Research Problem Review 76-5

LEVEL II

DEVELOPING A CONCEPTUAL AND PREDICTIVE MODEL OF DISCIPLINE IN THE U.S. ARMY

AD A076643

DDC FILE COPY

DDC
RECEIVED
NOV 16 1979
A



U. S. Army

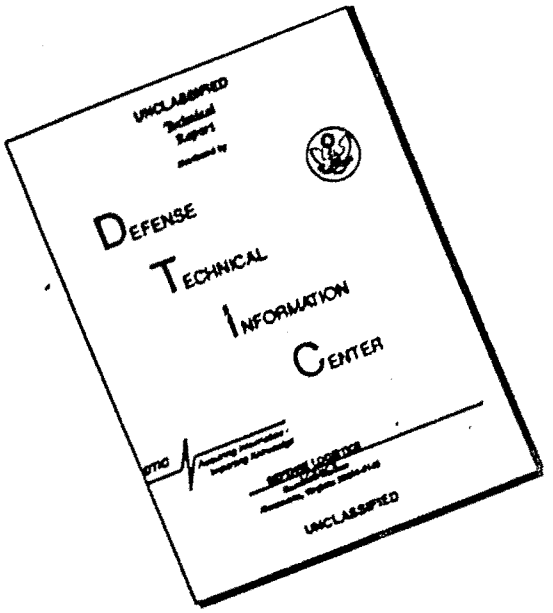
Research Institute for the Behavioral and Social Sciences

September 1976

Approved for public release; distribution unlimited.

79 11 15 265

DISCLAIMER NOTICE



THIS DOCUMENT IS BEST QUALITY AVAILABLE. THE COPY FURNISHED TO DTIC CONTAINED A SIGNIFICANT NUMBER OF PAGES WHICH DO NOT REPRODUCE LEGIBLY.

U. S. ARMY RESEARCH INSTITUTE
FOR THE BEHAVIORAL AND SOCIAL SCIENCES

A Field Operating Agency under the Jurisdiction of the Deputy Chief of Staff for Personnel

J. E. UHLANER
Technical Director

W. C. MAUS
COL, GS
Commander

Research accomplished
Under contract to the Department of the Army

Bendix Applied Sciences Division

NOTICES

DISTRIBUTION: Primary distribution of this report has been made by ARI. Please address correspondence concerning distribution of reports to: U. S. Army Research Institute for the Behavioral and Social Sciences, ATTN: PERI-P, 1300 Wilson Boulevard, Arlington, Virginia 22209.

FINAL DISPOSITION: This report may be destroyed when it is no longer needed. Please do not return it to the U. S. Army Research Institute for the Behavioral and Social Sciences.

NOTE: The findings in this report are not to be construed as an official Department of the Army position, unless so designated by other authorized documents.

Army Project Number
(16) 2Q162108A740

Career Effectiveness in
the Contemporary Army
DAHC 19-73-C-0036

Research Problem Review 76-5

(6) DEVELOPING A CONCEPTUAL AND PREDICTIVE MODEL OF DISCIPLINE IN THE U.S. ARMY

(10) Ronald G. Bauer, and Robert L. Stout
Bendix Applied Sciences Division

and

Robert F. Holz
Army Research Institute for the Behavioral and Social Sciences

INDIVIDUAL TRAINING AND SKILL EVALUATION TECHNICAL AREA
Milton S. Katz, Chief

(12) 67

(14) **ARI-RES PROBLEM REV-76-5**

Submitted By:
E. Ralph Dusek, Director
INDIVIDUAL TRAINING AND PERFORMANCE
RESEARCH LABORATORY

Approved By:
J. E. Uhlaner
TECHNICAL DIRECTOR

U.S. ARMY RESEARCH INSTITUTE FOR THE BEHAVIORAL AND SOCIAL SCIENCES

Office, Deputy Chief of Staff for Personnel
Department of the Army
1300 Wilson Boulevard, Arlington, Virginia 22209

(11) September 1976

Research Problem Reviews are special reports to military management. They are usually prepared to meet requests for research results bearing on specific management problems. A limited distribution is made--primarily to the operating agencies directly involved.

408 010

FOREWORD

The Army Research Institute for the Behavioral and Social Sciences (ARI) is concerned both with systematic research over wide areas and with immediate specific problems, in this case continuing to seek the underlying causes of military delinquency and develop instruments to screen recruits for potential military delinquents--problems previously addressed by ARI's Retention Standards Task and Selection and Behavioral Evaluation Project, Military Selection Research Division.

With every change in induction standards since the end of World War II, questions concerning the effects on the Army's enlisted personnel system have been addressed by ARI's continuing program on selection, classification, management, and utilization of Army personnel. In response to a requirement from the Deputy Chief of Staff of the Army (DCSPER), part of the research focused on early identification of soldiers likely to become discipline problems. ARI Research Report 1185 summarized ARI research on military discipline and delinquency to early 1975. This report is one of two Research Problem Reviews which discuss a broadly based recent effort (briefly summarized in Research Report 1185) designed to assess a variety of social-psychological predictors of delinquency and integrate them in relation to discipline problems in the Army.

Research was conducted under Army RDTE Project 2Q162108A740, "Institutional Change," FY 1974 Work Program, and is responsive to special requirements of the Leadership and Behavior Division of DCSPER. Research at ARI is conducted as an in-house effort augmented by contracts with organizations selected for their unique capabilities in the area; the present study was done jointly by personnel of ARI and the Bendix Applied Sciences Division, Ann Arbor, Michigan.

J. E. UHLANER
Technical Director

Accession For
NTIS GRA&I X
DDC TAB
Unannounced
Justification
By
Distribution/
Availability Codes
Dist. | Avail and/or special
A

DEVELOPING A CONCEPTUAL AND PREDICTIVE MODEL OF DISCIPLINE IN THE U.S. ARMY

BRIEF

Requirement:

To (1) develop and test conceptual and predictive models of Army discipline and (2) develop reliable measures of unit discipline and its predictors that can help Army leaders assess and manage discipline in their commands.

Procedure:

- Conceptual and predictive models of discipline were developed based on the perceptions of active-duty Army personnel obtained through in-depth interviews with a broad sample of 291 active duty officers and enlisted men in the United States and Europe. To obtain data to test these models, a questionnaire was administered to a sample of 1564 non-commissioned officers (NCO's) and enlisted men at installations in the United States and Europe. The measures of discipline and its predictors were developed using Guttman-Lingoes non-metric scaling techniques, including smallest space analysis (non-metric factor analysis). Predictive models of Army unit discipline were tested using multiple regression.

Findings:

Results indicated three distinguishable conceptualized components of military unit discipline--unit performance, unit appearance, and unit conduct.

Unit performance can be strongly predicted by scales measuring esprit de corps, leadership, satisfaction with military work role, quality of living quarters, and availability of recreation. The factors which are associated with good unit performance vary among different types of units. For combat units, the best predictors are esprit de corps, leadership, and satisfaction with work role, in that order. For support units, esprit de corps is also the best predictor, although not as strong as for combat units, followed by satisfaction with military work role, leadership, availability of recreational facilities, and satisfaction with living quarters. For training units, leadership is the strongest predictor, followed by quality of living quarters and esprit de corps.

Unit appearance is considerably less predictable than unit performance for combat and support units. Esprit de corps and leadership are its best predictors. There does not appear to be a distinguishable unit appearance dimension for training units.

Unit conduct, a measure of how willingly unit members obey their leaders, is best predicted by esprit de corps, the degree of racial discrimination in the unit, satisfaction with military work role, and, to a limited extent, by general racial discrimination and leadership in the soldiers' environment. Unit conduct is less predictable than unit performance and more predictable than unit appearance.

Utilization of Findings:

The state of discipline in Army units can be assessed and to a great extent predicted by measures of environmental circumstances that are subject to development and change through Army management programs.

Validation and field testing of the conceptual and predictive models of discipline is imperative. The models should be validated by comparing the attitudinal data from which they were developed with actual observed behavior. The acquired measures of discipline and its predictors should be applied to the commissioned officer population and to units in the field to determine the feasibility of employing these instruments as management tools to diagnose and improve Army discipline.

DEVELOPING A CONCEPTUAL AND PREDICTIVE MODEL OF DISCIPLINE IN THE U.S. ARMY

CONTENTS

	Page
INTRODUCTION	1
Problem	1
Review of Previous Research	2
METHODS AND PROCEDURES	5
Approach	5
The Criterion Measures	15
The Predictor Measures	17
RESULTS	25
Prediction of Military Unit Discipline--The Predictor Variables	25
Regression Analysis of Military Unit Discipline Scales--Methods	25
Predicting Military Unit Performance	29
Predicting Military Unit Appearance	35
Predicting Military Unit Conduct	35
DISCUSSION AND CONCLUSIONS	35
BIBLIOGRAPHY	43
APPENDIX	53

TABLES

Table 1.	Interview sample characteristics: Commands, installations and types of units	9
2.	Interview sample characteristics: Individual respondent characteristics by type and rank	10
3.	Dimensionality of unit discipline in combat, support, and training units	18

TABLES (continued) Page

Table 4. Correlations among military unit discipline scales 19

5. Dimensionality of Leadership I and Leadership II items for combat, support and training units 21

6. Dimensionality of racial discrimination items by racial group 24

7. Descriptive measures for military unit discipline scales and predictors 26

8. Correlations among predictors of unit discipline 27

9. Correlations of situational predictors with unit performance, appearance, and conduct for the entire sample 28

10. Analysis of variance of regression residuals by unit type 30

11. Correlations of environmental predictors with unit performance by unit type 31

12. Regression of unit performance on situational predictors for combat units 32

13. Regression of unit performance on situational predictors for support units 33

14. Regression of unit performance on situational predictors for training (BCT/AIT) units 34

15. Regression of unit appearance on situational predictors in combat and support units 36

16. Regression of unit conduct on situational predictors in combat and support units 37

17. Regression of unit conduct on situational predictors in training units 38

FIGURE

Figure 1. Categories of determinants of Army discipline 13

DEVELOPING A CONCEPTUAL AND PREDICTIVE MODEL OF DISCIPLINE IN THE U.S. ARMY

INTRODUCTION

THE PROBLEM

During the mid-1960's, as the Army became more involved in Indochina, military delinquency began to rise to unprecedented levels. By 1971, Army commanders worldwide could expect one out of every four soldiers to go AWOL (absent without leave) or desert (Congressional Quarterly Weekly Report, 1972, p. 392). Desertion rates were the highest recorded since the Army began keeping these statistics during World War II. The 1972 desertion rates were over three times greater than the highest levels reached during the Korean War and nearly double those of the peak years of World War II. The rates of court-martial, non-judicial punishments, and less-than-honorable discharges increased similarly. Whereas 47 soldiers per thousand received non-judicial punishment in the first quarter of 1965, 62 per thousand received such punishment during the same quarters in 1972. Over the same period less-than-honorable discharge rates rose from 2.7 to 11.1 per thousand.[1]

The state of Army discipline was reflected not only in official statistics based on absenteeism and judicial decisions. Confirmed "fragging"[2] incidents rose from a rate of eight per month in 1969 to 19 a month by late 1971 (Congressional Quarterly, 1972, p. 393). In addition to fragging incidents, the Army continued to experience group refusals to obey orders, demonstrations by its members, racial conflicts, illicit drug usage, alcoholism, and other examples of military delinquency.

By 1974, Defense Department statistics indicated that delinquency problems in the Army might be lessening.[3] But they also indicated that court-martial, non-judicial punishment, AWOL, and desertion rates were still at exceptionally high levels.

This set of problems led Army leaders to seek to develop new policies and programs to improve discipline. However, these new steps generated

---

[1] Unclassified data provided by Office of the Deputy Chief of Staff for Personnel, Department of the Army.

[2] Fragging: Army and Marine Corps slang--Attempt to injure or assault (especially unpopular or overzealous superior) with a fragmentation grenade.

[3] Unclassified data provided by Office of the Deputy Chief of Staff for Personnel, Department of the Army.

a wide range of both positive and negative reactions among those who had to implement them. It soon became apparent that there was a need to develop a means by which the state of Army discipline could be empirically assessed and managed.

Leaders involved in managing the Army's human resources recognized that before the problem of Army discipline could be accurately assessed and dealt with, there must first be agreement on what military discipline is. Without a common conceptualization, views on the state of discipline and its determinants would continue to be subject to individual bias. There was also little common agreement on the determinants (or predictors) of discipline or lack of discipline. Thus, there was conflict among Army leaders on how to maximize discipline levels in today's Army.

This research project with its three major objectives is a result of the Army's recognition of these problems. The first objective was to develop a conceptual definition of discipline as that idea is understood in today's Army. The second was to identify those phenomena that social scientists and active duty Army personnel perceive to be the current principal social psychological indicators and determinants of discipline. The third objective was to conduct empirical research to develop reliable measures of discipline and its predictors that could be used in a variety of ways to assess and maximize Army discipline.

