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AUGUST 1986

**PILOT EVALUATION OF THE CAREER ASSESSMENT INVENTORY
FOR USE IN APPRENTICE PLACEMENT**

Joyce Dann Mattson

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1. Enclosure (1) describes the pilot test of a commercially available vocational interest inventory for possible use in helping to lower shipyard apprentice attrition. While the inventory related well to job satisfaction, it mainly reflected a general preference for blue collar work and did not discriminate adequately among shipyard trades to be useful for apprentice job assignment. Work with the inventory was therefore discontinued.
2. This report is being distributed to document work of interest to Navy offices and researchers concerned with similar operational and methodological issues. The point of contact for further information about this research is Joyce Mattson, (619) 225-2408 or AV 933-2408.

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**PILOT EVALUATION OF THE CAREER ASSESSMENT INVENTORY
FOR USE IN APPRENTICE PLACEMENT**

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<p>→ The purpose of this project was to pilot-test a commercially available vocational interest inventory for possible use in shipyard apprentice placement. The inventory (the Career Assessment Inventory) and a job satisfaction questionnaire were administered to 312 first-year apprentices. Analyses indicated that the inventory related well to job satisfaction but could not discriminate adequately among people satisfied by work in different shipyard trades. For this reason, it was not recommended for use in differential assignment. Inventory detection of blue collar interests in general has some potential usefulness for counseling shipyard applicants.</p>			
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SUMMARY

Problem

Approximately one-third of people in the Navy shipyards' apprentice training programs attrite before completing their 4-year programs. Some of these individuals are academic failures; others say that they simply dislike their particular apprenticeships or the shipyard environment. In either case, the attrition is undesirable and costly.

Objective

The objective of this research was to pilot test a commercially available vocational interest inventory for possible use by apprentice applicants and shipyard trade representatives in improving apprentice assignments.

Approach

The Career Assessment Inventory (CAI) was selected because it is among the more technically sound of the commercial instruments and its scales cover trades occupied by about two-thirds of shipyard apprentices. The CAI and a job satisfaction questionnaire were administered to 312 first-year apprentices with no previous experience in their trades, and the information was analyzed to determine whether:

1. A sufficient percentage of apprentices are likely to obtain high enough scores on scales relevant to shipyard trades to meet shipyard quotas and therefore warrant the inventory's use for apprentice applicant guidance.
2. Scores on relevant inventory scales relate to job satisfaction.
3. The inventory can differentiate between people who are satisfied in different apprenticeships.
4. The inventory's use could potentially improve the placement system.

Results and Discussion

Results suggest that:

1. About three-quarters of applicants are likely to obtain high scores on one or more of the CAI's 12 shipyard-related scales, and that individuals without high scores are more often dissatisfied.
2. Most of the CAI scales relevant to shipyard trades relate well to job satisfaction, with the scale most relevant to each specific apprenticeship showing only a slightly higher relationship to this criterion than the remaining shipyard-related scales. Most of the relationship results from individuals having blue collar interests in general rather than interest in any particular apprenticeships.
3. The CAI scales differentiate poorly between different shipyard occupations, limiting their usefulness for differential placement.
4. The blue-collar scales of the CAI are more highly related to job satisfaction than applicants' expressed preferences, suggesting their potential for improving the level of job satisfaction among the trades.

Recommendations

1. The existing CAI scales should not be used for apprentice guidance or placement into the specific trades within shipyard work (e.g., electrician vs. painter).
2. If the CAI is to be used at all, its best use is to counsel shipyard applicants who lack blue collar interests to carefully reconsider their choice of shipyard work.

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INTRODUCTION

Problem and Background

Under the present shipyard apprentice assignment system, thousands of individuals apply each year to enter the 50 or so apprenticeship programs at naval shipyards. These individuals complete an aptitude battery, and those scoring highest within each shipyard's geographic area may continue applying.

At most shipyards, these pre-screened individuals must then express job preferences based on information received through job fairs, handouts, slide presentations, or other means. They are typically interviewed by shipyard representatives to assess their motivation and suitability for different trades, and assignment decisions are made sequentially starting with the candidate whose combined test and veteran's preference score is highest. This individual may be offered his or her preference, may be offered an alternate apprenticeship, or may be passed over in favor of the next candidate. The assignment procedure continues, working downward through the list of candidates until all apprenticeships are filled. (In practice, assignments are often complicated by such factors as approximate quotas for merit promotion candidates and severe restrictions on the number of individuals who can be passed over.)

While many appropriate assignments are made with this system, candidates often cannot assimilate enough information about the many apprenticeships to make good career choices. Instead, many may base their preferences on such factors as friends' or relatives' recommendations. From the organization's side, only limited information can be gathered in the brief candidate interviews, and assignments often result from negotiations among apprenticeship program directors competing for able candidates. The cost of the resulting mismatches is apprentice dissatisfaction and turnover as well as unnecessary recruiting and training costs.

At present, it is not unusual for only 5 to 10 percent of apprentice applicants to be selected, and for one-third of those selectees to attrite from their apprenticeships for academic or motivational reasons. Attempts are being made to reduce the academic attrition by incorporating a new ability test into the apprentice selection process. The present research, however, attempted to reduce motivational attrition by evaluating the potential of a vocational interest inventory to help apprentice applicants select trades consistent with their vocational interests.

Objective

This pilot project was designed to determine whether a commercially available vocational interest inventory has the statistical properties to be useful in shipyard apprentice assignment. Specifically:

1. Are most applicants likely to obtain high scores on shipyard-related scales of the inventory, demonstrating interest in a shipyard apprenticeship?
2. Does the inventory relate to job satisfaction, the available criterion which would appear most closely related to motivational attrition?
3. Can the inventory differentiate between incumbents in different apprenticeships?

4. Can the inventory improve upon the present assignment system?

Several limitations of this project are related to its nature as a pilot investigation and should be noted. First, incumbents were tested, rather than the applicants to whom the inventory would be applied operationally. Second, the intermediate research criterion of job satisfaction is used as a surrogate for the real criterion of interest--job tenure. Third, the study uses a concurrent rather than a predictive research design. Given these limitations, negative results would indicate that the interest inventory would probably not be useful for apprentice assignment. Positive results would suggest that the inventory has promise, but not necessarily that it would be effective for predicting job tenure for a group of applicants.

Related Research

Research has already demonstrated that diverse occupational groups can be differentiated based on their vocational interests (e.g., Campbell, 1971, 1977; Clark, 1961; Kuder, 1968; Strong, 1943). Individuals in both professional and trade-level occupations tend to select fields in which they have a high level of measured interest and to remain only briefly in fields with which their interests are inconsistent (Campbell, 1971, 1977; Clark, 1961; Kuder, 1968; Strong, 1943). Individuals are also more satisfied in occupations consistent with their vocational interests (e.g., Alley, Wilbourn, & Berberich, 1976; Dann & Abrahams, 1977). These results suggest that if a vocational interest inventory could differentiate adequately among the relatively homogeneous groups of occupations that shipyards include, it could be useful in apprentice assignment.

