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THE PREDICTION OF PSYCHIATRIC HOSPITALIZATION, (U)  
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THE PREDICTION OF PSYCHIATRIC HOSPITALIZATION

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NAVAL MEDICAL RESEARCH AND DEVELOPMENT COMMAND

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The Prediction of Psychiatric Hospitalization  
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The Recruit Temperament Survey (RTS) was devised by Waite and Barnes (1) in an attempt to screen out those enlistees who might become psychiatric casualties or be prematurely discharged administratively while in the Navy. Using Navy enlistees, Bucky, Edwards, and Berry (2) found that the RTS significantly discriminated between those enlistees who entered the service because they were likely to be drafted (draft-motivated enlistees) and those who had very little chance of being drafted (self-motivated enlistees). Not only did these groups differ in their response to the RTS but they also significantly differed in their psychiatric incidence rates. Although an identical percentage of subjects in both groups became psychiatric casualties during their first enlistment, the draft-motivated enlistees had twice the drug-related hospitalization rates while only half the hospitalizations for neurosis and psychosis.

The RTS was also found to be predictive of psychiatric hospitalization within the first four years of enlistment (3) and specific items on the test were able to discriminate between those men who were hospitalized with diagnoses of psychosis, neurosis, or personality disorder.

Since the RTS has been found to be predictive of psychiatric incidence as well as the major subgroups of diagnostic categories, the question arises as to how far into the future the RTS can predict psychiatric hospitalization.

The purpose of the present study was to determine: (1) whether the psychiatric incidence rates differ for the first two years and the last two years of a sailor's first enlistment, (2) whether cutoff scores on the RTS are differentially predictive of psychiatric incidence for the first two and last

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two years of enlistment, and (3) whether specific items on the RTS can be clustered to predict psychiatric disabilities as related to the first and last two years of enlistment.

### Method

#### Subjects

The subjects were 4390 men who were hospitalized for psychiatric reasons during their first two years of enlistment and 868 men who were hospitalized during the last two years of enlistment. They were all hospitalized from January 1967 to December 1971. The subjects were compared to a control group which consisted of 8024 subjects who were randomly selected from a group of 211,000 Navy enlisted men. Each of these samples were randomly divided in half so that the results on the initial sample could be cross-validated.

#### Recruit Temperament Survey (RTS)

The RTS is a 115 item yes-no test given to all recruits during their first week in boot camp. The items focus on attitudes and psychiatric symptoms as well as the past behavior of the individual. High scores are reported to be indicative of poor adjustment potential and early discharge from the Navy (Waite and Barnes, 1968).

#### Procedure

The entire record was evaluated on those individuals who were found to have had at least one psychiatric hospitalization. An analysis was made of the frequency of diagnostic categories for the two patient groups. A frequency count was also implemented to determine those cutoff scores that would be most predictive of psychiatric hospitalization. The final step was to do an item analysis to determine whether there were specific items that were predictive of the early vs. late hospitalization dichotomy.

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### Results and Discussion

The results indicate that the psychiatric diagnostic rates do not change as a function of time. That is, from 8 to 9 percent of all of the patients received a diagnosis of psychosis, approximately 16% were neurotic, with from 49 - 50 percent receiving a diagnosis of personality disorder. The other 21 - 23% received a diagnosis of situational adjustment, organic brain syndrome, alcoholism, or no diagnosis.

Waite and Barnes (1) suggest that a score of 40 or above on the RTS is indicative of poor recruit adjustment potential. Three different cutoff scores were used to compare the two psychiatric groups with the control group. The results indicate that using a cutoff score of 40, 21% of the patients hospitalized within the first two years of enlistment and 11% of the men hospitalized during their last two years of enlistment could have been eliminated while losing 7% of those men in the control group. The results also indicate that using a cutoff score of 35, 29% of those subjects hospitalized during their first two years of enlistment and 17% of those subjects who were hospitalized during their second two years of enlistment could have been eliminated while losing 10% of the control group. When using a cutoff score of 57, 7% of the subjects who were hospitalized within the first two years of enlistment and 1% of the subjects who were hospitalized during the second two years of enlistment could have been eliminated while only losing 1% of the control group.