REVIEW OF PREVIOUS RESEARCH

Previous research on military discipline has focused on the military deviant and his individual characteristics. Because AWOL is the most noticeable form of military delinquency, most research efforts have been directed toward identifying the predictors of absenteeism in the Armed Forces. A review of the literature reveals a great deal of replication, both within and between the armed services. This is partially the result of the cyclical nature of inquiries on military delinquency. As noted by McCubbin and others (1971, p. 6) "Research on the military offender has occurred in cycles, with the greatest emphasis appearing in times of major conflicts."

Empirical research on the causes of military deviancy began during World War II. Research during the 1940's focused on individual characteristics, such as levels of maturity, education, marital status, civilian arrests and convictions, path of recruitment into the military service, and psychopathic or psychoneurotic traits. The works of Stouffer and Otness (1946), Manson and Grayson (1946), LaGrone (1947), Feldman and Maleski (1948), Davis (1945), Schneider et al. (1944), and Bromberg et al. (1945) are representative of most empirical research performed during the period.

Research on individual characteristics in relation to military delinquency continued through the early 1950's. From these studies, the military offender began to emerge as more than likely to have (1) less than a high school education, (2) a history of truancy and civilian

arrests, (3) poor civilian job performance, (4) an unstable home environment while growing up, (5) entered the service voluntarily rather than have been drafted, and (6) a neurotic hatred of authority figures and the military service.

There was also, at this time, some interest in environmental factors affecting military delinquency. French (1951) found that a naval recruit's sociometric status within his training company is related negatively and significantly to his tendency to commit military offenses. Similarly, Christie et al. (1952) reported that the proximity of the Army recruit's home to his basic training camp was inversely related to his ability to adjust to Army life and to perform well. Osburn et al. (1954) reported that among Army enlisted personnel, men in a transient status between assignments or commands were more likely to go AWOL than soldiers integrated into regular units (Hauser, 1973, pp. 93-95). Not surprisingly, they also found that imminent assignment to combat duty also contributed to AWOL, and that soldiers with "family problems" were more likely to go AWOL than soldiers without. Osburn et al. also touched on a variable that had previously received little empirical investigation as a possible determinant of delinquency--perceptions of leadership. They found that a perceived lack of personal interest by unit leaders was related to military delinquency. This study marked a beginning in efforts to assess empirically the impact of organizational variables, such as perceived leadership on Army delinquency.

During the late 1950's and early 1960's, many researchers continued measuring the relations between military delinquency and social background characteristics and/or psychiatric judgments, with the hope of developing a predictor of individual military delinquency that could be used to screen potential military deviants. It became apparent that social background information alone would not suffice as a basis for predicting military delinquency. As noted by Ryan, in the conclusion of his analysis of performance of Fort Dix basic trainees, (1958, pp. 117-118),

> ". . .caution must be observed in judging the importance of certain social background data in relation to performance. Although there are statistically significant relationships between such factors as broken homes, poor school attendance, civil crime etc. (sic) and substandard performance, these relationships were generally subtle and by no means exclusive. Most subjects with pathological social background histories were satisfactory soldiers."

The futility of seeking to prevent the entrance of potential delinquents into the military based solely on tests and psychiatric criteria was also becoming apparent (Lang, 1965, p. 858; Ginzburg et al., 1959). Plag (1964) reported that the Navy's psychiatric screening interview had little value in predicting military performance. A year later, Plag and Arthur (1965) confirmed Plag's previous findings. They concluded that the Navy psychiatric screening system they tested had statistical

validity but limited practical value. Seventy percent of the recruits judged to be unsuitable for naval service using the psychiatric screening system satisfactorily adjusted to Navy life.

During the mid-1950's and 1960's, with increasing evidence that social background variables alone would not provide adequate predictors for screening potential military offenders from among recruits, researchers began to place greater emphasis on personality characteristics to discriminate between potential military offenders and non-offenders. This increased emphasis merged with a series of investigations that led to the development of several self-report personality inventories containing scales capable of discriminating between delinquents and non-delinquents in both civilian and military samples (Gough, 1954; Peterson, Quay, and Cameron, 1959; Gordon, 1960; Gordon, 1961; Quay and Peterson, 1964; Knapp, 1963; Knapp, 1964; Kristiansen and Larson, 1967.

These personality measures failed to provide an operational basis for screening potential delinquents from the armed services, even when combined with pertinent social background information. (Gunderson, undated; Gunderson and Ballard, undated; Larson and Kristiansen, 1969). The measures would have screened out an undue number of recruits who were subsequently found to be non-offenders and reasonably well adjusted to military life. Based on their effort to predict delinquency among Army recruits, using three scales derived from the University of Illinois Personal Opinion Study and one scale derived from previous Army research, Larson and Kristiansen (1969, p. iii) concluded:

> "Taken together with similar findings on the predictions of military offenses during two years of service, these findings should discourage efforts to predict individual disciplinary offenses on the basis of individual soldier characteristics on entry to military service."

In the late 1960's, several researchers involved in etiological inquiries on military delinquency directed their attention to examining the impact of environment on military delinquency. Reports from the Wakeoff Research Center revealed that social isolation did not have an apparent effect on military performance (Goldstein et al., 1968). However, Watson (1969) reported that the lack of after-duty recreation facilities, unit-oriented activities, unit-integrity, and proper duty assignments, all contributed to the number of AWOL offenses.

Occasional reports still indicate a continuing research effort to develop and test personality measures and to use social background indicators as predictors of military effectiveness and delinquency (Berbiglia, 1971; Fraas and Fox, 1972; Fraas, 1972; Mahan and Clum, 1971; Clum and Mahan, 1971; Drucker and Schwartz, 1973). The fact remains that the majority of those designated potential military offenders that have been accepted for enlistment perform acceptably. The search for personality and background predictors of military delinquency has provided valuable insights into the nature of the military delinquent, particularly the AWOL offender. It is time to begin

to examine more closely the environmental characteristics that may influence military behavior; personality and previous background experience explain little of the variance in military behavior.

These studies, and the failure of other scholars to develop efficient and reliable predictors of military delinquency, led some researchers to call for the inclusion of environmental variables into the list of predictors. McCubbin et al. (1971, p. 8), for example, stated:

> "The individual factors which were first thought to be significant in attempting to predict those individuals who may become military deviants, as far back as the recruiting level, have proved to be quite unsatisfactory."

Thus, they concluded that AWOL research must take into account the situation and leadership climate in which the soldier lives, as well as personality and background characteristics. In their subsequent research on AWOL offenses, McCubbin et al. found that among 24 company-sized units in four Army installations in "low-AWOL" units their members were more satisfied with their leadership, job situation, opportunities for promotion, and recreational facilities. Low-AWOL units were also found to be characterized by greater problem-solving activities by agencies such as the Judge Advocate General, the Mental Hygiene Consultation Service, and the Inspector General, as well as high unit morale, low personnel turbulence due to transfer, less racial conflict, less illicit drug usage and alcoholism, less encouragement of members by peers to go AWOL, and less experience of members with punishments for previous military offenses.

Further research is needed to identify the environmental predictors of military behavior. If measures of military unit discipline can be developed, merged with efficient feedback systems, and used to identify and minimize discipline problems, this new path of inquiry will be justified. It will enable military leaders to limit military delinquency through human resource management where unit leaders can take positive actions to maximize discipline.

METHODS AND PROCEDURES

APPROACH

A central feature of the approach taken in this inquiry has been to develop measures of military discipline that are based not on official punitive actions, but rather on the perceptions of the men in the units who are most aware of discipline problems and their causes. The intent was to develop discipline criteria that may be used by field commanders to detect, diagnose, and treat discipline problems. The emphasis here is on prevention rather than punishment.

This approach is also inductive. The researchers sought to develop an etiological model of Army discipline. A major portion of the research for this report was an in-depth interview survey of Army personnel to

gain the necessary insights into Army perceptions of discipline and its determinants.

This approach has sought also to develop measures of discipline and its predictors based on subjective data for use in intervention strategies to improve organizational effectiveness.

The researchers did not assume that the principal socio-psychological phenomena they sought to conceptualize and measure were unidimensional. Many hypothetical constructs previously assumed to be unidimensional are multi-dimensional. When the design for the present research was developed it was viewed as likely that military discipline would be a multidimensional construct. The scale construction design and procedures used in this inquiry were developed accordingly.

Finally, the researchers desired to delineate environmental, as well as individual phenomenon that may affect Army discipline. To develop a complete model of military discipline and its determinants, individual phenomena such as basic personality characteristics and social background experiences were included in the analysis, but environmental features such as perceptions of leadership behavior and quality of life features were also taken into account.

A Review of Official Regulations and Policy Statements. The researchers reviewed official regulations and policy statements describing military discipline in the U.S. Armed Forces. The purpose of this review was to identify the ways the term discipline is used in the military. The results of this review indicated little consensus either within or between the U.S. Armed Forces on the meaning or use of the term discipline. Various official and semi-official sources define military discipline as being either a pattern of behavior that reflects conformity to prescribed military norms, attitudes that predispose soldiers to conform to these prescribed norms, or training or punishment that causes soldiers to conform to prescribed norms.

An example of the behavioral definition is found in the Army Officer's Guide which describes military discipline as "...an intelligent, willing, and cheerful achievement of assigned mission or compliance with orders" (Crocker, 1971, p. 281). Similarly, an official Soldier's Guide suggests that discipline is the "....state of order and obedience among military personnel resulting from training" (U.S. Department of the Army, 1961, p. 134).

A typical attitudinal definition is offered in a Department of the Army Field Manual which defines discipline as an "...individual or group attitude that insures prompt obedience to orders and initiation of appropriate action in the absence of orders (and) ...a state of mind that produces a readiness for willing and intelligent obedience and appropriate conduct" (U.S. Department of the Army, 1965, p. 27). More recently, the Department of the Army Legal Guide for Commanders used a definition quoted from a Congressional report which describes military discipline as being "...a state of mind which leads to a willingness to obey an order no matter how unpleasant the task to be performed..." (U.S. Department of the Army, 1972, p. 1-1). Comparable definitions of

military discipline as an attitudinal phenomenon are also found in Air Force and Navy reference materials (Heflin, 1956, p. 169; Noel, 1959, p. 127-128).

The use of the term discipline to describe either training or coercive actions taken to cause soldiers to conform to prescribed norms is far less common in official publications and policy statements. However, it is occasionally found in literature describing policies and practices in military confinement facilities (McMahon, 1962, p. 45; MacCormick, 1945, p. 7).

In summary, there is little consensus among military writers and policymakers concerning the use of the term discipline. To develop a conceptualization of military discipline as the concept is understood in today's Army, field interviews were used as a second source of guidance.

Field Interviews. As noted above, to assure the development of a conceptualization and etiological model of discipline as that complex phenomenon is understood by the Army, the researchers conducted a series of in-depth interviews of active-duty Army personnel to determine their perception of discipline and its determinants. This interview program began with a series of unstructured discussions with Army officers and civilian personnel in the Department of the Army, the Army Research Institute for the Behavioral and Social Sciences, and the Army War College. From the information gathered during these discussions, it was possible to define an interview sample and develop an unstructured in-depth interview format.

The objectives of the interviews were to determine: (1) how the interviewees defined discipline, (2) their perception of its principal indicators, and (3) their perception of its major determinants. The interview results were intended to guide the researchers in their efforts to develop a self-report survey instrument to develop and test conceptual and predictive models of Army discipline.

Limitations of time and resources precluded the development of a service-wide sample for the interviews. It was important that the interviews reveal as much as possible the scope of Army experience and perspectives related to the concept of discipline. The interviewees were selected from sites representative of the Army in terms of environmental criteria that included region, proximity to urban areas, types of units assigned to the post, levels and types of training exhibited by post personnel, quality of on-post services and facilities, levels of military delinquency, presence of soldiers' dependents, reputed levels of on-post and off-post racial polarization and discrimination, and the presence of military personnel confinement or correctional training facilities.

For each site, interviewees were selected to provide the maximum direct insights into the nature of Army discipline. Selection criteria were rank, position in the chain of command, type of unit assigned, functional (or occupational) specialty, race, and experience with or involvement in military personnel problems and delinquency. The sample was purposely weighted to emphasize the perspectives of persons with

the most contact--as leaders, counselors, or peers--with discipline problems in their units. The sample characteristics are described in Tables 1 and 2.

The interviewing process was an unstructured open-ended question format. The interviewer's role was primarily to elicit elaboration and clarification of ideas introduced by the respondent. Leading questions were kept to a minimum to lessen response bias.

The interview format was relatively simple. The rank and Military Occupational Specialty (MOS) of the respondent were noted along with the location, date, and any significant event that occurred during the interview. Each interview was opened with a very brief introduction to the goals of the inquiry and the institutions performing and sponsoring the research. The respondent was assured of his anonymity. He was further assured that the interviewer intended to listen to his opinions and note his observations rather than to ask questions. During the interview, if the discussion lagged, the interviewer would ask broad questions about various phenomenon that might impact on Army discipline. This procedure diverged from the inductive approach taken in this inquiry. Consequently, a rating technique was developed and tested to allow the respondent to go back over the list of determinants of discipline he had mentioned and ascribe to each a weighting of from 1 to 10, according to the perceived importance of the item as a determinant of Army discipline. The higher the weighting given, the more impact the item was perceived as having on Army discipline.

