Research Note 84-71

RACIAL HARMONY, LEADERSHIP, AND UNIT EFFECTIVENESS IN COMBAT UNITS: AN EXPLORATORY ASSESSMENT OF CAUSAL RELATIONSHIPS

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U. S. Army

Research Institute for the Behavioral and Social Sciences

April 1980

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REPORT DOCUMENTATION PAGE

READ INSTRUCTIONS BEFORE COMPLETING FORM

1. REPORT NUMBER: Research Note 84-71	2. GOVT ACCESSION NO.: AD-A151063
3. RECIPIENT'S CATALOG NUMBER:	
4. TITLE (and Subtitle): RACIAL HARMONY, LEADERSHIP, AND UNIT EFFECTIVENESS IN COMBAT UNITS: AN EXPLORATORY ASSESSMENT OF CAUSAL RELATIONSHIPS	5. TYPE OF REPORT & PERIOD COVERED: Final Report 15 June 1978 - 15 April 1980
	6. PERFORMING ORG. REPORT NUMBER: - -
7. AUTHOR(s): H. Alan Griesemer	8. CONTRACT OR GRANT NUMBER(s): MDA903-78-C-2011
9. PERFORMING ORGANIZATION NAME AND ADDRESS: Lawrence Johnson & Associates, Inc. 4545 42nd Street NW Suite 103 Washington, D.C. 20016	10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS: 2Q162722A791
11. CONTROLLING OFFICE NAME AND ADDRESS: U.S. Army Research Institute for the Behavioral & Social Sciences 1300 Wilson Blvd. Arlington, VA 22209	12. REPORT DATE: April 15, 1980
	13. NUMBER OF PAGES: 126
14. MONITORING AGENCY NAME & ADDRESS(if different from Controlling Office): U.S. Army Research Institute for the Behavioral & Social Sciences Field Unit P.O. Box 5787, Presidio of Monterey, CA 93940	15. SECURITY CLASS. (of this report): Unclassified
	15a. DECLASSIFICATION/DOWNGRADING SCHEDULE: - -

16. DISTRIBUTION STATEMENT (of this Report)

Approved for public release; distribution unlimited

17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)

- -

18. SUPPLEMENTARY NOTES

- -

19. KEY WORDS (Continue on reverse side if necessary and identify by block number)

company commander	leadership	soldiers' perceptions
cross-lagged panel analysis	leadership climate	unit effectiveness
discipline	race relations	
enlisted men	racial climate	
first sergeant	racial harmony	

20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

Causal relationships between racial harmony and unit effectiveness, and between leadership, racial harmony, and unit effectiveness were examined using a longitudinal design and cross-lagged panel analysis. Sixty combat line companies were studied over a seven-month period. Data collected included both survey and record data measures. Cross-lagged panel analysis revealed that, in general, improvements in unit effectiveness were conducive to improvements in racial harmony, although one measure of racial harmony, perceived overall

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Item 20 (Continued)

racial climate, was found to reduce perceptions of insubordination in the unit and increase the performance rating of and acquiescence to company leaders. Leadership variables, like the racial harmony variables, generally improved as a result of unit effectiveness. An exception to this trend was found in the leadership punishment variables, number of Article 15s, and number of unprogrammed discharges, which were found to have a negative effect on several aspects of unit effectiveness and racial climate.

FOREWORD

The Presidio of Monterey Field Unit has conducted a number of research efforts designed to assess the racial climate in the Army and to produce tools, techniques and programs to assist in the diagnosis, prediction, control and resolution of racial, ethnic, and gender related problems.

Army regulations have placed responsibility for equal opportunity on the chain of command. Evidence suggests that in spite of the existence of continued racially oriented problems, many commanders give equal opportunity a low priority. It is unlikely that difficult race relations problems can be solved without a strong commitment from the chain of command. It is also unlikely that such a commitment will ever be achieved unless commanders perceive equal opportunity concerns as being directly related to the mission accomplishment of their units. One solution to this problem is to demonstrate that racial harmony is, in fact, related to unit effectiveness.

This report describes the application of cross-lagged panel analysis to measures of racial harmony, leadership and unit effectiveness in order to establish causal relationships among these factors. The results indicate that racial harmony and unit effectiveness are causally related among a number of different dimensions. Most of these relationships were such that the unit effectiveness variables caused the racial harmony variable. Only one racial harmony measure, perceptions of overall racial climate, was found to cause unit effectiveness variables. The general trend of the data was such that changes in the racial climate and unit effectiveness variables. The general trend of the data was such that changes in the racial climate and unit effectiveness variables caused changes in the leadership variables rather than leadership causing changes in the unit. The methodology employed in this report has implications for researchers in that the cross-lagged approach (time series) provides for a more reliable data base. The results have implications for leadership and equal opportunity training and EO-related programs throughout the Army.

ACKNOWLEDGMENTS

Appreciation is extended to the staff of the Army Research Institute for their guidance and direction during the course of this project and especially to Dr. Roland J. Hart, who acted as technical monitor, and Dr. James A. Thomas, Team Chief of the Personnel Effectiveness Group. Also appreciated is the help of the many Army personnel who gave their assistance during data collection.

This final report is the product of over a year and a half of research and represents the work of several individuals. In this regard, the contributions of Mr. Junius Eli, Jr., Mr. Werner M. Field, Ms. Judith J. Nichols, and Dr. John C. Skilton are gratefully acknowledged.

RACIAL HARMONY, LEADERSHIP, AND UNIT EFFECTIVENESS IN COMBAT UNITS:
AN EXPLORATORY ASSESSMENT OF CAUSAL RELATIONSHIPS

BRIEF

Requirement:

(1) To determine causal relationships between racial harmony and unit effectiveness in company-size units.

(2) To identify those variables which can cause high and low unit effectiveness and racial harmony in company-size units.

Procedure:

Survey and record data measures of racial harmony, unit effectiveness, and leadership were collected from 60 combat line companies. Data were collected at three consecutive points in time approximately 2 months apart. This allowed the examination of relationships at 2 and 5-month intervals. A technique called cross-lagged panel analysis was used to infer causal relationships between the measures by examining patterns of correlations across time.

Findings:

Cross-lagged panel analysis revealed that racial harmony and unit effectiveness were causally related among a number of dimensions. Most of these relationships were such that the unit effectiveness variable caused the racial harmony variable. For example, improvements in: unit discipline; E1-E4 cohesion; levels of self-reported lawbreaking; numbers of MP reports; and numbers of AWOLs were all found to reduce perceptions of overt racial hostility. Decreasing AWOLs and MP reports also increased voluntary interaction between blacks and whites, improved attitudes toward integration, and improved perceptions of the overall racial climate. Generally these relationships were found across a 5-month interval but not across 2 months. Only one measure, perceptions of overall racial climate, was found to cause unit effectiveness variables. Overall racial climate was found to reduce perceptions of insubordination in the unit and increase the rating of and acquiescence to company leaders.

When various aspects of leadership climate were examined for factors which cause improved unit effectiveness and racial harmony, the general trend of the data was such that changes in the racial climate and unit effectiveness variables caused changes in the leadership variables, rather than leadership causing changes in the unit. However, there were several specific relationships in which aspects of the leadership climate appeared to cause changes in unit effectiveness and/or racial climate. In the positive direction, perceptions of leader fairness and willingness to sacrifice for their troops were found to decrease AWOLs, and leader strictness was found to decrease MP reports (although

leader strictness also had the undesirable effect of increasing sick calls). Also, Unprogrammed Discharges were reduced when ratings of unit leaders were high. Two variables, Article 15 punishments and Unprogrammed Discharges, were found to be detrimental to unit effectiveness and racial climate. Article 15s produced greater perceptions of insubordination, racial hostility, lawbreaking, and increased negative attitudes toward integration. Article 15s also produced lower ratings of unit leaders, lower unit discipline, more negative racial climate, and lowered the percentage of company members who respondents would trust in battle. Similar but less extensive negative effects were seen with Unprogrammed Discharges.

Utilization of Findings:

The data base and analysis techniques developed for this effort will form the basis for a more comprehensive system modeling of factors which increase and decrease unit effectiveness. The system model will form the basis for the design of a unit management monitoring system. Commanders will be able to use this system to assess the status of conditions in their units which are likely to impact on unit effectiveness.

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RACIAL HARMONY, LEADERSHIP, AND UNIT EFFECTIVENESS IN COMBAT UNITS: AN EXPLORATORY ASSESSMENT OF CAUSAL RELATIONSHIPS

INTRODUCTION

Since the executive order issued by President Truman in 1948 making it a policy of the government to integrate and provide equal opportunity for all people in the Armed Forces, the Army has been striving to make minorities integral and important members of its various units. In the 1960's, heightened sensitivities to the issue of discrimination throughout every facet of our society had a significant effect upon both civilian and military institutions, and the Federal government developed a series of laws intended to guarantee equal opportunity for all and to prohibit discrimination. State and local governments also subsequently enacted anti-discrimination laws. Since then, the military has had an increased commitment to the goal of achieving equal opportunity and treatment for all its personnel irrespective of their race, color, religion, gender, or national origin. The Army's efforts to achieve this goal are manifest in the definitive body of regulations and guidelines which make equal opportunity and treatment a matter of Army policy and in the growing number of specialized programs designed to foster harmony and understanding among personnel of different ethnic backgrounds. Behind these efforts is the fundamental belief that a military organization, to be truly effective, must exist in an atmosphere which is free of discrimination and ethnic prejudice.