APPROACH

Instrument

The Career Assessment Inventory (CAI) was selected for this effort because it is among the more technically sound of the commercial interest inventories and it contains more scales related to shipyard occupations than its competitors.

The inventory consists of 305 items tapping interest in different activities and occupations. It includes 91 scales derived using the men-in-general method (Johansson, 1982) to compare an individual's interests with those of satisfied members of 91 primarily noncollege occupational groups.¹ Twelve of these occupational groups were judged similar to shipyard trades by a majority of the shipyards' Apprentice Program Administrators, and their scales were extracted as "shipyard-related scales" for use in this study. Table 1 shows the 12 shipyard-related scales and the shipyard trades which are similar to each. In all, the 12 scales cover 22 apprenticeships representing two-thirds of the shipyard apprentice population. (Appendix Exhibits A-1 through A-3 show a CAI booklet, a sample score profile, and a questionnaire used to gather Apprentice Program Administrator judgments.)

¹Each scale yields a t-score having a mean of 50 and a standard deviation of 10 for the occupational group on which that scale is based.

Table 1
Apprenticeships Covered by Shipyard-Related CAI Scales

CAI Scale	Related Shipyard Occupations ^a
Auto mechanic	Automotive mechanic, heavy mobile equipment mechanic
Camera repair technician	Optical instrument repairer
Carpenter	Carpenter, woodcrafter, boatbuilder, shipwright
Electrician	Electrician, electrician (HV), electrical equipment repairer ^b
Machinist	Machinist, marine machinery mechanic, propeller machinist, production machinery mechanic
Painter	Painter
Pipefitter/plumber	Pipefitter
Radio/TV repairer	Electronics mechanic ^b , electronic industrial controls mechanic ^b
Sheet metal worker	Sheet metal mechanic
Telephone repairer	Instrument mechanic, electrical equipment repairer ^b
Tool/die maker	Toolmaker
Electronic technician	Electronic measurement equipment mechanic, electronics mechanic ^b , electronic industrial controls mechanic ^b

^aApprenticeships considered very similar or somewhat similar to each CAI scale occupation by a group of eight subject-matter experts from the shipyards.

^bShipyard occupations that are related to more than one CAI scale.

Subjects

A sample of 312 apprentices with no more than one year's experience in their trades was administered the CAI and a job satisfaction questionnaire (Appendix Exhibit A-4). First-year apprentices were chosen because they had recently completed the application process and, of incumbent groups, would be expected to respond to the inventory most like the applicants with whom it would be used operationally. The individuals identified for questionnaire administration were distributed across apprenticeships to provide (1) a representative cross-section of apprentices (i.e., a General Apprentice Sample of 104 individuals) and (2) larger subsamples of individuals in eight apprenticeships. Table 2 shows the composition of the total sample, the General Apprentice Sample, and the eight larger apprenticeship subsamples in terms of the apprenticeships represented. It also shows the shipyard, age, sex, and job satisfaction of individuals in the total sample.

Table 2
Description of the Samples

Variable	Category	Total Sample (N=312)	General Apprentice Sample (N=104)	Eight Larger Apprenticeship Samples ^a
Apprenticeship	Boilermaker	38	5	38
	Electrical equipment repairer	1	1	
	Electrician	46	13	46
	Electronics mechanic	11	10	
	Fabric worker	2	2	
	Heavy mobile equipment mechanic	1	1	
	Insulator	19	4	19
	Machinist	33	14	33
	Marine machinery mechanic	2	2	
	Metals inspector	3	2	
	Optical instrument repairer	2	1	
	Painter	24	4	24
	Pipefitter	8	8	
	Plastic fabricator	1	1	
	Production machinery mechanic	1	1	
	Rigger	37	5	37
	Sheet metal mechanic	33	8	33
	Shipfitter	6	6	
	Shipwright	4	3	
	Toolroom mechanic	2	1	
Welder	35	10	35	
Wood and plastics installer	2	2		
Shipyard	Charleston	22		
	Long Beach	24		
	Norfolk	57		
	Pearl Harbor	36		
	Philadelphia	53		
	Portsmouth	40		
	Puget Sound	39		
	Marine Island	41		
Sex	Male	240		
	Female	68		
Age	18 to 20	66		
	21 to 25	79		
	26 to 30	76		
	31 to 35	59		
	36 or older	22		
Job satisfaction	Very satisfied	109		
	Somewhat satisfied	115		
	Neutral	48		
	Somewhat dissatisfied	3		
	Very dissatisfied	7		

^aThere is some overlap of individuals in the General Apprentice Sample and the eight larger apprenticeship samples.

Analyses

Analyses were designed to answer four questions:

1. Are most applicants likely to obtain high scores on one or more of the CAI's shipyard-related scales? For the scales to be useful in classification, most individuals should have high enough scores that recommendations could be made about appropriate placements for them.

To answer this question, the number of high scores obtained by each individual in the General Apprentice Sample on the 12 shipyard-related scales was determined. Individuals with no high scores on these scales were examined more closely to determine whether their interests were consistent with any of the remaining 79 (non-shipyard-related) occupations covered by the CAI and thus whether they might be better suited to other occupational settings.

2. Do the relevant inventory scales relate to job satisfaction? Job tenure, the real criterion of interest, was not available for incumbents in this pilot test, and job satisfaction was used as the most feasible interim alternative. If the inventory does not relate to satisfaction in different fields, it will likely be of limited usefulness for apprentice assignment.

To address this question, (a) the job satisfaction of individuals in the General Apprentice Sample with high scores on the shipyard-related scales was compared with the satisfaction of those with low scores, and (b) the mean interest scores of satisfied and dissatisfied members of the eight larger occupational groups were contrasted.²

3. Can the inventory differentiate among members of diverse apprenticeships? Without the ability to differentiate, the inventory would be unable to suggest which particular apprenticeships would be most appropriate for an individual.

This question was addressed by determining: (a) the shipyard-related scales on which four of the larger apprenticeships obtained their highest mean scores, (b) the percentage of these individuals obtaining high scores on the scale corresponding to their own apprenticeship, (c) the overlap of scores on the corresponding scale between satisfied individuals in each of the four apprenticeships and the total sample of satisfied apprentices, and (d) the scale intercorrelations.

4. How would the inventory's use compare with the present assignment system, and could it improve upon that system? The CAI scales were first compared with the expressed preferences of the apprentices for their ability to relate to job satisfaction. The scales' validities when combined with preferences in the statistically optimal way were then assessed to determine the maximum possible gain from their use. If this increment were slight, there would be little point in implementing the scales, since any operational gains from their use to modify preferences would be even smaller.

²Job satisfaction for these analyses was coded so that the "Satisfied" category included individuals who were either very satisfied or somewhat satisfied, and the "Dissatisfied" category included individuals who were neutral, somewhat dissatisfied, or very dissatisfied.