This weighting technique helped eliminate any bias that may have been introduced by the interviewer's probe questions by helping the interview scorer distinguish between items which were mentioned simply because they come readily to mind or were suggested by the interviewer's comments, and those items which the respondent perceived as having a substantial impact on Army discipline. The technique also provided the interviewee the opportunity to clarify his statements.

Results. The interview data revealed that the majority of the respondents view discipline as a behavioral phenomenon. It was generally described as some form of willing response to orders and/or compliance with military standards of performance, conduct and appearance with little or no supervision. Some of the more common words or phrases used to describe indicators of Army discipline were "the unit performing as a team," "obedience," "posture," "maintaining a high state of readiness," "doing what has to be done without being told," "observing military courtesies," and "orderly behavior" off-post. The term indiscipline was also commonly used to describe the absence of discipline. Indicators of indiscipline were described in terms of specific standards of conduct,

Table 1

INTERVIEW SAMPLE CHARACTERISTICS: COMMANDS, INSTALLATIONS AND TYPES OF UNITS*

CONUS Commands

Fort Devens, Massachusetts: Garrison, Combat (Special Forces), Support (Engineering, Transportation, Supply and Services), Training (NCO Academy) and Correctional (Personnel Confinement Facility).

Fort Bragg, North Carolina: Garrison, Combat (Airborne Infantry, Armor, and Artillery), Support (Supply and Service, Medical), Training (NCO Academy), and Correctional (Personnel Confinement Facility).

Fort Riley, Kansas: Garrison, Combat (Infantry, Armor, Artillery), Training (NCO Academy), Correctional (Post Confinement Facility and U.S. Army Correctional Training Facility).

Fort Ord, California: Garrison, Training (NCO Academy, BCT and AIT), Correctional (Post Confinement Facility Personnel).

USARL Commands

Fort Richardson, Alaska: Garrison, Combat (Infantry), Correctional (Personnel Confinement Facility).

Fort Wainwright, Alaska: Garrison, Combat (Infantry, Air Defense), Support (Aircraft Maintenance, Engineering, Military Police) and Correctional (Personnel Confinement Facility).

USAREUR Commands

Goeppingen, West Germany: Headquarters, Combat (Infantry).

Boeblingen, West Germany: Combat (Infantry, Armored Cavalry).

Frankfurt, West Germany: Headquarters, Combat (Armored Cavalry).

Bad Kreuznach, West Germany: Headquarters, Combat (Infantry).

Bad Toelz, West Germany: Headquarters, Combat (Special Forces), Training (NCO Academy).

Berlin: Headquarters, Combat (Infantry), Support.

Mannheim, West Germany: Correctional (Personnel Control Facility).

Heidelberg, West Germany: Headquarters, U.S. Army, Europe.

* Sites in South Korea and South Vietnam were not available because of conflicting field research schedules and ongoing troup withdrawals respectively. Other non-CONUS sites were not selected because of limited numbers of Army personnel assigned and research cost-benefit considerations.

Table 2

INTERVIEW SAMPLE CHARACTERISTICS: INDIVIDUAL RESPONDENT CHARACTERISTICS BY TYPE AND RANK

By Type	Number	By Rank	Number
Chief of Staff/Headquarters Personnel	14	General	-
Brigade Commanders	9	Colonel	11
Battalion Commanders	15	Lieutenant Colonel	21
Company Commanders	27	Major	31
Platoon Leaders/Executive Officer (Company Level)	12	Captain	58
		First Lieutenant	24
Platoon Sergeants	12	Second Lieutenant	7
Squad Leaders	14	E9/Sergeant Major	6
Provost Marshal's Office Personnel (Officers and Men)	20	E8/Master Sergeant	14
		E7 Sergeant First Class	25
Chaplains	18	E6/Staff Sergeant	19
JAG Officers (Trial and Defense Counsels)	17	E5/Sergeant	20
		E4/Corporal/Specialist	17
Inspectors General	10	E3/Private First Class	15
Equal Opportunity/Human Relations Office Personnel	15	E2/Private	5
		E1/Recruit	10
Alcohol and Drug Control Office Personnel (Staff and Counselors)	16	Civilian	5
		Unidentified	3
Stockade/Retraining Brigade Staff and Cadre	14	Total Interview Sample	291
Social Workers/Psychiatrists	12		
NCO Academy Commandants and Cadre	10		
Drill Sergeants	12		
Enlisted Personnel/Support Units	26		
Enlisted Personnel/Combat Units	10		
Inmates/Trainees	8		
Total Interview Sample	291		

such as not keeping one's hair cut according to regulations, the commission of specific military offenses such as AWOL, stealing from others, "getting over" on superiors,[4] or simply court-martial and non-judicial punishment rates, AWOL and desertion rates, or levels of drug usage.

A few respondents defined discipline as being an attitudinal phenomenon or "state of mind" that causes a soldier "to obey lawful commands" or "to do what he doesn't want to do." Related descriptions include "an intangible that causes a man to do the right thing," "self control," "the ability to cope with what can't be changed" or "willingness to postpone immediate gratification" for anticipated gains later on. But attitudinal definitions were far fewer than the behavioral definitions described earlier.

Still fewer respondents perceived discipline as coercive or punitive actions taken to cause soldiers to conform to military standards. Respondents with this view of discipline were generally officers and enlisted men assigned to the Provost Marshall's Offices, the Judge Advocate General's Offices, or confinement facilities. Some representative words and phrases used to define discipline by such persons were "punishment," "power to control," "power to compel others to get the job done," "coercion," Article 15s" (non-judicial punishment), and "courts-martial" (judicial punishment).

In direct contrast to definitions found in the literature review, no respondents described discipline as training designed to predispose soldiers to behave in a prescribed manner.

It is important to note here, in light of the findings derived from the interviews of active-duty Army personnel described earlier, that military discipline and military delinquency are not equivalent concepts. Discipline, as understood by the interviewees, is a series of acts which both contribute to and detract from the Army's efforts to accomplish its mission. Military delinquency in the form of absenteeism (AWOL, desertion), insubordination, illicit drug usage, and so on, is not perceived to constitute the principal or even the majority of socio-psychological phenomena underlying discipline.

In summary, the interview data revealed that an overwhelming majority of the respondents viewed discipline as individual or group compliance with prescribed military standards and norms. Given this view and lack of any official documentation and policy statements, the researchers defined Army discipline as individual or group compliance with behavioral standards and norms prescribed by Army leaders.

---

[4] "Getting over" is a slang phrase generally used to describe clever and subtle acts or interactions with supervisors resulting in the avoidance of work or punishment and/or the receipt of unmerited rewards.

Content analysis of the interview data revealed five basic categories of determinants of Army discipline. Two of these categories are listed as being individual characteristics; personality and social background. Three are perceptions of the Army environment, work role, leadership behavior, and other situational phenomena. As indicated in Figure 1, environmental phenomena far exceed individual phenomena in terms of the frequency with which they were mentioned and perceived as having a maximum relative impact on Army discipline.

Among perceptions of the environment, leadership characteristics were by far the most important group, followed by military work role and other situational phenomena.

Among individual characteristics, personality features such as acceptance of authority and sense of social responsibility were predominant over social background characteristics, such as family relations and pre-service delinquency.

Developing a Pretest Questionnaire. On the basis of the analysis of the interview data and previous consultation with other researchers who sought to obtain similar data on socio-psychological variables,[5] a self-administered questionnaire was designed to gather perceptions related to the variables described by the interviewees as being the indicators and leading determinants of Army discipline.

The questionnaire was pretested on a group of 151 soldiers in August 1973. The pretest sample was drawn from combat (Special Forces), support (supply and services, medical), engineering, and training (ASA school) units at Fort Devens, Massachusetts. The pretest, which consisted of 284 Likert-type items, was administered by the same persons who would administer the final instrument.

The respondent ranks ranged from E-1 to E-9 with the median and modal ranks both being E-4. The sample contained approximately 20 percent non-white and 80 percent white respondents. There were two women respondents. The mean time required for completing the questionnaire

---

[5] During the course of this research project, various institutions were visited in which related research projects have been performed. The information obtained from researchers at these institutions was invaluable in guiding this effort and is very much appreciated. The institutions visited include the Leadership Study Group of the Strategic Studies Institute, U.S. Army War College, Carlisle Barracks, Pennsylvania; the U.S. Navy Medical Neuropsychiatric Research Unit, San Diego, California; the Research and Evaluation Division of the U.S. Army Correctional Training Facility, Fort Riley, Kansas; the Organizational Development Directorate, Fort Ord, California; and the Institute for Social Research at The University of Michigan.

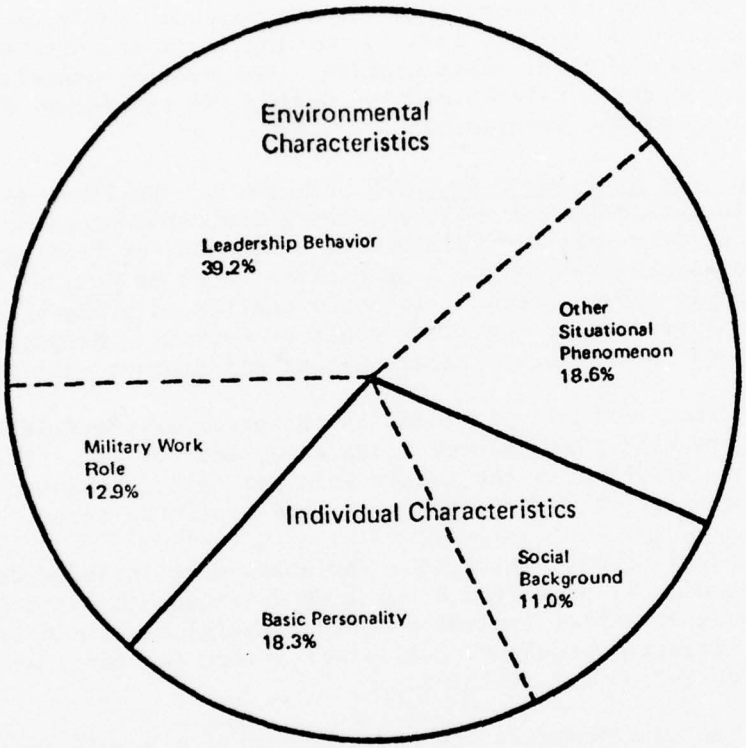


Figure 1. Categories of determinants of Army discipline

was 49 minutes, the median time 47 minutes, and the modal time 45 minutes. Of the 151 questionnaires administered, 141 were completed.

Following the administration, individual respondents were randomly interviewed to determine if they found any ambiguities or had any difficulty in understanding the questionnaire items. The cited items were either reworded or eliminated from the final instrument. Comments by the interviewees and other respondents to the questionnaire also were used to develop additional response choices.

The Final Questionnaire. The final version of the questionnaire was essentially the same as the pretest instrument, with the exception of a few item deletions or changes in item wording. A total of 274 items were included in the final questionnaire. The average administration time remained approximately 45 minutes during the subsequent field administrations of the instrument.

Design of the Subsequent Research. In view of the findings derived from the interview data and a literature review, conceptual and predictive models of Army unit discipline were developed for testing using the questionnaire survey data. A predictive model of unit discipline was specifically chosen because, as noted earlier, a primary objective was to develop a survey instrument that could be used as a diagnostic management tool to help Army leaders assess and improve unit discipline.

The criterion variables included in the predictive models of unit discipline were unit performance, appearance, and conduct. The principal predictor variables in the models were perceptions related to leadership behavior, military work role, and esprit de corps.

Several other possible predictor variables were included despite their poor showing as perceived discipline determinants by the interviewees. These variables include perceived racial discrimination, marital and financial problems, quality of living quarters, and availability of recreational facilities.

Sample. The questionnaire was administered to a sample of enlisted personnel from October 1973 to January 1974. The survey sites and units surveyed were, with a few exceptions, the same as those used in the interview phase of the inquiry (see Table 1).[6] As much as possible, the respondents were selected on a random basis with certain categories of respondents within each unit selected for inclusion in the survey. This was done to insure sufficient numbers of respondents in various rank, racial, and delinquent versus non-delinquent categories to facilitate and to ensure the validity of subsequent statistical analysis of the data.

---

[6] The survey questionnaire was not administered to personnel at Fort Richardson, Alaska. Different units were surveyed within the same divisional commands headquartered at Frankfurt and Bad Kreuznach, West Germany.

The military and selected social background characteristics of respondents in the sample are presented in Appendix A. Variations occur in the number of respondents used in the calculation of statistics because of occasional missing data.

THE CRITERION MEASURES

Military Unit Discipline. To develop a criterion measure of military unit discipline, a pool of 25 items was constructed and incorporated in the questionnaire. Using the behavioral conceptualization of military discipline described earlier, all but two of the items were designed to measure indicators the respondents perceived as good or poor unit discipline. The two exceptions were items designed to measure the extent to which unit members were perceived as displaying racial prejudice or letting racial conflict interfere with their work. Several independent studies have indicated that white servicemen are less likely to perceive racial discrimination than are non-whites (U.S. Department of Defense, 1970, pp. 6-7; Borus, Stanton, and Fiman, 1972, p. 1371; Stoloff et al., 1972, p. 11). These two items were not however, perceived by the survey respondents as being part of the unit discipline construct.