In recent years a number of studies have been conducted to assess the state of racial affairs in the Army. These studies indicate that while improvements have been made some race relations problems remain. One such study (Dept. of the Army, 1977) examined the distribution of blacks and whites on a series of dimensions such as rank, occupational specialty, and speed of promotion. The study examined data from the period 1963 to 1973, and while it notes significant improvement during that time, it also found a continuing underrepresentation of blacks on dimensions considered "advantageous" and a continuing overrepresentation of blacks on dimensions considered "disadvantageous." O'Mara (Note 1) reports a study which examined responses to a questionnaire designed to measure racial climate. The survey was administered twice to a random sample of personnel from an infantry division. The first administration took place during the summer of 1975; the second, 1 year later. The study described the racial climate as moderate in both 1975 and 1976, but it found that blacks' perception of discrimination had increased over the period of the study, as did the perception of reverse racism among non-blacks. A third study (Hart, 1979) found that black enlisted soldiers in a sample of 50 infantry companies received Article 15 punishments at a significantly higher rate than whites, even though offense rates (based on a self-report measure) did not differ. Finally, Goehring (Note 2) applied methodology similar to the 1977 Department of the Army study. Goehring's data, which were gathered from an infantry division during 1978 and 1979, also indicated the possibility of institutional racial discrimination against blacks.

Army regulations have placed responsibility for equal opportunity on the chain of command. Company commanders have the additional responsibility of implementing one of the major facets of the Equal Opportunity (EO) program, the Race Relations (RR) training program. Evidence suggests that in spite of the existence of continuing racial discrimination, many commanders give EO matters a low priority. For example, until recently, the Army as a part of its RR/EO training program, required that company personnel attend monthly RR/EO seminars; yet most companies did not even hold these seminars. In the units that did hold them the responsibility was often delegated to low-ranking NCOs (Hart, Note 3), and the mandatory attendance requirement was seldom enforced. Brown, Nordlie, and Thomas (Note 4), investigating command commitment to the EO program, stated, "Although the realization that race relations and equal opportunity are leadership responsibilities is growing, it is far from being universally accepted" (p. 34). Black soldiers in particular tended to doubt the chain of command commitment to EO programs.

It is unlikely that difficult race relations problems such as institutional discrimination can be solved without a strong commitment from the chain of command. It is also unlikely that such a commitment will be forthcoming unless commanders perceive RR/EO concerns as being related to their primary responsibilities for accomplishing their military mission and maintaining the welfare of their troops.

The primary objective of the present research is to investigate the extent to which good or bad racial climate in an Army unit impacts on the effectiveness of that unit in carrying out various aspects of its military mission (which in a peacetime environment consists primarily of training and readiness). A previous study (Brown, Note 5) established a tentative relationship between racial harmony and unit effectiveness. Brown found significant positive correlations between survey scales designed to measure unit discipline and unit leadership and scales measuring several aspects of racial climate. However, this study was limited by the relatively small number of scales used and by its single time period (single wave) correlational design, which did not allow the drawing of causal influences about the relationships established.

The current study attempts to extend the findings of the previous study by examining both survey measures and measures drawn from Army record data. In addition, the present study will attempt to establish causal relationships between racial harmony and unit effectiveness by using a three-wave panel design and cross-lagged panel analysis (Kenny, 1973, 1975).

A second objective of the study is to identify command variables which can cause high and low unit effectiveness and good and bad racial climate. Leadership styles and specific strategies and interventions will be examined to identify methods and procedures which might be used to improve unit effectiveness and racial harmony. Cross-lagged panel analysis will be used to attempt to identify factors actually causing unit effectiveness and racial harmony.

METHOD

Sample

The sample consisted of 60 combat line companies drawn from two divisions located in the continental United States, with 30 units selected from each of the two divisions. The particular units to be sampled at each division were selected by the division G-3. The G-3s were instructed to select companies from combat line battalions which would be available for survey administration at three different intervals approximately 2 months apart.

For each of the three survey administrations, a sample of individuals was drawn from each of the companies in the sample. The individual company sample consisted of 18 enlisted personnel of ranks E1-E4, the company commander (CO), and the first sergeant (1SG). Within each company the sample of E1-E4s was stratified according to race, with black and white personnel sampled in numbers proportional to each group's representation in the company. Across the three intervals of survey administration, E1-E4s were sampled at random without replacement. However, since there is only one CO and 1SG in each company, these individuals were resurveyed if they remained in their positions during repeated survey administrations.

Design and Procedure

A three wave panel design was used for this study. The three waves consisted of three consecutive 10-week measurement periods during which survey and record data were collected from each of the 60 companies in the sample. Record data were accumulated continuously throughout the study and then aggregated across the appropriate time period to form measures for each wave. During the final 2 weeks of each wave, survey data were obtained by means of a questionnaire which requested respondents to answer retrospectively for the past 8 weeks.

Record Data Collection. Based on a survey of previous research and informal interviews with local Army personnel, a list was developed of record data information (i.e., data obtainable from Army records) which seemed both relevant and obtainable, as well as a list of sources and procedures for obtaining that information. Because the amount of time the researchers could spend on site at each division was limited, it was decided that local Army personnel would be used to obtain the data from Army records. Where appropriate, preliminary data collection forms were designed for use by the agencies that would be supplying the data.

During the initial visit to the data collection sites, meetings were held with the division staff agencies that would be involved in the data collection. During these meetings, the final modifications were made to the record data collection forms, and procedures to adjust for local idiosyncrasies in record-keeping methods were developed. Table 1 presents the staff agencies involved in record data collection and the information they provided. Appendix A contains the record data collection forms.

Table 1

Record Data Collected and Source of Data by Division

Data collected	Source
Article 15s	Adjutant General Battalion PACs (Div. A) Staff Judge Advocate (Div. B)
Bars to re-enlistment	Adjutant General
Awards and commendations	Adjutant General and Battalion PACs
SIDPERS SPF and transaction files	Adjutant General
Unprogrammed discharges	Adjutant General
Courts-martial	Staff Judge Advocate
Military police reports	Provost Martial
I.G. complaints	Inspector General
Sick calls	Troop Medical Clinics and Battalion Aid Stations
Company Unit Status Report Information (DA form 2715, part A)	Battalion S-3

Throughout the course of the study, record data collection site visits were conducted on a monthly basis. During these visits, a researcher contacted each agency supplying data. At this time, accumulated data were collected and forms were checked to insure that they were being filled out properly. In addition, the visiting researcher dealt with data collection problems the agency might be experiencing. These monthly visits were necessary for two related reasons. First, because of the high turnover rate among staff agency personnel, it frequently was necessary to orient new individuals to the data collection procedures. Second, a combination of factors related to Army record-keeping systems and turnover of agency personnel made much of the information being collected volatile. That is, if the data were left uncollected because of a problem in the data collection system, they would be lost and could not be obtained retrospectively.

It should be noted that considerable effort was required to maintain the integrity of the data collection system, because the data were often incomplete or in the wrong form. For example, early checks in the frequency of AR15s and administrative discharges being reported indicated that they were well below expected frequencies. Further investigation indicated that between one-third and one-half of the AR15s were not reported on the data collection forms. In an attempt to solve this problem, alternative data sources were developed. The SIDPERS transaction files were used to generate an alternate list of administrative discharges. Additional AR15 information was obtained from the Battalion PACs at Division A and by having a researcher abstract data directly from the Staff Judge Advocate's AR15 log book at Division B. Data obtained from primary and alternate sources were merged to form the final data files used in the analysis.

Survey Development. The survey instrument developed for this effort used a combination of items constructed for the present study and items adopted from previous studies. A literature search was conducted for surveys that attempted to measure concepts relevant to racial harmony, unit effectiveness, and unit leadership. Generally, when a scale or group of items that appeared relevant was found, the four highest loading items were included in the present survey instrument. In this manner items were taken from Boyd and Griesemer (Note 6), Hiett, McBride, and Fiman (Note 7), Taylor and Bowers (1972), Bauer, Stout, and Holz (Note 8), Hart (1978, Note 3, and Note 9), and finally, Worchel, Sgro, and Cravens (Note 10).

The initial 371-item survey instrument was pretested on a random sample of 62 E1-E4s drawn from line companies stationed at an Army post in the continental United States. The purpose of the pretest was to assess the adequacy of the administration procedures and the intelligibility of the instrument. The most frequent comment of the respondents was that the survey was too long. In order to shorten the instrument, the items were grouped into a priori scales based on the original scales from which they are adapted. Alpha reliability coefficients were calculated for each scale with and without each item. Items that did not increase the reliability when added to the scale were deleted. In addition, because companies and not individuals were the basic unit of analysis in this study, an analysis of variance was conducted for each scale, using the scale score on the dependent variable and the company of the respondent as the independent variable. This made it possible to identify scales that could discriminate between companies. The least discriminating scales were deleted from the final version of the survey. Two versions of the final survey were produced, one for E1-E4s and another for the leaders (CO and 1SG). The two versions of the questionnaire were similar except for the minor revisions necessary to make the questions appropriate for the particular respondent group. In addition, to control for respondent fatigue, each version of the questionnaire was printed with two different orders of item presentation.

Concurrent with the pretest of the survey, 114 NCOs and the company commanders from the units involved in the pretest were asked about problems in the unit and about what they do to prevent or reduce these problems (see Appendix B for a taxonomy of unit problems developed from this interview data). Information obtained from the interviews was integrated with a list of intervention strategies developed by Boyd and Griesemer (Note 6) to produce 19 additional items. These items related to the perceived frequency of use for various intervention strategies and were included only on the leaders' questionnaires.

Survey Data Collection. The individuals within each unit to be surveyed were randomly selected from a current copy of the SIDPERS SPF file. The SIDPERS SPF file is a computer file which contains personnel information on individuals at a particular installation. A computerized sampling system was developed which read the SIDPERS SPF file and produced for each company, a roster of individuals to be sampled. The roster of 18 primary names was broken down by race, with a separate list of three to six randomly chosen alternates for each race. The number of alternates increased as the number of individuals sampled in a racial category increased.

Sampling rosters and instructions were distributed to the company commanders 15 days before the survey. The instructions required the attendance of the CO, 1SG, and the 18 E1-E4s at a prescheduled survey session. (Survey sessions were scheduled in advance with the Battalion S-3s). If, for some reason, an individual on the primary list could not attend the survey session, company commanders were instructed to use the first available alternate on their list and that alternates were to be used only if absolutely necessary.

