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ATTRIBUTES OF DRILL INSTRUCTOR SCHOOL GRADUATES:  
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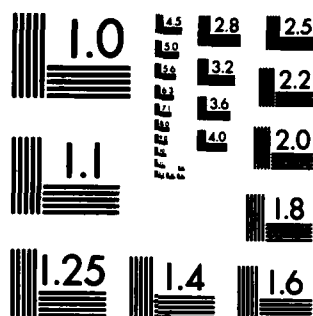
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Report DI-ONR-001

Attributes of Drill Instructor School Graduates: Stress-Related Factors

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) This Technical Report describes research on the psychological, behavioral, and physiological correlates of Marines in Drill Instructor School and afterwards. Identifiable significant differences between Drill Instructor School graduates and non-graduates were obtained and are described.		

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## Summary

The characteristics of men at the start of Drill Instructor School were examined in comparative analyses of graduates versus those dropped for psychological or behavioral reasons. Demographic, background, and aptitude factors were studied, along with a variety of measures found in our previous research to be related to stress on the drill field.

Four Drill Instructor School classes, comparable in their composition, formed a combined sample for the investigation. Graduates, in comparison with all drop categories, were found to be significantly younger than non-graduates. Military Occupational Status was also related to graduation outcome, but no other background or aptitude factor was significantly associated with successful completion.

Regarding the stress measures, the results indicate that the process of screening in Drill Instructor School operates in the direction of graduating those who are least at risk for stress on the drill field. Those who graduate, as compared to psychological/behavioral drops, are at the time of entrance to the school significantly more job involved, more competitive, and higher in internal control expectations, while also being less impatient, lower in anger proneness, and lower in physiological arousal. They also have more realistic job expectations and have greater empathy for recruits. These identified differences are important because they converge with our previous results concerning stress on the drill field and indicate that Drill Instructor School is selecting out a significant percentage of those who are most susceptible to experience stress.



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## Attributes of Drill Instructor School Graduates: Stress-related Factors

Our research has shown that the job of the Marine Corps drill instructor is stress-inducing and that stress reactions increase as a function of time spent on the drill field. In a longitudinal panel design, two drill instructor class cohorts were measured at graduation from DI school and at three months and one year from the date of graduation. The results revealed highly significant increases in the speed/impatience component of the coronary prone behavior pattern, blood pressure, heart rate, and perceived job stress. Additionally, perceived job stress was found to be inversely related to evaluations of job performance and positively associated with the drill instructors' level of anger (Novaco, Sarason, Robinson, & Cunningham, 1982).

During the recruit training cycle, the DI must cope with the strain imposed by (1) a rigorous training schedule in which activities are tightly programmed, (2) the high performance standards of the Marine Corps (3) long working hours with limited time off, (4) the myriad difficulties associated with certain recruits who lack agility, aptitude, motivation, and/or discipline, (5) potential family conflicts linked to the heavy workload, (6) the presence of constant supervision and evaluative scrutiny, and (7) competitive pressure among peers. In the present study, we examined the characteristics of those who graduate from Drill Instructor School, as differentiated from those who do not graduate, in order to understand more fully the attributes of those who are entrusted with the training of recruits in this difficult occupational role.

The occupational stress associated with the drill instructor role can have organizational as well as personal consequences. Importantly, the drill instructor shapes the social environment of the training unit, and if

he experiences high levels of stress, the platoon environment can be adversely affected. Our past recruit-focused research has revealed that the manner in which training is conducted by the drill instructor can have significant effects on recruit performance and rate of attrition; effects which persist long after graduation from training (Novaco, Sarason, Cook, Robinson, & Cunningham, 1979; Sarason, Novaco, Robinson, & Cook, 1981; Sarason, Novaco, & Sarason, 1981).

Another potential effect of stress upon the DI is to increase the risk of inappropriate behavior on the job. We have now found that approximately 14% of drill instructors falling into a 1981 sample (N=163) were relieved from duty for cause (poor performance on the drill field, recruit maltreatment or drug use) within one year of graduation from DI school. In a 1980 sample (N=108), this figure reached 23% within two years of DI school graduation. A subsequent report will deal with these and other outcome results.

