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SAN DIEGO, CALIFORNIA 92152

RESEARCH MEMORANDUM SRM 73-3

APRIL 1973

**PRELIMINARY VALIDATION OF AN INTEREST
INVENTORY FOR SELECTION OF NAVY RECRUITERS**

**Norman M. Abrahams
Idell Neumann
Bernard Rimland**

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SUMMARY

A. Problem

The quality and quantity of the enlisted manpower of the Navy is in large part dependent upon the effectiveness of Navy recruiters. The advent of the all-volunteer armed forces has made selection of the most capable recruiters increasingly important.

B. Background

The Strong Vocational Interest Blank (SVIB) has been used successfully by the Naval Personnel and Training Research Laboratory (NPTRL) to identify: (1) those individuals most likely to complete an officer training program such as the Naval Academy or NROTC, and (2) those individuals most likely to pursue a full Navy career. This report presents the preliminary findings of a research program aimed at improving recruiter selection through the use of the SVIB and other predictor instruments.

C. Approach

SVIBs were collected from samples representing the most and least effective recruiters at 36 of the 42 main recruiting stations. The responses of the two groups were contrasted for one-half of the sample, and used to establish scoring weights. The valid responses were assembled into the Recruiter Interest Scale-1 (RIS-1). The remaining recruiters, not used in scale development, were scored on the RIS-1 to determine how well the scale discriminates between the most and least effective recruiters.

D. Findings, Conclusions, and Recommendations

1. An empirical SVIB scale, RIS-1, was found to discriminate quite well between the most and least effective recruiters. When scores of the "holdout group" were ordered and divided into fourths, the top quarter contained about three times as many effective recruiters as did the bottom fourth (pgs. 3 and 4). It is therefore recommended that the RIS-1 scale be used to identify potentially effective recruiters among those volunteering for recruiting duty.

2. Several suggestions intended to increase the number of applicants for recruiting duty, including a Shipmate Nomination System, were proposed.

3. Efforts toward improving recruiter selection, involving the SVIB, other instruments, and criterion refinement, are continuing.

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PRELIMINARY VALIDATION OF AN INTEREST INVENTORY
FOR SELECTION OF NAVY RECRUITERS

Norman M. Abrahams
Idell Neumann
Bernard Rimland

April 1973

P43-07X.B8
Research Memorandum SRM 73-3

Submitted by

B. Rimland, Ph.D., Director, Personnel Measurement Research Department

Approved by

E. I. Jones, Ph.D., Technical Director
F. L. Nelson, Captain, USN
Commanding Officer

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Naval Personnel and Training Research Laboratory
San Diego, California 92152