Survey sessions were held in battalion or brigade classrooms local to the units. From one to four units were surveyed at each session. At the start of each session, each of the subjects was asked to write his name and unit on a slip of paper. This information was used to determine that sampling quotas had been met, as well as to eliminate individuals who had already taken the survey when samples were drawn for subsequent waves. After all identifying information had been collected, surveys were distributed (different orders of the survey were distributed at random). Subjects were instructed not to put their names on the survey and were assured that their responses would remain anonymous. When EM surveys were turned in, they were checked to make sure that the correct racial category and unit had been marked. Leader surveys were distributed and returned in envelopes and were not checked.

At each survey session there were a substantial number of no-shows. Among the E1-E4s, 10 percent of the individuals on the sampling rosters had been discharged or transferred, 9 percent were on leave, 8 percent had some kind of special duty, and 6 percent were attending school. Whenever possible, make-up survey sessions were scheduled for units which did not complete their sampling requirements. EM make-ups were scheduled as soon as possible after the initial survey session to insure synchronous measurement within companies. An additional consequence of the large number of no-shows was that some units were not able to meet their sampling quotas from the names on their lists. Such units were given additional names from a supplemental list of alternates held in reserve by the researchers. When the reserve alternates had been exhausted and the necessary personnel had still not been obtained, company leaders were instructed to choose individuals of the required race randomly from the company. These individuals, who were not on either sampling list, constituted 15 percent of the final sample.

Attendance of the COs and 1SGs at the survey sessions averaged approximately 50 percent. When leaders did not attend the survey session, their surveys were delivered to them at the company where they were allowed to complete the survey at their convenience. The completed leader make-ups were picked up as soon as possible after they were delivered, usually the following day.

RESULTS

Obtained Sample

Table 2 shows the distribution of companies by type of unit, selected by the division G-3s for inclusion in the sample. Because of availability constraints among the units selected for the study, it was not possible to exactly synchronize the data collection dates for both divisions in the sample. Consequently, data collection from units in Division B began 6 weeks after data collection in Division A. However, once data collection was initiated, all units followed the same 10-week, 3-wave schedule.

Table 2

Number and Types of Units in Sample from Each Division

Type of unit	Division A	Division B
Infantry	18	21
Divarty	4	3
Divada	3	2
Air Cavalry	1	-
Cavalry	-	2
Engineering	4	2
Total	30	30

Survey data were obtained from 3,196 enlisted soldiers, ranks E1-E4, 83 first sergeants, and 77 COs in these units. Table 3 represents the racial composition of the respondents for each of these ranks. During each wave of the survey, previously untested enlisted personnel were randomly selected for inclusion in the sample. However, three enlisted soldiers from one unit were resampled in the third wave because all available personnel in the unit had been previously surveyed. For the leadership survey, the same COs and 1SGs were resampled during each wave, unless they had been transferred out of the unit. In such cases, their replacements were included in the sample. During the second and third wave of the survey, the percent of leaders resurveyed was 87.4 percent and 76.5 percent respectively.

Table 3

Percent of Questionnaire Respondents by Race for Each Rank Category

Race	E1-E4 (n=3190)[a]	1SG (n=66)[b]	CO (n=68)[c]
White	53%	55%	93%
Black	39	29	7
Other	8	17	0

[a] 6 E1-E4 of undetermined race were not included.

[b] 17 1SG of undetermined race were not included.

[c] 9 CO of undetermined race were not included.

Survey Item Analysis

An item analysis of the survey data was conducted to identify the underlying factors producing variance in the data, as well as to identify internally consistent and reliable scales which could be used to measure these factors.

Based on their content, survey items were assigned to three item pools that related to racial harmony, unit effectiveness, and leadership climate. The items in these item pools are shown in Appendices C, D, and E respectively. Factor analysis was used to identify a set of preliminary indices in each item pool. A separate factor analysis was conducted on each of the item pools using an iterated principal factor solution (Nie, Hull, Jenkins, Steinbrenner, and Bent, 1975), followed by a varimax rotation of factors with eigenvalues greater than 1.0. Except where noted, all enlisted and leader survey data were included in these analyses. Results of the factor analyses are presented in Appendix F which includes tables of items loading $\geq$ .35 on each of the retained factors. In order to develop indices for each of the factors, the responses to all items loading $\geq$ .35 on a given factor were averaged for each individual. The scoring of an item was reversed, if necessary, so that a numerically high score on the item represented a positive response. If more than half of the responses to items in the index were missing for a given individual, that case was deleted from the analysis. Next, item-total correlations were obtained for each index against all items in its pool. Item-total correlations between an item and an index in which it was included were corrected to remove the spurious correlation between the item and its contribution to the scale score.

Based on the item-total correlations, items were selectively added or deleted from the scales. Items to be retained in the index needed to show a high correlation with the item-total score of which it was a component and a low correlation with other index scores. The intent was to maximize both the internal consistency of the indices and their independent contributions in the cross-lagged analyses that followed. Additionally, the scales were required to contain at least two items and exhibit adequate alpha reliability. If an index did not meet these criteria, it was excluded from the analysis. After item additions and deletions had been completed, item-total correlations for the revised indices were obtained, and the addition/deletion process was repeated. This procedure was continued until no new additions or deletions were indicated.

Racial Climate Item Pool. Table 4 presents the results of the item analysis for the racial climate item pool. To be retained in the scale, an item had to correlate $\geq .50$ with its component item-total score and at least .10 less with all other item-total scores. In addition, to be retained a scale had to have at least two items and an $\alpha \geq .60$. An exception to these rules was made in the case of the fifth index. Since these items ask about race relations in general, they were exempted from the requirement that they correlate at least .10 less with other indices. Table 4 shows that five scales named Racial Hostility (R_HOST), Racial Solidarity (R_SOL), Attitude Toward Integration (R_AI), Racial Conflict Over Rules (R_RULES), and Racial Climate (R_RC) resulted from the item analysis of the racial climate item pool.

The R_HOST scale contains items which relate to acts of overt hostility between racial groups such as fights, arguments, and racial slurs. The R_SOL scale measures perceptions of voluntary interactions between black and white soldiers (which indicates the level of racial solidarity or polarization in the unit). The R_AI scale deals with attitudes about racial separatism, while the R_RULES scale concerns the respondent's evaluation of the rules which other racial groups live by. Finally, the R_RC scale deals with perceptions of overall racial climate.

It is interesting to note that each of these scales corresponds to factors found in the studies from which their component items were drawn (with the exception of the R_RULES scale which is original to the present study). The R_HOST and R_SOL scales correspond to the racial hostility and racial solidarity factors found by Boyd and Griesemer (Note 6). The R_AI and R_RC scales replicate the attitude toward integration scale and racial climate scales developed by Hiett, et al. (Note 7).

Unit Effectiveness Item Pool. The same procedure used to develop indices for the racial climate factors was used in developing scales for the unit effectiveness item pool, but in this instance, an item had to correlate $\geq .40$ with its component item-total score and at least .10 less with all other item-total scores. As with the racial climate scales, the unit effectiveness scales themselves had to exhibit at least .60 alpha reliability and contain at least two items in order to be retained for further analysis.

Table 4

Correlations of Questionnaire Items with Racial Climate Scales

Item number	Corrected item-total correlation	Item description
Racial Hostility Scale (R_HOST) α =.89		
C26[a]	.60	Fights between blacks and whites in company
C28[a]	.54	Blacks make whites unwelcome in areas meant for all
C30[a]	.51	White officers have trouble handling blacks
C31[a]	.60	Whites refer to blacks using racial epithets
C32[a]	.56	Whites make blacks unwelcome in areas meant for all
C33[a]	.62	Blacks refer to whites using racial epithets
C34[a]	.55	Blacks and whites fight over female companions
C35[a]	.55	Racial jokes in company
C36[a]	.58	Blacks and whites fight over pot, lending money, or selling drugs
C37[a]	.56	Other racial groups get angry when I do right things
C38[a]	.55	Other racial groups encourage me to do wrong things
C39[a]	.58	Other racial groups inform on me
C40[a]	.52	Other racial groups play up to leaders
B37[a]	.53	Number of racial incidents within last 8 weeks

Table 4 (Continued)

Correlations of Questionnaire Items with Racial Climate Scales

Item number	Corrected item-total correlation	Item description
Racial Solidarity Scale (R_SOL) α =.79		
C23	.57	Blacks in company have black and white buddies
C25	.59	Blacks and whites in company have a lot in common
C27	.62	Blacks and whites in company hang around together after duty hours
C29	.62	Close friendships between blacks and whites occur in company
Attitude Toward Integration Scale (R_AI) α =.84		
C14[a]	.73	Blacks and whites should work in separate groups
C16[a]	.72	Blacks and whites should live and work with their own race
C18[a]	.67	Total separation of blacks and whites is the answer to racial problems
Racial Conflict Over Rules (R_RULES) α =.84		
C43	.72	Other racial group's rules are good/bad
C44	.72	Other racial group's rules are fair/unfair

Table 4 (Continued)

Correlations of Questionnaire Items with Racial Climate Scales

Item number	Corrected item-total correlation	Item description
Racial Climate Scale (R_RC) α =.80		
C13[a]	.51	Racial conflicts interfere with work
C17	.69	Race relations good/bad during last 8 weeks
C19	.68	Race relations getting better/ worse during last 8 weeks
C21	.54	Good solutions to racial problems within the company

[a]Item reversed when calculating the scale scores.

Table 5 presents the results of this item analysis for the unit effectiveness item pool. Eight scales meeting the above stated criteria resulted from this analysis. These scales are Unit Hostility (U_HOST), Evaluation of Leaders (U_RATE), Positive Discipline (U_PDISP), Pot Smoking (U_POT), Value Rebellion (U_REBV), Lawbreaking (U_LAWB), Preparedness to Fight (U_FIGHT), and Enlisted Closeness (U_CLOSE).