RESULTS AND DISCUSSION

Distribution of High Scores

Table 3 shows that nearly three-quarters of the General Apprentice Sample scored high (i.e., 45 or above as suggested by Johansson, 1982) on one or more of the 12 shipyard-related scales. By extrapolation, this suggests that most applicants would obtain high scores on these scales and could be counseled based on them. Of the 26 percent with no high shipyard-related scores, it is uncertain what proportion would be interested in shipyard trades not covered by the 12 shipyard-related scales (e.g., insulator) and what proportion would simply not be interested in any shipyard occupations. Almost all of these individuals scored high on one or more of the 79 non-shipyard-related scales (see Table 4).

Relationship to Job Satisfaction

Table 5 shows that the satisfaction rate of individuals in the General Apprentice Sample with high scores on shipyard-related scales was almost 20 percent higher than the satisfaction rate of individuals without high scores ($p < .05$).

Looking at the relationship from a different perspective, Table 6 indicates that satisfied individuals in the four apprenticeships having relevant scales scored considerably higher on the scales for their trades than did dissatisfied individuals. Although these differences were not statistically significant with the small samples used, they were usually a standard deviation or more in size (see Table 7) and exhibited a very consistent trend across apprenticeships. However, the relationship between job satisfaction and CAI scores applies almost as strongly to the 11 non-relevant scales as to the relevant scales. (For example, satisfied and dissatisfied electricians scored about two standard deviations apart on the Electrician scale, but also about two standard deviations apart on the Auto Mechanics, Machinist, and other non-relevant blue collar scales.) These results suggest that the overall level of scores on the shipyard-related scales--that is, blue collar interests in general--may account for most of the relationship of the shipyard scales to shipyard job satisfaction.

Ability to Differentiate Among Apprenticeships

Tables 6, 8, 9, and 10 provide information on the shipyard-related scales' ability to differentiate among apprenticeships. Table 6 shows that satisfied individuals did not necessarily obtain their highest scores on the scales for their own apprenticeships. For example, satisfied sheet metal mechanics obtained higher mean scores on nine other scales than they did on their own scale. Table 8 shows that more of them scored high on the Painter scale than on the Sheet Metal Mechanic scale, and that only 29 percent of sheet metal mechanics scored high on their own scale. The other three apprenticeships yielded similar discouraging results. This difficulty is illustrated still further in Table 9, which shows the overlaps (i.e., percentage of scores in one group matched by scores in the other group) on the relevant scales between satisfied members of four apprenticeships and the total sample of satisfied individuals.

The lowest overlap in Table 9 is 78 percent, a figure indicating little support for the scale's ability to differentiate among apprenticeships. Intercorrelations among the shipyard-related scales in Table 10 are also very high. These results taken together indicate that the 12 shipyard-related scales of the CAI would not be useful for differential classification.

Table 3

Distribution of Number of High (> 45) Scores on Shipyard-related Scales in the General Apprentice Sample (N = 104)

Number of high scores on shipyard-related CAI scales	Percentage of sample	
0	26.0	
1	11.5	
2	6.7	
3	6.7	
4	3.8	
5	1.9	
6	3.8	73.7
7	5.8	
8	6.7	
9	6.7	
10	6.7	
11	6.7	
12	6.7	

Table 4

Percentage of Apprentices with no High (> 45) Scores on Shipyard-related Scales who had High Scores on Other CAI Scales (N = 27)

Number of high scores on other CAI scales	Percentage of sample	
0	3.7	
1	18.5	
3	18.5	
4	18.5	
5	11.0	
6	3.7	
7	7.4	96.1
8	3.7	
9	3.7	
11	3.7	
13	3.7	
20	3.7	

Table 5
 Percentage of Satisfied Apprentices in the General Apprentice
 Sample^a as a Function of High (> 45) Scores
 on Shipyard-related Scales
 (N = 104)

Group	N	% Satisfied
No high ^a scores on shipyard- related scales	27	59 ^b
At least 1 high score on shipyard- related scales	77	78 ^b

^aThe General Apprentice Sample consisted of apprentices from all shipyard trades.

^bThe z-score difference in satisfaction rates between the two groups is statistically significant, $p < .05$.

Table 6

Mean CAI Scores of Satisfied and Dissatisfied Individuals in Different Apprenticeships

Apprenticeship	Satisfaction Level	N	CAI Scale											
			Auto Mechanic	Camera Repair Technician	Carpenter	Electrician	Machinist	Painter	Pipefitter/Plumber	Radio/TV Repair	Sheetmetal Worker	Telephone Repair	Tool/Die Maker	Electronic Technician
Electrician	Sat	40	39.0	42.8	40.5	43.9	39.7	40.4	43.5	43.5	38.0	50.0	42.2	43.0
	DSat	6	20.7	29.3	23.0	24.3	19.2	22.8	24.7	26.8	13.8	35.3	18.7	27.7
Machinist (Inside)	Sat	27	36.6	38.8	38.1	36.1	38.1	39.0	41.4	35.4	38.6	41.0	39.3	34.8
	DSat	6	25.2	33.3	25.0	27.7	25.5	28.5	26.8	33.3	18.8	36.8	24.2	39.7
Painter	Sat	12	34.6	36.9	35.9	33.2	34.1	40.3	39.3	30.6	33.8	39.6	32.7	32.3
	DSat	12	28.9	31.3	30.8	30.1	28.2	32.0	33.4	28.8	26.0	36.2	27.2	32.3
Sheet Metal Mechanic	Sat	28	35.9	37.2	40.3	36.2	36.4	39.0	42.0	33.1	35.8	42.5	37.9	33.8
	DSat	5	26.0	33.6	28.8	28.6	22.8	29.0	29.6	29.8	19.8	40.8	24.0	33.6
Boilermaker	Sat	22	42.1	40.9	43.9	41.4	42.5	42.6	48.8	37.5	43.1	43.2	42.2	37.4
	DSat	16	36.1	36.6	35.8	37.7	34.6	33.3	37.6	39.6	33.1	44.4	34.9	40.7
Insulator	Sat	5	28.6	31.6	31.6	28.4	25.4	33.8	35.4	24.6	24.4	38.2	27.4	28.4
	DSat	14	27.1	31.2	26.5	28.1	24.7	29.6	29.8	32.2	25.1	35.1	25.3	30.9
Rigger	Sat	28	38.5	36.4	38.6	39.5	39.6	37.9	41.9	37.4	38.3	44.2	39.1	34.5
	DSat	9	34.8	33.3	39.3	36.0	36.1	38.3	36.1	35.4	31.3	41.0	35.6	35.7
Welder	Sat	26	43.0	42.5	44.3	41.4	44.5	43.0	47.1	39.7	43.8	44.2	45.2	39.1
	DSat	9	27.7	32.1	27.6	29.2	26.7	27.4	31.1	30.2	21.4	36.2	25.6	35.6

Note. Results on the relevant scales are circled.