To enhance the respondents' understanding of the items, many of the item statements were based on terminology used by the Army interviewees to describe behavioral indicators of discipline. The original item pool contained statements designed to assess the following: the extent to which the respondent perceived members of his unit maintaining and properly wearing their uniforms, ignoring military courtesies, failing to show up on time, keeping their living and working areas in clean and orderly condition, processing paperwork efficiently, cooperating with each other, letting racial discrimination interfere with their work, readily responding to orders, needing direct supervision to get the job done right, displaying disorderly conduct off post, obeying lawful orders, doing nothing during duty hours, doing poor quality work, working together as a team, maintaining a high level of combat readiness, doing whatever needs to be done, maintaining a neat personal appearance, performing well without close supervision, volunteering to work past duty hours, displaying racial prejudice, failing to get their hair cut according to regulations, helping each other out, doing just enough work to get by, stealing from each other, and "getting over" on their supervisors.

The analyses of the scales and indices derived from this research utilized, among other techniques, non-metric factor analysis and Smallest Space Analysis. Because these techniques may not be fully understood by all readers a short description of them follows.

Nonmetric factor analysis is a special case of multidimensional scaling developed originally by Shepard (1962) and Kruskall (1964). The primary purpose of multidimensional scaling is to provide the scientists with a parsimonious picture or model of the interrelations between data elements that is accessible to human visualization in that

it is confined to two, or at most, three spatial dimensions.

This matter of dimensionality and visualizability distinguishes multidimensional scaling (including nonmetric factor analysis) from the related methods (factor analysis and principal components analysis) that have long been used in the social and behavioral sciences. Although it is true that there is nothing inherent in the factor-analytic methods that requires that they always yield representations of high dimensionality, in most social science applications the standard factor-analytic methods lead to representations of five, ten, or more dimensions.

Such results cannot be cast into the form of a readily visualizable picture. These high dimensionality characteristics of factor-analytic results are, in part, a consequence of the rigid assumptions of linearity upon which the methods are based. To the extent that appreciably nonlinear relations exist among the underlying variables governing the phenomenon under study, a more flexible, nonlinear method of factor analysis could lead to a lower-dimensional, more visualizable representation.

Smallest Space Analysis (SSA) is a specific computer program based on nonmetric multidimensional scaling procedures. As such, SSA is based on the following points: (a) it assumes a monotonic relation between interpoint distances and the given data; (b) it uses an interative procedure of adjusting the coordinates for the data points to achieve a closer and closer approximation of the desired monotonic relations.

Further, SSA III (the specific program used in the following analyses) is a nonmetric factor-analytic method whose algorithm consists of a sequence of linear and orthogonal transformations of values monotone with R, i.e., Guttman's rank images. The typical use of this technique is in those applications where one would do a standard linear factor analysis but could not justify the linear assumptions of the model (the general situation confronting social scientists).

For a more detailed review of multidimensional scaling and nonmetric factor analysis the reader is referred to Shepard, Romney and Nerlove, 1972.

Dimensional Structure of Unit Discipline. A non-metric factor analysis of the original item pool for unit discipline indicated that a single factor could not account adequately for the pattern of correlations. Furthermore, comparisons of the interitem correlation matrices for breakdowns of the respondents by unit type, race, rank, prisoner status, and educational level indicated that the dimensional structure of discipline might vary from one group to another. Hence a series of nonmetric factor analyses (smallest space analyses) using Guttman-Lingoes program SSA-III were carried out for the item set for each group separately. Nine items were eliminated from the pool because of low communality and/or failure to load consistently on the same factor for all groups; in particular, the items dealing with the effect of racial discrimination on the unit were removed from the Discipline item pool and included in one of the racial discrimination scales.

The results of the nonmetric factor analyses using SSA III indicated that three dimensions were necessary to explain the interitem correlations for combat and support units; two factors were sufficient for the training units. The program was formatted to stop generating dimensions after the third iteration. Table 3 shows the items assigned to each scale and their loadings on the factor. The three scales have been designated the Military Unit Performance Scale (Discipline I), the Military Unit Appearance Scale (Discipline II), and the Military Unit Conduct Scale (Discipline III). The Military Unit Performance Scale contains items having to do with how well the men in the unit carry out their duties--whether they cooperate, work as a team, have high combat readiness, process paperwork efficiently, do what needs to be done, and help each other out. A high score on this scale implies good unit performance. The Military Unit Appearance Scale contains items having to do with neatness of uniforms, cleanliness of living and working areas, and generally neat personal appearance; a high score on this scale implies good unit appearance. The last scale, Military Unit Conduct, contains items having to do with behavior toward leaders, disorderly conduct, quality of work, and the extent to which the men are slow to work or fail to work without direct supervision; a high score on this scale implies good unit conduct. These three scales, it must be emphasized, are not independent; the correlations in Table 4 indicate that all three scales are closely linked even though they measure what appear to be distinguishable concepts.

A caveat must be entered with respect to the Unit Conduct Scale; all the items in the scale are negatively worded; i.e., the response "To a very great extent" for these items implies poor unit conduct, whereas for all the items in the other two scales that response implies good unit performance or appearance. This situation raises the possibility that the Unit Conduct factor is an artifact attributable to response bias and/or failure of the respondents to read or interpret the items correctly. Nonetheless, even though the Unit Conduct Scale is probably contaminated to some extent by such artifacts, the scale was retained for subsequent analysis because it was not possible to rule out the Unit Conduct Scale measures as a valid factor distinct from the other two Unit Discipline Scales.

THE PREDICTOR MEASURES

Leadership. Much of the questionnaire was devoted to items that might contribute to the development of a reliable measure of leadership characteristics relevant to unit discipline. In an essentially behavioral approach, most of the items included in the original item pool were designed to measure some aspects of perceived supervisory behavior that the interviewees felt to be an important determinant of discipline. Some of the facets of leadership behavior included were the degree to which the respondent's supervisor was perceived as being concerned about the welfare of his subordinates, encouraging members of his command to work together as a team, working with his subordinates, treating his subordinates as individuals, keeping himself informed with their progress, and helping them to solve their personal problems. Other

Table 3

DIMENSIONALITY OF UNIT DISCIPLINE ITEMS IN COMBAT, SUPPORT, AND TRAINING UNITS

Factor	Item	Type of Support		
		Combat	Support	Training
Performance[a] Discipline I	To what extent do members of your unit process paperwork in an efficient manner?	-.537	-.581	-.568
	To what extent do members of your unit cooperate with each other?	-.680	-.520	-.621
	To what extent do members of your unit work together as a team?	-.630	-.621	-.385
	To what extent do members of your unit maintain a high level of combat readiness?	-.485	-.569	-.540
	To what extent do members of your unit do what ever needs to be done?	-.488	-.493	-.718
	To what extent do members of your unit help each other out?	-.612	-.412	-.439
Appearance[b] Discipline II	To what extent do members of your unit maintain and properly wear their uniforms?	.548	.670	.424
	To what extent do members of your unit keep living and working areas in clean and orderly condition?	.446	.492	.282
	To what extent do members of your unit maintain a neat personal appearance?	.626	.597	.256
Conduct[c] Discipline III	To what extent do members of your unit "get over" on their supervisors?	.483	.510	.559
	To what extent do members of your unit fail to show up on time?	.552	.454	.654
	To what extent do members of your unit need direct supervision to get the job done right?	.443	.427	.551
	To what extent do members of your unit display disorderly conduct off-post?	.709	.529	.680
	To what extent do members of your unit sit around on duty hours doing nothing?	.467	.568	.674
	To what extent do members of your unit do poor quality work?	.512	.509	.675
	To what extent do members of your unit do just enough work to get by?	.515	.571	.488

[a] Coefficient alpha = .814

[b] Coefficient alpha = .726

[c] Coefficient alpha = .815

Table 4

CORRELATIONS[a] AMONG MILITARY UNIT DISCIPLINE SCALES

	Performance (I)	Appearance (II)
Performance (I)	–	–
Appearance (II)	.566	–
Conduct (III)[b]	.536	.465

[a] Product-moment correlations, 1327 complete cases. All correlations in the table are significant at the .001 level.

[b] The positive correlations between unit conduct, Performance and Appearance are accounted for by reverse scoring of Unit Conduct Scale responses.

items were designed to measure whether the respondent perceived their immediate supervisor to be technically competent and sufficiently experienced to perform his duties, willing to entertain new ideas and accept new ways of doing things, able to anticipate and solve problems, and able to make decisions quickly and stick to them.

Of the twenty-three items included in the original item pool, fifteen were developed especially for this inquiry, eight were adapted from items in the Leadership Behavior Description Questionnaire developed by Stogdill and others (Fleishman, 1957, pp. 120-133), and one was taken from the leadership measures developed by Bowers and Seashore (1966).[7] As in the case of the previously described unit discipline measures, wherever possible item statements included terms and phrases derived from the interviews.

Dimensional Structure of Leadership. Nonmetric factor analyses using SSA III of the item set were carried out for several kinds of subject groupings, including groupings by unit type, rank, race, educational level, and prisoner status. There was some evidence that the data from training units were reliable or dimensionally more complex that for other types of units, but in all cases it was clear that the dimensions labeled Leadership I and Leadership II, which were reasonably stable across subject

[7] The authors are grateful to Professor Ralph M. Stogdill, of the Ohio State University, and Professor David G. Bowers, of the Institute of Research, of The University of Michigan for permitting the use of the items drawn from the LDBQ and Survey of Organizations instruments.

categories, would explain most of the variation. Leadership II appears to be the less reliable. For some categories of subjects, some of the items included in Leadership II had higher loadings on other dimensions. However, the partitioning of the items, as given in Table 5, seemed to give the best fit overall.

The items included in the Leadership I scale are all positive items, that is, the response "To a very great extent" is indicative of good leadership for these items; all the items in the Leadership II set are negative--the response "To a very great extent" implies poor leadership. As in the case of the Discipline III scale, the Leadership II dimension may be an artifact of response bias. Some subjects may have tended to respond with a check mark in the same column regardless of the direction of the item, or may have misread the item, or may have other biases leading to inappropriate responses to negative items. Despite the possibility that the dimension Leadership II might be artifactual, however, it was included in subsequent analysis because it could not be demonstrated that the scale was nothing but response bias. Responses to the Leadership II scale were reversed scored prior to computation. For both Leadership I and Leadership II, a high scale score implies good leadership.

Esprit de Corps. Among the principal environmental determinants of Army discipline was esprit de corps. The basic concept of esprit de corps is a sense of commitment to others in one's military unit, which may be manifested in several ways, including the soldier's perceptions of others in his unit. The esprit measure developed for this inquiry is designed to measure the soldier's attitude toward others in his unit in terms of their professional competence, cooperativeness, trustworthiness, and general likeability.

The original item pool consisted of seven Likert-type items, three of which were previously used in a measure of "group esprit and solidarity" and reported to lie on the same dimension (Spector, Clark, and Glickman, 1960, p. 309). The remaining items were developed for this inquiry (alpha coefficient = .766). Two of the original pool items were deleted because of their low intercorrelation scores.

Dimensional Structure of Esprit de Corps. The item pool for esprit de corps was judged to be too small (5 items) to justify a factor analysis.

Racial Discrimination. While conducting the field interviews, it became apparent that the officer, NCO, and enlisted respondents were not likely to attribute Army discipline problems to racial discrimination. There is evidence that white Army personnel did not perceive as much racial discrimination in their units as black personnel do (Stoloff et al., 1972 p. 11; Borus, Stanton and Fiman, 1972, pp. 1370-71; Nordlie and Thomas 1974; U.S. Dept of Defense, 1970, p. 11). Hence, white personnel probably did not consider racial discrimination as an important influence on soldiers' behavior. Second, the failure to link military delinquency to racial matters may be a result of social desirability response style--the tendency to "fake good" when responding to the questionnaire.

Table 5

DIMENSIONALITY OF LEADERSHIP I AND LEADERSHIP II ITEMS
FOR COMBAT, SUPPORT, AND TRAINING UNITS

Factor	Item	Type of Unit		
		Combat	Support	Training
Leadership I[a]	To what extent is your supervisor concerned about the personal problems of his subordinates?	.713	.589	.714
	To what extent is your supervisor technically competent to perform his duties?	.677	.630	.650
	To what extent does your supervisor keep his subordinates informed?	.696	.586	.667
	To what extent does your supervisor plan ahead?	.667	.632	.686
	To what extent does your supervisor keep himself informed about the work that is being done by his subordinates?	.692	.602	.653
	To what extent does your supervisor communicate effectively with his subordinates?	.690	.684	.675
	To what extent does your supervisor anticipate and solve problems before they get out of hand?	.710	.684	.684
	To what extent is your supervisor willing to make changes in ways of doing things?	.529	.595	.622
	To what extent does your supervisor encourage subordinates to work together as a team?	.720	.664	.605
	To what extent does your supervisor keep himself informed about the progress his subordinates are making in their work?	.726	.735	.675
	To what extent does your supervisor work right along with his men?	.704	.624	.707
	To what extent does your supervisor offer new ideas for solving job-related problems?	.681	.682	.676
	To what extent does your supervisor know and treat his subordinates as individuals?	.595	.607	.606
	To what extent does your supervisor make decisions quickly and stick to them?	.442	.560	.522
Leadership II[b]	To what extent does your supervisor lack sufficient experience to perform his duties?	.452	.362	.393
	To what extent does your supervisor fail to provide for the everyday needs of his subordinates?	.598	.540	.486
	To what extent does your supervisor fail to keep his subordinates busy with challenging tasks?	.420	.360	.293
	To what extent is your supervisor unwilling to accept responsibility for mistakes made by his subordinates?	.478	.564	.535
	To what extent does your supervisor depend too much on threats--rather than rewards--to get things done?	.480	.413	.449
	To what extent does your supervisor fail to explain why a particular action is important?	.604	.492	.502
	To what extent is your supervisor not aware of his subordinates' capabilities?	.449	.374	.491

[a] Coefficient alpha = .923

[b] Coefficient alpha = .698

Soldiers, especially officers and NCOs, may be reluctant to identify racial problems in their units because of pressure to eliminate racial tensions. And third, the differences in perceptions between blacks and whites may also be the product of racially "polarized pre-Army attitudes and expectations, which selectively filter the daily experiences [of whites and non-whites] to produce contrasting perceptions of Army life" (Borus et al., 1972, pp. 1371-72).