The precise link between job stress and drill instructor behavior remains to be specified, and our ongoing research is addressing that question. However, the effects of occupational demands result in part from personal characteristics of the individual drill instructor. In this regard, we examined the personal and psychological factors related to selection for drill field duty by comparing those who graduate from Drill Instructor School with those who are dropped. Our measures in this study entailed the personality, physiological, and attitudinal factors involved in our longitudinal analyses of stress on the drill field, along with other pertinent background and aptitude variables.

All candidates for DI training must meet certain criteria for intelligence and psychological adjustment, the latter assessed by screening interviews and psychological testing (MMPI). A sizable proportion of selectees

fail to graduate from DI school. This attrition is generally of two types: (a) that which results from some performance deficit (psychological or behavioral) or (b) that which occurs for a reason beyond the individual's control (e.g. family hardship or physical injury). More specifically, then, our central question is: What are the attributes that distinguish the successful drill instructor candidate from the trainee who is dropped for psychological or behavioral reasons?

## METHOD

### Subjects

Subjects consisted of four cohorts of Marines selected for Drill Instructor School. These cohorts were the fourth and fifth consecutive DI classes of 1980 (4-80 & 5-80) and the fourth and fifth consecutive DI classes of 1981 (4-81 & 5-81). The fourth class in both years convened in June and graduated in August and the fifth class began training in August, graduating in October. The initial class strength consisted of 51 men in 4-80, 57 men in 5-80, 83 men in 4-81, and 80 men in the 5-81 cohort, comprising a total sample of 271 subjects.

### Design

This study is part of a longitudinal analysis of a drill instructor's career, from the first day of Drill Instructor school until completion of the tour of duty. The present research is concerned only with the testings administered during Drill Instructor school. This investigation begins with an analysis of cohort comparability with regard to initial composition factors. The statistical design utilized class cohort (a four category factor) and year (combining the classes within each year) as independent variables.



Because the cohorts were found to be comparable, they were then combined for subsequent analyses of training outcomes. Training outcome was partitioned into five categories: graduation and four drop classifications. The latter consisted of a drop for medical reasons; a drop due to financial hardship, family problems, or elapsed active service time (EAS); a drop for psychological or behavioral causes including motivational problems, alcohol or drug use, lack of command presence, or academic reasons; and finally an "other" category. In the present research, the primary statistical comparisons involve a contrast between DI school graduates and those in the psychological/behavioral drop category in the combined cohort sample.

#### Procedure

At each testing, a number of self-report instruments were administered and blood pressure and heart rate were measured using an automatic recorder (Physiometrics SR-2). At the initial testing, a consent form explaining the nature and purpose of the study accompanied the test materials. The men completed these protocols in a large classroom in the DI school facility. Following completion of the questionnaires, heart rate and blood pressure were measured individually in a small conference room adjacent to the main testing area. This standard procedure was repeated at each testing administration.

#### Measures

A detailed description of the stress related measures administered to this sample was previously reported (Novaco, Sarason, Robinson and Cunningham, 1982). The principal instruments are the Jenkins Activity Survey (JAS), the Rotter Locus of Control Scale (IE), and the Drill Instructor Questionnaire. In brief, the JAS assesses subject's tendency toward coronary prone or Type A

behavior. In addition, the JAS provides an assessment of the three components of Type A behavior. These consist of Speed/Impatience (Factor S), Job Involvement (Factor J), and Hard-Driving/Competitiveness (Factor H).

The Rotter Locus of Control (IE) Scale evaluates generalized expectancies pertaining to control of reinforcement. An internal locus of control reflects a generalized belief that reward outcomes result from one's skill and ability, whereas external locus of control refers to a belief that reinforcement is controlled by chance, luck, or powerful others.

The DI Questionnaire was specially constructed to obtain background and demographic information and to assess the DI candidate's attitudes, expectations, and appraisals with regard to various aspects of recruit training. The respondent is asked to rate recruits in general, to assess the importance of certain behaviors for a recruit, to estimate the influence of various factors on recruit attrition, and to evaluate the degree of stress experienced by both recruits and drill instructors resulting from particular demands. These latter items concerning perceived stress are combined by simple addition into summary indices referred to as the "Recruit Stress" and "DI Stress" scales. Consisting of 12 items with a Likert-type response scale (1 = very little stress, 5 = very much stress), the Recruit Stress index has a reliability coefficient of  $\alpha = .82$  for the combined cohort sample ( $N = 227$  valid cases at the time 1 measurement). The DI Stress index consists of ten items with responses ranging from 0 (No stress) to 9 (A great deal of stress). This scale results in an alpha coefficient of .84 based upon 195 cases at the time 1 testing.