Table 7
CAI Scale Standard Deviations of Satisfied and Dissatisfied Individuals in Different Apprenticeships

Apprenticeship	Satisfaction Level	N	CAI Scale											
			Auto Mechanic	Camera Repair Technician	Carpenter	Electrician	Machinist	Painter	Pipe-fitter/Plumber	Radio/TV Repair	Sheet-metal Worker	Telephone Repair	Tool/Die Maker	Electronic Technician
Electrician	Sat	40	11.6	9.6	11.0	10.8	12.3	10.0	10.7	9.6	13.0	7.6	14.5	9.9
	DSat	6	6.4	11.6	7.0	7.3	4.9	6.4	6.6	12.5	7.8	10.4	9.6	14.0
Machinist (Inside)	Sat	27	10.6	12.6	11.2	9.3	11.7	9.8	10.9	9.9	12.0	8.4	12.5	11.5
	DSat	6	7.7	16.5	9.4	11.9	9.1	8.1	8.2	16.1	8.1	12.8	9.0	20.5
Painter	Sat	13	12.7	9.2	11.3	11.6	11.4	8.3	11.4	13.2	13.1	11.1	12.2	10.1
	DSat	12	14.3	11.5	13.2	14.9	14.6	11.2	13.3	11.6	13.7	11.3	15.8	7.5
Sheet Metal Mechanic	Sat	28	10.3	10.7	10.7	10.2	11.7	11.2	9.7	10.5	11.9	8.3	12.5	8.5
	DSat	5	19.1	9.8	19.4	17.1	20.7	18.6	19.8	13.1	23.2	13.8	22.5	11.8
Boilermaker	Sat	22	8.7	11.6	8.3	7.9	8.6	8.4	7.9	9.7	7.3	7.9	8.9	14.4
	DSat	16	14.8	15.1	15.8	13.9	15.7	14.1	15.5	14.2	16.2	13.2	17.9	13.9
Insulator	Sat	5	17.6	13.7	13.3	16.6	15.7	12.9	11.3	19.5	12.3	14.4	14.7	9.1
	DSat	14	9.9	12.4	12.3	12.7	14.0	13.6	11.7	10.6	12.9	12.3	5.8	12.4
Rigger	Sat	28	9.0	11.1	11.8	9.0	10.0	10.0	10.3	8.2	11.0	8.1	11.6	11.8
	DSat	9	14.0	14.4	12.4	14.8	14.7	11.8	12.9	13.6	15.1	10.1	14.3	17.2
Welder	Sat	26	9.8	10.9	10.0	10.1	11.2	9.0	8.9	11.5	10.6	9.4	11.0	12.0
	DSat	9	14.6	16.0	13.3	14.4	15.4	16.7	14.3	17.7	14.4	13.5	16.0	16.6

Table 8

Percentage of Satisfied Individuals in Four Specialties with High (≥ 45) Scores on the Four Related CAI Scales

Apprenticeship	N	Scale			
		Electrician	Machinist	Painter	Sheet Metal Mechanic
Electrician	40	60	45	45	38
Machinist	27	19	30	37	33
Painter	12	8	17	17	17
Sheet Metal Mechanic	28	14	25	36	29

Note. Results on the relevant scales are circled.

Table 9

Overlap Between the Total Sample and Individuals in Each Apprenticeship on the Relevant Scale (Satisfied Apprentices Only)

Apprenticeship	Percent Overlap
Electrician	78
Machinist	95
Painter	91
Sheet Metal Mechanic	98

Table 10
CAI Scale Means, Standard Deviations, and Intercorrelations
(N = 104)

	Camera Repair Tech- nician	Carpen- ter	Elec- trician	Machin- ist	Painter	Pipe- fitter/ Plumber	Radio/ TV Repair	Sheet- metal Worker	Tele- phone Repair	Tool/Die Maker	Elec- tronic Tech- nician	Mean	S.D.
Auto Mechanic	.67	.83	.90	.93	.77	.90	.76	.91	.76	.92	.47	38.5	11.2
Camera Repair Technician		.72	.73	.73	.71	.73	.74	.66	.64	.75	.82	39.5	11.6
Carpenter			.80	.84	.88	.92	.60	.90	.65	.88	.42	39.3	11.7
Electrician				.90	.73	.87	.86	.85	.84	.88	.58	39.8	11.1
Machinist					.81	.89	.76	.90	.73	.95	.52	38.6	13.1
Painter						.82	.55	.82	.61	.83	.42	39.5	10.3
Pipefitter/ Plumber							.67	.94	.74	.91	.47	42.1	11.6
Radio/TV Repair								.65	.81	.75	.76	39.5	11.5
Sheet Metal Worker									.67	.92	.37	37.2	13.3
Telephone Repair										.76	.55	45.3	8.7
Tool/Die Maker											.52	39.5	14.1
Electronic Technician												37.9	12.2

Incremental Validity

Tables 11 and 12 compare the validities of the CAI scales with the validity of the present expressed-preference-based classification system and suggest the increase in validity which might be possible if the CAI were optimally used to augment expressed preference.³ As Table 11 indicates, the relevant CAI scale relates more strongly to job satisfaction than does preference (operationalized here as the correspondence between the individual's desired and actual assignment). However, this difference is not statistically significant. The general level of blue collar interests (computed as the mean score on the 12 shipyard-related scales), as well as the Navy enlisted scale of the CAI, related to job satisfaction almost as strongly as the relevant CAI scale. If preferences and CAI-tested interests were independently measured and optimally combined through multiple regression techniques as in Table 12, the correlation with job satisfaction could increase from .25 to .49--a significant increase. Most of this increase is attributable to the presence of general blue collar interests, which could be useful in selection but not in differential classification. On the other hand, if an interest inventory were used operationally, individuals would probably be counseled about their results, and would modify their preferences accordingly. These modified preferences would be expected to show validities greater than the current .25, but perhaps not as great as the .49 that might be obtained by an optimal combination of preferences and CAI-tested interests.

Table 11

Validity of Expressed Preference Versus CAI Scores
in Relation to Job Satisfaction
(Based on 163 individuals with a relevant CAI scale)

Predictor	Correlation with Job Satisfaction	% of Variance Accounted for
Preference ^a	.25	6
Relevant CAI scale	.39	15
Blue collar CAI interests	.35	12
Navy enlisted scale of CAI	.35	12

^aCorrespondence between the individual's actual and desired assignment.

³Expressed preference was coded "4" if the individual's assignment was his or her first choice, "3" if the second choice, "2" if the third choice, and "1" if the fourth or lower choice.

Table 12

Incremental Validity of the CAI in Relation
to Job Satisfaction
(Based on 163 individuals with a relevant CAI scale)

Predictors	Correlation with Job Satisfaction	% of Variance Accounted for
Preference	.25	6
Preference + blue collar	.44	19
Preference + blue collar + relevant CAI	.49	24

CONCLUSIONS

The results of this research suggest that:

1. About three-quarters of shipyard apprentice applicants are likely to obtain high scores on one or more of the CAI's 12 shipyard-related scales, and that individuals without high scores are more likely to be dissatisfied.