Regardless of what caused this discrepancy, it undoubtedly reduced the frequency with which racial discrimination was mentioned as a factor affecting Army discipline. And because of the significantly larger portion of whites and higher ranking personnel interviewed, it also undoubtedly reduced the probability that racial discrimination would emerge from the summary of the interview data as a leading determinant of military discipline.

However, considerable evidence suggests that racial tensions and conflicts are associated with military discipline problems. The interviewers encountered numerous reports of incidents involving fights between groups of soldiers divided along racial lines at many of the posts they visited. McCubbin et al. (1971, p. 31) offer empirical evidence that Army "units with minimal AWOL problems are characterized by less conflict between races." And, as noted by Borus, Stanton and Fiman (1972, p. 53), "In the last few years interracial conflicts have been reported on military posts throughout the United States and Asia."

In view of this evidence, and in light of the probable bias in the interview data because of the preponderance of whites and high ranking respondents and the social desirability response set, perceived racial discrimination was included in the research design as a possible predictor of discipline and a pool of Likert-type items was developed for inclusion in the survey questionnaire to measure this phenomenon.

The racial discrimination items were designed to measure the respondent's perception of the levels of racial discrimination--within both the respondent's military and off-post civilian environments, as well as society in general. Items to measure the respondent's perception of discrimination were selected from scale items originally used to measure perceived racial discrimination among Marine and Navy personnel (Stoloff et al., 1972), and subsequently used to measure racial discrimination perceptions among Army personnel. Four items designed to measure perceptions of off-post racial discrimination and discrimination against soldiers in general were also developed for inclusion in the questionnaire.

Dimensional Structure of Racial Discrimination. Correlation matrices for the racial discrimination items were inspected for different subject groupings split by type of unit, rank, prisoner status, educational level, and race. Nonmetric factor analyses were carried out for each racial group; the results of these analyses were inspected in an attempt to determine a set of one or more scales applicable to all races. Five of the original sixteen items were eliminated using this process, and the remaining eleven units were partitioned into a Unit Racial

Discrimination Scale and a General Racial Discrimination Scale. The items and their factor loadings are shown in Table 6. The items in the Unit Racial Discrimination Scale all deal with discrimination specifically within the respondent's unit, whereas the General Racial Discrimination Scale items deal with discrimination in the Army or society as a whole and the local off-post civilian environment. A high score on either discrimination scale implies a high degree of perceived discrimination.

Military Work Role. As reported earlier and illustrated in Figure 1, elements of the military work role were perceived by the Army interviewees as having considerable impact on military discipline. Of particular importance were unit policies, working conditions, co-workers, the relevance and quality of training received, the unit mission, the importance of daily jobs assigned, and the types and relevance of MOS assignments. There were also related elements of job satisfaction.

To develop a measure of these phenomena, a pool of thirteen Likert-type items was developed. All of the items were designed to measure the respondent's perceptions of various facets of the military work role that the Army interviewees reported as having a substantial impact on Army discipline.

Dimensionality of Military Work Role. It was determined that the unidimensionality of the item set was sufficiently evident to make factor analysis unnecessary. The stability and generality of the inter-item correlations was explored by calculating matrices for the respondents in the sample stratified by type of unit (combat, support, training, or correctional), rank, race, educational level, and prisoner versus non-prisoner status. No significant differences between groups were observed.

The internal consistency of the scale was exceptionally high, especially considering the item sets were not the product of factor analysis. A high score on the work role scale implies favorable perceptions of the military work role.

Recreational Availability. The availability of recreational facilities did not emerge from the interview data as a principal determinant of Army discipline. However, many facets of unit discipline and indiscipline were perceived by the interviewees to be the consequence of a lack of meaningful, interesting, and challenging things to do. Therefore, the researchers included items to measure the availability of recreational facilities on or near the respondent's post.

The Recreational Availability Index was calculated by summing the untransformed responses to the recreational availability items across all facilities mentioned in the questionnaire. No attempt was made to determine the dimensionality of the item set.

Table 6

DIMENSIONALITY OF RACIAL DISCRIMINATION ITEMS BY RACIAL GROUP

Scale	Item	Blacks (N=394)		Whites (N=940)		Others (N=202)	
		Factor I	Factor II	Factor I	Factor II	Factor I	Factor II
Unit Discrimination[a]	To what extent do members of your unit let racial conflicts interfere with their work?	-.038	-.740	.074	.618	.234	-.324
	To what extent do members of your unit display racial prejudice?	.363	-.501	.074	.642	.171	-.381
	Whites in my unit have a good reason to distrust non-whites.	.101	-.313	-.041	.794	-.105	-.686
	Non-whites in my unit have good reason to distrust whites.	.368	-.596	-.515	.090	.463	.328
General Discrimination[b]	The Army should make a greater effort to assist non-whites to qualify for enlistment and technical ratings	.562	.029	-.516	-.160	.718	.120
	Members of minority groups have a harder time in the Army than others.	.530	-.179	-.445	-.158	.611	-.076
	White soldiers are punished less severely than non-whites for the same offenses.	.515	-.300	-.506	.046	.516	-.323
	The Army should recognize that it is not always fair to apply test standards to minority groups that have been developed for whites.	.419	-.263	-.452	-.192	.474	-.264
	Commanding officers should be more responsive to the needs of minority group members.	.490	-.215	-.510	.029	.490	-.277
	There is so much discrimination against minority soldiers by local civilians, minority soldiers don't want to leave the post.	.400	-.200	-.478	.012	.390	-.447
	Local landlords discriminate against non-whites	.501	-.140	-.458	-.192	.420	-.390

[a]Alpha coefficient for Blacks = .650; for whites = .636; others = .507

[b]Alpha coefficient for Blacks = .730; for whites = .684; others = .795

Social Desirability. The questionnaire included a set of items intended to measure the tendency of persons to respond to survey items on the basis of what they believe is the most socially desirable way--generally to achieve the approval of others. If a social desirability scale could be constructed, the researchers intended to use the measure to screen out respondents using this form of response style. To develop a social desirability scale, ten items were selected from the 33-item social desirability scale developed by Crowne and Marlowe (1964; also reported in Robinson and Shaver, 1969, pp. 640-643).[8] The items were evenly balanced between "deny bad quality" items and "claim good quality" items. The response data proved to be too unreliable for a scale to be formed, and the attempt to form a scale was abandoned.

RESULTS

PREDICTION OF MILITARY UNIT DISCIPLINE--THE PREDICTOR VARIABLES

Ten environmental variables were included in the analyses designed to predict unit discipline: Leadership I, Leadership II, Work Role, Esprit de Corps, Unit Racial Discrimination, General Racial Discrimination, Recreational Availability, Financial Problems, Satisfaction with Living Quarters, and Sexual Satisfaction. These scales and items were included in the analysis as predictors because it was felt that they were diagnostic of conditions within the respondents' units which might relate to unit discipline.

Descriptive measures for all the variables in the regression analyses can be found in Table 7, and the correlation matrix for the predictors is in Table 8. The overall correlations between the predictors and criteria are in Table 9.

It should be clear from the inter-predictor correlations that we are not dealing with independent predictors; in fact, some of the most crucial predictors such as Leadership I, Esprit de Corps, and Military Work Role, are very closely related. Even Recreational Availability, which one would expect to be orthogonal to most of the other variables, instead is closely associated with Leadership I, Work Role, and Esprit de Corps. The implication of these correlations seems to be that those units which are well off in one regard tend to be well off in all regards.

REGRESSION ANALYSIS OF MILITARY UNIT DISCIPLINE SCALES--METHODS

For each of the Unit Discipline criteria, the regression of the criterion on the environmental predictors was calculated for the sample.

---

[8] The authors are grateful to Professor David Marlowe of the University of California, Santa Cruz, for authorizing the use of the scale items.

Table 7

DESCRIPTIVE MEASURES FOR MILITARY UNIT DISCIPLINE SCALES AND PREDICTORS

Variable	N[a]	Mean	Standard Deviation	Range
Unit Performance	1554	3.14	.853	1 to 5
Unit Appearance	1557	3.47	.881	1 to 5
Unit Conduct	1556	3.31	.849	1 to 5
Leadership I	1556	3.11	.904	1 to 5
Leadership II	1555	3.48	.796	1 to 5
Work Role	1557	2.93	.975	1 to 4.92
Esprit de Corps	1538	4.18	1.106	1 to 6
Unit Racial Discrimination	1535	0.00[b]	.679	-1.01 to 1.95
General Racial Discrimination	1521	3.28	1.230	1 to 6
Recreation Availability	1548	3.09	.761	1 to 5
Financial Problems[c]	1446	2.52	1.33	1 to 5
Satisfaction w/Quarters[d]	1534	2.71	1.49	1 to 5
Sexual Satisfaction[e]	1513	2.78	1.59	1 to 5

[a]Number of cases out of the complete sample of 1564 cases, stockade prisoners included.

[b]Unit racial discrimination was calculated as the sum of standardized variables.

[c]Questionnaire item: "To what extent are you bothered by financial problems?"

[d]Questionnaire item: "How satisfied are you with your present living quarters?"

[e]Questionnaire item: "Since being assigned to this post, how satisfied have you been with your opportunities for having sexual relations?"

Table 3

CORRELATIONS AMONG PREDICTORS OF UNIT DISCIPLINE [a]

Variable					
Leadership II	.376***				
Work Role	.588***	.282***			
Esprit de Corps	.450***	.238***	.475***		
General Racial Discrimination	-.125***	-.063*	.002	-.160***	
Unit Racial Discrimination	-.290***	-.203***	-.269***	-.470***	.260***
Recreational Availability	.372***	.077**	.416***	.340***	-.061*
Financial Problems	-.198***	-.142***	-.181***	-.164***	.118***
Satisfaction with Living Quarters	.195***	.065*	.261***	.198***	-.042
Sexual Satisfaction	.114***	.036	.232***	.144***	.016

	Leadership I	Leadership II	Military Work Role	Esprit de Corps	General Racial Discrimination
Recreational Availability	-.199***				
Financial Problems	.186***	-.144***			
Satisfaction w/ Living Quarters	-.080**	.256***	-.132***		
Sexual Satisfaction	-.107**	.246***	-.088**	.236***	

	Unit Racial Discrimination	Recreational Availability	Financial Problems	Satisfaction w/ Living Quarters

* $p < .05$, two-tailed
** $p < .01$
*** $p < .001$
a For 1326 complete cases (including stockade prisoners) out of 1564.

Note. *Obtained r's based upon large samples have not been corrected.*

Table 9

CORRELATIONS OF SITUATIONAL PREDICTORS WITH UNIT PERFORMANCE, APPEARANCE AND CONDUCT FOR ENTIRE SAMPLE (N=1481)

	Criterion Variable		
Predictor Variable	Unit Performance	Unit Appearance	Unit Conduct
Leadership I	.311***	.292***	.540***
Leadership II	.090***	.218***	.198***
Military Work Role	.267***	.328***	.509***
Esprit de Corps	.399***	.473***	.600***
General Racial Discrimination	-.100***	-.031	-.096***
Unit Racial Discrimination	-.223***	-.377***	-.323***
Recreational Availability	.187***	.161***	.350***

*** p <.001, two-tailed

Respondents who were stockade prisoners or who had missing data for their unit type were excluded. To test for the possibility that the regressions were different for different subject categories, one-way analyses of variance were carried out on the residuals of the regression by unit category (combat, support, and training), race, rank category (three levels: E1-E2, E3-E4, E5-E9), educational level, and career intent (whether the respondent intended to remain in the Army). If the analyses of the residuals indicated substantial intergroup differences, the regressions were recalculated for each group separately.

PREDICTING MILITARY UNIT PERFORMANCE

Analysis of variance of the residuals of the initial regression of Unit Performance discloses large, systematic differences among the unit types. Table 10 contains the analysis of variance results; the original equation tended to underestimate evaluations of performance for combat units and overestimate it for support units, the difference between the two being .25 scale units. The other kinds of units fell between combat and support. Following this finding, all analyses of Unit Performance were carried out separately for all unit types except correlational. Correlations of the predictors with the Unit Performance Scale are given separately for each unit category in Table 11.