The U_HOST scale contains items which relate to hostile acts or intentions, particularly those directed toward the company and its leadership. Taken together, these items seem to describe a climate of insubordination among the enlisted soldiers in the company. U_RATE asks the respondent about his evaluation of, and acquiescence to company leaders (CO and 1SG). It is assumed that U_RATE is related to unit effectiveness to the extent that subordinates will tend to follow leaders who they perceive are competent, an interpretation which is supported by the presence of items D36 and D38 in this scale. The U_PDISP contains items related to the general work effectiveness of the company. The items in this scale are a subset of the items from the Discipline Scale (Bauer, Stout, and Holt, Note 8) consisting of the positively worded items from the original scale. Since the Discipline Scale has been used in previous research (Hart, 1978) and since Hart (Note 9) has shown that the full discipline scale is unidimensional even though its positive and negative items tend to load on different factors, the full discipline scale (labeled U_DISPF in Table 5) was used in subsequent analysis. The U_POT scale consists of two items which deal with levels of marijuana use and marijuana selling. The U_REBV scale deals with feelings of rebellion in the company. Although somewhat similar in subject

Table 5

Correlations of Questionnaire Items with Unit Effectiveness Scales

Item numbers	Corrected item-total correlation	Item description
Unit Hostility Scale (U_HOST) α =.90		
A72[a]	.51	Percentage of time enlisted soldiers spend in illegal activities
B15[a]	.61	Percentage of enlisted soldiers who violate rules to reduce unit effectiveness
B19[a]	.64	Percentage of enlisted soldiers who would like to make unit less effective
B25	.42	Feels it's right to make unit strong
B39[a]	.50	Number of incidents of property destruction during last 8 weeks
B45[a]	.47	Number of thefts in company during last 8 weeks
B47[a]	.54	Number of fist fights in company during last 8 weeks
C46[a]	.64	Percentage of blacks who talked about "dealing with" leaders
C49[a]	.63	Percentage of whites who talked about "dealing with" leaders
C52[a]	.70	Percentage of enlisted soldiers who talked about organizing an underground group
C55[a]	.67	Percentage of white enlisted soldiers who talked about organizing an underground group
C58[a]	.69	Percentage of black enlisted soldiers who talked about organizing an underground group

Table 5 (Continued)

Correlations of Questionnaire Items with Unit Effectiveness Scales

Item number	Corrected item-total correlation	Item description
Unit Hostility Scale (U_HOST) (Continued)		
C61[a]	.50	Enlisted soldiers in company out to get leaders they consider unfair
C62[a]	.51	Enlisted soldiers threaten to harm unit leaders
D20[a]	.43	Percentage of enlisted soldiers who act as if they don't want to be promoted
D39[a]	.55	Percentage of enlisted soldiers who rebel against what leaders ask them to do
D65[a]	.60	Percentage of enlisted soldiers who break rules on purpose to get out of Army
Evaluation of Leaders Scale (U_RATE) α =.70		
D36[a]	.54	Respondent feels like protesting actions of company leaders
D38[a]	.46	Respondent would like to be free of company leaders' authority
E75	.51	Rating of company commander
E76	.43	Rating of first sergeant
Positive Discipline Scale (U_PDISP) α =.71		
E37	.41	Members of company show up on time
E40	.50	Members of company cooperate with each other

Table 5 (Continued)

Correlations of Questionnaire Items with Unit Effectiveness Scales

Item number	Corrected item-total correlation	Item description
Positive Discipline Scale (U_PDISP) (Continued)		
E42	.43	Members of company keep areas clean and orderly
E43	.49	Members of company get jobs done right without direct supervision
E45	.49	Members of company do high quality work
Pot Smoking Scale (U_POT) α =.65		
B33[a]	.48	Enlisted soldiers in company make money by selling pot
B49[a]	.48	Percentage of enlisted soldiers who smoked pot
Value Rebellion Scale (U_REBV) α =.70		
D33[a]	.50	Good/bad for enlisted soldiers to rebel against company leaders
D35[a]	.56	Fair/unfair for enlisted soldiers to rebel against company leaders
D37[a]	.48	Better/worse person if you rebel against company leaders
Law Breaking Scale (U_LAWB) α =.64		
D56[a]	.47	Try to break as many rules as possible without getting caught
D57[a]	.49	How often respondent seriously violates law
D58	.41	Respondent's overall respect for law

Table 5 (Continued)

Correlations of Questionnaire Items with Unit Effectiveness Scales

Item number	Corrected item-total correlation	Item description
Preparedness to Fight Scale (U_FIGHT) α =.79		
D59[a]	.66	Percentage of enlisted soldiers in company respondent would trust in battle
D62[a]	.66	Percentage of enlisted soldiers company who would actively fight the enemy in battle
Enlisted Closeness Scale (U_CLOSE) α =.73		
E25	.57	Enlisted soldiers in company close during last 8 weeks
E29	.57	Enlisted soldiers in company distant during last 8 weeks
Full Discipline Scale (U_DISPF) α =.78		
E36	.36	Company members process paperwork efficiently
E37	.44	Members of company show up on time
E38[a]	.40	Members of company fail to work together as a team
E39[a]	.32	Members of company display disorderly conduct off post
E40	.47	Members of the company cooperate with each other
E41[a]	.42	Members of the company sit around doing nothing during duty hours
E42	.38	Members of company keep areas clean and orderly

Table 5 (Continued)

Correlations of Questionnaire Items with Unit Effectiveness Scales

Item number	Corrected item-total correlation	Item description
	Full Discipline Scale (U_DISPF) (Continued)	
E43	.43	Members of company get jobs done right without direct supervision
E44[a]	.32	Members of company maintain low level of combat readiness
E45	.51	Members of company do high quality work
E46[a]	.43	Members of company fail to maintain and properly wear uniforms
E47[a]	.44	Members of company do just enough work to get by

[a]Item reversed when calculating scale scores

matter to some of the questions in the U_HOST scale, the U_REBV deals with judgments of the value of rebellion against company leaders (good/bad, fair/unfair) while similar questions in R_HOST are more behavioral, asking what percentage of the soldiers in the company actually rebel against leaders and commit or talk about committing insubordinate acts. U_LAWB is a self-reported lawbreaking measure similar to the one used in Hart (1978). U_FIGHT concerns the percent of the enlisted soldiers that the respondent would trust in battle, and the respondent's estimate of how many would actively fight the enemy in battle. It is interpreted as a measure of the extent to which EMs are prepared to fight in combat situations, i.e., their combat readiness. Finally, the U_CLOSE scale deals with feelings of closeness among the EMs. Feelings of closeness among the enlisted soldiers should logically be related to unit cohesion. Some authors, for example Gabriel and Savage (1978) and Hauser (1979) have suggested that unit cohesion can contribute substantially to the combat effectiveness of a unit.

Leadership Item Pool. Once again, the procedure used to develop indices for the racial climate and unit effectiveness item pools was used to develop indices for the leadership items. To be retained in a scale after the initial factor analysis, an item had to correlate $\geq$ .40 with its component item-total

score and at least .10 less with all other item-total scores. The scales themselves had to exhibit $\geq$ .60 alpha reliability and contain at least two items in order to be retained for further analysis.

Table 6 presents the results of the item analysis for the leadership item pool. Three scales meeting the stated criteria resulted from this analysis. These scales are Leader Fairness and Consideration (L_FAIR), Leader Sacrifice (L_SAC), and Leader Strictness (L_STR). The first of these scales, L_FAIR, contains 34 items and represents an amalgamation of concepts. Included in this scale are items related to dimensions of leader consideration, persuasion, structure, and production emphasis from the modification of the Leader Behavior Description Questionnaire used by Worchel, Sgro, and Cravens (Note 10). Other questions in the scale ask about leader fairness, and the extent to which leaders stigmatize subordinates by talking unfavorably about them in public. The L_SAC scale concerns the extent to which company leaders are willing to sacrifice their personal welfare for the good of their men. Gabriel and Savage (1978) suggest that the willingness of commanders to sacrifice their personal welfare for the good of their men improves unit cohesion and willingness to fight in battle. Finally, L_STR deals with the extent to which company leaders establish strict rules.

Leadership Strategies Item Pool. As a subcomponent of the leadership item pool analysis, a separate factor analysis was done of those items dealing with leadership strategies which were asked of only the company commanders and first sergeants. Only the responses of the leaders that were given during their first test administration were analyzed because when only leader surveys are used in the analysis, the repeated surveys of the same subjects constitutes a substantial percentage of the data.

Using the previously discussed procedures, indices for this leadership strategies item pool were developed. Any item correlating $\geq$ .40 with its component item-total score and at least .10 less with all other item-total scores was retained in its scale. All scales with $\geq$ .60 alpha reliability and with at least two items were retained for further analysis. Two scales meeting these criteria resulted from this analysis. These scales, as shown in Table 7, are L_PROB and L_CONS.

L_PROB was originally interpreted as representing strategies a commander might use if he was experiencing severe problems, especially racial problems. For example, seek outside assistance from the EO or OE offices, relieve individuals, ignore minor problems (possibly because of preoccupation with major ones), etc. This may in fact be the case, but subsequent inspection of the individual item means suggested the more parsimonious explanation that this factor represents things that company leaders seldom do. The second scale, L_CONS, deals with the extent to which leaders consult with subordinates on matters such as promotion and punishment.