2. The CAI relates well to job satisfaction, with scales most relevant to each apprenticeship showing a slightly higher correlation with this criterion than the remaining shipyard-related scales.

3. The CAI differentiates poorly between shipyard occupational groups, limiting its usefulness for differential assignment.

4. The scales are more highly related than expressed preferences to the job satisfaction criterion, and, if used in combination with expressed preferences, could probably enhance the prediction of job satisfaction. However, most of this improvement would be attributable to identifying people with blue collar interests in general rather than interest in particular apprenticeships.

There are several caveats which should be noted, however, when generalizing the favorable part of these results to the apprentice placement situation. First, applicants might complete the CAI differently than the incumbents used here, altering the CAI's correlations with job satisfaction. Second, the relationships between the CAI and job satisfaction demonstrated here are concurrent rather than predictive. And third, the scales' favorable relationships with job satisfaction might not hold for the tenure criterion.

RECOMMENDATIONS

Based on these results:

1. The existing CAI scales should not be used for apprentice placement.
2. The CAI would be best used, if at all, to counsel individuals lacking blue collar interests regarding their chances of shipyard job satisfaction so that they could deselect from the application process if they desired.
3. The follow-on phases of this research effort should not be pursued.

REFERENCES

- Alley, W. E., Wilbourn, J. M., & Berberich, G. L. (December 1976). Relationships between performance on the Vocational Interest-Career Examination and reported job satisfaction. Lackland Air Force Base, TX: Air Force Human Resources Laboratory, Personnel Research Division.
- Campbell, D. P. (1971). Handbook for the Strong Vocational Interest Blank. Stanford: Stanford University Press.
- Campbell, D. P. (1977). Manual for the SVIB-SCII. Stanford: Stanford University Press.
- Clark, K. E. (1961). The vocational interests of nonprofessional men. Minneapolis: University of Minnesota Press.
- Dann, J. E., & Abrahams, N. M. (November 1977). Occupational scales of the Navy Vocational Interest Inventory: III. Relationship to job satisfaction, "A" school grades, and job performance (NPRDC Tech. Rep. 78-3). San Diego: Navy Personnel Research and Development Center. (AD-A046 754)
- Johansson, C. B. (1982). Manual for Career Assessment Inventory. Minneapolis: National Computer Systems.
- Kuder, G. F. (1968). Kuder Occupational Interest Survey general manual. Chicago: Science Research Associates.
- Strong, E. K. (1943). Vocational interests of men and women. Stanford: Stanford University Press.

APPENDIX
SAMPLE QUESTIONNAIRE AND PROFILE MATERIALS



Career Assessment Inventory™

By Charles B. Johansson, Ph.D.

**Weekly
Profile
Report**

GRID DIRECTIONS: Print your name in the boxes; last name first — skip a box, then as much of your first name as possible. Then blacken the circle below each box which corresponds to the letter in the box. Blacken the blank circles below empty boxes. In a similar manner, fill in the grids for ID Number (optional), Sex and Age. Either Name or ID Number grid must be completed

DIRECTIONS

1. Use a soft black lead pencil only and make a heavy, dark mark when filling in the circles.
2. If you make a mistake or change your mind please erase the mark fully and then fill in the correct circle.
3. Fill in the grids according to the directions above.
4. There is no time limit for completing the inventory, but it is best to work as rapidly as is comfortable for you.
5. This is an inventory to measure your vocational interests and not a test of your abilities. By comparing your answers with satisfied workers in various occupations, it is possible to determine whether you would like certain occupations or not.

The following pages list various activities, school subjects, and occupations, and you are asked to show your preferences for each. Your answers will be used to help find work and career areas that will be satisfying to you.

DO NOT WRITE IN THIS SPACE

29442

NAME											
A	A	A	A	A	A	A	A	A	A	A	A
E	B	B	B	B	B	B	B	B	B	B	B
C	C	C	C	C	C	C	C	C	C	C	C
D	D	D	D	D	D	D	D	D	D	D	D
F	F	F	F	F	F	F	F	F	F	F	F
G	G	G	G	G	G	G	G	G	G	G	G
H	H	H	H	H	H	H	H	H	H	H	H
I	I	I	I	I	I	I	I	I	I	I	I
J	J	J	J	J	J	J	J	J	J	J	J
K	K	K	K	K	K	K	K	K	K	K	K
L	L	L	L	L	L	L	L	L	L	L	L
M	M	M	M	M	M	M	M	M	M	M	M
N	N	N	N	N	N	N	N	N	N	N	N
O	O	O	O	O	O	O	O	O	O	O	O
P	P	P	P	P	P	P	P	P	P	P	P
Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
R	R	R	R	R	R	R	R	R	R	R	R
S	S	S	S	S	S	S	S	S	S	S	S
T	T	T	T	T	T	T	T	T	T	T	T
U	U	U	U	U	U	U	U	U	U	U	U
V	V	V	V	V	V	V	V	V	V	V	V
W	W	W	W	W	W	W	W	W	W	W	W
X	X	X	X	X	X	X	X	X	X	X	X
Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z

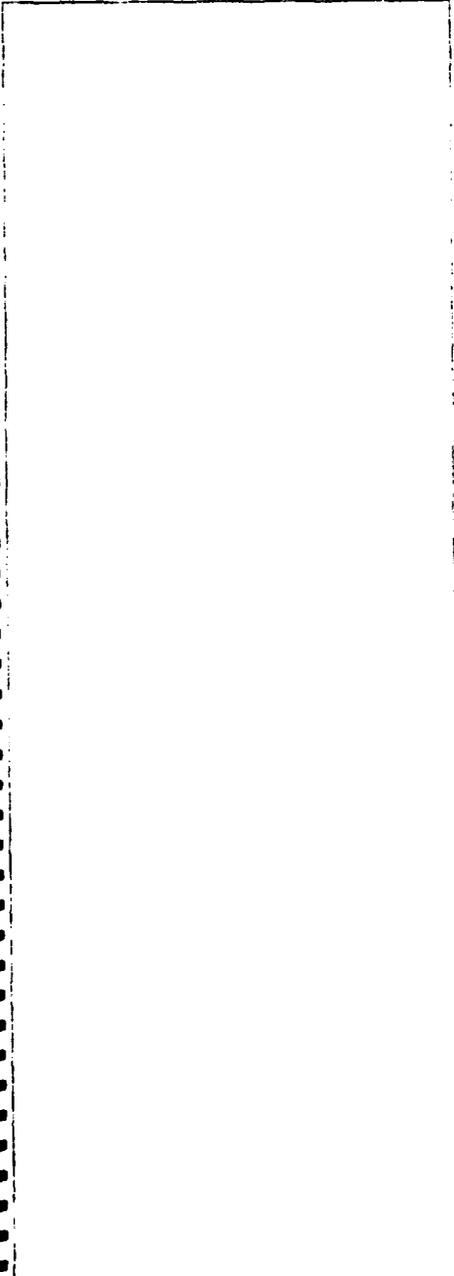
ID NUMBER										SEX	AGE		
0	0	0	0	0	0	0	0	0	0	MALE	<input type="radio"/>	0	0
1	1	1	1	1	1	1	1	1	1			0	0
2	2	2	2	2	2	2	2	2	2	FEMALE	<input type="radio"/>	0	0
3	3	3	3	3	3	3	3	3	3			0	0
4	4	4	4	4	4	4	4	4	4			0	0
5	5	5	5	5	5	5	5	5	5			0	0
6	6	6	6	6	6	6	6	6	6			0	0
7	7	7	7	7	7	7	7	7	7			0	0
8	8	8	8	8	8	8	8	8	8			0	0
9	9	9	9	9	9	9	9	9	9			0	0

Part I - ACTIVITIES

Many activities are listed below. For each of them show your interest.