A LABORATORY OF THE BUREAU OF NAVAL PERSONNEL

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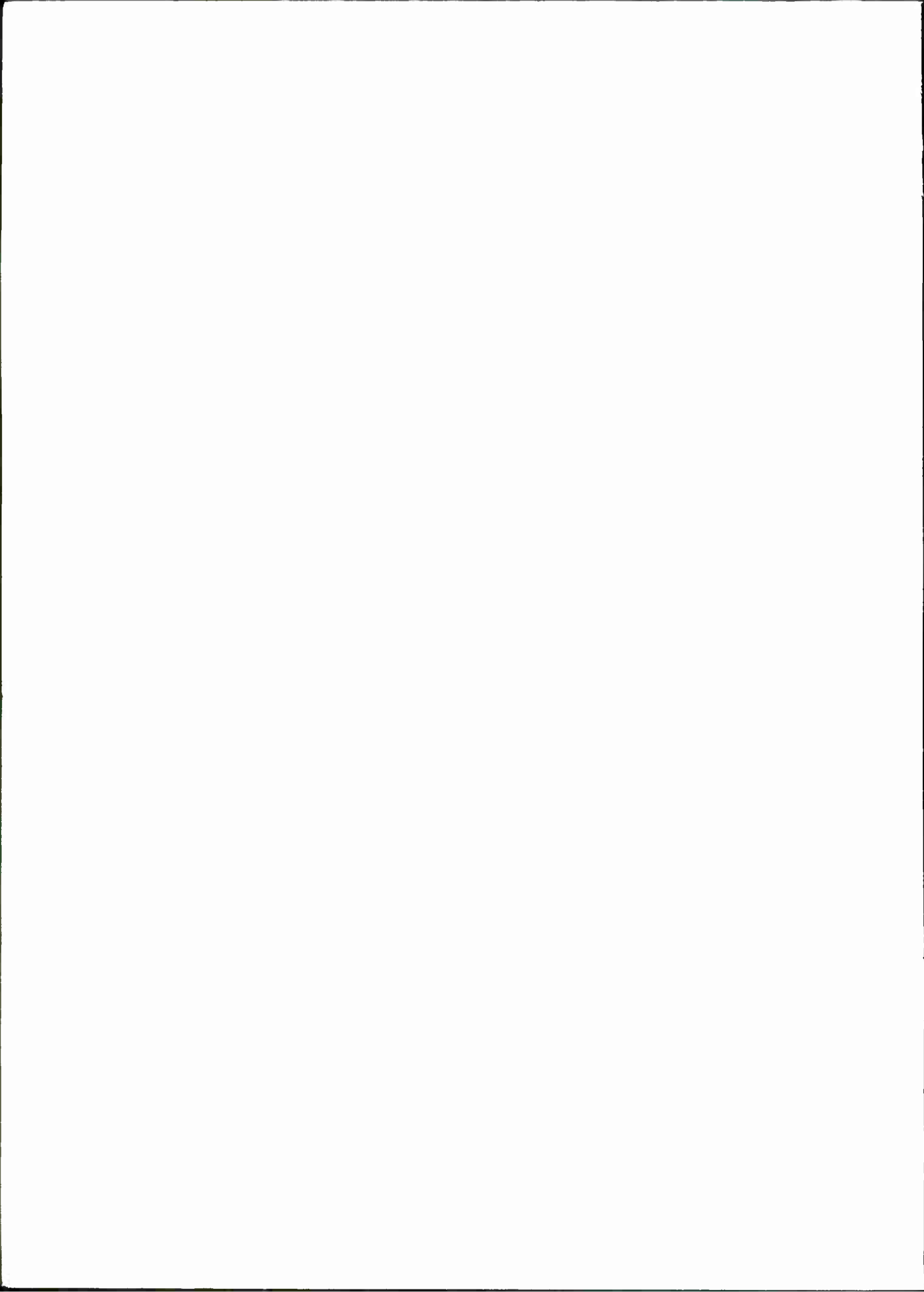
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PRELIMINARY VALIDATION OF AN INTEREST INVENTORY
FOR SELECTION OF NAVY RECRUITERS

A. BACKGROUND

The Navy Recruiting Command is responsible for the selection of recruiters from the enlisted men who volunteer for recruiting duty. In light of the recruiters' impact on the quantity and quality of the enlisted manpower of the Navy, it is essential to select those volunteers who will quickly become and remain productive recruiters.

This Laboratory has undertaken a program of research aimed at improving recruiter selection procedures. Using various criteria of recruiter success, groups of most effective and least effective recruiters will be identified and administered a series of experimental tests. The battery will include measures of vocational interests, personality, and biographical factors, as well as other potentially useful devices. The data gathered will permit the development of profiles of effective recruiters for use in evaluating and selecting future volunteers for recruiting duty. In this way only those volunteers most likely to become effective recruiters will be selected, trained, and assigned.

B. PROCEDURES

The present report, concerned primarily with the vocational interest portion of the experimental battery, describes the development of a Recruiter Interest Scale.

During the fall of 1972, Strong Vocational Interest Blanks (SVIBs) were mailed to the 42 main recruiting stations. Each station was requested to identify and administer the SVIB to its five most effective and five least effective recruiters. The effectiveness designations were made by the Commanding Officer and were revealed only to the investigators.