## RESULTS

### Cohort Comparability

The initial composition of the four cohorts was examined with regard to basic demographic and background factors. Analyses of variance or cross-tabulations were performed according to cohort grouping. These results are contained in Table 1. Overall, the four cohorts are highly comparable with respect to demographic, aptitude and background factors. The cohorts do not differ with respect to age, race, education, marital status, years in the Marine Corps, or GCT aptitude score. However, there is a statistically significant difference between cohorts in rank. The 4-80 cohort was significantly different from 5-80,  $\chi^2(3) = 10.16$ ,  $p < .02$ , and from 5-81,  $\chi^2(3) = 8.75$ ,  $p < .035$ , in that it consisted of fewer corporals and more staff sergeants than the other cohorts.

The cohorts were next compared with regard to psychological and behavioral attributes measured at the start of Drill Instructor School. The measures involved the locus of control scale, the Jenkins Activity Survey, and the summary indices of "DI Stress" and "Recruit Stress." No significant differences were obtained for either the Type-A, Speed/Impatience, Job Involvement, or Hard-Driving/Competitiveness factors of the JAS. No significant differences distinguished the DI classes in locus of control beliefs or in judgements of "Recruit Stress." However, significant cohort differences were found for the "DI Stress" ratings, due to a low mean score for the 5-81 cohort. The means for 4-80, 5-80, 4-81, and 5-81, respectively, were 48.3, 53.1, 52.9, and 40.5,  $F(3,191) = 5.08$ ,  $p < .002$ . Thus, the members of the last cohort had lower anticipations of job stress at the start of training than did the other classes in our sample.

Comparing the cohorts on the physiological measures of heart rate and blood pressure at the start of training revealed no cohort differences in heart rate. Significant differences were found for systolic blood pressure,  $F(3,232) = 6.50$ ,  $p < .001$ , due to an elevated mean for the 4-80 class (138.6) in contrast to the means for the other classes (128.4 for 5-80; 129.1 for 4-81, and 132.3 for 5-81). Significant variation in means also occurred for diastolic pressure,  $F(3,232) = 6.18$ ,  $p < .001$  (77.5, 71.5, 74.0, and 77.6 for the 4-80, 5-80, 4-81, and 5-81 cohorts, respectively). These analyses remain significant when weight and physical fitness are controlled.

We interpret these variations in blood pressure to reflect differences in the psychosocial environments of different training cohorts. Our field observations indicated that the tenor of the initial days of training varied substantially with training personnel and that there were noticeable differences in the tempo set from class to class. Since no differences in heart rate distinguish the training cohorts and because the differences in blood pressure cannot be attributed to differences between cohorts in physical attributes, we believe that variations in mean blood pressure reflect psychosocial differences in the training atmosphere rather than pre-existing differences in the physiological attributes of these cohorts. This analysis is supported by the fact that the elevated means for the 4-80 class decrease over the course of training coincidental to a change in training personnel.

In summary, we find the cohorts to be quite similar with respect to demographic characteristics, aptitude, and psychological attributes. We do not interpret the differences between cohorts on physiological dimensions to mitigate their essential comparability with regard to initial composition factors. Therefore, we have combined the cohorts for the subsequent analyses on training outcome, which are the focus of this report.

### Characteristics of Psychological/Behavioral Drops

The combined training cohorts consisted of 271 drill instructor candidates. Of these, 174 (64.4%) successfully completed DI school. As previously indicated, men dropped from training were partitioned according to the specific reasons for their attrition. Of the 97 nongraduates in the combined sample, 18 men (6.7%) were dropped for medical reasons, and another 3 were dropped because of a family or financial hardship. Since attrition from DI school for these reasons is assumed to have no direct relationship to individual differences in psychological attributes, these classifications were excluded from subsequent analyses. In addition, three men (.7%) were excluded because of drops for reasons other than those represented by our categories.

