28	.46	.49	.54	.19
SK	63	.29	.16	.22	.16	.29	.36	.16	.16	.14	.18	.15	.29	.28	.20	.42
		Longitudinal Sample														
AC	90	.43	.35	.35	.29	.28	.37	.32	.36	.29	.32	.26	.42	.39	.38	.25
AE	56	.42	.51	.51	.51	.34	.40	.51	.47	.51	.50	.12	.42	.47	.49	.23
AO	7	.32	.35	.37	.35	.25	.25	.35	.32	.35	.36	.15	.32	.32	.34	.14
BT	33	.38	.48	.50	.51	.35	.32	.49	.43	.51	.50	.12	.37	.41	.45	.15
CS	51	.24	.22	.27	.23	.34	.23	.23	.20	.24	.26	.10	.24	.23	.22	.20
DP	62	.34	.31	.32	.28	.28	.39	.30	.31	.28	.29	.14	.35	.37	.33	.34
EM	70	.42	.49	.47	.46	.29	.37	.48	.47	.46	.45	.17	.41	.45	.48	.18
ET	180	.43	.50	.45	.44	.27	.41	.49	.51	.43	.42	.20	.42	.49	.51	.20
EN	52	.40	.50	.52	.53	.34	.36	.51	.45	.53	.52	.10	.39	.45	.47	.19
EO	19	.41	.46	.48	.48	.32	.35	.46	.42	.48	.49	.16	.41	.43	.44	.19
HM	433	.28	.20	.20	.14	.23	.22	.17	.22	.14	.17	.38	.29	.23	.23	.15
QM	28	.31	.26	.29	.25	.26	.26	.25	.26	.25	.28	.16	.32	.29	.28	.20
RM	152	.32	.29	.30	.27	.26	.31	.28	.28	.26	.28	.16	.32	.34	.30	.27
ST	26	.44	.51	.49	.50	.29	.38	.51	.51	.48	.48	.18	.43	.47	.52	.15
SK	33	.32	.25	.31	.26	.32	.30	.24	.23	.26	.29	.14	.32	.30	.26	.30

Note. Mean scores of ratings on their own scale are underlined.

14

Table 5

Percentage of Satisfied Men in Each Rating With Their
Highest Score (or Within .06 of their
Highest Score) on the Relevant Scale

Rating	Cross-sectional Sample			Longitudinal Sample			Recruit-in-general Sample (N=30,273)	
	Sample Size	Percent Highest	Percent Within .06 of Highest	Sample Size	Percent Highest	Percent Within .06 of Highest	Percent Highest	Percent Within .06 of Highest
AC	180	25	56	90	30	58	5	26
AE	100	18	86	56	7	61	4	43
AO	53	15	74	7	0	57	4	47
BT	29	31	86	33	15	85	8	47
CS	79	54	73	51	41	51	6	14
DP	180	36	57	62	10	26	2	13
EM	72	28	89	70	16	59	5	45
ET	124	39	83	180	29	72	7	33
EN	71	41	93	52	33	87	12	47
EO	91	43	79	19	11	68	6	43
HM	126	87	92	433	60	66	12	17
QM	71	20	52	28	11	29	4	25
RM	69	29	54	156	12	33	7	30
ST	68	25	76	26	15	77	5	40
SK	63	48	63	33	33	42	10	15
Median		31	76		15	59	6	33

15

Table 6

Percentage Accuracy of Classification for Cross-sectional and Longitudinal
Samples of Satisfied Men in 15 Ratings

| | Cross-sectional Sample | | | | Longitudinal Sample | | | | Recruit-in-general Sample (N=30,273) | | | |
	Sample Size	Hits	Near Hits	Misses	Sample Size	Hits	Near Hits	Misses	With Highest Score on Scale	With Highest Score on Related Scale	With Highest Score on Unrelated Scale	Ratings Considered Near Hits
AC	180	25	--	74	90	30	--	68	5	--	92	None
AE	100	18	18	63	56	7	11	80	4	5	89	EM
AO	53	15	--	83	7	0	--	100	4	--	93	None
BT	29	31	24	45	33	15	33	52	8	12	78	EN
CS	79	54	8	35	51	41	16	43	6	10	82	SK
DP	180	36	--	64	62	10	--	89	2	--	95	None
EM	72	28	31	41	70	16	19	63	5	10	82	AE, ET
ET	124	39	39	21	180	29	37	33	7	17	74	RM, ST, EM
EN	71	41	24	32	52	33	10	54	12	8	78	BT
BO	91	43	--	57	19	11	--	84	6	--	91	None
HM	126	87	--	13	433	60	--	39	12	--	86	None
QM	71	20	--	80	28	11	--	89	4	--	93	None
RM	69	29	10	61	152	12	1	87	7	7	84	ET
ST	68	25	18	57	26	15	23	50	5	7	86	ET
SK	63	48	13	39	33	33	12	52	10	6	82	CS

Note. Sums of rows and columns do not necessarily equal 100 percent because ties have not been classified as hits, near hits, or misses.

16

Table 7 is concerned with classification accuracy for all possible pairs of ratings. It shows percentages of correct classifications and corresponding point-biserial correlations between the interest variable and actual rating for each possible pair of the 15 ratings. The interest variable in this case is the difference between an individual's scores on the two lambda scales relevant to the classification decision.

Classification accuracy was generally high: 57 to 97 percent (median of 82 percent) were correctly classified in the cross-sectional sample; and 46 to 87 percent (median of 72 percent), in the longitudinal sample. The corresponding median point-biserial correlations between interest scores and occupational group membership were .69 and .54.

The gain over the 50 percent classification accuracy that would be expected by chance is substantial in the cross-sectional samples for most ratings; longitudinal samples showed less gain and, in some cases, a decrement. Possible reasons for the lower accuracy of the longitudinal samples include:

1. Men tested as recruits may have less differentiated interests than men tested later in their Navy careers; that is, interests may become more differentiated over the 4 to 8 years following recruit training. They may also become more consistent with the individual's rating assignment, particularly if the individual is satisfied with that assignment.