Table 6

Correlations of Questionnaire Items with Leadership Scales

Item number	Corrected item-total correlation	Item description
Leader Consideration & Fairness (L_FAIR) α =.93		
A14	.60	Company commander is friendly and easy to approach
A16	.53	First sergeant is friendly and easy to approach
A18	.55	Leaders put suggestions made by group into operation
A20	.52	Leaders treat all groups as their equals
A31	.52	Leaders make company policy clear to group
A33	.46	Leaders maintain definite performance standards
A37	.44	Leaders ask all groups to follow same rules
A49	.56	Leaders' arguments are convincing
A50	.44	Leaders persuade others when they talk
A56	.60	Leaders treat all in a positive way
A58	.60	Company commander emphasizes treating all equally and fairly
A60	.58	First sergeant emphasizes treating all equally and fairly
A62[a]	.45	Leaders handle punishment and discipline unfairly

Table 6 (Continued)

Correlations of Questionnaire Items with Leadership Scales

Item number	Corrected item-total correlation	Item description
Leader Consideration & Fairness (L_FAIR) (Continued)		
A64	.65	Leaders treat all fairly and justly
A65[a]	.43	Leaders discriminate against black enlisted soldiers
B54[a]	.44	Leaders would risk enlisted men's lives in battle to look good
B60[a]	.52	Leaders talk unfavorably about enlisted soldiers in front of the whole company
B62[a]	.40	Leaders talk favorably about themselves in front of the whole company
B64[a]	.42	Leaders feel enlisted soldiers set a bad example
B69[a]	.45	Leaders talk publicly about "babysitting" enlisted soldiers
B70[a]	.46	Enlisted soldiers are insulted by the type of work required by their leaders
D45[a]	.49	Leaders keep score on enlisted soldiers
E13	.60	Company commander close to enlisted soldiers
E14	.48	Percentage of enlisted soldiers who agree with leaders about who deserves punishment
E17	.54	First sergeant close to enlisted soldiers

Table 6 (Continued)

Correlations of Questionnaire Items with Leadership Scales

Item number	Corrected item-total correlation	Item description
Leader Consideration & Fairness (L_FAIR) (Continued)		
E18	.46	Percentage of enlisted soldiers who agree with leaders about who deserves promotion
E21	.67	Leaders are close to enlisted soldiers
E62	.42	Leaders promote most/least intelligent soldiers
E64[a]	.46	Leaders promote "yes men"
E66[a]	.53	Leaders promote "brown nosers"
E68	.60	Company commander lives up to his own rules
E69	.56	First sergeant lives up to his own rules
E70[a]	.61	Leaders break regulations when they think no one is watching
E71[a]	.61	Leaders have punished innocent enlisted soldiers
Leader Sacrifice (L_SAC)		α =.76
B46	.54	Leaders risk poor OER/EER to protect enlisted soldiers
B48	.63	Leaders risk punishment by superiors to protect enlisted soldiers
B52	.62	Leaders sacrifice their welfare for that of their enlisted soldiers

Table 6 (Continued)

Correlations of Questionnaire Items with Leadership Scales

Item number	Corrected item-total correlation	Item description
	Leader Strictness (L_STR)	α =.62
E61	.45	Leaders establish strict rules requiring respect for authority at all times
E63	.45	Leaders establish strict rules against disobedience

[a]Item reversed when calculating scale scores.

Table 7

Correlations of Questionnaire Items with Leadership Strategies Scales

Item number	Corrected item-total correlation	Item description
Leader Problems (L_PROB) α =.81		
F31	.52	Number of RR/EO seminars conducted
F35	.66	Number of calls to EO office for assistance
F36	.57	Number of calls to Organizational Effectiveness office for assistance
F38	.49	Number of individuals relieved by respondent
F40	.51	Number of times problem was ignored because respondent did not think it was serious
F41	.59	Number of times tried to break up racial groups
Leader Consultations (L_CONS) α =.77		
F28	.50	Number of hours spent in conversation with enlisted soldiers
F29	.53	Number of hours spent counseling individuals
F32	.55	Number of hours spent talking to enlisted leaders about company problems
F33	.52	Number of hours spent seeking chain of command advice about promotions
F34	.64	Number of hours spent seeking advice from enlisted leaders about discipline problems

Reliability Estimation

For survey measures, reliabilities to be used in correcting cross-lagged and synchronous correlations in subsequent cross-lagged panel analysis were estimated using an analysis of variance model developed by Hart (Note 11). Reliabilities calculated using this method are shown in Table 8. Reliabilities in the columns labeled aggregate are calculated in such a way that individual differences are not treated as error (Note 11, Formula 2). According to Hart, this reliability represents the extent to which average company scale scores would be correlated if they were drawn from different random samples of company personnel at the same point in time. Reliabilities in the column labeled consensus are calculated in such a way that individual differences are treated as error and reflect the level of agreement between respondents (Note 11, Formula 4). High levels of agreement produce small individual differences and increase the consensus reliability.

For this study, the assumption was made that individual differences are not measurement error but rather reflect legitimate differences in frames of reference caused by the respondent's unique position in the company structure (e.g., different platoons and squads) and real differences in individual traits and behaviors (e.g., attitudes toward integration or lawbreaking). Consequently, the aggregate reliability was used for correction purposes because it assumes that individual differences are not error and would be replicated in another random sample. The fact that at least some of the correlations found in the cross-lagged analysis exceeded the maximum that would be theoretically possible if the data were reliable at the level implied by the consensus reliability, is evidence for the appropriateness of the use of the aggregate reliability.

Reliability of record data measures, except for sick calls, was estimated by randomly assigning observations to one of two split halves. The observations in each half were counted to produce split totals for each company and each wave. Then coefficient alpha was calculated across the two company split half scores for each wave and over all three waves. To avoid taking advantage of any one particularly favorable random split, three sets of alpha coefficients were computed for each variable based on three different random splits. The mean of these alphas was used as the estimate of reliability and is presented in Table 9. Since sick call data were collected in the form of monthly frequencies on odd and even days, reliabilities were estimated by summing the odd and even frequencies for each company across the months in each wave and computing the coefficients alpha across the odd and even halves.

Cross-Lagged Panel Analysis

Examination of the relationships between measures of racial harmony, unit effectiveness, and leadership climate, employed cross-lagged panel analysis as described by Kenny (1973, 1975). In cross-lagged panel analysis, three different groups of product-moment correlation coefficients are calculated for each pair of measures (X and Y). They are (1) Synchronous correlations which are calculated from different variables measured at the same time (i.e., r_{x1y1}, r_{x2y2}, and r_{x3y3}, where the numeric subscripts represent time); (2) Cross-lagged correlations which relate different variables measured at different times (i.e., r_{x1y2}, r_{x2y3}, and r_{x1y3} in which X leads in time, and r_{x2y1}, r_{x3y2},

Table 8

Reliabilities for Survey Scales Calculated by Analysis of Variance

	Time 1		Time 2		Time 3	
Scale	Aggre-gate	Consen-sus	Aggre-gate	Consen-sus	Aggre-gate	Consen-sus
R_HOST	.75	.36	.79	.48	.82	.50
R_SOL	.77	.43	.85	.47	.90	.63
R_AI	.84	.51	.90	.48	.90	.50
R_RULES	.81	.00	.82	.38	.94	.53
R_RC	.86	.60	.86	.49	.92	.70
U_HOST	.94	.65	.90	.52	.91	.45
U_RATE	.74	.76	.74	.68	.82	.73
U_POT	.68	.40	.87	.67	.39	.08
U_REBV	.73	.36	.61	.13	.59	.15
U_LAWB	.65	.30	.82	.45	.67	.22
U_FIGHT	.71	.23	.87	.38	.90	.52
U_CLOSE	.69	.26	.85	.52	.77	.56
U_DISPF	.81	.49	.88	.65	.87	.57
L_FAIR	.95	.70	.96	.72	.97	.78
L_SAC	.87	.58	.88	.59	.83	.56
L_STR	.80	.52	.71	.47	.64	.39
L_CONS [a]	.66	.20	.76	.19	.71	.02
L_PROB [a]	.67	.49	.81	.23	.88	.78

[a]Since responses to L_PROB and L_CONS were obtained only from leaders, the consensus reliability for these scales represents agreement between the CO and 1SG.

Table 9

Mean Reliability for Record Data Measures by Wave and Across All Waves

Data	T_1	T_2	T_3	Overall
Article 15s	.48	.53	.55	.57
Bars to re-enlistment	.75	.18	.08	.55
Awards and commendations	.93	.88	.76	.91
AWOLs	.40	.47	.44	.43
Unprogrammed discharges	.49	.47	.55	.51
Courts-martial	.31	.38	.18	.33
MP reports	.59	.66	.67	.66
IG complaints	.55	.17	.37	.34
Sick calls	.80	.94	.91	.91

and r_{x3y1} in which Y leads in time), and (3) Autocorrelations involving a single variable measured at different times (r_{x1x2}, r_{x2x3}, and r_{x1x3} for X and r_{y1y2}, r_{y2y3}, and r_{y1y3} for Y). Synchronous correlations are the type of correlations used in traditional single-time wave studies. Although this type of correlation analysis indicates which variables are linearly related, it gives no information concerning the source of the relationship. In particular three basic hypotheses are confounded: (1) X is causing Y, (2) Y is causing X, and (3) X and Y are related because they are both being caused by a spurious third variable, Z (Kenny, 1975). Information contained in the cross-lagged correlations can help distinguish between these rival hypotheses if the proper assumptions can be made. In addition, cross-lagged correlations are sensitive to relationships in which X and Y are related only after some period of time. Such relationships may be severely attenuated or absent from the synchronous correlations.

Cross-lagged correlations can distinguish between causal hypotheses by assuming that, in a causal relationship, the cross-lagged correlation with the causal variable leading in time will be larger than the cross-lagged correlation with the caused variable leading in time. Thus the magnitude of the difference between two cross-lagged correlations indicates the strength of the causal relationship while the sign of the difference indicates the direction of causality. Unfortunately, the interpretation of the sign of the cross-lagged difference is problematic because correlated errors can raise or lower the cross-lagged correlations by a constant. Take for example the following cross-lagged correlations $r_{x1y2} = .30$, $r_{x2y1} = .04$. The cross-lagged correlation with X leading is higher, producing a positive cross-lagged difference of .26. This result is compatible with the hypotheses that X causes increases in Y because the cross-lagged correlation with X leading (.30) is higher than the cross-lagged correlation with Y leading (.04). But suppose that correlated error had

increased both these correlations by .25. If this were the case, the actual correlations would be $r_{x1y2} = .05$, $r_{x2y1} = .21$. The cross-lagged difference is still .26 but in this instance, because the cross-lagged correlation with Y leading is largest, we would conclude that Y is decreasing X. Thus, for positive differences, two hypotheses are confounded: (1) that X increases Y; and (2) that Y decreases X. For negative differences, the two confounded hypotheses are that Y increases X, or that X decreases Y. The present study resolves this confounding in many cases by using the sign of the synchronous correlations to fix the direction of the relationship so that the causality can be inferred. In other cases, the direction is fixed by a priori assumptions. This approach has been recommended by Kenny (1975), for an alternate approach using a "no-cause baseline" and for a further discussion of this problem see Rozelle and Campbell (1969).