Complete information was received from 36 stations, thereby providing a sample of 360 recruiters, for 356 of whom data were complete. From this sample, SVIBs of 178 recruiters were randomly removed and set aside for evaluating prediction procedures. The remainder of the sample was used for establishing scoring weights for the SVIB items. Weights were determined by tabulating the number and proportion of most and least effective recruiters choosing each answer of the SVIB. An example is shown below for one item of the SVIB.

Item 374: I remember faces, names, and incidents better than the average person.

	Recruiters				Scoring Weight
	Most Effective		Least Effective		
	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>	
(1) Yes	43	48	20	22	+1
(2) ? (Not sure)	16	18	28	31	-1
(3) No	30	34	41	46	-1

In this example, the more effective recruiters chose the first alternative significantly more often (48%) than did the less effective recruiters (22%). The second and third alternatives were endorsed more frequently by less effective recruiters. Consequently, a scoring weight of +1 was assigned to the first answer (Yes) and a weight of -1 was assigned to the second and third answers (? and No). All other SVIB items were examined in a similar fashion and those that were answered differently by the most effective and least effective groups of recruiters were assigned appropriate scoring weights and included in a scale. Thus an individual obtaining a high score is more likely to be in the effective recruiter category than is a low scoring individual. After the 399 items of the SVIB were analyzed, the 115 item responses with the largest differences in endorsement rates were identified, assigned weights, and included in a single scale referred to as the SVIB Recruiter Interest Scale (RIS-1).

C. RESULTS

Since the 178 recruiters used in the development of the scale could not be employed in determining the validity of the scale, scores were computed for the remaining 178 recruiters who were in no way used in developing the scale.¹

The scores of this "holdout" group were arranged from high to low and divided as nearly as possible into four groups. The number of effective and ineffective recruiters within each of the four groups are shown in Table 1 and Figure 1.

The top group contains about three times as many effective recruiters as does the bottom group. These results indicate that if the SVIB scale

¹Since the recruiters involved in this comparison represent extremes in terms of effectiveness, the degree of discrimination achieved by the SVIB scale appears greater in the present sample than it would in a group representing the entire range of effectiveness.

TABLE 1

Number and Percent of Most and Least Effective Recruiters in Each
Quarter of the SVIB Recruiter Interest Scale
(Cross-validation Sample; N=178)

Score Category	<u>Most Effective</u>		<u>Least Effective</u>		<u>Total</u>	
	N	%	N	%	N	%
Top (114 or above)	36	78.3	10	21.7	46	100
Second (102-113)	24	54.5	20	45.5	44	100
Third (91-101)	17	39.5	26	60.5	43	100
Lowest (90 or below)	12	26.7	33	73.3	45	100
Total	89		89		178	

were used to eliminate those scoring lowest, a significant proportion of least effective recruiters would be eliminated who might otherwise have been accepted--to the detriment of the Recruiting Command mission.

D. DISCUSSION AND RECOMMENDATIONS

In order to capitalize on the potential of this scale, or, for that matter, any selection device, it is necessary to have a larger number of applicants volunteering for recruiting duty than the number ultimately required. In other words, there must be a surplus of applicants so that only those with the greatest likelihood of success need be selected. Although the number of applicants for recruiting duty appears to be somewhat less than desirable at this time, there are at least two practical methods by which it may be increased.

1. Shipmate Nomination System (SNS)

The SNS would entail having recruiters nominate former shipmates. Persons experienced in recruiting, particularly those regarded as especially proficient, presumably have an excellent understanding of the