2. The lambda scales were developed on a sample much like the cross-sectional sample in terms of Navy experience and time of NVII administration and should, therefore, work better for that sample.

It is interesting that classification accuracy was good (69 to 82 percent) in both cross-sectional and longitudinal samples for several pairs of ratings (i.e., EM and BT, EM and EN) whose scales correlated as high as .98 or .99 in a representative recruit sample (Dann & Abrahams, 1973a).

The lambda scales' classification accuracy for selected pairs of similar and dissimilar ratings is provided in Table 8.

These percentages represent excellent accuracy in the cross-sectional sample and a substantial improvement over chance in the longitudinal sample.

Relationship Between Lambda Scales and Job Satisfaction

Table 9 shows means and standard deviations on the relevant scale for cross-sectional and longitudinal samples of men in each rating and job satisfaction level.

Table 7

Classification Accuracy of the Lambda Scales for Satisfied Individuals

							Rating								
Rating	AC	AE	AO	BT	CS	DP	EM	ET	EN	EO	HM	QM	RM	ST	SK
Cross-sectional Sample															
AC		.63	.45	.63	.80	.59	.68	.66	.71	.60	.81	.44	.57	.60	.67
AE	79		.67	.63	.82	.67	.26	.47	.73	.75	.85	.69	.55	.35	.82
AO	70	84		.42	.63	.57	.66	.72	.53	.41	.82	.48	.58	.65	.69
BT	77	78	72		.74	.70	.61	.70	.37	.57	.84	.65	.69	.69	.80
CS	88	91	78	85		.81	.80	.85	.77	.70	.83	.76	.80	.80	.68
DP	79	81	78	82	92		.72	.67	.75	.67	.82	.53	.61	.65	.51
EM	83	58	81	81	90	84		.48	.67	.72	.86	.70	.64	.48	.83
ET	80	70	84	83	92	82	73		.80	.81	.85	.70	.55	.22	.84
EN	85	82	74	63	87	88	82	92		.61	.90	.73	.75	.77	.83
EO	77	86	63	80	82	81	86	91	79		.86	.65	.68	.76	.75
HM	89	93	89	95	92	89	94	94	97	92		.79	.84	.82	.82
QM	68	81	71	78	88	73	84	85	87	77	87		.55	.62	.57
RM	75	76	74	81	89	79	81	76	85	82	81	74		.54	.65
ST	74	68	81	81	90	80	71	57	88	87	92	79	75		.80
SK	77	92	82	84	82	71	91	94	92	84	91	68	79	92	
Longitudinal Sample															
AC		.59	.52	.67	.70	.53	.55	.59	.70	.60	.56	.52	.39	.61	.38
AE	79		.11	.26	.61	.54	-.14	.56	.24	.24	.74	.53	.47	.32	.54
AO	73	50		.41	.48	.55	.22	.55	.37	.11	.62	.28	.42	.39	.37
BT	79	63	60		.57	.66	.46	.66	.01	.14	.70	.54	.62	.53	.58
CS	82	77	75	75		.64	.62	.71	.64	.61	.69	.53	.49	.70	.29
DP	69	72	66	77	81		.53	.54	.66	.63	.68	.47	.26	.62	.15
EM	73	46	61	71	79	70		.30	.42	.44	.68	.44	.43	.09	.54
ET	79	71	67	79	83	73	62		.73	.68	.69	.57	.49	.10	.59
EN	85	64	58	49	82	79	69	84		.29	.76	.57	.56	.56	.56
EO	75	60	48	51	78	75	73	78	60		.67	.41	.49	.56	.53
HM	76	84	80	82	80	81	84	81	87	79		.54	.55	.70	.64
QM	77	73	61	69	65	66	65	73	74	69	74		.30	.57	.24
RM	69	70	69	77	71	61	65	70	72	66	75	58		.53	.14
ST	80	63	65	72	82	75	57	49	75	73	84	75	76		.65
SK	65	68	67	71	61	54	73	70	72	72	80	56	57	72	

Note. Point-biserial correlations of true ratings with the difference between scores on the relevant lambda scales are shown above the diagonals; percentages of correct classifications for satisfied individuals in each pair of ratings are shown below them.

18

Table 8

Percentages of Correct Classifications for
Similar and Dissimilar Rating Pairs

Rating Pair	Cross-sectional Sample	Longitudinal Sample
Similar Ratings		
Aviation Electrician's Mate--Electrician's Mate (AE--EM)	58	46
Boiler Technician--Engineman (BT--EN)	63	49
Electrician's Mate--Electronics Technician (EM--ET)	73	62
Electronics Technician--Radioman (ET--RM)	76	70
Electronics Technician--Sonar Technician (ET--ST)	57	49
Dissimilar Ratings		
Hospital Corpsman--Electronics Technician (HM--ET)	94	81
Storekeeper--Boiler Technician (SK--BT)	84	71
Commissaryman--Hospital Corpsman (CS--HM)	92	80
Sonar Technician--Commissaryman (ST--CS)	90	82

Table 9

Means and Standard Deviations of Relevant Lambda Scores
by Job Satisfaction Level