The regression data for the entire sample are presented in Tables 12, 13, and 14. The predictor variables account for about half of the variation of the criterion across all unit types.

For combat and support units the leading predictor is clearly Esprit de Corps; for training units it ranks third. Combat Unit Performance[9] seems to be affected relatively little by such physical environment factors as availability of recreational facilities or quality of living quarters; for combat units high Esprit de Corps, good leadership, and satisfaction with work roles seem to be sufficient to ensure high performance. For support units, however, even though Esprit de Corps, leadership and attitudes toward work roles are important, good living conditions clearly contribute to good performance.

For training units the pattern of prediction is different; Esprit assumes a tertiary role, possibly because the trainees have not been together as a unit very long. Leadership I replaces Esprit, with quality of living quarters next.

---

[9] The sign changes for some of the predictor variables in different types of units can be attributed to the fact that the quality of living quarters, for example, changes markedly as one moves from one type of unit to another.

Table 10

ANALYSIS OF VARIANCE OF REGRESSION
RESIDUALS BY UNIT TYPE

Source	df	Sum of Squares	Mean Square	F	Significance
Between units	3	6.843	2.281	6.26	.0005
Within units	636	231.9	.3646		
Total	639	238.8			

Unit Type	N	Mean	Std. Dev.
Combat	358	.0775	.5994
Support	149	-.1765	.6297
Training	72	-.0264	.6014
CTF	61	.0074	.5667

Table 11

CORRELATIONS OF ENVIRONMENTAL PREDICTORS
WITH UNIT PERFORMANCE BY UNIT TYPE

Variable	Combat (N=645)	Support (N=281)	Training (N=142)
Leadership I	.589***	.473***	.511***
Leadership II	.236***	.240**	.104
Work Role	.547***	.475***	.471***
Esprit de Corps	.657***	.563***	.393***
General Racial Discrimination	-.081*	-.028	.043
Unit Racial Discrimination	-.357***	-.282**	-.317***
Recreational Availability	.319***	.390***	.299***
Financial Problems	-.162**	-.210**	-.007
Satisfaction with Living Quarters	.073	.259**	.329***
Sexual Satisfaction	.205***	.130*	.004

Note: Obtained r's are reported with no correction.

* $p < .05$ two tailed
** $p < .01$
*** $p < .001$

Table 12

RECRESSION OF UNIT PERFORMANCE ON SITUATIONAL PREDICTORS
FOR COMBAT UNITS

Predictor Ranking	Variable	Partial Correlation	Unnormalized Regression Coefficient	Significance Level
1	Esprit de Corps	.433	.333 ± .028	.0001
2	Leadership I	.305	.287 ± .036	.0001
3	Military Work Role	.134	.115 ± .034	.001
4	Quality of Living Quarters	-.108	-.045 ± .016	.01
5	Leadership II	-.079	-.066 ± .033	.05
6	Sexual Satisfaction	.066	.025 ± .015	
7	Unit Racial Discrimination	-.043	-.044 ± .041	
8	Recreational Availability	.031	.006 ± .007	
9	Financial Problems	-.017	-.008 ± .018	
10	General Racial Discrimination	-.005	-.003 ± .020	
	Constant Term		.788 ± .181	.0001

N = 645

Overall Test of Regression: $F(10,634) = 75.30$, $p < .0001$

Multiple Correlation: .738

Percentage of Variance Explained: 54.3

Standard Error of Residuals: .585

Table 13

REGRESSION OF UNIT PERFORMANCE ON SITUATIONAL PREDICTORS
FOR SUPPORT UNITS

Predictor Ranking	Variable	Partial Correlation	Unnormalized Regression Coefficient	Significance Level
1	Esprit de Corps	.344	.269 ± .045	.0001
2	Military Work Role	.169	.139 ± .049	.01
3	Leadership I	.164	.158 ± .058	.01
4	Recreational Availability	.162	.148 ± .055	.01
5	Quality of Living Quarters	.156	.070 ± .027	.05
6	Financial Problems	-.105	-.055 ± .031	
7	General Racial Discrimination	.083	.045 ± .033	
8	Sexual Satisfaction	-.070	-.030 ± .026	
9	Unit Racial Discrimination	-.037	-.039 ± .064	
10	Leadership II	-.005	-.004 ± .056	
	Constant Term		.401 ± .309	

N = 281

Overall Test of Regression: $F(10,270) = 22.21$, $p < .0001$

Multiple Correlation: .672

Percentage of Variance Explained: 45.1

Standard Error or Residuals: .625

Table 14

REGRESSION OF UNIT PERFORMANCE ON SITUATIONAL PREDICTORS
FOR TRAINING (BCT/AIT) UNITS

Predictor Ranking	Variable	Partial Correlation	Unnormalized Regression Coefficient	Significance Level
1	Leadership I	.371	.382 ± .084	.0001
2	Quality of Living Quarters	.254	.118 ± .039	.005
3	Esprit de Corps	.202	.151 ± .064	.05
4	Unit Racial Discrimination	-.158	-.187 ± .102	.10
5	Leadership II	-.107	-.094 ± .076	
6	Military Work Role	.102	.108 ± .092	
7	Financial Problems	.086	.043 ± .043	
8	Recreational Availability	.059	.051 ± .075	
9	Sexual Satisfaction	-.037	-.016 ± .037	
10	General Racial Discrimination	-.012	-.007 ± .051	
	Constant Term		.727 ± .447	

N = 142

Overall Test of Regression: $F(10,131) = 10.33$, $p < .0001$

Multiple Correlation: .664

Percentage of Variance Explained: 44.1

Standard Error or Residuals: .615

PREDICTING MILITARY UNIT APPEARANCE

Analysis of variance of the residuals from the original regression of Unit Appearance indicated no significant intergroup differences as a function of unit type, race, rank, educational level, marital status or mode of entry into the Army.

Subjects who were in training units were, however, excluded from the analysis because the results obtained during the scaling procedure indicated that for training units Unit Appearance does not constitute a separate dimension of variation (see section on Dimensional Structure of Unit Discipline above).

The regression data for the entire subject pool are presented in Table 15. Military Unit Appearance is considerably less predictable than Unit Performance; less than 20% of the variance is predictable, as compared to a minimum of 44% for Unit Performance. Esprit de Corps and Leadership I account for virtually all of the predictable variation.

PREDICTING MILITARY UNIT CONDUCT

Analysis of variance of the residuals from the original regression of Unit Conduct indicated substantial differences between unit categories ($F(3,1435 = 6.94$, $p < .0005$). The principal differences were between training units and all other units, the largest difference being .21 scale points between support and training units. Accordingly, regression analyses were carried out separately for training units and combat and support units combined. Other analyses of residuals indicated no significant differences, either by rank, race, educational level, marital status, or mode of entry into the Army.

Tables 16 and 17 present the results for the entire sample by unit category. Unit Conduct is more predictable than Unit Appearance but less predictable than Unit Performance. For combat and support units, Esprit de Corps is again the best predictor, followed closely by Unit Racial Discrimination. The other statistically significant predictors--Work Role and General Racial Discrimination--account for little additional variance.

For training units, Esprit de Corps and Unit Racial Discrimination are again the most prominent predictors, but the ordering among the relatively unimportant predictors following those two is very different from the ordering of the same variables for combat and support units.

DISCUSSION AND CONCLUSIONS

There has been heretofore no empirical evidence of any general consensus among Army leaders as to what is meant by the term discipline. It follows that there have been no generally accepted indicators of discipline, other than the results of official acts such as arrests, courts-martial, confinement, less-than-honorable discharge, and official

Table 15

REGRESSION OF UNIT APPEARANCE ON SITUATIONAL PREDICTORS
IN COMBAT AND SUPPORT UNITS

Predictor Ranking	Variable	Partial Correlation	Unnormalized Regression Coefficient	Significance Level
1	Esprit de Corps	.288	.275 ± .027	.0001
2	Leadership I	.113	.137 ± .035	.0001
3	Leadership II	-.050	-.055 ± .032	.05
4	Financial Problems	.041	.026 ± .018	
5	Military Work Role	.026	.029 ± .032	
6	Sexual Satisfaction	-.024	-.013 ± .016	
7	Quality of Living Quarters	-.020	-.011 ± .017	
8	General Racial Discrimination	-.013	-.008 ± .020	
9	Recreational Availability	.005	.006 ± .036	
10	Unit Racial Discrimination	-.005	-.007 ± .040	
	Constant Term		1.977 ± .182	.0001

N = 1159

Overall Test of Regression: $F(10,1148) = 26.49$, $p < .0001$

Multiple Correlation: .433

Percentage of Variance Explained: 18.8

Standard Error of Residuals: .801

Table 16

REGRESSION OF UNIT CONDUCT ON SITUATIONAL PREDICTORS
IN COMBAT AND SUPPORT UNITS

Predictor Ranking	Variable	Partial Correlation	Unnormalized Regression Coefficient	Significance Level
1	Esprit de Corps	.292	.261 ± .028	.0001
2	Unit Racial Discrimination	-.198	-.253 ± .041	.0001
3	Military Work Role	.104	.105 ± .033	.005
4	General Racial Discrimination	.091	.056 ± .020	.01
5	Recreational Availability	-.056	-.061 ± .036	
6	Leadership II	.038	.040 ± .034	
7	Leadership I	.032	.035 ± 0.36	
8	Sexual Satisfaction	-.027	-.013 ± .016	
9	Financial Problems	-.024	-.014 ± .019	
10	Quality of Living Quarters	.006	.003 ± .017	
	Constant Term		1.680 ± .188	.0001

N = 927

Overall Test of Regression: $F(10,916) = 37.09$, $p < .0001$

Multiple Correlation: .537

Percentage of Variance Explained: 28.8

Standard Error or Residuals: .725

Table 17

REGRESSION OF UNIT CONDUCT ON SITUATIONAL PREDICTORS
IN TRAINING UNITS

Predictor Ranking	Variable	Partial Correlation	Unnormalized Regression Coefficient	Significance Level
1	Esprit de Corps	.345	.288 ± .068	.0001
2	Unit Racial Discrimination	-.204	-.261 ± .109	.05
3	Recreational Availability	.101	.093 ± .080	
4	Leadership II	.101	.094 ± .081	
5	Sexual Satisfaction	-.031	-.014 ± .040	
6	Leadership I	-.029	-.029 ± .089	
7	General Racial Discrimination	.027	.017 ± .054	
8	Financial Problems	.024	.013 ± .046	
9	Quality of Living Quarters	-.021	-.010 ± .042	
10	Military Work Role	.010	.012 ± .098	
	Constant Term		1.782 ± .477	

N = 142

Overall Test of Regression: $F(10,131) = 6.79$, $p < .0001$

Multiple Correlation: .584

Percentage of Variance Explained: 34.2

Standard Error or Residuals: .656

awards and commendations. The limitations of using these official judgments as indicators of Army discipline have been pointed out in this report.

This situation has left Army leaders without the basic tools to assess levels of discipline in their commands. The objectives of this inquiry were to ascertain whether a common Army conceptualization of discipline could be identified, operationalized, and tested in a predictive model using demonstrably reliable socio-psychological measures of discipline and its predictors.

Discipline may be analyzed at two levels. At the individual level the individual soldier is the unit of analysis. At the unit level discipline and its predictors are measured as they pertain to groups of soldiers. This inquiry has focused primarily on the unit level. This has been done to provide Army leaders and researchers with ongoing information concerning the state of discipline, and more importantly to provide field commanders with diagnostic managerial tools for identifying current or potential discipline problems at the battalion or company level.

Two basic approaches may be taken to the problem of conceptualizing and controlling discipline in a military organization. The first is to determine what personality and background variables predict disciplined behavior, and then develop appropriate measures and selection procedures to screen out the likely delinquent before he enters the service. This approach, by many researchers, has not yet led to the development of selection devices that can efficiently screen out the potential military delinquent.

A second approach is to determine what environmental factors have an impact on discipline, and then seek to correct those that lead to discipline problems and strengthen those that lead to disciplined behavior. This approach may lead to a better means of managing discipline after the initial selection process.

In this inquiry, the researchers employed the second approach. Measures of unit performance, appearance, and conduct were used as discipline criteria. Environmental variables such as perceptions of leadership, military work role, esprit de corps, racial discrimination, quality of living quarters, and availability of recreational facilities were found to be useful predictors of these criteria. The environmental phenomena show promise as predictors of unit discipline, and as the basis for developing diagnostic tools that can be coupled with organizational effectiveness programs designed to aid Army leaders in discipline management.