Drill instructor candidates who were dropped for psychological or behavioral reasons (58 men, or 21.5%) comprise the drop category of primary interest in the present investigation. We hypothesize that attrition in this category is highly related to coping deficiencies that presage poor adjustment to the stress of the drill field. The between group comparisons (graduates vs. drops) are based upon Time 1 measures, since reassignments and transfers precluded follow-up testing of men dropped from DI school.

Demographic, Background, & Aptitude Factors. As presented in Table 2, those who are dropped for psychological/behavioral reasons are significantly older and have served more years in the Marine Corps. The tendency of DI school graduates to be younger is further supported by the higher mean ages of the medical and hardship drop categories, which are also reported in Table 2. These results for age and years of service are independent of rank, for which no significant relationships were found.

With regard to other demographic factors, training outcome (graduate vs. drop) was unrelated to level of education, nor was it related to GCT aptitude

score. However, a significant effect was found for Military Occupational Standing (MOS), cross-tabulating across graduation and all drop categories,  $\chi^2(8) = 18.6$ ,  $p < .02$ . Those with a support/administrative MOS ( $N=71$ ) had an 83% graduation rate, followed by a 65% rate for the infantry or artillery/engineering group ( $N=125$ ), and a 51% rate of graduation for air wing personnel ( $N=41$ ).

In addition to training outcome, we analyzed these various factors for their association with class standing, a composite score of performance in Drill Instructor School. Class standing was found to be unrelated to rank, years in the Marine Corps, MOS, level of education, and marital status. A significant relationship was found between class standing and GCT aptitude score ( $r = .35$ ,  $N = 146$ ,  $p < .001$ ). A slight inverse correlation was also noted between age and class standing ( $r = -.14$ ,  $N = 161$ ,  $p < .04$ ), converging with the findings for training outcome. Class standing was also found to vary across racial groups, with the respective means being 91.5 for Caucasians ( $N=85$ ), 87.4 for Blacks ( $N=39$ ), 90.4 for Mexican Americans ( $N=21$ ), and 89.3 for others ( $N=16$ ). This difference between racial groups in average class standing cannot be attributed to differences in aptitude as indexed by GCT score. In an analysis of covariance, controlling for GCT score, these means were found to be significantly different,  $F(3,135) = 10.65$ ,  $p < .001$ .

Physiological Arousal. No differences in blood pressure were found to differentiate DI school graduates from candidates who were dropped for psychological/behavioral reasons. However, these outcome groups differed in heart rate,  $F(1,202) = 6.33$ ,  $p < .02$ . Those who were dropped for psychological/behavioral reasons had a significantly higher heart rate than those who graduated. The heart rate data are presented in Table 3, together with the psychological measures. While the heart rate difference (approximately

3 beats per minute) is small, its occurrence, in conjunction with the psychological measures reported below, is congruent with the pattern of findings from our longitudinal study of the graduates in these cohorts. The data suggest that DI school is dropping candidates on dimensions associated with our stress measures. We elaborate on this point below.

Psychological Attributes. As shown in Table 3, graduates and psychological/behavioral drops differed significantly in JAS Factors S, J, and H. Drill Instructor School graduates were significantly less impatient, more job involved, and more hard driving and competitive than those dropped for psychological/behavioral reasons. The JAS impatience score (Factor S) was found in our longitudinal study to increase very significantly over time on the drill field, along with heart rate and "DI stress" ratings, and that high levels on these measures were found to be associated with poor job performance evaluations by supervisors (Novaco, Sarason, Robinson, and Cunningham, 1982).

Also contained in Table 3 are results for locus of control beliefs, which show that those dropped for psychological/behavioral reasons are significantly more external than graduates, although the difference in group means is small. Nevertheless, this result is consistent with our findings regarding recruit attrition--i.e. those who attrite are significantly more external (Cook, Novaco, & Sarason, 1980).

Scores on the "DI stress" composite (Table 3) were found to be higher for graduates of DI school than for psychological/behavioral drops. This measure here denotes anticipated job stress, as subjects at this point of assessment had no drill field experience upon which to base their ratings. Since the values for DI school graduates early in training better approximate the values obtained in later assessments of drill instructors on the field than do those of psychological/behavioral drops, it is reasonable to conclude

that those who graduate have a more realistic appraisal of job demands at the outset.