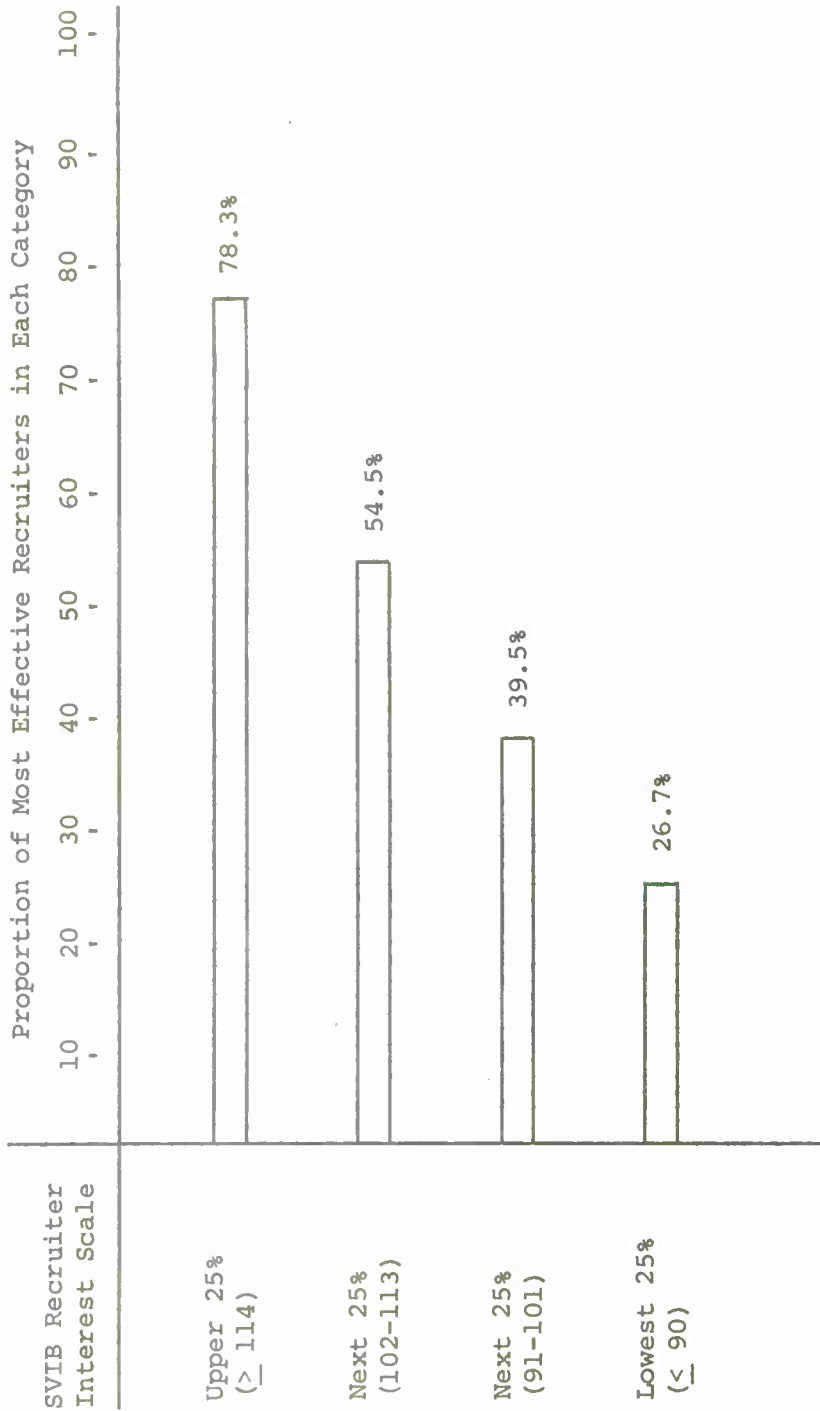


Fig. 1. Proportion of most effective recruiters in each quarter of the SVIB Recruiter Scale. (Note: Since the recruiters involved in this comparison represent extremes in terms of effectiveness, the degree of discrimination achieved by the SVIB scale appears greater in the present sample than it would in a group representing the entire range of effectiveness.)

job and they may thus be able to identify men from their previous duty stations who would be likely candidates for recruiter positions. A packet containing an SVIB would be mailed to each nominee. The packet would also contain an explanation of the nomination system, the name of his sponsor, information on recruiting duties, and a brief explanation of the SVIB. Nominees who completed and returned SVIBs would be included in an applicant pool for further consideration.