Although a much higher percentage of hospitalized patients (relative to those who did not require hospitalization) were eliminated, it is felt that, with the lower scores, too many of the men who completed their enlistment would have been eliminated and with the higher score the RTS did not eliminate enough of the hospitalized groups to be of any practical utility. Nevertheless, it is clear that

the RTS does discriminate between the patient groups and those individuals who have not been psychiatrically hospitalized.

It would be easy to conclude from this data that the RTS is not particularly effective in the prediction of psychiatric incidence and therefore of little value to the Navy. It should be recalled that the RTS was devised to help eliminate ineffectiveness among recruits and that being hospitalized is only one measure of wasted manpower and excessive cost to the Navy.

When combining the psychiatric patients with other men who were unable to complete their first enlistment without some difficulty (behavioral acting out, administrative discharges, courts-martial) it is quite possible, if not probable, that the RTS will prove to be of considerable utility.

An item analysis was implemented to determine whether there were individual items or a group of items that discriminated between the two groups of hospitalized patients. Five items were eliminated due to the fact that almost all subjects responded identically to the item. Twenty-five variables were eliminated because they did not survive cross-validation.

The results in Table I indicate that there were 41 variables that significantly discriminated between those enlistees who were hospitalized in their first two years and those who were hospitalized during their last two years of enlistment. There are five different types of items that discriminated between these two groups: somatic complaints, anger and depressive symptoms, sleep disturbance symptoms, school difficulties, and difficulties establishing and maintaining interpersonal relationships.

(Insert Table I about here.)

#### Somatic Complaints

The patients who were hospitalized during their first two years of enlistment more frequently indicated that they had to deal with the following symptoms:

nervousness, back pains, headaches, pains in the heart and chest, holding urine, cold sweats, and shaking hands. They also indicated that when they get a cold they frequently feel knocked out and weak. In the past they have gotten so excited that they have gotten sick. They also have trouble with their money and easily get tired when dealing with routine tasks.

#### Anger and Depressive Symptoms

The patients with the early hospitalization indicated that they feel that they have gotten a raw deal out of life, at times they just don't care about what will happen to them. They worry over trifles and cry more easily than the group hospitalized during their last two years of enlistment. In addition, the same group has felt so mad in the past that they have destroyed things. They describe themselves as cross and irritable, and at times they feel that their folks at home can't get along without them.

#### Sleep Disturbance Symptoms

Those sailors hospitalized during their first two years of enlistment admitted to waking in their sleep, nightmares, and waking more frequently than those subjects hospitalized later in their enlistment.

#### School Related Difficulties

The men hospitalized during the first two years of their enlistment have completed less high school, have had trouble with their teacher, and quit school due to lack of interest more frequently than those subjects hospitalized in the last two years of their enlistment.

#### Difficulty in Establishing Interpersonal Relationships

The following items indicated that the sailors hospitalized during the first two years of their enlistment have had much more difficulty relating to other people than those subjects hospitalized in their last two years of enlistment: the former have had more trouble finding friends as well as finding anything to



talk about with others and more frequently feel the need to get away from other people. In addition, they indicated that they have said things in the past for which they are sorry. They feel that they cannot give as much as they get when teased and that they get rattled when dealing with situations in which there is a lot of shouting and confusion. The men who were hospitalized during their first two years of enlistment also indicated that at school they did not get around as much as their peers. Their parents frequently objected to their friends. In general, they do not feel that people are honest. They also tend to go to pieces when rushed. The same men indicated that they cannot take criticism very well and that they joined the Navy because of pressure from other people.

#### Summary

The results of the present study indicate that there is no difference in overall psychiatric diagnostic rates among the major diagnostic categories between those subjects who were hospitalized within their first two years of enlistment and the last two years of enlistment. Using various cutoff scores, the RTS appears more predictive of early hospitalization than late and when the two groups are combined and compared to the control group approximately four times the percentage of patients can be eliminated. When looking at the items that discriminate between the two patient groups all 41 items were answered in the "pathological" direction with greater frequency for the subjects who were hospitalized during their first two years of enlistment. Those results indicated those subjects hospitalized within their first two years of enlistment had considerably more difficulty at school, relating to other people, and admit to more somatic complaints, anger, depressive, and sleep disturbance symptoms than those subjects hospitalized during their second two years of their enlistment.