To more accurately identify the aspects of the job which drill instructor candidates anticipated to be stressful, the summary index was disaggregated into its component items which were then separately analyzed for differences between outcome groups. Four items in particular were found to distinguish graduating trainees from psychological/behavioral drops. Graduates anticipated a significantly greater degree of stress to result from the tasks of "producing an outstanding platoon", "meeting the expectations of commanding officers", and "trying to follow the Standard Operating Procedures (SOP)" and from "fear of punishment for violations of the SOP". The means and statistical effects for these analyses are reported in Table 4.

While the "Recruit Stress" composite did not distinguish DI school graduates from psychological/behavioral drops, there are significant between group differences on several component items. As reported in Table 5, graduates view recruits as being under more stress with regard to attaining marksmanship standards, worries about discharge, and worries about being setback than do those candidates who are dropped for psychological/behavioral reasons.

The ability to control anger in responding to recruits is of obvious importance for drill instructors. Moreover, we have previously found that anger is inversely related to job performance ratings by supervisors. Although the anger inventory measure used in our drill field assessments (Novaco, Sarason, Robinson, & Cunningham, 1982) was not administered to all cohorts during Drill Instructor School, we were able to examine differences in anger between graduates and drops by analyzing data for three items on the JAS that pertain to anger. The group means and the results of this analysis are contained in Table 6. Those who graduate from Drill Instructor School are



significantly lower in anger across indices than are those who are subsequently dropped for psychological/behavioral reasons.

## DISCUSSION

The successful candidates in Drill Instructor School differ significantly at the outset from those who are dropped on a number of important dimensions. Our findings indicate that demographic factors (age and mos), physiology (heart rate), personality (impatience, anger, job involvement, and competitiveness) and cognitive factors (locus of control beliefs, job expectations, and attitudes toward recruits) distinguish graduates from psychological/behavioral drops. These identified differences are important because they converge with our previous results concerning stress on the drill field and indicate that Drill Instructor School is selecting out those who are most susceptible to experience stress.

The results for age are perhaps counterintuitive and are interesting in that regard. One might expect that candidates who are older, and thereby more mature, would be most likely to be successful. On the contrary, graduates are significantly younger than nongraduates, including all drop categories. In addition, for those who graduate, age was found to be inversely related to class standing. This suggests that individuals should not be selected for Drill Instructor School because they are older. Maturity may well be an important factor, but it is not guaranteed by age.

The finding for Military Occupational Status is also of interest, as those with a support/administrative MOS had a graduation rate nearly 20% higher than that for the infantry/artillery/engineering group and more than 30% higher than air wing personnel. However, MOS had no relationship to class standing. The nature of these differences associated with MOS background

remains to be determined in future research which might examine the question in terms of person-environment fit. That is, the job of a drill instructor may be more congruent with the needs and abilities of persons with certain MOS backgrounds. Moreover, if important dimensions of person-environment mismatch could be identified, improvements might be made in the process of selecting drill instructor candidates.

With regard to our stress measures, the balance of our findings indicate that the process of selection in Drill Instructor School operates in the direction of graduating those who are least at risk for stress on the drill field. Those who graduate, when compared to psychological/behavioral drops, are at the time of entrance to the school significantly more job involved, more competitive, and higher in internal control expectations, while also being significantly less impatient, lower in proneness to anger, and lower in physiological arousal. They also have more realistic job expectations and greater empathy for recruits. These are all important characteristics for drill instructors. Although Drill Instructor School does not directly aim to select individuals for their stress coping abilities, the screening process does seem to operate in this direction.