As an incentive for achieving high quality and quantity in his nominations, it might be worthwhile to initiate an incentive system, perhaps similar to the pyramid system successfully used in civilian sales forces. In this approach the "salesman" derives benefits in proportion to the success of those he has recruited.

2. The SVIB as a Recruiting Technique

There are no doubt many Navy men who would make excellent recruiters but who, for various reasons, have not applied for recruiting duty. Some of these men may simply have never considered volunteering for recruiting duty, while others may have considered it but failed to apply because of uncertainty about their potential as a recruiter. Such men might be encouraged to apply for recruiting duty if they could complete the SVIB and obtain an indication of their high likelihood of success. A similar approach was successfully used by this Laboratory to encourage young men who had not previously considered attending the Naval Academy to submit their applications to Annapolis (Thomas & Rimland, 1971). SVIBs were administered to high school students and scored on a scale designed to predict Academy success. Those scoring high were interviewed and apprised of their scores. On follow-up (Thomas & Hinsvark, 1973), it was ascertained that a number of young men who had not previously considered the Academy did later apply, as a result of this program.

A similar procedure could be instituted aboard ships and administered by a career counselor, or by mail, to identify good recruiter prospects. Men due for reassignment and qualified for recruiter duty could be contacted well in advance of the effective date. The SVIB Recruiter Interest Scale would be explained to them and they could be offered the opportunity to complete it and determine for themselves what their potential might be. Once they obtained their score they would be free to seek a tour of recruiting duty. If the Career Counselor/Recruiter rating is established, this approach would be particularly effective, since the career counselor will also be a recruiter. Thus, stimulating interest in recruiting duty might become an important and useful part of the career counselor's shipboard duties.

E. PLANS

Although the scale developed on the SVIB is clearly effective enough for immediate use, further developmental effort is required to bring it

to its full level of effectiveness. The development of other selection devices, to supplement the SVIB, is also indicated. Included among planned efforts are:

1. Biographical Information Scale

This Laboratory has surveyed the literature on the use of biographical (life history) information for predicting success in selling. The survey has resulted in the development of a questionnaire containing about 100 questions, many of which have been found effective in predicting sales performance in one or more studies. The questionnaire will be administered to both recruiter applicants and recruiters to determine the appropriate scoring weights. If the biographical information is effective, it may be found to add significantly to the validity already achieved by the SVIB.

2. Further Development and Evaluation of the SVIB Scale

The SVIB will be administered to additional samples to further improve and establish the effectiveness of the RIS-1 Scale. Administering the SVIB to additional recruiters will provide greater stability in establishing scoring weights and in assessing validity.

3. Criterion Development

A better criterion of recruiter effectiveness must be developed. The quality of recruits enlisted by each recruiter should be taken into account, and the recruits followed up to determine their success in boot camp. There may be wide differences between recruiters in the proportions of their recruits who: (a) enlist for two, three, four, and six-year periods, (b) successfully complete recruit training, (c) exhibit disciplinary problems, (d) are "A" school-qualified, (e) graduate from "A" school, and/or (f) are satisfied with their assignments or with the ability of the Navy to fulfill their expectations and the promises made by the recruiter.

4. Comparison With Present Methods

The validity of selection techniques currently in use by the Recruiting Command will be determined and compared with those under development at the Naval Personnel and Training Research Laboratory.

References

Thomas, P. J., & Hinsvark, D. G., CDR, USNR. An evaluation of the effectiveness of a vocational interest test in recruiting minority and caucasian officer candidates. San Diego: Naval Personnel & Training Research Laboratory. (Research Memorandum, in press.)

Thomas, P. J., & Rimland, B. The use of a vocational interest test in recruiting minority and caucasian officer candidates: An exploratory study. San Diego: Naval Personnel & Training Research Laboratory, August 1971. (Research Memorandum SRM 72-3)

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