| | Cross-sectional Sample | | | | | | Longitudinal Sample | | | | | |
| | Means | | | Standard Deviations | | | Means | | | Standard Deviations | | |
Rating	Same	Similar	Diff.	Same	Similar	Diff.	Same	Similar	Diff.	Same	Similar	Diff.
AC	.47	.42	.43	.14	.16	.15	.43	.35	.44	.14	.14	.13
AE	.60	.53	.41	.16	.18	.23	.51	.49	.42	.16	.14	.17
AO	.49	.49	.40	.23	.20	.23	.37	.48	.48	.21	.20	.19
BT	.55	.59	.41	.20	.19	.26	.51	.54	.46	.21	.18	.21
CS	.36	.28	.33	.17	.19	.17	.34	.35	.31	.16	.15	.16
DP	.45	.41	.38	.16	.18	.19	.39	.37	.40	.13	.17	.08
EM	.56	.57	.43	.24	.16	.23	.48	.48	.38	.19	.19	.24
ET	.58	.53	.39	.14	.17	.24	.51	.48	.40	.17	.18	.19
EN	.61	.60	.46	.15	.16	.24	.53	.55	.48	.20	.16	.17
EO	.52	.58	.39	.21	.13	.26	.49	.46	.31	.19	.18	.09
HM	.51	.51	.35	.14	.13	.18	.38	.38	.28	.19	.20	.17
QM	.43	.37	.41	.15	.15	.16	.32	.36	.36	.15	.12	.14
RM	.48	.45	.40	.14	.19	.18	.34	.29	.33	.19	.20	.18
ST	.54	.54	.42	.16	.16	.22	.52	.53	.44	.16	.14	.18
SK	.43	.41	.28	.13	.18	.16	.30	.33	.21	.11	.17	.15

Note. The job satisfaction levels of Same, Similar, and Diff. used in this table relate as follows to the original job satisfaction question asked the men:

Same = "I would choose my present rating."

Similar = "I would choose a different rating, but it would be in the same general area as my present rating."

Different – "I would choose a different rating in a completely different area from my present rating."

20

Men who would choose the same rating obtained higher mean scores on
their own scale than men who would choose a different rating for all ratings
in the cross-sectional sample. Exceptions in the longitudinal sample were
Air Controlman, Aviation Ordnanceman, Data Processing Technician, and
Quartermaster ratings, where sample sizes were sometimes as small as 12 or
18. Means for individuals who would choose a similar rating were usually
intermediate between the other groups' means. For some ratings, however,
individuals choosing a similar rating actually scored higher than individuals
selecting the same rating (i.e., BT, EM, and EO in the cross-sectional
sample and AO, BT, CS, EN, QM, ST, and SK in the longitudinal sample). Many
of these paradoxical results may reflect unstable means based on small samples.

The median difference in means between men in each rating who would
choose the same rating and men who would choose a similar rating was .04
for the cross-sectional sample. Median differences between men who would
choose a similar and a different rating were .12 and .08, respectively.
Thus, there was greater resemblance in interests between men who would choose
the same versus a similar rating than between men who would choose a similar
versus a different rating.

Table 10 provides information on the relationship between interests and
job satisfaction by showing the percentage of individuals in each job satis-
faction category whose relevant score was their highest (or within .06 of it).

Median percentages of men in the cross-sectional sample with their highest
score on the relevant scale were 31, 23, and 14, respectively, for men who
would select the same, a similar, and a different rating. Median percentages
in the longitudinal sample were 15, 16, and 13, with more dissatisfied than
satisfied Aviation Ordnancemen and Quartermasters actually achieving their
highest score on the relevant scale.

The percentages of men whose relevant scores were within .06 of their
highest were more favorable. All but three ratings in the longitudinal
sample (AO, EO, and QM) showed higher percentages of appropriate interests
for people who would choose the same than for people who would choose a
different rating. (Median percentages in the cross-sectional sample were
76, 73, and 45 for same, similar, and different groups, respectively, and
59, 65, and 47 in the longitudinal sample.) Since these results were derived
using the .06 criterion for appropriate interests, it appears that a larger
proportion of men who would choose the same rather than a different rating
would have been guided into their present rating based upon interests. How-
ever, many dissatisfied individuals still had interests consonant with their
ratings.

Table 11 shows biserial correlations between the dichotomized job satis-
faction criterion and lambda difference scores. (It may be recalled that the
lambda difference scores indicate the difference between an individual's
highest score and his score on each scale.)

Table 10

Percentage of Men with Highest Score and Score Within .06 of
Highest on Relevant Scale by Job
Satisfaction Level

Percentage with Highest Score on Relevant Scale

Rating	Cross-sectional Sample			Longitudional Sample		
	Choose same rating	Choose similar rating	Choose different rating	Choose same rating	Choose similar rating	Choose different rating
AC	25	7	15	30	0	17
AE	18	10	4	7	13	3
AO	15	8	8	0	20	6
BT	31	23	14	15	16	15
CS	54	21	20	41	31	26
DP	36	26	9	10	6	7
EM	28	27	13	16	12	3
ET	39	38	20	29	25	14
EN	41	37	18	33	35	27
BO	43	24	2	11	14	0
BM	87	77	32	60	54	36
QM	20	15	19	11	28	15
RM	29	18	10	12	9	7
ST	25	14	6	15	12	13
SK	48	55	20	33	49	13
Median	31	23	14	15	16	13

Percentage with Score Within .06 of Highest on Relevant Scale

Rating	Cross-sectional Sample			Longitudional Sample		
	Choose same rating	Choose similar rating	Choose different rating	Choose same rating	Choose similar rating	Choose different rating
AC	56	48	43	58	0	25
AE	86	73	48	61	59	50
AO	74	58	49	57	80	78
BT	86	89	59	85	86	70
CS	73	30	35	51	62	35
DP	57	49	24	26	56	14
EM	89	73	47	59	66	46
ET	83	75	44	72	70	47
EN	93	89	56	87	84	62
BO	79	87	49	68	71	100
BM	92	82	45	66	65	47
QM	52	44	50	29	61	40
RM	54	50	29	33	31	31
ST	76	75	36	77	73	56
SK	63	68	29	42	56	23
Median	76	73	45	59	65	47