- Blacken in the circle labeled "1" if you like the activity very much
- Blacken in the circle labeled "2" if you like it a little or you like it somewhat
- Blacken in the circle labeled "3" if you are indifferent or undecided or neutral
- Blacken in the circle labeled "4" if you dislike it somewhat
- Blacken in the circle labeled "5" if you dislike it very much

Show your interest for each type of activity. Just think about whether you would like it or dislike it, even though you may not have the training. Work fast. Make a heavy black mark for each item.



- 1 () () () () () Work with small hand tools
- 2 () () () () () Repair electrical wiring
- 3 () () () () () Work long hours
- 4 () () () () () Drive on long journeys
- 5 () () () () () Fix things around the house
- 6 () () () () () Work in the kitchen
- 7 () () () () () Do office work such as typing or filing
- 8 () () () () () Work in a hospital setting
- 9 () () () () () Operate a drill press
- 10 () () () () () Sell adding machines
- 11 () () () () () Write a novel
- 12 () () () () () Repair broken furniture
- 13 () () () () () Set type for a publication
- 14 () () () () () Plan meals
- 15 () () () () () Discuss politics
- 16 () () () () () Try new cooking recipes
- 17 () () () () () Sell clothes in a department store
- 18 () () () () () Type letters
- 19 () () () () () Change oil in an automobile
- 20 () () () () () Add numbers to get a total
- 21 () () () () () Repair electrical appliances
- 22 () () () () () Bake a cake
- 23 () () () () () Operate a printing press
- 24 () () () () () Go to a symphony music concert
- 25 () () () () () Study first aid
- 26 () () () () () Fix a broken radio
- 27 () () () () () Take care of a pet
- 28 () () () () () Work in a hardware store
- 29 () () () () () Sell life insurance
- 30 () () () () () Adjust a carburetor
- 31 () () () () () Take pictures with a camera
- 32 () () () () () Teach children to read
- 33 () () () () () Plant your own garden
- 34 () () () () () Draw graphs and charts
- 35 () () () () () Interview people for a job
- 36 () () () () () Help campaign for a politician
- 37 () () () () () Repair adding machines
- 38 () () () () () Sell merchandise by traveling from place to place
- 39 () () () () () Wait on tables in a restaurant
- 40 () () () () () Make things out of wood
- 41 () () () () () Direct a children's play
- 42 () () () () () Wash and wax floors
- 43 () () () () () Sort mail in a post office
- 44 () () () () () Drill in a military company
- 45 () () () () () Read science fiction stories
- 46 () () () () () Take photographs of wildlife
- 47 () () () () () Go canoeing
- 48 () () () () () Operate office machines (typewriters, adding machines)
- 49 () () () () () Play chess
- 50 () () () () () Repair antiques
- 51 () () () () () Keep a budget
- 52 () () () () () Do cross word puzzles
- 53 () () () () () Take care of children
- 54 () () () () () Make new friends
- 55 () () () () () Fix a clogged sink
- 56 () () () () () Plan a social affair for a religious group
- 57 () () () () () Entertain people in your home
- 58 () () () () () Work a cash register
- 59 () () () () () Tell stories to children
- 60 () () () () () Work at a desk
- 61 () () () () () Read popular mechanics magazines
- 62 () () () () () Travel to new places
- 63 () () () () () Grow flowers
- 64 () () () () () Give directions to a visitor who is lost
- 65 () () () () () Prepare dinner for guests
- 66 () () () () () Visit art galleries
- 67 () () () () () Play a musical instrument
- 68 () () () () () Plan the repainting of a room
- 69 () () () () () Work with a group on a project
- 70 () () () () () Prepare advertisements for a social event
- 71 () () () () () Do babysitting
- 72 () () () () () Be a guide for visitors
- 73 () () () () () Fix broken toys
- 74 () () () () () Work in an office
- 75 () () () () () Work out of doors
- 76 () () () () () Improve the health of others
- 77 () () () () () Attend a fashion show
- 78 () () () () () Pay attention to the latest hair styling

- 79 Enter a baking contest
- 80 Read books on science
- 81 Work with a chemistry set
- 82 Sing in a religious choir
- 83 Read romantic stories
- 84 Meet new people
- 85 Sell something to a customer
- 86 Write a story for a magazine
- 87 Act in a play
- 88 Take a modern dance class
- 89 Help crippled children exercise
- 90 Organize a group or club
- 91 Read editorial pages of newspaper
- 92 Pack dishes for shipment
- 93 Work in a small town
- 94 Help someone walk after surgery
- 95 Read adventure stories
- 96 Do volunteer work with a community organization
- 97 Do free-hand drawings and sketchings
- 98 Work in a factory
- 99 Go on a camping trip
- 100 Do welfare work
- 101 Interview people in a public opinion survey
- 102 Study musical arrangements
- 103 Study about social customs of a different country
- 104 Help a child with a spelling lesson
- 105 Work on the design of a new product
- 106 Pick out pictures to hang on a wall
- 107 Direct traffic
- 108 Help people at the scene of an accident
- 109 Shampoo hair in a beauty shop
- 110 Take the pulse of a hospital patient
- 111 Read sports pages in a newspaper
- 112 Program a computer to solve problems
- 113 Work on the sale campaign of a new product
- 114 Raise money for a charity
- 115 Make alterations (changes) on clothes

- 116 Study road maps for best way to travel
- 117 Keep up-to-date on current events
- 118 Plan a program to prevent forest fires
- 119 Teach swimming
- 120 Make flight reservations for airplane passengers
- 121 Prepare foods for special diets
- 122 Inspect hospital equipment for cleanliness
- 123 Study about people in different countries of the world
- 124 Make your own clothes from a pattern
- 125 Style hair
- 126 Coach a high school sports team
- 127 Trim dead branches from a tree
- 128 File books in a library
- 129 Inspect factory product for defects
- 130 Make a rug from yarn
- 131 Plant trees for a new forest
- 132 Fix a door bell
- 133 Build a radio from a kit
- 134 Make leather goods
- 135 March in a band
- 136 Type reports or assignments
- 137 Help someone solve personal problems
- 138 Travel to foreign countries
- 139 Work at a religious camp
- 140 Write poetry
- 141 Work on the advertisement of a new product
- 142 Give tickets for over-time parking
- 143 Make pottery
- 144 Find uses for old objects
- 145 Inspect people for security purposes
- 146 Repair electric power lines that are down
- 147 Go to an auction
- 148 Repair damage to an automobile body
- 149 Arrange flowers for a display
- 150 Walk through woods to find interesting plants
- 151 Greet visitors from out-of-town

Part II - SCHOOL SUBJECTS

As you did in Part I, show your interest in these school subjects, even though you may not have studied them.