Causal interpretation of the cross-lagged correlations requires two additional assumptions, synchronicity, and stationarity. Synchronicity requires that the variables being compared were measured at the same point in time. The present study maintained synchronicity of survey and record data measures within each company by surveying all personnel from a given company within a period of several days, by aggregating record data during a fixed period before the survey administration, and by maintaining an equal data collection interval for all units. The methodology did not provide synchronous measurements between companies, especially between companies in different divisions, however, since all comparisons relate measures taken within companies, it is felt that the synchronicity assumption is satisfied.

The stationarity assumption requires that the causal structure of variables in the comparison remain the same across time. Evidence of stationarity is provided by the equality of the synchronous correlations. However, changes in measurement error (reliability) across time can make the observed synchronous correlations appear different even though the true synchronous correlations are equal. This condition is called quasistationarity. It can be identified by correcting the synchronous correlations for attenuation due to measurement error (McNemar, 1969, p. 171). If, after correction, the synchronous correlations become equal, the stationarity assumption is satisfied by the assumption of quasistationarity. In a similar manner, reliability shifts across time can artificially increase or decrease cross-lagged correlations. Therefore, it is necessary to adjust the cross-lagged correlations using reliability ratios (Kenny, 1975) which indicate magnitude and direction of the reliability shift across time.

In two-wave, two-variable cross-lagged panel analysis, a significant difference between cross-lagged correlations is evidence for a causal relationship (hypotheses 1 and 2 above) if the assumptions of synchronicity and stationarity can be justified. If stationarity cannot be assumed, the hypo-autocorrelation can still provide evidence of causal relationship. The hypo-autocorrelation is the estimated autocorrelation of a hypothetical third spurious causal variable. If the hypo-autocorrelation exceeds its theoretical maximum value of 1.0, then the hypothesis of a spurious third variable can be rejected.

In three-wave, two-variable comparisons such as found in the present study, Kenny (1973, p. 160) suggests two vanishing tetrads which can distinguish between the three alternate causal hypotheses above. However, when the second and canonical correlation test for vanishing tetrads recommended in Kenny (1974) was calculated, it indicated virtually no significant relationships and was deemed not sufficiently powerful for use with these data. Consequently, the analysis which follows is based on multiple two-wave comparisons.

Racial Harmony and Unit Effectiveness. To evaluate the relationship between racial harmony and unit effectiveness, cross-lagged comparisons were calculated between the survey measures of racial climate developed from the racial climate item pool and survey and record data measures of unit effectiveness. Table 10 presents the significant synchronous correlations between racial harmony and unit effectiveness scales. Relatively high and consistent synchronous correlations were found between all of the various racial climate scales and measures of unit effectiveness related to perceptions of hostile acts or intentions against the company and its leaders (U_HOST), perceptions of percentage of enlisted soldiers who would fight the enemy in battle and who could be trusted in battle (U_FIGHT), perceptions of E1-E4 cohesion (U_CLOSE), and perceptions of the general work effectiveness of the company (U_DISPF). Three other unit effectiveness measures showed a less consistent relationship with the racial scales, each producing only two significant correlations with the five racial scales. These were perceptions of incidence of pot smoking (U_POT), self-reported lawbreaking (U_LAWB), and the respondent's evaluation of company leaders (U_RATE). One scale dealing with the perceived value of allegiance to company leaders (U_REBV) showed no synchronous correlations with any of the racial scales. In every case, the direction of the correlations in Table 7 is such that a favorable score on the racial climate scale is associated with a favorable score on the unit effectiveness scales.

From these data it is apparent that perceived racial climate is broadly associated with perceived unit effectiveness such that positive perceptions of racial climate are associated with positive perceptions of unit effectiveness. However, from the synchronous correlations it is not possible to determine if racial harmony is causing unit effectiveness (or vice versa) or if racial harmony and unit effectiveness are co-symptoms of other causal variables. To aid in answering this question, it is necessary to examine the cross-lagged differences. Table 11 presents cross-lagged comparisons between racial harmony and unit effectiveness scales which produced cross-lagged differences significant at the .10 level. (Cross-lagged differences significant at the .10 level were reported because of the low power of the test (Kenny, 1975, p. 894), the relatively small sample size, and the exploratory nature of the analysis.) For each comparison, the table presents the synchronous, cross-lagged, hypo auto, and autocorrelations, and the cross-lagged difference. Correlations corrected for reliability are shown in parentheses. Cross-lagged correlations were corrected using reliability ratios (Kenny, 1975, p. 897) and synchronous correlations were corrected for attenuation (McNemar, 1969, p. 171).

Several of the significant cross-lagged differences cannot be interpreted as causal relationships. In the comparisons between R_HOST and U_POT and R_RULES and U_POT, correction for reliability shifts reduces the cross-lagged difference to a level that would not be significant. The comparisons between R_AI and U_LAWB, R_AI and U_DISPF, and R_RULES and U_RATE do not warrant

Table 10

Significant Synchronous Correlations Between Racial Harmony and Unit Effectiveness Scales[a]

Unit Effectiveness Scales	Racial Harmony Scales				
	R_HOST	R_SOL	R_AI	R_RULES	R_RC
U_HOST	.63	.35	.39	.46	.50
U_RATE				.43	.34
U_POT	.46			.36	
U_REBV					
U_LAWB	.38		.29		
U_FIGHT	.45	.41	.38	.43	.53
U_CLOSE	.46	.50	.35	.32	.51
U_DISPF	.63	.51	.35	.45	.60

Note. Correlations presented are averaged across time by converting the three synchronous correlations to their corresponding angles using a cosine transformation (Jöreskog and Sörbom, 1979, p. 10) averaging the angles and converting the average angle back into a correlation coefficient using an arc cosine transformation.

[a] $n = 59$, for $r \geq .25$ $p < .01$, for $r \geq .33$ $p < .01$ two tailed.

the stationarity or quasi-stationarity assumption because of significant differences between the synchronous correlations which were not reduced by correction for attentuation. In addition, the comparisons between R_AI and U_FIGHT and R_RULES and U_RATE show a strong pattern of reversing the sign of the cross-lagged differences across time which makes them difficult to interpret.

These exclusions leave eight pairs of variables with interpretable cross-lagged differences, six pairs with negative differences, and two pairs with positive differences. The variables which produced the negative differences were perceptions of overt racial hostility (R_HOST), which produced negative cross-lagged differences across waves one and three (a 5-month interval) when compared with self-reported lawbreaking (U_LAWB), the general work effectiveness of the company (U_DISPF), and E1-E4 cohesion (U_CLOSE). U-CLOSE also showed a significant difference across waves one and two, but this comparison

Table 11

Synchronous, Cross-Lagged, Hypo Auto, and Autocorrelations for Comparisons Between Racial Climate and Unit Effectiveness Scales Which Produced Significant Cross-Lagged Differences

X[a]	Y	Syncronous Correlations[b] T_1 T_2 T_3		Cross-Lagged Correlations: X Leading Y	Y Leading X	Difference	Hypo Auto-correlations	Auto-correlations: X	Y
R_HOST	U_POT	(.63)(.62)(.71)[d] .45 .51 .40 [e]	T_1-T_2	.19(.17)	.24(.21)	∓05 (∓10)	.19	.46	.42
			T_2-T_3	.14(.21)	.30(.20)	∓16 (∓01)	.21	.43	.15
			T_1-T_3	.08(.11)	.30(.22)	∓22[c](∓11)	.13	.26	.32
	U_LAWB	(.67)(.35)(.50) .47 .28 .37	T_1-T_2	.18(.16)	.11(.12)	.08 (.04)	.15		.06
			T_2-T_3	.20(.23)	.24(.21)	∓04 (.02)	.46		.22
			T_1-T_3	∓03(∓03)	.19(.18)	∓22[c](∓21)	∓03		.15
	U_CLOSE	(.81)(.33)(.60) .58 .27 .48	T_1-T_2	.20(.18)	.51(.55)	∓31[c](∓37)	.64		.40
			T_2-T_3	.09(.10)	.28(.26)	∓18 (∓16)	.20		.22
			T_1-T_3	∓01(∓01)	.22(.22)	∓23[c](∓23)	∓01		.06
	U_DISPF	(.74)(.73)(.82) .58 .61 .69	T_1-T_2	.33(.32)	.45(.46)	∓13 (∓14)	.42		.60
			T_2-T_3	.33(.34)	.46(.46)	∓13 (∓11)	.36		.43
			T_1-T_3	.09(.09)	.29(.29)	∓20[c] (∓20)	.07		.30
R_AI	U_LAWB	(.41)(.09)(.50) .30 .08 .39	T_1-T_2	∓00(∓00)	.03(.03)	∓03 (∓03)	∓00	.18	.06
			T_2-T_3	.33(.36)	.08(.07)	.24[c](.29)	.84	.27	.22
			T_1-T_3	∓14(∓14)	.04(.04)	∓18 (∓18)	∓05	.06	.15
	U_FIGHT	(.40)(.38)(.51) .31 .34 .46	T_1-T_2	.07(.06)	.21(.23)	∓14 (∓16)	.15		.28
			T_2-T_3	.31(.30)	.09(.09)	.22[c](.22)	.18		.14
			T_1-T_3	∓08(∓07)	.11(.12)	∓19 (∓19)	∓06		.25
	U_DISPF	(.19)(.35)(.55) .16 .31 .49	T_1-T_2	.11(.11)	.13(.13)	∓02 (∓02)	.28		.60
			T_2-T_3	.26(.26)	.25(.25)	.01 (.01)	.43		.43
			T_1-T_3	∓11(∓11)	.13(.13)	∓24[c](∓24)	∓19		.30
R_RULES	U_POT	(.39)(.54)(.50) .29 .46 .30	T_1-T_2	∓06(∓05)	.14(.16)	∓20 (∓21)	∓07	.06	.42
			T_2-T_3	.06(.10)	.39(.24)	∓33[c](∓14)	.18	.26	.15
			T_1-T_3	.08(.11)	.13(.09)	∓05 (∓02)	.12	∓04	.32