22

Table 11

Biserial Correlations Between Lambda-related Scores
and Job Satisfaction

		Scale														
Rating	Sample Size	AC	AE	AO	BT	CS	DP	EM	ET	EN	EO	HM	QM	RM	ST	SK
Cross-sectional Sample																
AC	283	.13	.03	.06	.04	.05	.09	.02	.02	.04	.04	-.03	.07	.07	.03	.05
AE	410	-.07	.33	.21	.22	-.15	-.01	.31	.28	.20	.16	-.23	-.14	.20	.31	-.16
AO	489	-.05	.15	.18	.18	-.03	.02	.18	.11	.18	.16	-.23	-.05	.10	.13	-.07
BT	430	-.25	.20	.21	.29	-.18	-.21	.25	.09	.28	.23	-.31	-.26	-.10	.09	-.27
CS	411	-.16	-.23	-.17	-.18	.31	-.09	-.21	-.24	-.17	-.15	.06	-.16	-.30	-.25	.15
DP	298	-.12	-.11	-.12	-.09	-.05	.20	-.09	-.12	-.11	-.13	-.10	-.12	-.05	-.11	.22
EM	407	-.22	.31	.26	.32	-.12	-.20	.34	.23	.32	.27	-.25	-.23	.01	.23	-.27
ET	367	-.12	.35	.18	.22	-.27	-.03	.33	.36	.20	.13	-.19	-.16	.19	.37	-.24
EN	326	-.18	.19	.28	.36	-.07	-.24	.26	.03	.38	.34	-.24	-.19	-.10	.05	-.23
EO	172	.00	.13	.22	.21	.05	.01	.16	.07	.21	.23	-.11	.02	.03	.08	-.04
HM	248	-.32	-.33	-.35	-.34	-.24	-.34	-.34	-.30	-.34	-.35	.46	-.32	-.37	-.33	-.14
QM	388	.03	-.08	-.03	-.05	.03	.02	-.08	-.08	-.06	-.05	-.02	.03	-.01	-.07	.09
RM	450	-.05	.02	-.04	-.04	-.09	.17	.02	.00	-.07	-.09	-.12	-.11	.22	.04	.14
ST	427	.00	.31	.13	.14	-.14	.09	.27	.36	.12	.06	-.11	-.01	.27	.36	-.12
SK	379	-.26	-.37	-.33	-.34	-.01	-.05	-.35	-.37	-.34	-.33	-.10	-.27	-.30	-.36	.43
Longitudinal Sample																
AC	106	.11	-.05	.00	-.03	.32	.50	-.06	-.14	-.04	-.03	-.08	.00	.19	-.09	.55
AE	125	-.14	.23	.16	.16	-.05	.12	.20	.05	.12	.11	-.23	-.16	.15	.15	.03
AO	35	.19	-.16	-.11	-.16	.12	-.04	-.15	-.09	-.08	-.08	.27	.12	-.15	-.11	.03
BT	418	-.22	.17	.16	.24	-.09	-.21	.22	.06	.26	.22	-.22	-.23	-.10	.05	-.23
CS	175	-.18	-.12	-.09	-.08	.24	.01	-.09	-.16	-.08	-.08	-.07	-.19	-.08	-.14	.18
DP	92	-.27	-.10	-.17	-.11	.04	.22	-.10	-.16	-.13	-.18	-.14	-.35	-.02	-.14	.37
EM	274	-.17	.24	.23	.30	-.06	-.25	.28	.13	.31	.28	-.26	-.19	-.06	.14	-.28
ET	397	-.15	.28	.19	.25	-.21	-.08	.29	.30	.23	.17	-.22	-.15	.10	.24	-.24
EN	203	-.16	.03	.11	.21	-.09	-.09	.09	-.08	.20	.19	-.23	-.17	-.11	-.09	-.10
EO	30	-.48	-.36	-.43	-.13	-.62	-.52	-.26	-.46	-.09	-.21	-.42	-.46	-.51	-.47	-.58
HM	575	-.21	-.22	-.22	-.23	-.19	-.23	-.22	-.22	-.22	-.23	.17	-.23	-.26	-.22	-.15
QM	98	.00	-.17	-.15	-.17	.02	.09	-.16	-.13	-.15	-.13	.17	.08	-.08	-.11	.17
RM	691	-.19	-.15	-.15	-.13	-.09	-.02	-.14	-.17	-.14	-.15	-.12	-.18	-.10	-.16	.16
ST	132	-.01	.30	.19	.21	-.14	-.18	.27	.30	.20	.18	-.16	-.06	.06	.28	-.34
SK	154	-.26	-.36	-.30	-.32	.05	-.01	-.35	-.40	-.33	-.31	-.05	-.26	-.24	-.37	.39

Note. The correlation of the relevant lambda-related score with job satisfaction is underlined for each rating.

23

Correlations for the relevant scales ranged from .03 to .46 (median of .31) in the cross-sectional sample and from -.21 to .39 (median of .22) in the longitudinal sample. Thus, while satisfaction showed low or negative correlations with relevant interest scores in some ratings, overall results were moderately favorable. The most consistently high relationships were found in the Storekeeper and Electronics Technician ratings, where relevant correlations were in the .30 to .43 range.

Finally, Table 12 compares the percentage of satisfied individuals in each rating under the present classification system with percentages that might be expected under a system using NVII scores. The NVII system assumes that an individual would be assigned to a rating for which he received his highest score (or within .06 of it).

The median percentage of men in the cross-sectional sample who would choose the same rating was 42 percent under the present system and 51 percent using interests, with a median improvement of 6 percent. The median percentages who would choose either the same or a similar rating were 76 percent under the present system and 85 percent using interests. The median improvement here was 7 percent. Longitudinal sample results were less favorable. The median increase in individuals who would choose the same rating was only 2 percent, and the median improvement in individuals who would choose either the same or a similar rating was only 6 percent.

In general, then, some slight improvement in satisfaction and decrease in dissatisfaction might be expected to result from assigning men to ratings based upon their measured vocational interests. While as many as 19 percent more Storekeepers might choose the same or a similar rating, no more Aviation Ordnancemen or Equipment Operators might be satisfied.

Relationship Between Lambda Scales and "A" School Grades

Table 13 shows biserial correlations between "A" school grades and lambda scores dichotomized using the .06 criterion for a portion of the longitudinal sample.

Correlations of grades with relevant NVII scales ranged from -.28 for Sonar Technicians to .39 for Hospital Corpsmen; the median relevant correlation was .04. For most ratings, at least one scale correlated higher with grades than the relevant scale. These findings suggest that the lambda scales would not be effective in predicting "A" school grades for most ratings.