- 152 Study Agriculture
- 153 Study Algebra
- 154 Study American Government
- 155 Study Arithmetic
- 156 Study Art
- 157 Study Astronomy (stars and planets)
- 158 Study Biology (plants and animals)
- 159 Study Bookkeeping
- 160 Study Carpentry
- 161 Study Chemistry
- 162 Study Creative Writing
- 163 Study Debate
- 164 Study Drafting
- 165 Study Ecology
- 166 Study Electronics
- 167 Study English Composition
- 168 Study Foreign Languages (Spanish, French, German)
- 169 Study General Business Methods
- 170 Study General Math
- 171 Study General Science
- 172 Study Geology (rocks and fossils)
- 173 Study Geometry
- 174 Study Health
- 175 Study History
- 176 Study Home Economics
- 177 Study Industrial Arts
- 178 Study Literature
- 179 Study Mechanical Drawing
- 180 Study Metal Working
- 181 Study Music
- 182 Study Office Practices
- 183 Study Penmanship
- 184 Study Photography
- 185 Study Physical Education
- 186 Study Physics
- 187 Study Poetry
- 188 Study Printing
- 189 Study Shop
- 190 Study Social Studies
- 191 Study Speech
- 192 Study Typing
- 193 Study Welding
- 194 Study Woodworking

Part III - OCCUPATIONS

For each occupation listed below, show whether or not you would like that kind of work. Do not think about the salary, or whether you would be good at the job, but whether you would like or dislike that type of work

- 195 Be an Actor/Actress
- 196 Be an Airline Steward/Stewardess
- 197 Be an Apartment Manager
- 198 Be an Architect
- 199 Be an Art Dealer
- 200 Be an Auto Racer
- 201 Be a Bank Cashier
- 202 Be a Bartender
- 203 Be a Barber
- 204 Be a Bill Collector
- 205 Be a Biologist
- 206 Be a Bookkeeper
- 207 Be a Bricklayer
- 208 Be a Bus Driver
- 209 Be a Butcher
- 210 Be a Cabinet Maker
- 211 Be a Camp Counselor
- 212 Be a Carpenter
- 213 Be a Cartoonist
- 214 Be a Cattle Rancher
- 215 Be a Cement Mason (smooths fresh concrete)
- 216 Be a Check-out Clerk in a Store
- 217 Be a Director of Religious Choir
- 218 Be a Circus Performer
- 219 Be a Comedian
- 220 Be a Computer Operator
- 221 Be a Construction Worker
- 222 Be a Cook in a Restaurant
- 223 Be a Courtroom Reporter
- 224 Be a Delivery Truck Driver
- 225 Be a Dog Trainer
- 226 Be a Driving Instructor
- 227 Be an Electrician
- 228 Be an Elementary School Teacher
- 229 Be a Farmer
- 230 Be a Fish and Game Warden
- 231 Be a Fashion Model
- 232 Be a File Clerk

- 233 Be a Firefighter
- 234 Be a Fish and Game Warden
- 235 Be a Florist
- 236 Be a Wildlife Manager
- 237 Be a Forest Ranger
- 238 Be a Funeral Director
- 239 Be a Gas Station Attendant
- 240 Be a Hair Stylist
- 241 Be a Heavy Equipment Operator (bulldozer, crane, earth mover)
- 242 Be a High School Counselor
- 243 Be a High School Teacher
- 244 Be a Hospital Orderly
- 245 Be a Hospital Records Clerk
- 246 Be a Hotel Manager
- 247 Be a House Painter
- 248 Be a Telephone Operator
- 249 Be an Interior Decorator
- 250 Be a Janitor/Janitress
- 251 Be a Jeweler
- 252 Be a Labor Union Leader
- 253 Be a Legal Secretary
- 254 Be a Library Clerk
- 255 Be a Life Insurance Salesperson
- 256 Be a Logger (lumberjack)
- 257 Be a Magician
- 258 Be a Mail Carrier
- 259 Be a Manager of a Pet Shop
- 260 Be a Marriage Counselor
- 261 Be a Mechanic
- 262 Be a Medical Technician
- 263 Be a Military Officer
- 264 Be a Minister, Priest, or Religious Leader
- 265 Be a Missionary/Religious Ambassador
- 266 Be a Movie Projector Operator
- 267 Be a Musician
- 268 Be a Newspaper Reporter
- 269 Be a Nurse
- 270 Be a Nursery School Helper
- 271 Be a Nurse's Aide
- 272 Be a Photographer
- 273 Be a Playground Director
- 274 Be a Plumber
- 275 Be a Police Officer
- 276 Be a Post Office Clerk
- 277 Be a Printer

- 278 Be a Private Detective
- 279 Be a Private Secretary
- 280 Be a Radio/TV Announcer
- 281 Be a Railroad Engineer
- 282 Be a Real Estate Salesperson
- 283 Be a Receptionist in an Office
- 284 Be a Recreation Leader
- 285 Be a Restaurant Cook
- 286 Be a Scout Troop Leader
- 287 Be a Sculptor
- 288 Be a Security Guard
- 289 Be a Sheet Metal Worker
- 290 Be a Short Order Cook
- 291 Be a Social Worker
- 292 Be a Stage Manager
- 293 Be a Stenographer (takes shorthand)
- 294 Be a Stock Room Clerk
- 295 Be a Supervisor
- 296 Be a Taxi-cab Driver
- 297 Be a Teacher's Aide
- 298 Be a Ticket Agent
- 299 Be a Tour Guide
- 300 Be a Travel Bureau Agent
- 301 Be a Truck Driver
- 302 Be a Waiter/Waitress
- 303 Be a Welder
- 304 Be a Veterinarian Assistant
- 305 Be a Zoo Attendant

29442

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MINNEAPOLIS, MN 55440

SHIPYARD SME QUESTIONNAIRE

Name _____
 Last First MI

Shipyard _____ Your Title _____

Phone Number(s): Autovon _____ Commercial _____

The purpose of this questionnaire is to establish similarities between shipyard occupations and non-Navy trades (that is, trades as practiced in various industrial settings outside of Naval shipyards). Fourteen non-Navy trades are listed. For each, review the enclosed "List of Shipyard Occupations" and determine which of them are related to the non-Navy trade. That is, which shipyard occupations have tasks and working conditions which are very similar or somewhat similar to the non-Navy trade.