These findings have important policy implications. First, the findings reported here indicate that military discipline, as the concept is understood in today's Army, can be measured and predicted. It is important to note that environmental predictors are subject to control through programs and practices of Army management. It is beyond the scope of the current effort to specify specific steps to improve Army discipline,

but certain avenues might be profitably taken. Leadership, for example, can be improved through training and selection, as well as through restrictions on personnel reassignments. Satisfaction levels with military work roles can be raised by addressing specific problem areas in the Military Work Role scale items. These include, for example, the development of more challenging task assignments (both in training and working situations), and the matching of MOS assignments to the individual's knowledge, interests and skills, particularly in support units where satisfaction with military work role is a more important predictor of unit performance. Esprit de corps may be enhanced through development of interunit competition and exposure of soldiers as a unit to challenging team training programs that foster intra-unit dependencies and trust. Recreational facilities can be made more available by providing a greater number of facilities, and by reordering priorities for soldiers on posts where facilities are scarce. The Army has made serious efforts to improve the quality of living quarters, most recently in the European commands.

Our findings regarding differential predictors of Army unit discipline for combat and support units tends to reinforce the concept of a "pluralistic Army" as posed by Bradford and Brown (1973).

Quoting from their work: "A pluralistic Army would consist of two broad sub-groupings of skills--a combat Army composed of those individuals and organizations primarily designed to close with and destroy the enemy (combat and combat-support units) and a support Army composed of those personnel and organizations required to support a modern ground force (combat service support units)."

Because, as Bradford and Brown state, discipline in the combat Army would stress traditional (leadership) patterns while the support Army would place greater emphasis on job satisfaction (work role), the empirical data we have reported clearly favor the Bradford and Brown thesis.

This preliminary research effort points to several likely target areas where programs and actions can be taken that will affect Army discipline, but more important, it provides a basis for developing an ongoing system for assessing and managing Army discipline.

There are three important limitations to the current inquiry which demonstrate the need for further research on the indicators and predictors of discipline. The first limitation is found in the nature of the survey design used in this inquiry. Because it was an exploratory effort, the subjects were drawn only from enlisted personnel in several commands. Commissioned officers were not included in the survey sample because of the difficulties inherent in administering a self-report instrument to a representative sample of the officer personnel assigned to a major post. The NCOs stated they felt that responsibility for problems with Army leadership, satisfaction with the military work role, and esprit de corps rests to a large extent at the commissioned officer level, where, in their view, future surveys of this nature should also be made. If the Army is to develop a truly comprehensive model to manage and control discipline, future researchers must consider officer personnel.

Of particular interest are junior officers who have the greatest amount of daily interaction with NCO and enlisted personnel.

The second limitation of the current inquiry, imposed by the need to limit the scope of the survey sample, was the researchers' inability to inquire extensively into specific types of Army units, such as elite combat units, units composed of women, units with especially high or low delinquency rates, or units with good and poor discipline. Evidence reported here strongly suggests, for example, that the predictive model of discipline is quite different for combat and support units. There is need for further research analyzing Army companies to test various models that may suggest different solutions to discipline problems in these types of units.

A third limitation in the current inquiry relates to the need to validate the findings by comparing the data derived from the measures of unit discipline, based on perceptions, with information describing observed behavior over time. For example, measures of military delinquency such as AWOL incidence, racial conflict, illicit drug use, alcoholism, as well as such positive measures as reenlistment rates and unit training proficiency scores, may be used to determine the extent to which survey measures of unit performance, conduct, and appearance correlate with patterns of delinquent and non-delinquent behavior.

In summary, despite the exploratory nature of this inquiry, this research suggests some steps Army leaders may take to control Army discipline and improve the quality of life of the soldier. It seems apparent that the best approach to improving Army unit discipline and reducing military delinquency is to improve the soldiers' organizational and social environment. Evidence indicates that measures of military discipline should not be limited solely to official indicators of delinquency such as AWOL lists. The findings reported here suggest that the most useful measures of discipline are those based on patterns of behavior that support as well as oppose Army organizational goals. This report provides strong evidence that such measures can be used as managerial tools by Army leaders.

BIBLIOGRAPHY

Adorno, T., et al. The authoritarian personality. New York: Harper, 1950.

Bachman, J. G. Youth in transition, Volume II; The impact of family background and intelligence on tenth-grade boys. Ann Arbor, Michigan: Institute for Social Research, The University of Michigan, 1970.

Bales, R., and Couch, A. The value profile: A factor analytic study of value statements. Sociological Inquiry, 1969, 39, 3-17.

Bauer, R. G. Military professional socialization in a developing country (Doctoral Dissertation, University of Michigan). University Microfilms, 1974. No. 74-3577.

Berbiglia, J. C. The AWOL Syndrome: A study in the early identification of potential AWOLs by the use of the Taylor-Johnson Temperment Analysis leading to the development of a preventive program. Los Angeles: Psychological Publications, 1971.

Berkowitz, L., and Lutterman, K. The traditionally socially responsible personality. Public Opinion Quarterly, 1968, 32, 169-185.

Berkowitz, N. H., and Wolkon, G. H. A forced choice form of the F scale free of acquiescent response set. Sociometry, 1964, 27, 54-65.

Blackman, S., et al. Psychosocial factors in military deviance (II). Staten Island, New York: Wakoff Research Center, March 1966.

Bohrnstedt, G. W. A quick method for determining the reliability and validity of multiple-item scales. American Sociological Review, 1969, 34, 542-548.

Borus, J. F., Stanton, M. D., and Fiman, B. G. Racial perceptions in the Army: An approach. American Journal of Psychiatry, 1972, 128, 1369-1374.

Boshes, D., and Hermann, J. The Naval delinquent. Journal of Criminal Law and Criminology, 1947, 38, 218-34.

Bowers, D. G., and Seashore, S. E. Predicting organizational effectiveness with a four-factor theory of leadership. Administrative Science Quarterly, 1966, 2, 236-63.

Box, G. E. P. A general distribution theory for a class of likelihood criteria. Biometrika, 1949, 36, 317-346.

Bradford, Z. B., Jr., and Brown, F. J. The United States Army in Transition. Beverly Hills, California: Sage Publications, 1973.

PRECEDING PAGE NOT FILMED
BLANK

Bromberg, W., Apuzzo, W. A., and Locke, B. A psychologic study of desertion and over-leave in the Navy. U. S. Naval Medical Bulletin, 1945, 44, 558-568.

Brown, S. R., and Taylor, R. W. Perspective in concept formation. Social Science Quarterly, 1972, 52, 852-860.

Canter, F., and Canter, A., Authoritarian attitudes and adjustment in a military situation. U. S. Armed Forces Medical Journal, 1957, 8, 1201-1209.

Christie, R., et al. An exploratory study of factors affecting transition to Army life. ARI Technical Research Note 13. January 1952.

Clum, G. A., and Mahan, J. L., Jr. Attitudes predictive of Marine combat effectiveness. Journal of Social Psychology, 1971, 83, 55-62.

Cockerham, W. Selective socialization: Airborne training of status passage. Journal of Political and Military Sociology, 1973, 1, 215-229.

Congressional Quarterly Weekly Report. February 19, 1972.

Crocker, L. P. The officer's guide, 36th Ed. Harrisburg, Pennsylvania: Stackpole Press, 1971.

Crowne, D., and Marlowe, D. The approval motive. New York: Wiley, 1964.

Davis, D. B., Absence without leave. War Medicine, 1945, 7, 147-151.

Drexler, J. A., and Bowers, D. G. Navy retention roles and human resources management. All-Volunteer Force RND Program, Office of Naval Research Technical Report. Ann Arbor, Michigan: Institute for Social Research, University of Michigan, May 1973.

Drucker, E. H., and Schwartz, E. H. The prediction of AWOL, military skills, and leadership potential. HumRRO Technical Report 73-1. Alexandria, Virginia: Human Resources Research Organization, January 1973.

Dubuisson, A. U., and Klieger, W. A. Combat performance of EM with disciplinary records. ARI Technical Research Note 148. June 1964.

Dubuisson, A. U., and Sargent, B. Prediction of disciplinary behavior in a two-year follow-up sample. ARI Research Memorandum 65-7. October 1965.

Egbert, R. L., Cline, V. B. and Weeland, T. The characteristics of fighters and non-fighters. I: Analysis of intelligence and personality scales. Information Report. Fort Ord, California: Human Resources Research Office, 1954.

Feldman, H., and Maleski, A. A. Factors differentiating AWOL from non-AWOL trainees. Journal of Abnormal and Social Psychology, 1948, 43, 70-77.

Fisher, A. H., Nelson, K. E., and Panzarella, J. Patterns of drug usage among Vietnam veterans. Professional Paper 12-72. Human Resources Research Organization, 1972.

Fleishman, E. A. The Leadership Opinion Questionnaire. In R. Stogdill and A. Coons (Eds.), Leadership behavior: Its description and measurement. Columbus: Ohio State University, 1957.

Flyer, Eli S. Factors relating to discharge for unsuitability among 1956 airman accessions to the Air Force. Wright Air Development Center, Personnel Laboratory, Lackland Air Force Base, Texas. December 1959.

Flyer, Eli S. Prediction of unsuitability among first-term airmen from aptitude indexes, high school preference data and Basic Training evaluations. 6570th Personnel Research Laboratory, Aerospace Medical Division, Lackland AF Base, Texas. Report PRL-TDR-63-17. June 1963.

Fraas, L. A. Taylor-Johnson Temperament Analysis as a predictor of AWOL recidivism. Fort Riley, Kansas: U.S. Correctional Training Facility, 1972 (Mimeographed).

Fraas, L. A. and Fox, L. J. The Taylor-Johnson Temperament Analysis "AWOL Syndrome." A further evaluation. Fort Riley, Kansas: U.S. Army Correctional Training Facility. May 1972.

French, R. L. Sociometric status and individual adjustment among Naval recruits. Journal of Abnormal and Social Psychology, 1951, 46, 64-72.

French, E. G. and Ernest, R. R. The relationship between authoritarianism and acceptance of military. Ideology Journal of Personality, 1955, 24, 181-191.

Garetz, F. K. A follow-up study of first time offenders. Military Medicine, 1961, 126, pp. 842-844.

Ginzburg, E., et al. The ineffective soldier. New York: Columbia University Press, 1959.

Gitter, A. G., and Pinto, S. K. Social indicators of the military: Assessing the quality of life in the U.S. Army: Volume I. Boston: Boston Area Academic Consortium, 1973.

Goldstein, K., et al. Social isolation, attitudes toward the military and military performance. Staten Island, New York: Wakoff Research Center, January 1968.

Gordon, L. V. Manual for the survey of interpersonal values. Chicago: Science Research Associates, 1960.

Gordon, L. V. Conformity among the non-conformists. Psychol. Rep., 1961, 8, 383.

Gough W. The service delinquent. Journal of the Royal Navy Medical Service, 1945, 31, 8-18.

Gough, H. G. Systematic validation of a test for delinquency. American Psychologist, 1954, 9, 8-18.

Gunderson, E. K. E. Canonical analysis of variables related to non-conformity in Navy recruits. Eleventh Technical Report (Revised), U.S. Naval Retraining Command, San Diego, California (undated).

Gunderson, E. K. E. and Ballard, K. B. Prediction of delinquency in Naval recruits. Ninth Technical Report (Revised), U.S. Naval Training Command, San Diego, California (undated).

Gunderson, E. K. E., Ballard, K. B. and Grant, J. D. Changes in nonconformist attitudes induced by closed living group. Twelfth Technical Report (Revised), U.S. Naval Training Command, San Diego, California (undated).

Guttmacher, M. S. and Stewart, F. A. A psychiatric study of absence without leave. American Journal of Psychiatry, 1945, 102, 74-81.

Harris, D. A scale for measuring attitudes of social responsibility in children. Journal of Abnormal and Social Psychology, 1957, 55, 332-326.

Hauser, William L. America's Army in crisis: A study in civil military relations. Baltimore: Johns Hopkins University Press, 1973.

Heflin, W. A. The United States Air Force dictionary. Princeton, N.J.: Van Nostrand, 1956.

Holz, R. F. and Gitter, A. G. Assessing the quality of life in the U.S. Army. ARI Technical Paper 256. September 1974.

Ives, Virginia, Grant, Marguerite Q., and Ballard, K. B. Interpersonal variables related to recidivism in military delinquency. Eighth Technical Report, U.S. Naval Retraining Command, Camp Elliott, San Diego, California, 1957 (Mimeographed).

James, L. R., and Hornick, C. W. An analysis of criteria, situational data, organizational climate and individual characteristics: Results of a pilot study. Paper presented at the Annual Meeting of the American Psychological Association, Symposium on Organizational Analysis: Models and Criteria, at Montreal, August 1973.

Janowitz, M., and Little, R. W. Sociology and the military establishment (Rev. ed.) New York: Russell Sage Foundation, 1965.

Janowitz, M. Military organization. In R. W. Little (Ed.) Handbook of military organizations. Beverly Hills, California: Sage Publications, 1971.

Kaufman, W. C. Status, authoritarianism, and anti-semitism. American Journal of Sociology, 1957, 62, 359-382.

Knapp, R. Value and personality differences between offenders and non-offenders. San Diego, California: Navy Medical Neuropsychiatric Research Unit, February 1963.

Knapp, R. Value and personality differences between offenders and non-offenders. Journal of Applied Psychology, 1964, 48, 59-62.

Kisel, J. The problem soldier. Infantry, 1963, 53, 57-58.

Klieger, W. A., Dubuisson, A. U., and Sargent, B. B., III. Correlates of disciplinary record in a wide-range sample. ARI Technical Research Note 125. August 1962.