Relationship Between Lambda Scales and Job Performance

Table 14 shows biserial correlations between lambda scores dichotomized using the .06 criterion and performance of an individual in relation to others of his rating and paygrade and in relation to others of his rating but the next higher paygrade.

24

Table 12

Percentage of Satisfied Men in 15 Ratings Under the Present Classification
System and Under a Hypothetical Classification System
Using Lambda Scores

Rating	Sample Size	Cross-sectional Sample						Longitudinal Sample					
		Percentage who would choose same rating			Percentage who would choose same or similar rating			Percentage who would choose same rating			Percentage who would choose same or similar rating		
		Present System	Using Interests	Diff.	Present System	Using Interests	Diff.	Present System	Using Interests	Diff.	Present System	Using Interests	Diff.
(AC) Air Controlman	283	84	87	3	88	90	2	85	95	10	89	95	6
(AE) Aviation Electrician's Mate	410	49	56	7	84	90	6	45	47	2	76	79	3
(AO) Aviation Ordnanceman	489	27	34	7	53	60	7	20	15	- 5	49	46	- 3
(BT) Boiler Technician	430	22	18	- 4	59	68	9	8	9	1	44	49	5
(CS) Commissaryman	411	42	65	23	55	71	16	29	36	7	37	47	10
(DP) Data Processing Technician	298	82	89	7	89	95	6	67	59	- 8	85	93	8
(EM) Electrician's Mate	407	39	48	9	76	84	8	26	26	0	68	75	7
(ET) Electronics Technician	367	60	66	6	86	92	6	45	49	4	80	86	6
(EN) Engineman	326	46	51	5	78	85	7	26	28	2	74	90	6
(EO) Equipment Operator	172	77	80	3	88	92	4	63	59	- 4	87	82	- 5
(HM) Hospital Corpsman	248	76	83	7	84	92	8	75	79	4	84	88	4
(QM) Quartermaster	388	40	42	2	53	53	0	29	20	- 9	47	48	1
(RM) Radioman	450	35	41	6	73	83	10	22	23	1	58	59	1
(ST) Sonar Technician	427	36	42	6	76	87	11	20	23	3	59	66	7
(SK) Storekeeper	379	37	44	7	67	82	15	21	25	4	48	67	19
Median		42	51	6	76	85	7	29	28	2	68	75	6

25

Table 13

Biserial Correlations Between Dichotomized Lambda Scores
and "A" School Grades

"A" School	Sample Size	Scale														
		AC	AE	AO	BT	CS	DP	EM	ET	EN	EO	HM	QM	RM	ST	SK
AC	188	**.09**	-.10	-.22	-.16	.00	.07	-.07	-.07	-.18	-.15	.06	.12	.05	-.07	-.06
AE	281	-.01	**.13**	-.15	-.14	-.38	.18	.05	.28	-.14	-.28	-.03	-.04	.01	.15	-.08
AO	181	.08	**-.02**	-.02	.04	-.18	-.02	.09	-.03	-.02	-.04	.09	.03	-.13	.03	.16
CS	152	-.31	-.09	-.25	-.09	**-.07**	-.18	-.03	-.02	-.16	-.21	.10	-.22	-.11	-.13	.14
EM	315	-.10	-.05	-.26	-.23	-.24	.07	**-.07**	.34	-.19	-.26	.08	-.01	.04	.01	-.13
ET	398	-.20	-.03	-.29	-.14	-.30	-.12	-.04	**.27**	-.17	-.30	-.02	-.20	-.14	-.20	-.23
HM	1319	-.18	-.23	-.32	-.31	-.21	-.14	-.27	-.09	-.29	-.30	**.39**	-.15	-.29	-.15	-.20
QM	156	-.08	-.13	-.03	-.18	-.26	.01	-.15	-.18	-.12	-.05	.24	**.19**	-.11	-.05	-.02
RM	826	-.08	-.16	-.20	-.14	-.09	.12	-.16	-.12	-.19	-.19	.07	-.05	**-.03**	-.14	.14
ST	126	.06	.04	-.04	.02	-.07	.07	.03	.04	-.03	-.15	.24	.12	.04	**-.28**	-.19
SK	279	-.20	-.22	-.23	-.19	-.08	-.10	-.17	-.15	-.21	-.22	.08	-.15	-.15	-.15	**.23**

Note. The correlation between the relevant dichotomized lambda score and "A" School grades is underlined for each rating.

26

Table 14

Biserial Correlations Between Dichotomized Lambda Scores
and Job Performance

Rating	Sample Size	Scale														
		AC	AE	AO	BT	CS	DP	EM	ET	EN	EO	HM	QM	RM	ST	SK
Performance in Same Rating and Paygrade																
AT	124	.09	.13	-.14	-.08	.20	.05	.04	.24	-.19	-.16	-.22	.09	.16	.24	.01
AD	96	-.17	.15	.19	.13	-.13	-.40	.13	-.09	.16	.15	-.06	-.31	-.05	.05	-.09
AM	92	-.24	-.21	.06	.22	.18	.18	-.10	-.11	.20	.18	-.04	-.06	-.20	-.10	-.03
ET	158	-.02	-.07	-.13	.01	-.20	-.08	-.02	-.19	.01	-.02	.01	-.07	-.22	-.20	.37
HM	353	.03	-.04	-.03	-.12	.02	.15	-.09	-.04	-.08	-.04	.05	.08	-.10	-.05	.04
RM	316	-.16	-.05	-.08	.01	-.24	-.02	-.04	-.12	-.02	.03	-.15	-.18	-.06	-.08	.06
Performance in Same Rating and Next Higher Paygrade																
AT	124	.17	.09	-.15	.02	-.26	.14	.02	.23	-.12	-.08	-.15	.16	.17	.19	-.05
AD	96	-.18	.12	.05	.07	-.03	-.14	.10	-.08	.05	-.03	.00	-.09	.08	.01	.17
AM	92	-.21	-.20	-.05	.09	.25	.19	-.10	-.12	.09	.12	-.02	-.06	-.12	-.07	-.08
ET	158	.12	-.11	-.04	.04	-.12	-.05	-.03	-.19	.04	.13	.00	.07	-.21	-.19	.46
HM	353	.04	.02	-.05	-.14	-.01	.05	-.08	.06	-.13	-.06	-.01	.05	-.06	.05	.03
RM	316	-.17	-.04	-.08	-.02	-.15	-.07	-.03	-.10	-.02	.05	-.12	-.20	-.12	-.06	.16

Notes.