Table 1

DEMOGRAPHIC, APTITUDE, AND BACKGROUND DESCRIPTORS FOR THE  
DRILL INSTRUCTOR SCHOOL COHORTS

	Cohort			
	4-80	5-80	4-81	5-81
AGE (mean)	25.2	24.7	25.2	24.4
EDUCATION				
College grad.	2.1%	0	1.3%	1.6%
Some college	34.0%	23.6%	30.7%	30.2%
HS grad	53.2%	58.2%	52.0%	57.1%
Voc. sch. grad.	0	9.1%	2.7%	0
HS equiv.	10.7%	5.5%	13.3%	11.1%
Non HS grad.	0	3.6%	0	0
RACE				
Caucasian	47.9%	58.2%	48.0%	63.5%
Black	27.1%	20.0%	29.3%	19.1%
Chicano	14.6%	12.7%	13.3%	9.5%
Other	10.4%	9.1%	9.3%	7.9%
MARITAL STATUS				
Married	70.8%	61.8%	60.0%	59.7%
Separated	0	3.6%	0	3.2%
Divorced	6.3%	3.6%	5.3%	4.8%
Single	22.9%	30.9%	34.7%	32.3%
RANK				
Corp	6.3%	18.2%	13.9%	11.1%
Sgt	58.3%	61.8%	61.1%	69.8%
SSgt	35.4%	14.6%	19.4%	14.3%
GSgt	0	5.5%	5.6%	4.8%
MARINE CORPS YEARS (mean)	5.92	5.62	6.13	6.0
GCT Aptitude	111.5	111.7	109.2	110.7

Table 2

MEAN AGE AND NUMBER OF YEARS IN THE MARINE CORPS ACCORDING TO  
TRAINING OUTCOME IN DRILL INSTRUCTOR SCHOOL

	TRAINING OUTCOME		ANOVA	
	GRADUATE N=164	DROP (PSYCH/BEHAV) N=49	F	P
AGE	24.23 (3.40)	26.08 (3.09)	10.51	<.002
MCYRS	5.48 (2.82)	6.50 (2.78)	4.89	<.029

Note. Not included in the present analysis are 38 men who were dropped for reasons other than psychological or behavioral problems. These men were dropped due to medical reasons (mean age 26.0) or because of financial hardship or family problems (mean age 28.3). The psychological behavioral category consists of DI candidates dropped because of academic problems, alcohol or drug use, or lack of motivation or command presence. The values in parentheses are standard deviations.

Table 3

HEART RATE, JENKINS ACTIVITY SURVEY (S,H,U), PERCEIVED JOB STRESS  
AND EXTERNAL CONTROL BELIEFS ACCORDING TO TRAINING OUTCOME

STRESS MEASURE AT START OF DI SCHOOL	TRAINING OUTCOME		ANOVA	
	GRADUATE	DROP (PSYCH/BEHAV)	F	P
HEART RATE	62.68 (6.17) N=158	65.50 (8.23) N=46	6.33	<.013
FACTOR S (Impatience)	-4.56 (7.96) N=165	.32 (9.57) N=46	12.39	<.0006
FACTOR H (Hard-Driving)	4.49 (9.41) N=166	-.59 (9.79) N=46	10.31	<.002
FACTOR J (Job Involvement)	2.58 (7.41) N=164	-1.35 (6.46) N=46	10.64	<.002
PERCEIVED JOB STRESS (Anticipated)	49.91 (18.95) N=131	42.21 (21.68) N=42	4.88	<.03
EXTERNAL CONTROL BELIEFS	8.42 (3.53) N=164	9.87 (3.93) N=46	5.80	<.017

Note. In the four combined DI school cohorts, a total of 64.4% of the DI candidates graduated, 21.5% were dropped for psychological or behavioral reasons, and the remaining 14.1% (excluded from the present analysis) were dropped for medical reasons, or financial/family problems. The JAS Factor values are standardized scores. The values in parentheses are standard deviations.

Table 4

MEAN RATINGS BY DRILL INSTRUCTOR CANDIDATES OF ANTICIPATED JOB STRESS  
ACCORDING TO TRAINING OUTCOME IN DRILL INSTRUCTOR SCHOOL

	TRAINING OUTCOME		ANOVA	
	GRADUATE	DROP (PSYCH/BEHAV)	F	<u>P</u>
"Produce an Outstanding Platoon"	6.80 (2.41) N=143	5.70 (2.87) N=44	6.32	<.02
"Meet Expectations of Commanding Officers"	6.16 (2.65) N=140	4.98 (3.01) N=43	6.12	<.02
"Trying to Follow SOP"	5.03 (3.19) N=139	3.52 (3.38) N=44	7.23	<.008
"Fear of Punishment for Violations of SOP"	5.81 (3.19) N=139	4.25 (3.74) N=44	7.31	<.008

Note: Respondents rated each item on a Likert-type scale ranging from 0 (no stress at all) to 9 (a great deal of stress). The values in parentheses are standard deviations. Not included in this analysis are 38 men who were dropped for medical or financial or family problems. The psychological/behavioral drop category includes those dropped from DI school for academic reasons, alcohol or drugs, or lack of motivation or command presence.