Write the 2-DIGIT CODES for those related occupations in the appropriate columns.

EXAMPLES

<u>NON-NAVY TRADE</u>	<u>VERY SIMILAR SHIPYARD OCCUPATIONS</u>	<u>SOMEWHAT SIMILAR SHIPYARD OCCUPATIONS</u>
Ex.1: Construction Equipment Mechanic	28	35
Ex.2: Cable Splicer	16,17	None

Example 1 indicates that Construction Equipment Mechanic is very similar to the shipyard occupation of Heavy Mobile Equipment Mechanic (code 28) and somewhat similar to the shipyard occupation of Marine Machinery Mechanic (code 35).

Example 2 indicates that Cable Splicer is very similar to the shipyard occupations of Electrician (code 16) and High Voltage Electrician (code 17). There are no shipyard occupations to which it is somewhat similar.

Now please turn to the back of this sheet and write your answers. Remember that you are matching non-Navy trades (that is, trades as they are done by people who work for non-Navy organizations) with shipyard occupations.

LIST OF SHIPYARD OCCUPATIONS

<u>2-digit code</u>	<u>Shipyards Occupation</u>
2	Air Conditioning Equipment Mechanic
7	Automotive Mechanic
8	Boatbuilder
9	Boiler Plant Equipment Mechanic
10	Boiler Plant Operator
11	Boilermaker
12	Carpenter
13	Coppersmith
14	Electric Power Controller
15	Electrical Equipment Repairer
16	Electrician
17	Electrician (High Voltage)
20	Electronic Industrial Controls Mechanic
21	Electronic Measurement Equipment Mechanic
22	Electronics Mechanic
23	Electroplater
24	Fabric Worker
25	Foundry Molder
28	Heavy Mobile Equipment Mechanic
29	Industrial Equipment Mechanic
30	Instrument Mechanic
31	Insulator
33	Machinist (Inside)
34	Machinist (Outside)
35	Marine Machinery Mechanic
37	Nelter
38	Metal Forger
39	Metals Inspector
40	Milling Worker
43	Optical Instrument Repairer
44	Ordnance Equipment Mechanic
45	Painter
46	Patternmaker
47	Pipefitter
49	Plastic Fabricator
51	Production Machinery Mechanic
52	Propeller Machinist
53	Rigger
55	Sheet Metal Mechanic
57	Shipfitter
58	Shipwright
61	Toolmaker
62	Toolroom Mechanic
63	Welder
64	Wharfbuilder
65	Wood and Plastics Installer (Ships)
66	Wood Crafter

NON-NAVY TRADE	VERY SIMILAR SHIPYARD OCCUPATIONS	SOMEWHAT SIMILAR SHIPYARD OCCUPATIONS
Aircraft Mechanic		
Auto Mechanic		
Camera Repair Technician		
Carpenter		
Drafter		
Electrician		
Machinist		
Painter		
Pipefitter/Plumber		
Radio/TV Repairer		
Sheet Metal Worker		
Telephone Repairer		
Tool/Die Maker		
Electronic Technician		

APPRENTICE QUESTIONNAIRE

(S)

Name _____
 Last First MI

Social Security Number [][][] - [][][] - [][][][][]

Part 1

Directions: Answer each question in Part 1 by writing the number that goes with your answer in the box to the right.

A. Where are you an apprentice? [][]

- (1) Charleston Naval Shipyard
- (2) Long Beach Naval Shipyard
- (3) Norfolk Naval Shipyard
- (4) Pearl Harbor Naval Shipyard
- (5) Philadelphia Naval Shipyard
- (6) Portsmouth Naval Shipyard
- (7) Puget Sound Naval Shipyard
- (8) Mare Island Naval Shipyard
- (9) Naval Air Rework Facility, Alameda
- (10) Naval Air Rework Facility, Jacksonville
- (11) Naval Air Rework Facility, Norfolk
- (12) Naval Air Rework Facility, Pensacola
- (13) Naval Air Rework Facility, San Diego
- (14) Naval Air Rework Facility, Cherry Point

B. Which year of your apprenticeship are you in? []

- (1) First year (1-6 months in the apprenticeship)
- (2) First year (7 or more months in the apprenticeship)
- (3) Second year
- (4) Third year
- (5) Fourth year

C. How satisfied are you with your trade/apprenticeship? []

- (1) Very satisfied.
- (2) Somewhat satisfied.
- (3) Neutral.
- (4) Somewhat dissatisfied.
- (5) Very dissatisfied.

CONTINUE ON TO THE NEXT PAGE

D. How many years did you work in this trade before you started your apprenticeship?

- (1) None.
- (2) Less than one year.
- (3) 2 to 4 years.
- (4) 5 or more years.

E. If you had it to do again, would you enter the same apprenticeship?

- (1) Yes.
- (2) No.

Part 2

Directions: For each of the questions in Part 2, choose your answer from the List of Apprenticeships on the next page. First write the name of the apprenticeship on the line provided. Then write the 2-digit code that goes with that apprenticeship in the boxes to the right. If your answer is not on the List of Apprenticeships, write in your answer but do not give it a 2-digit code.

F. Which trade/apprenticeship are you in?

G. When you applied for an apprenticeship, what were your first 3 choices?

First choice _____

Second choice _____

Third choice _____

H. If you had to choose an apprenticeship now, what would be your first 3 choices?

First choice _____

Second choice _____

Third choice _____

LIST OF APPRENTICESHIPS

2-digit code	Apprenticeship
2	Air Conditioning Equipment Mechanic
7	Automotive Mechanic
8	Boatbuilder
9	Boiler Plant Equipment Mechanic
10	Boiler Plant Operator
11	Boilermaker
12	Carpenter
13	Coppersmith
14	Electric Power Controller
15	Electrical Equipment Repairer
16	Electrician
17	Electrician (High Voltage)
20	Electronic Industrial Controls Mechanic
21	Electronic Measurement Equipment Mechanic
22	Electronics Mechanic
23	Electroplater
24	Fabric Worker
25	Foundry Molder
28	Heavy Mobile Equipment Mechanic
29	Industrial Equipment Mechanic
30	Instrument Mechanic
31	Insulator
33	Machinist (Inside)
34	Machinist (Outside)
35	Marine Machinery Mechanic
37	Melter
38	Metal Forger
39	Metals Inspector
40	Milling Worker
43	Optical Instrument Repairer
44	Ordnance Equipment Mechanic
45	Painter
46	Patternmaker
47	Pipefitter
49	Plastic Fabricator
51	Production Machinery Mechanic
52	Propeller Machinist
53	Rigger
55	Sheet Metal Mechanic
57	Shipfitter
58	Shipwright
61	Toolmaker
62	Toolroom Mechanic
63	Welder
64	Wharfbuilder
65	Wood and Plastics Installer (Ships)
66	Wood Crafter

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