1. Because of the coding system used for job performance, negative correlations indicate a positive relationship between interests and performance (i.e., the more interest, the better the job performance).

2. The correlation between the relevant dichotomized lambda score and job performance is underlined where available.

27

Correlations between relevant interest scores and performance in the same paygrade ranged from -.19 to .05; and those between interests and performance in the higher paygrade ranged from -.19 to -.01. (Because of the coding system used, negative correlations in Table 14 indicate positive associations between interests and performance.)

From this limited information, it appears that interests may be only slightly related to job performance.

Comparison of Lambda Scales with Clark's Occupational and Area Scales

Tables 15 through 17 compare Clark's NVII scales with the lambda scales.

The lambda scales were similar to Clark's occupational scales in terms of their accuracy in classifying individuals into pairs of ratings (Table 15). For example, individuals in the BT and ET rating pair were correctly classified 79 and 82 percent of the time using lambda scales and Clark's occupational scales respectively.

Correlations in Table 16 indicate a similar degree of relationship between job satisfaction and scores on the two types of relevant occupational interest scales. The median correlation on the relevant scale was .22 for the lambda-based scores and -.29 for Clark's occupational scales. Correlations for the most pertinent area scales were also of this magnitude (Table 17).

28

Table 15

Point-biserial Correlations of True Ratings with Difference Between Scores
on Two Relevant Scales, and Percentages of Correct Classifications
for Satisfied Individuals in Pairs of Ratings

Rating	BT	EM	ET	EN	HM	QM	RM	SK
Lambda-related Scale								
BT		.46	.66	.01	.70	.54	.62	.58
EM	71		.30	.42	.68	.44	.43	.54
ET	79	62		.73	.69	.57	.49	.59
EN	49	69	84		.76	.57	.56	.56
HM	82	84	81	87		.54	.55	.64
QM	69	65	73	74	74		.30	.24
RM	77	65	70	72	75	58		.14
SK	71	73	70	72	80	56	57	
Clark's Occupational Scale								
BT		.47	.74	.08	.70	.51	.50	.58
EM	72		.28	.31	.70	.48	.37	.64
ET	82	61		.71	.77	.64	.45	.74
EN	53	69	84		.78	.59	.47	.56
HM	82	77	86	83		.56	.57	.63
QM	70	65	76	73	76		.31	.31
RM	71	60	70	74	73	60		.22
SK	80	77	85	74	79	64	62	

Note. Point-biserial correlations are shown above the diagonals; percentages
of correct classifications are shown below them.

Table 16

Biserial Correlations of Lambda-related Scales
and Clark's Occupational Scales with Job Satisfaction

Rating	Sample Size	BT	EM	ET	EN	HM	QM	RM	SK
Lambda-related Scale[a]									
BT	418	.24	.22	.06	.26	-.22	-.23	-.10	-.23
EM	274	.30	.28	.13	.31	-.26	-.19	-.06	-.28
ET	397	.25	.29	.30	.23	-.22	-.15	.10	-.24
EN	203	.21	.09	-.08	.20	-.23	-.17	-.11	-.10
HM	575	-.23	-.22	-.22	-.22	.17	-.23	-.26	-.15
QM	98	-.17	-.16	-.13	-.15	.17	.08	-.08	.17
RM	691	-.13	-.14	-.17	-.14	-.12	-.18	-.10	.16
SK	154	-.32	-.35	-.40	-.33	-.05	-.26	-.24	.39
Clark's Occupational Scale[b]									
BT	418	-.28	-.15	.04	-.24	.11	.22	.02	.18
EM	274	-.23	-.22	.00	-.31	.13	.13	.06	.23
ET	397	-.14	-.30	-.27	-.23	.13	.06	-.16	.18
EN	203	-.20	-.01	.07	-.18	.17	.09	.14	.05
HM	575	.07	.08	.01	.12	-.28	-.05	.13	-.01
QM	98	.13	.21	.16	.14	-.03	-.14	.23	-.12
RM	691	.04	.02	.02	.11	.10	.03	-.06	-.20
SK	154	.23	.19	.15	.29	.04	.03	-.05	-.35

[a]The "lambda-related scales" are the difference between an individual's highest lambda score and his score on a particular lambda scale.

[b]Because of the coding systems used, negative correlations indicate a positive relationship between interests and satisfaction for Clark's scales (i.e., the more interest, the greater the job satisfaction).

Table 17

Biserial Correlations of Clark's Area Scales
with Job Satisfaction

Rating	Sample Size	Mechanical	Health Service	Office Work	Electronics	Food Service	Carpentry	Sales-Office	Clean Hands	Outdoors
AC	106	.24	.15	-.31	.15	.11	.19	.22	-.22	.00
AE	125	-.21	.22	-.02	.31	-.13	.00	.17	.12	-.14
AO	35	.17	-.17	.03	.39	.25	-.36	.10	.27	.04
BT	418	-.31	.05	.22	-.15	-.01	-.03	.13	.21	-.19
CS	175	.14	.29	-.15	.00	-.20	-.17	-.02	-.07	-.09
DP	92	.11	.22	-.30	-.17	-.04	.11	.04	-.09	.05
EM	274	-.35	.04	.25	-.22	-.01	.01	.10	.24	-.25
ET	397	-.23	-.04	.13	-.28	.02	.15	.18	.22	-.11
EN	203	-.16	.11	-.01	-.08	.02	-.08	-.02	.05	-.20
EO	30	-.29	-.25	.12	.06	.44	-.48	-.06	.30	-.04
HM	575	.12	-.21	-.01	.16	-.05	.06	-.13	-.01	.04
QM	98	.16	.14	-.19	.23	.19	-.14	-.13	-.09	.19
RM	691	.05	.17	-.21	-.01	.05	.07	.13	-.02	-.01
ST	132	-.27	-.16	.31	-.30	-.19	.16	.24	.27	-.18
SK	154	.23	.20	-.29	.17	-.03	-.05	.07	-.33	-.03

Clark's Area Scale

Notes.