## References

1. Waite, R. R. and Barnes, E. H. Predicting success or failure in the Navy, a longitudinal study, unpublished manuscript, 1968.
2. Bucky, S. F., Edwards, D., and Berry, N. H. Personality, pressure, and military service. Unit report no. 73-22, Navy Medical Neuropsychiatric Research Unit, San Diego, California 92152, 1973.
3. Bucky, S. F., and Edwards, D. A preliminary attempt to develop self-report scales predictive of psychosis, neurosis, and personality disorder. Unit report no. 73- , Navy Medical Neuropsychiatric Research Unit, San Diego California 92152, 1973.

Table 1

## IRQ Items That Discriminated Between The Two Patient Groups

	1 - 2 Year Group Val.	1 - 2 Year Group Cross-val.	3 - 4 Year Group Val.	3 - 4 Year Group Cross-val.
<u>Somatic Complaints</u>				
Are you often bothered by back pains?	18	17	11	11
Have you ever been so nervous that you needed to stay home for a rest?	14	16	09	07
Does a cold really knock you out and make you weak all over?	27	27	22	23
Are you often troubled by headaches?	21	22	22	23
Have you ever been so excited that you actually got sick?	27	28	21	19
Are you often bothered by dizziness?	15	15	09	09
Are you often bothered by pains in your heart and chest?	17	17	11	13
Have you had difficulty starting or holding your urine?	13	14	08	08
Is there anything wrong with your memory?	11	11	06	08
Do you find that you easily become tired with a routine task or job?	47	45	37	39
Do your feet hurt when you have to stand for long periods of time?	71	72	60	61
Are you bothered by nervousness?	29	29	22	19
Do your hands shake enough to bother you?	11	10	06	05

Have you ever been bothered by cold sweats? 18 17 12 13

Sleep Disturbance Symptoms

Have you ever walked in your sleep more than once in the past two years? 15 16 11 08

Are you often bothered by nightmares or frightening dreams? 28 28 24 24

Do you awake frequently during the night? 26 26 18 16

Interpersonal Difficulties

Do people often take advantage of you? 17 19 12 12

Do you often say things that you are sorry about afterwards? 18 17 11 11

When you are teased, can you usually give as much as you get? 83 82 87 86

Have you had trouble finding friends with interests like yours are? 27 25 16 16

Do you get rattled when there is a lot of shouting and confusion? 38 38 31 31

When you are in a group do you have trouble finding things to talk about? 24 24 18 19

Did you get around as much as the other fellows when you were in school? 68 68 74 74

Did your parents object to the kind of people you went around with? 33 35 23 20

Do you think that most people are really honest? 54 55 63 61

Do you tend to go all to pieces when you are rushed? 22 22 14 13

Do you often need to get away from other people?	44	43	35	37
Can you usually take criticism without feeling hurt?	80	81	89	88
Did you join the Navy because someone else wanted you to?	14	14	08	09
<u>School</u>				
Did you complete high school?	66	67	76	74
Did you have trouble getting along with teachers in school?	18	17	13	12
Did you quit school because you lost interest?	19	19	13	12
<u>Anger and Depression</u>				
Have you often told off your teachers, boss or father?	20	19	14	13
Have you ever been so mad that you destroyed or damaged something?	50	48	43	42
Do you think that you have gotten a "raw deal" from life?	13	13	06	08
Do you frequently feel that you just don't care what happens to you?	28	27	20	20
Are you often cross and irritable for no particular reason?	24	24	18	19
Do you believe your folks at home will be able to get along without you?	85	86	90	89
Do you cry easily?	13	13	08	09
Do you tend to worry over trifles?	31	29	22	21



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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) The purpose of the present study was to determine whether the Recruit Temperament Survey (RTS) can predict psychiatric hospitalization for the first two years and the last two years of a sailor's first enlistment in the U.S. Navy. The results indicate that the RIS is not predictive of early hospitalization, with those men hospitalized during their first two years of enlistment admitting to more difficulty in school, relating to other people, admitting to more somatic complaints, anger, depressive and sleep disturbance symptoms than those men hospitalized during their second two years of enlistment.		

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