Table 5

MEAN RATINGS BY DRILL INSTRUCTOR CANDIDATES OF THE  
STRESS ASSOCIATED WITH TRAINING TASKS FOR RECRUITS  
ACCORDING TO TRAINING OUTCOME IN DRILL INSTRUCTOR SCHOOL

	TRAINING OUTCOME			
	GRADUATE	DROP (PSYCH/BEHAV)	F	P
"Marksmanship Stress"	3.95 (.924) N=160	3.51 (1.08) N=49	7.83	<.006
"Fear of Failure (Discharge)"	3.85 (1.04) N=160	3.50 (1.11) N=48	4.08	<.05
"Fear of Being Set Back"	4.26 (.99) N=158	3.74 (1.08) N=49	10.06	<.002

Note. Respondents rated each item on a Likert-type scale ranging from 1 (very little stress) to 5 (very much stress). The values in parentheses are standard deviations. Not included in this analysis are 38 men who were dropped for medical or financial or family problems. The psychological/behavioral drop category includes those dropped from DI school for academic reasons, alcohol or drugs, or lack of motivation or command presence.

Table 6

MEANS FOR ANGER ITEMS ON THE JENKINS ACTIVITY SURVEY ACCORDING TO  
TRAINING OUTCOME IN DRILL INSTRUCTOR SCHOOL

JAS ITEM	TRAINING OUTCOME		ANOVA	
	GRADUATE N = 164	DROP (PSYCH/BEHAV) N = 46	F	P
"Would people say that you get irritated easily?"	2.06 (.79)	2.50 (.94)	10.57	<.001
% responded "definitely yes"	3.7%	17.4%		
"Temper when younger"	2.54 (.88)	2.85 (.89)	4.39	<.04
% responded "fiery and hard to control"	12.3%	26.1%		
"Temper now"	2.27 (.69)	2.59 (.81)	6.96	<.01
% responded "fiery and hard to control"	1.8%	10.9%		
Total score for 3 anger items	6.87 (1.84)	7.94 (1.91)	11.91	<.001

Note. The measures were taken at the start of Drill Instruction School. Possible responses for "irritated easily" ranged from 1 (definitely no) to 4 (definitely yes); responses for both "temper when younger" and "temper now" ranged from 1 (almost never got angry) to 4 (fiery and hard to control). The total score was obtained by summing the ratings for the 3 anger-related items. The values in parentheses are standard deviations. The percentages are the proportion of the respective groups that endorsed the extreme response.



References

- Cook, T.M., Novaco, R.W., & Sarason, I.G. Generalized expectancies, life experiences and adaptation to Marine Corps recruit training. Technical Report AR-002. Seattle, Washington: University of Washington, April, 1982.
- Novaco, R.W., Sarason, I.G., Cook, T.M., Robinson, G.L., & Cunningham, F.J. Psychological and organizational factors relating to attrition and performance in Marine Corps training. Technical Report AR-001. Seattle, Washington: University of Washington, November, 1979.
- Novaco, R.W., Sarason, I.G., Robinson, G.L., & Cunningham, F.J. Longitudinal analyses of stress and performance among Marine Corps drill instructors. Technical Report AR-ONR-007. Seattle, Washington: University of Washington, April, 1982.
- Sarason, I.G., Novaco, R.W., Robinson, G.L., & Cook, T.M. Recruit attrition and the training unit environment. Technical Report AR-004. Seattle, Washington: University of Washington, April, 1981.
- Sarason, I.G., Novaco, R.W., & Sarason, B.R. A follow-up study of Marines two and a half years after recruit training. Technical Report AR-006. Seattle, Washington: University of Washington, November, 1981.

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