1. Because of the coding systems used, negative correlations indicate a positive relationship between interests and satisfaction for Clark's scales (i.e., the more interest, the greater the job satisfaction).

2. Appropriate correlations have been underlined for those ratings having a highly relevant area scale.

31

Summary of Results

Results of this study indicate that:

1. The lambda scales were quite effective in classifying men from the cross-sectional sample into ratings where they were known to be satisfied. When the classification decision was between the individual's own rating and each of the other 14 ratings taken one at a time, 82 percent[9] were correctly placed. When scores on all 15 scales were considered simultaneously, 31 percent were accurately classified. Of the satisfied men, 76 percent scored high on the scale for their rating and 31 percent obtained their highest score on the relevant scale.

The scales also met other logical tests, such as that satisfied individuals in a rating score higher on their own scale than satisfied individuals in other ratings score on that scale.

2. Results in the longitudinal sample were less promising but still better than chance: 59 percent of satisfied men scored high on the scale for their rating, although only 15 percent obtained their highest score on that scale and would have been correctly classified based upon it. Further, 72 percent would have been accurately placed if classifications were based on two ratings at a time.

3. Most satisfied rating groups in both the longitudinal and cross-sectional samples obtained their highest mean score on their own scale, although other rating groups sometimes scored still higher on that scale.

4. The lambda scales were highly related to job satisfaction in the cross-sectional sample, but less related in the longitudinal sample. In the cross-sectional sample, 76 percent of those who would choose the same rating and 45 percent of those who would choose a completely different rating scored high on the scale for their rating. Comparable figures for the longitudinal sample were 59 percent and 47 percent. When satisfied individuals were contrasted with dissatisfied individuals using each individual's single highest score, the differences between the satisfaction groups nearly disappeared in the longitudinal sample.

5. For most ratings, the lambda scales were not highly correlated with either "A" school grades or job performance.

6. The lambda scales were similar to Clark's occupational scales in their classification accuracy for pairs of ratings. They were similar to both Clark's occupational and area scales in their degree of relationship to job satisfaction.

---

[9]Percentages throughout this section are the median percentages across ratings.

CONCLUSIONS

The results of this research are roughly comparable to those obtained by Abrahams, Lacey, Lau, and Neumann in their various studies using Clark's NVII scales. It thus appears that the lambda method applied to current NVII data has yielded little improvement over the previous NVII scales, although scales constructed using the men-in-general method and the current data might have fared better.

In general, the use of lambda scales for recruit classification would be expected to yield an average improvement of about 6 percent in the number of individuals who would indicate job satisfaction after 2 to 3 years in their rating.

RECOMMENDATIONS

Based on results of this study and the fact that the lambda scales require a type of centralized computer scoring that would be difficult to implement under the current Navy classification system, it is recommended that future Navy efforts in the development of interest measures be coordinated with interest measurement work in the other Armed Services. An interest inventory incorporating a more convenient scoring method could be devised for use by all services and could be administered along with the joint service aptitude battery, the ASVAB. Scores could then be derived specifically for the occupations of each service. This would reduce duplication of effort and testing time and would benefit the appropriate placement of recruits into satisfying military occupations.

REFERENCES

Abrahams, N. M., Lau, A. W., & Neumann, I. An analysis of the Navy Vocational Interest Inventory as a predictor of school performance and rating assignment (Res. Rep. 69-11). San Diego: U.S. Naval Personnel Research Activity, October 1968. (NTIS No. AD-681 044)

Clark, K. E. The vocational interests of nonprofessional men. Minneapolis: University of Minnesota Press, 1961.

Clemans, W. V. An index of item-criterion relationship. Educational and Psychological Measurement, 1958, 18, 167-172.

Dann, J. E., & Abrahams, N. M. Occupational scales of the Navy Vocational Interest Inventory: I. Development (NPRDC Tech. Rep. 74-4). San Diego: Navy Personnel Research and Development Center, October 1973. (a) (NTIS No. AS-770 558)

Dann, J. E., & Abrahams, N. M. Occupational scales of the Navy Vocational Interest Inventory: II. Reliability (NPRDC Tech. Rep. 74-5). San Diego: Navy Personnel Research and Development Center, October 1973. (b) (NTIS No. AD-770 557)

Kuder, G. F. Occupational Interest Survey General Manual. Chicago: Science Research Associates, 1968.

Lau, A. W., & Abrahams, N. M. Area scales of the Navy Vocational Interest Inventory as predictors of school performance and rating assignment (Res. Rep. 70-1). San Diego: U.S. Naval Personnel Research Activity, July 1969. (NTIS No. AD-694 933)

Lau, A. W., & Abrahams, N. M. The stability of scores on the Navy Vocational Interest Inventory (Res. Rep. 70-17). San Diego: Naval Personnel and Training Research Laboratory, March 1970. (NTIS No. AD-703 623)

Lau, A. W., & Abrahams, N. M. Reliability and predictive validity of the Navy Vocational Interest Inventory (Res. Rep. 71-16). San Diego: Navy Personnel and Training Research Laboratory, February 1971. (NTIS No. AD-721 075)

Lau, A. W., Lacey, L. A., & Abrahams, N. M. An analysis of the Navy Vocational Interest Inventory as a predictor of career motivation (Res. Rep. 69-27). San Diego: U.S. Naval Personnel Research Activity, June 1969.

Strong, E. K. Vocational interests of men and women. Stanford: Stanford University Press, 1943.