Table 11 (Continued)

Synchronous, Cross-Lagged, Hypo Auto, and Autocorrelations for Comparisons Between Racial Climate and Unit Effectiveness Scales Which Produced Significant Cross-Lagged Differences

X[a]	Y	Syncronous Correlations[b] T_1 T_2 T_3		Cross-Lagged Correlations: X Leading Y	Y Leading X	Differences	Hypo Auto-correlations	Auto-correlations: X	Y
R_RULES	U_REBV	(.35)(.11)(.27) .27 .08 .20	T_1-T_2	.01(.01)	.09(.09)	.10 (.10)	.04	.06	.29
			T_2-T_3	.17(.19)	.16(.15)	.01 (.04)	-1.69	.26	.31
			T_1-T_3	.17(.21)	.10(.08)	.27[c](.29)	.33	.04	.08
	U_LAWB	(.47)(.17)(.23) .34 .14 .18	T_1-T_2	.15(.13)	.16(.18)	.01 (.05)	.52		.06
			T_2-T_3	.03(.04)	.27(.23)	.24[c](.19)	.36		.22
			T_1-T_3	.05(.05)	.00(.00)	.05 (.05)	.00		.15
	U_RATE	(.39)(.73)(.43) .30 .57 .38	T_1-T_2	.11(.11)	.31(.31)	.20 (.20)	.21		.54
			T_2-T_3	.42(.43)	.17(.17)	.25[c](.26)	.34		.45
			T_1-T_3	.08(.08)	.05(.05)	.03 (.03)	.04		.32
R_RC	U_HOST	(.65)(.56)(.47) .58 .49 .43	T_1-T_2	.39(.40)	.32(.31)	.07 (.09)	.45	.52	.55
			T_2-T_3	.26(.27)	.27(.26)	.01 (.01)	.32	.26	.31
			T_1-T_3	.34(.36)	.07(.07)	.27[c](.29)	.10	.25	.41
	U_CLOSE	(.86)(.26)(.64) .66 .22 .54	T_1-T_2	.26(.23)	.54(.60)	.28[c](.37)	.96		.40
			T_2-T_3	.04(.04)	.31(.29)	.27[c](.25)	.12		.22
			T_1-T_3	.06(.06)	.26(.27)	.20[c](.21)	.04		.66
	U_RATE	(.34)(.44)(.44) .27 .35 .38	T_1-T_2	.20(.20)	.00(.00)	.20[c](.20)	.00		.54
			T_2-T_3	.28(.28)	.15(.15)	.13 (.12)	.32		.45
			T_1-T_3	.18(.18)	.06(.06)	.24[c](.24)	.12		.32

a. n = 59
b. $r \geq .25$ $p < .05$; $r \geq .33$ $p < .01$, two tailed.
c. $p < .10$, one tailed, Pearson-Filon z test for correlated correlations (Kenny, 1975)
d. Parenthesized values have been corrected for reliability.
e. Syncronous correlations connected by a line are not significantly different ($p < .10$), Pearson-Filon z test.

is not stationary. The fourth negative cross-lagged difference also involves U_CLOSE, this time compared with overall perceptions of racial climate (R_RC). This comparison produced significant negative cross-lagged differences across all three waves, but only the T1-T3 difference is stationary. Finally, the respondent's evaluation of the rules that other racial groups live by (R_RULES) produced a negative cross-lagged difference across times one and three when compared with the respondent's evaluation of the value of rebellion against leaders (U_REVB) and with the respondent's self-reported lawbreaking (U_LAWB).

Positive cross-lagged differences were found only when comparing overall perceptions of racial climate (R_RC) with perceptions of hostile acts or intentions against the company and its leaders (U-HOST) and the respondent's evaluation of unit leaders (U_RATE).

The cross-lagged differences found between the racial harmony and unit effectiveness scales can be interpreted in two ways. For the negative differences, there are two plausible hypotheses; the first is that improvements in perceptions of unit effectiveness cause improvement in perceptions of racial climate. The second is that improvements in perceptions of racial climate cause a deterioration in perceptions of unit effectiveness. Based on the cross-lagged differences alone, both hypotheses are equally plausible. However, the universally positive synchronous correlations between the various racial harmony and unit effectiveness variables suggests that when a negative cross-lagged difference appears, improvements in perceptions of unit effectiveness are causing improvements in perceptions of racial climate. By the same logic, in those cases where a positive difference is found, it suggests that improvements in the racial climate variable cause improvements in the unit effectiveness variable.

In addition to survey measures of unit effectiveness, the racial climate scales were compared to a number of record data measures considered to be indicators of unit effectiveness. The record data measures used as indicators of unit effectiveness were frequencies of Military Police Reports (MPR), frequencies of AWOLs as computed from SIDPERS change in duty status transactions, number of sick calls (SICK), and the overall rating from the company level unit status report (USR). One other record data measure considered to be an indicator of unit effectiveness, IG complaints, was not used because of its extremely low reliability (see Table 9). Although it could be argued that the other variables in Table 9, Article 15s, Unprogrammed Discharges, Awards, Courts-Martial, and Bars to Re-enlistment are also indicators of unit effectiveness. However, these actions are, in fact, initiated by the unit leaders. Therefore, these measures are treated as leadership variables in the present study. It should also be noted that in record data measures such as sick calls, Article 15s, discharges, and overall unit status report ratings, numerically high scores are considered to be negative, as opposed to th. scale scores which were all reversed so that a numerically high score was positive.

In order to control for company size and the possibility that some record data measures would not be directly comparable across divisions because of differences in local administrative procedures, record data measures involving frequencies and the scales which they were compared with, were residualized for the effect of company size, post, and the company size by post interaction. Separate regression equations were calculated for each wave. The regression

accounted for an average of 10 percent of the variance in the survey measures and 17 percent of the variance in the record data measures.

In contrast to the scale comparisons of racial harmony and unit effectiveness, the scale to record data comparisons produced no significant synchronous relationships based on the average synchronous correlations. There were, however, a number of significant cross-lagged differences as shown in Table 12. Two of the record data variables, frequency of Military Police Reports (MPR) and frequency of AWOLs, showed consistent negative cross-lagged differences across waves one and three with all racial scales except R_RULES. Two other unit effectiveness variables, sick calls (SICK) and overall readiness rating from the unit status report (USR), did not produce cross-lagged differences which were consistent enough to interpret.

The direction of causality implied by the cross-lagged differences in the scale to record data comparisons of racial harmony and unit effectiveness is similar to the primary direction of causality found in the scale to scale comparisons. The negative difference found between the racial scales and Military Police Reports, and the racial scales and AWOLs could indicate either that perceptions of racial harmony increase MP reports and AWOLs or that MP reports and AWOLs decrease perceptions of racial harmony. The signs of the synchronous correlations are mixed but most of the higher ones are negative, providing evidence against the first hypothesis, which is also counter-intuitive. Therefore, it seems most reasonable to conclude that increased AWOLs and Military Police Reports decrease perceptions of racial harmony.

Overall, the cross-lagged panel analysis of racial harmony and unit effectiveness indicates that, for the measures used in this study, the primary causal path leads from unit effectiveness to racial climate such that improvements in unit effectiveness cause improved racial climate. The single exceptions to this finding is that perceptions of overall racial climate (as measured by the R_RC scale) seem to improve perceptions of hostile acts and intentions against the unit (U_HOST) and the evaluation of unit leaders (U_RATE).

The finding that, in general, unit effectiveness causes improved racial climate is somewhat surprising but may be due to the relatively moderate level of racial climate among the companies in the sample. The means for the company level racial climate scales were 5.00, 5.04, 5.98, 4.75, and 4.89 for the R_HOST, R_SOL, R_AI, R_RULES, and R_RC scales respectively. All of these means are slightly above the 4.5 midpoint of the scale. It may be that in cases where the racial climate is not particularly extreme, it is controlled by unit effectiveness variables which in general are given a higher priority in the day-to-day operation of the company. On the other hand, in situations where racial climate becomes more extreme in the negative direction, it might still be expected to cause reductions in unit effectiveness.

This might explain why perceptions of overall racial climate (R_RC), alone among the racial climate measures, seems to be a causal factor of unit effectiveness. Of the five racial scales used in this study, R_RC produced the lowest single company score. In fact, it produced the five lowest single company scores. This finding suggests that R_RC may be more sensitive to negative racial climate than the other scales and therefore, if the explanation tendered above is correct, would be the scale most likely to indicate that racial climate was causing unit effectiveness.