Kristiansen, D. M. and Larson, E. E. Development of a Background and Opinion Questionnaire for predicting military delinquency. ARI Research Memorandum 67-3. October 1967.

Kruskal, J. B. Nonmetric multidimensional scaling: A numerical method. Psychometrika, 1964, 29, 115-129.

LaGrone, C. W. Interrelationships among developmental characteristics of 500 military delinquents. Journal of Clinical Psychology, 1947, 3, 330-441.

Larson, E. E. and Kristiansen, D. M. Prediction of disciplinary offense early in army service. ARI Technical Research Note. 210. 1969.

Lang, K. Military organizations. In J. G. March (Ed.), Handbook of organizations. Chicago: Rand McNally, 1965.

Lemkau, P. and Kent, F. Sociological factors in patients in Army neurosis center and their relations to disciplinary actions. American Journal of Psychiatry, 1945, 102, 231-233.

Lingoes, J. C. An IBM-7090 program for Guttman-Lingoes Smallest Space Analysis-III. Behavioral Science, 1966, 11, 75-65.

Lingoes, J. C. and Guttman, L. Nonmetric factor analysis-- A rank reducing alternative to linear factor analysis. Multivariate Behavioral Research, 1967, 2, 485-505.

Lingoes, J. C. An IBM 360/67 Program for Guttman-Lingoes Conjoint Measurement-III. Behavioral Science, 1968, 13, 421-422.

Lingoes, J. C. Some boundary conditions for a monotone analysis of symmetric matrices. Psychometrika, 1971, 36, 195-203.

Lingoes, J. C. The Guttman-Lingoes nonmetric program series. Ann Arbor, Michigan: Mathias Press, 1973.

Little, R. W. Buddy relations and combat performance. In M. Janowitz (Ed.) The new military, Science Edition. New York: Wiley, 1964.

Littlepage, G. E., and Fox, L. J. Personnel control facilities: An analysis of AWOL offenders awaiting disposition. Ft. Riley, Kansas: Research and Evaluation Division, U.S. Army Correctional Training Facility, 1972.

Locke, B. Comparison of Naval offenders with non-offenders on a projective sentence completion test. U.S. Forces Medical Journal, 1957, 8, 1825-1828.

MacCormick, A. H. Some basic considerations in the discipline of military prisoners. Federal Probation, 1945, January-March, 7-11.

McClosky, H. Conservatism and personality. American Political Science Review, 1958, 52, 27-45.

McCubbin, H. I. Restoration of the military offender: A follow-up study of CTF graduates returned to duty. Ft. Riley, Kansas: U.S. Army Correctional Training Facility, 1971.

McCubbin, H. I., et al. Leadership and situational factors related to AWOL: A research report. Ft. Riley, Kansas: U.S. Army Correctional Training Facility, 1971.

McMahon, R. A. Military discipline of the U.S. and USSR. Army, 1962, 12, 45-55.

Mahan, J. L. and Clum, G. A. Longitudinal prediction of Marine combat effectiveness. Journal of Social Psychology, 1971, 83, 45-54.

Manson, M. P. and Grayson, H. M. Why 2,276 American soldiers were AWOL. American Journal of Psychiatry, 1946, 103, 50-54.

Merton, R. K., Reader, G. G., and Kendall, P. L. (Eds.) The student physician: Introductory studies in the sociology of medical education. Cambridge, Massachusetts: Harvard University Press, 1957.

Nadal, R. A. Leadership and group behavior. Infantry, 1967, September-October, 12-14.

Nelson, P. D. and Berry, N. H. Dimensions of peer and supervisor ratings in a military setting. Report No. 66-1. San Diego, California: U.S. Navy Medical Neuropsychiatric Research Unit, May 1966.

Newman, C. Study of the relationship between attitudes toward certain authority figures and adjustment to the military service (Doctoral Dissertation, New York University). University Microfilm, 1954, No. 54-3577.

Nichols, M. P., Gordon, T. P., and Levine, M. D. Development and validation of the Life Style Questionnaire. Journal of Social Psychology, 1972, 86, 365-373.

Noel, J. V. Division Officer's Guide: A handbook for all Naval officers. 4th Ed. Annapolis, Maryland: United States Naval Institute, 1959.

Nordlie, P. G., and Thomas, J. A. Black and white perceptions of the Army's Equal Opportunity and Treatment programs. ARI Technical Paper 252. May 1974.

Nunnally, J. C. Psychometric Theory. New York: McGraw-Hill, 1967.

Osburn, H. G., Brown, C., Chreitzberg, J., Hield, W., Seidel, E., and Watson, D. A preliminary investigation of delinquency in the Army. HumRRO Technical Report 5. Alexandria, Virginia: Human Resources Research Organization, April 1954.

Pennington, L. A., Hough, R. B., and Case, H. W. The psychology of military leadership. New York: Prentice-Hall, 1943.

Peterson, D. R., Quay, H. C. and Cameron, G. R. Personality and background factors in juvenile delinquency as inferred from questionnaire responses. Journal of Consulting Psychology, 1959, 23, 395-399.

Plag, J. A. The practical value of a psychiatric screening interview in predicting military ineffectiveness. San Diego, California: Navy Medical Neuropsychiatric Research Unit, April 1964.

Plag, J. A., and Arthur, R. J. Psychiatric re-examination of unsuitable Naval recruits: A two-year follow-up. Report No. 65-13. San Diego, California: Navy Medical Neuropsychiatric Research Unit, 1965.

Plag, J. A., Goffman, J. M., and Phelan, J. D. The adaptation of Naval enlistees scoring in Mental Group IV on the Armed Forces Qualification Test. Report No. 68-23. San Diego, California: Navy Neuropsychiatric Research Unit, September, 1967.

Prina, L. E. Of justice, equal opportunity, and discipline. Sea Power, 1972, 15, 30-31.

Quay, H. C. and Peterson, D. R. The questionnaire measurement of personality dimensions associated with juvenile delinquency. Unpublished manuscript, 1964.

Quin, P. L. Discipline and morale in the Royal Air Force. Royal Air Force Quarterly, 1969, 9, 131-134.

Robinson, J. P. and Shaver, P. R. Measures of social psychological attitudes: Appendix B to measures of political attitudes. Ann Arbor, Michigan: Survey Research Center, Institute for Social Research, University of Michigan, 1969.

Ryan, F. J. Relation of performance to social background factors among Army inductees. Washington, D.C.: Catholic University Press, 1958.

Schneider, A. J. N., et al. Prediction of behavior of civilian delinquents in the Armed Forces. Mental Hygiene, 1944, 28, 456-475.

Segal, J. Correlates of collaboration and resistance behavior among U.S. Army POWs in Korea. Journal of Social Issues, 1957, 13, 31-40.

Shackelford, Doyle. The youthful offender and the Armed Forces. NPPA Journal, 1958, 2, 148-55.

Shepard, R. N. The analysis of proximities: Multidimensional scaling with an unknown distance function. I. Psychometrika, 1962, 27, 125-140.

Shepard, R. N., Romney, A. K., and Nerlove, S. B. (Eds.) Multidimensional scaling: Theory and applications in the behavioral sciences. Seminar Press, 1972.

Shils, E. A. and Janowitz, M. Cohesion and disintegration in the Wehrmacht in World War II. Public Opinion Quarterly, 1948, 12, 280-315.

Smith, S., Murphy, D. B. and Wheeler, L. S. Relation of intelligence and authoritarianism to behavioral contagion and conformity. Psychological Reports, 1964, 14, 248.

Smith, D. O. and Cartwright, D. S. Research reports and notes: Two measures of reported delinquent behavior. American Sociological Review, 1965, 39, 573-76.

Spector, A. J., Clark, R. A., and Glickman. Supervisory characteristics and attitudes of subordinates. Personnel Psychology, 1960, 13, 301-316.

Stoloff, P. H. Use of the Navy Human Relations Questionnaire with U.S. Army Personnel. Arlington, Virginia: Center for Naval Analyses, 1972.

Stoloff, P. H., et al. Development of the Navy Human Relations Questionnaire. Research Contribution 233. Arlington, Virginia: Center for Naval Analyses, Institute for Naval Studies, 1972.

Stouffer, S. A., et al. The American soldier: Combat and its aftermath. Vol. II. Science Editions. New York: Wiley, 1965.

Stouffer, G. A., and Otness, R. H. One hundred civilian delinquents in the Navy. Journal of Clinical Psychology, 1946, 8, 251-70.

Sullivan, T. School dropouts and military crimes. The American Benedictine Review, 1969, 20, 407-17.

Taylor, J. C. and Bowers, D. G. Survey of organizations: A machine-scored standardized questionnaire instrument. Ann Arbor, Michigan: Center for Research on Utilization of Scientific Knowledge, Institute for Social Research, University of Michigan, 1972.

U.S. Department of the Army, Headquarters. Army Regulation No. 600-20, Washington, D.C., April 1971.

U.S. Department of the Army, Headquarters. Legal Guide for Commanders: Pamphlet No. 27-19. Washington, D.C., March 1972.

U.S. Department of the Army, Headquarters. Leadership: Department of the Army Field Manual: FM 22-100. Washington, D.C., November 1965.

U.S. Department of the Army Headquarters. The Soldier's Guide: Department of the Army Field Manual: FM 22-100. Washington, D.C., August 1961.

U.S. Department of Defense, Office of the Assistant Secretary of Defense (Manpower and Reserve Affairs). Racial Discrimination: An Analysis of Serviceman Opinions. Washington, D.C., April 1970.

Valentine, L. D. and Vitola, B. M. Comparison of self-motivated Air Force enlistees with draft-motivated enlistees. Air Force Human Resources Laboratory Technical Report No. 70-26. July 1970.

Watson, R. L.. A study of the AWOL prevention program of the 5th Battalion, 67th Artillery. Fort Bliss, Texas, May 1969.

APPENDIX

Appendix	Page
A. Description of Survey Sample	55

PRECEDING PAGE NOT FILMED
BLANK

APPENDIX A

DESCRIPTION OF SURVEY SAMPLE

Variable	Percent of Total Sample Less Missing Data	N
Rank		
E1	22.4	344
E2	12.0	184
E3	19.6	300
E4	20.1	309
E5	10.6	163
E6	8.2	126
E7	5.1	78
E8 or E9	2.0	30
Missing Data = 30		
Race		
Black	25.7	394
White	61.2	940
Other	13.2	202
Missing Data = 23		
Type of Unit		
Combat	48.4	732
Support	21.1	319
Training	11.8	179
Stockade/Correctional Training	18.6	281
Missing Data = 53		
Post/Facility Site		
Ft. Riley	17.3	271
Retraining Brigade	8.3	130
Ft. Ord	15.5	243
Ft. Bragg	15.3	240
Ft. Wainwright	8.1	126
Frankfurt-Friedburg	5.6	88
Geoppingen	6.5	101
Baumholder	5.8	91
Mannheim	4.5	70
Bad Toelz	3.4	53
Berlin	4.8	75
Furth	4.9	76
Missing Data = 0		

PRECEDING PAGE NOT FILMED
BLANK

APPENDIX A (continued)

Variable	Percent of Total Sample Less Missing Data	N
Regional Origin		
Northeast	22.6	347
South	31.2	478
Midwest	19.8	304
West (Hawaii and Alaska)	18.2	279
None of the above	8.2	126
Missing Data = 30		
Community Origin		
Rural	20.6	315
Small City	36.6	560
Surburban--Large City	21.6	331
Large City	21.2	324
Missing Data = 34		
Marital Status		
Single	56.1	872
Married	39.9	620
Legally Separated	.8	12
Divorced	3.0	47
Widowed	.2	3
Missing Data = 10		
Presence of Wife on or Near Post		
Yes	66.9	433
No	32.6	211
Not Applicable/Missing Data = 917		
Living Arrangement		
Barracks	59.6	907
On post family	11.0	167
Off post family	3.3	50
Off post private	19.2	292
Personally owned	4.4	67
Other	2.6	39
Missing Data = 42		

APPENDIX A (continued)

Variable	Percent of Total Sample Less Missing Data	N
Time in Service		
Less than 6 months	12.3	188
Between 6 months and 1 year	10.6	162
Between 1 and 2 years	29.4	448
Between 2 and 3 years	18.2	297
Between 3 and 5 years	7.2	110
Between 5 and 10 years	9.3	142
Between 10 and 15 years	5.4	83
More than 15 years	7.5	114
Missing Data = 40		
Education		
Completed grade school	1.5	23
Some high school	16.4	253
Completed high school or GED	52.4	808
Some college	26.2	405
Completed college	2.5	38
Some graduate school	1.0	16
Missing Data = 21		
Method of Induction		
Volunteer	82.1	1218
Draftee	14.1	209
Army Reserve or National Guard	3.7	56
Missing Data = 81		
Join Because of Draft?		
Yes	25.8	358
No	74.2	1028
Missing Data (including draftees) = 178		
Career in Army?		
Yes, definitely	18.0	267
Yes, probably	11.8	174
Undecided	21.6	320
Probably not	14.2	210
Definitely not	34.4	509
Missing Data = 84		
Military Prisoner		
Yes	17.7	276
No	82.3	1288
Missing Data = 0		