Preceding Page Blank

REFERENCE NOTES

1. Dann, J. E. The relationship between aptitudes and interests for predicting "A" school achievement (NPRDC Ltr. Rep.). San Diego: Navy Personnel Research and Development Center, August 1974.

2. Dann, J. E., & Abrahams, N. M. Manual for the Navy Vocational Interest Inventory. Unpublished, Navy Personnel Research and Development Center, 1974.

Preceding Page Blank

37

APPENDIX

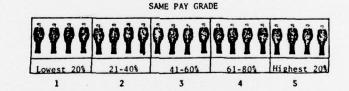PERFORMANCE EVALUATION REPORT (VOC-1)

APPENDIX

PERFORMANCE EVALUATION REPORT (VOC-1)

Your help and about five minutes of your time are needed for a research project designed to evaluate vocational interest inventories for possible use in assigning recruits to the ratings in which they are likely to perform best. A sample of Navy men has already completed the interest inventories, and you and other supervisors of these men are being contacted to find how well the men perform their jobs. The information obtained will be used for research purposes only and will be available only to research analysts. The man you evaluate in this questionnaire will not be harmed or helped in any way by what you say, but the Navy's personnel classification program will be helped.

Please answer the questions as carefully as possible. If the man is no longer under your supervision, fill out this questionnaire for the time he was under your supervision. When you have completed the questionnaire, fold and staple it (or seal it in an envelope if desired) and return it to the representative of your Command who gave it to you. He will forward it to the Naval Personnel and Training Research Laboratory.

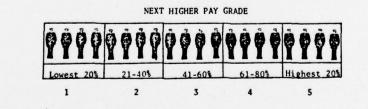| Complete the following information concerning the **man** **being** **evaluated**:	Complete the following information concerning you, the **supervisor**:
NAME: _____	YOUR SERVICE NUMBER: _____
SERVICE NUMBER: _____	YOUR PAY GRADE: _____
PAY GRADE (Circle one) E2 F3 E4 E5 E6	YOUR RATING: _____
RATING: _____	FOR HOW MANY MONTHS HAVE YOU BEEN IN THIS RATING? ____
	FOR HOW MANY MONTHS HAVE YOU SUPERVISED THE MAN YOU ARE EVALUATING? _____

The row of men below represents all men you have supervised and worked with who are in the same rating and pay grade as the man you are evaluating. They are arranged into five groups in order of OCCUPATIONAL SKILL AND EFFICIENCY, from lowest 20% to highest 20%. Considering the occupational skill and efficiency of the man you are evaluating, in which of the five groups would you place him? Circle the number under the group in which you would put this man.

SAME PAY GRADE

1.

Lowest 20%	21-40%	41-60%	61-80%	Highest 20%
1	2	3	4	5

The row of men below represents the occupational skill and efficiency for those men in the same rating, but the next higher pay grade than the man you're evaluating. (For example, if you're evaluating a Yeoman 3, this row represents the skill and efficiency of a Yeoman 2.) Considering the OCCUPATIONAL SKILL AND EFFICIENCY of this man right now, which of the five groups is his performance comparable to? Again, circle the appropriate number.

NEXT HIGHER PAY GRADE

2.

Lowest 20%	21-40%	41-60%	61-80%	Highest 20%
1	2	3	4	5

DISTRIBUTION LIST

Assistant Secretary of the Navy (MRA&L)
Principal Deputy Assistant Secretary of the Navy (Manpower & Reserve Affairs)
Chief of Naval Operations (OP-987H), (OP-964D)
Chief of Naval Personnel (Pers-2B), (Pers-5), (Pers-10c), (Pers-2)
Chief of Naval Research (Code 450) (4)
Chief of Information (OI-2252)
Chief of Naval Education and Training (N-5), (00A), (003)
Chief of Naval Technical Training (Code 016)
Chief of Naval Education and Training Support
Chief of Naval Education and Training Support (01A)
Commander in Chief, U. S. Naval Forces, Europe (2)
Commandant of the Marine Corps (MPI-20)
Commander Training Command, U. S. Pacific Fleet
Commander Training Command, U. S. Atlantic Fleet (Code N3A)
Commanding Officer, Fleet Combat Training Center, Pacific
Commanding Officer, Fleet Combat Training Center, Pacific (Code 00E)
Commander, Naval Data Automation Command
Commanding Officer, Naval Education and Training Program Development
   Center (2)
Commanding Officer, Naval Development and Training Center (Code 0120)
Commanding Officer, Naval Aerospace Medical Institute (Library Code 12) (2)
Commanding Officer, Fleet Training Center, San Diego
Commanding Officer, Fleet Anti-Submarine Warfare Training Center, Pacific
Commander, Navy Recruiting Command (Code 20), (Code 50)
Officer in Charge, Navy Occupational Development and Analysis Center
Director of Navy Laboratories
Director, Training Analysis and Evaluation Group (TAEG)
Personnel Research Division, Air Force Human Resources Laboratory (AFSC),
   Brooks Air Force Base
Occupational and Manpower Research Division, Air Force Human Resources
   Laboratory (AFSC), Brooks Air Force Base
Technical Library, Air Force Human Resources Laboratory (AFSC),
   Brooks Air Force Base
Technical Training Division, Air Force Human Resources Laboratory,
   Lowry Air Force Base
Flying Training Division, Air Force Human Resources Laboratory,
   Williams Air Force Base
Advanced Systems Division, Air Force Human Resources Laboratory,
   Wright-Patterson Air Force Base
Program Manager, Life Sciences Directorate, Air Force Office of
   Scientific Research (AFSC)
Army Research Institute for the Behavioral and Social Sciences
Military Assistant for Training and Personnel Technology ODDR&E OAD(E&LS)
Director for Acquisition Planning, OASD(MRA&L)
Coast Guard Headquarters (G-P-1/62)
Library Operations Section, Library of Congress
Human Resources Development Division, U. S. Army Personnel Administration
   Combat Developments Activity
Defense Documentation Center (12)