Table 12

Synchronous, Cross-Lagged, Hypo Auto, and Autocorrelations for Comparisons Between Racial Climate Scales and Record Data Measures of Unit Effectiveness Which Produced Significant Cross-Lagged Differences

X[a]	Y	Syncronous Correlations[b] T_1 T_2 T_3		Cross-Lagged Correlations: X Leading Y	Y Leading X	Differences	Hypo Auto-correlations	Auto-correlations: X	Y
MPR	R_HOST	(∓24)(∓11)(∓18)[d] ∓16 ∓08 ∓13 [e]	T_1-T_2	∓36(∓37)	∓40(∓39)	.04 (.02)	11.12	.17	.42
			T_2-T_3	∓22(∓22)	∓05(∓05)	∓17 (∓17)	.98	.22	.44
			T_1-T_3	∓34(∓35)	.08(.08)	∓42[c](∓43)	-1.25	.22	.26
	R_SOL	(∓33)(.04)(∓05) ∓22 .03 ∓04	T_1-T_2	∓07(∓07)	∓51(∓51)	.44[c](.44)	-5.12		.16
			T_2-T_3	∓14(∓14)	∓01(∓01)	∓13 (∓13)	-1.64		.46
			T_1-T_3	∓42(∓41)	∓01(∓01)	∓41[c](∓40)	.56		.24
	R_AI	(∓14)(.01)(∓26) ∓10 .01 ∓20	T_1-T_2	∓24(∓25)	∓31(∓30)	.07 (.05)	125.70		.06
			T_2-T_3	∓17(∓17)	.04(.04)	∓21 (∓21)	4.57		.26
			T_1-T_3	∓35(∓36)	∓01(∓01)	∓34[c](∓35)	.13		-.00
	R_RC	(∓27)(.11)(∓13) ∓19 .08 ∓10	T_1-T_2	∓19(∓20)	∓27(∓26)	.08 (.06)	-3.40		.39
			T_2-T_3	∓19(∓19)	.06(.06)	∓24[c](∓24)	1.37		.23
			T_1-T_3	∓36(∓37)	.07(.07)	∓43[c](∓44)	-1.34		.20
SICK	R_RULES	(∓15)(.40)(∓14) ∓12 .35 ∓13	T_1-T_2	.33(.36)	∓13(∓12)	.46[c](.45)	1.06	.29	∓01
			T_2-T_3	.04(.04)	.26(.28)	∓23[c](∓25)	∓22	.50	.34
			T_1-T_3	.10(.10)	∓19(∓19)	.28[c](.28)	-1.22	.32	∓08
AWOL	R_HOST	(∓11)(∓10)(∓25) ∓06 ∓06 ∓15	T_1-T_2	∓14(∓15)	∓05(∓05)	∓09 (∓10)	2.04	.22	.42
			T_2-T_3	∓02(.02)	∓08(.08)	.06 (.06)	.23	.20	.44
			T_1-T_3	∓24(∓24)	.05(∓05)	∓29[c](∓29)	-1.34	.34	.26
	R_SOL	(∓23)(.17)(∓21) ∓13 .11 ∓13	T_1-T_2	.06(.06)	.12(.12)	∓05 (∓05)	∓50		.16
			T_2-T_3	∓07(∓07)	∓01(∓01)	∓06 (∓06)	∓05		.46
			T_1-T_3	∓15(∓15)	.08(.08)	∓24[c](∓24)	∓72		.24
	R_AI	(∓09)(.11)(∓35) ∓05 .07 ∓22	T_1-T_2	∓00(.00)	.01(.01)	∓01 (∓01)	.01		.06
			T_2-T_3	∓07(∓07)	.06(.06)	∓12 (∓12)	.24		.26
			T_1-T_3	∓29(∓29)	.09(.09)	∓38[c](∓38)	-2.36		∓00

Table 12 (Continued)

Synchronous, Cross-Lagged, Hypo Auto, and Autocorrelations for Comparisons Between Racial Climate Scales and Record Data Measures of Unit Effectiveness Which Produced Significant Cross-Lagged Differences

		Syncronous Correlations[b]			Cross-Lagged Correlations				Auto-correlations	
X[a]	Y	T_1	T_2	T_3		X Leading Y	Y Leading X	Differences	Hypo Auto-correlations	X	Y
AWOL	R_RULES	(∓09)	(∓08)	(∓08)	T_1-T_2	.03(.03)	∓30(∓28)	.33[c](.31)	-3.82	.22	.05
		∓05	∓05	∓05	T_2-T_3	∓07(∓06)	∓07(∓08)	.00 (∓02)	2.24	.20	.33
					T_1-T_3	∓01(∓01)	.05(∓05)	∓07 (∓07)	∓28	.34	∓05
	R_RC	(∓29)	(.30)	(∓28)	T_1-T_2	.05(∓05)	∓10(∓09)	.14 (.13)	.14		.39
		∓17	.19	∓18	T_2-T_3	∓02(∓02)	∓01(∓01)	∓01 (∓01)	∓01		.23
					T_1-T_3	∓40(∓41)	∓01(∓01)	∓39[c](∓40)	.09		.20
USR	R_SOL	.15	.20	.16	T_1-T_2	.17	.16	.02	.93	.80	.32
					T_2-T_3	.36	.05	.31[c]	.62	.54	.46
					T_1-T_3	.22	.17	.05	1.64	.35	.28
	R_RULES	.10	∓14	.08	T_1-T_2	∓22	.12	∓34[c]	1.83		.11
					T_2-T_3	∓07	∓19	.11	-1.23		.25
					T_1-T_3	∓18	.25	∓43[c]	-5.64		∓01
	R_RC	.12	.25	.01	T_1-T_2	.18	.10	.07	.61		.55
					T_2-T_3	.25	.05	.20	9.81		.26
					T_1-T_3	.19	∓07	.25[c]	-13.30		.28

a. n = 59 except for comparisons with L_PROB and L_ CONS where n = 57.
b. $r \geq .25$ $p < .05$; $r \geq .33$ $p < .01$, two tailed.
c. $p < .10$, one tailed, Pearson-Filon z test for correlated correlations (Kenny, 1975).
d. Parenthesized values have been corrected for reliability.
e. Syncronous correlations connected by a line are not significantly different ($p < .10$), Pearson-Filon z test.

In any case, the results suggest that, at least in situations of moderate racial climate, a commander can improve race relations in his company by improving the effectiveness of his unit. Promoting feelings of closeness among the enlisted soldiers would seem to be especially effective in this regard because of the strong relationship of U_CLOSE with both R_HOST and R_RC.

Racial Harmony and Leadership Climate. Table 13 presents the significant synchronous correlations between racial harmony and leadership scales. Significant synchronous correlations were found between all the racial climate scales and measures of leadership climate related to perceptions of the consideration and fairness of company leaders (L_FAIR). Significant synchronous correlations also were found between all but one of the racial climate scales and measures of leadership climate related to leadership strictness in establishing rules requiring respect for authority and obedience (L_STR). A third leadership climate scale dealing with perceived willingness of leaders to protect their troops (L_SAC) produced only two significant correlations with the racial scales. Two additional leadership climate measures, one related to leadership actions taken to reduce conflicts (L_PROB) and one related to the amount of time spent interacting with enlisted soldiers (L_CONS), produced no significant synchronous correlations with any of the racial climate scales. In all cases, favorable scores on the racial climate scales were associated with favorable scores on the leadership climate scales.

Table 13

Significant Synchronous Correlations Between Racial Harmony and Leadership Scales[a]

Racial Harmony Scales	Leadership Scales				
	L_FAIR	L_SAC	L_STR	L_PROB	L_CONS
R_HOST	.43		.40		
R_SOL	.26		.35		
R_AI	.26		.35		
R_RULES	.51	.25			
R_RC	.48	.26	.34		

Note. Correlations presented are averaged across time by converting the three synchronous correlations to their corresponding angles using a cosine transformation (Jöreskog and Sörbom, 1979, p. 10) averaging the angles and converting the average angle back into a correlation coefficient using an arc cosine transformation.

[a] $n = 59$, except in correlations involving L_PROB and L_CONS where $n = 57$, for $r \geq .25$ $p < .05$; for $r \geq .33$ $p < .01$.

In order to assess the direction of causality in these relationships between racial climate and leadership climate, the cross-lagged differences were examined. Table 14 presents cross-lagged comparisons between racial climate and leadership climate scales which were significant at the .10 level.

Once again, a number of significant cross-lagged differences cannot be interpreted as causal relationships. In one case, the comparison between R_HOST and L_STR, correction for reliability shifts reduced the cross-lagged difference to a level that would not be significant. Significant differences between synchronous correlations would not allow the stationarity or quasi-stationarity assumption in the comparisons between R_RULES and L_SAC and between L_PROB and R_RULES. In a number of other cases, a strong pattern of reversing the sign of the cross-lagged difference across time made interpretation of these comparisons difficult. These comparisons included: R_AI and L_FAIR; R_AI and L_SAC; and R_RULES and L_FAIR.

Excluding these comparisons, there remained fourteen comparable cross-lagged differences. Positive cross-lagged differences were found in 13 of these cases. Except for comparisons involving L_PROB, all of these positive cross-lagged differences are consistent with the view that improvements in the racial climate variables cause improvement in perception of leadership climate. The alternate hypothesis that positive perceptions of leadership decrease racial harmony is not consistent with the positive synchronous correlation. Since enlisted responses are heavily weighted in the company level scores used in this analysis, the finding that racial harmony variables tend to cause the leadership variables might be explained simply as favorable enlisted perceptions of racial climate generalizing to more favorable enlisted perceptions of company leaders. However, the L_CONS scale also shows this effect and it consists only of the leaders' responses to questions about their own behavior. This suggests that racial climate may be producing real changes in the behavior of leaders on the dimensions measures by L_FAIR, L_SAC, L_STR, and L_CONS. Or, in other words, that positive racial climate increases a leader's perceived fairness, consideration, willingness to sacrifice for his troops, and the frequency with which he confers with subordinates about company policy.

The other significant positive comparisons in Table 14 which involve L_PROB must be evaluated separately from the rest of the leader scale comparisons because they show generally negative synchronous correlations. The negative synchronous correlations and the positive cross-lagged differences suggest that L_PROB is decreasing perceptions of racial harmony. This is an interesting finding because several of the items that make up L_PROB relate to strategies which would logically be expected to improve racial climate, such as number of RR/EO seminars conducted and calls to the EO office for assistance. In fact, Boyd and Griesemer (Note 6) found that in situations of racial hostility, enlisted subjects rated the strategy of holding RAP sessions (at the time of the study RR/EO seminars were called RAP sessions) as having a positive effect. On the other hand, calling the EO office for assistance was viewed as negative in situations of racial hostility, as was breaking up racial groups, which is also part of L_PROB.

Table 14

Synchronous, Cross-Lagged, Hypo Auto, and Autocorrelations for Comparisons Between Racial and Leadership Scales Which Produced Significant Cross-Lagged Differences

X[a]	Y	Syncronous Correlations[b] T_1 T_2 T_3		Cross-Lagged Correlations: X Leading Y	Y Leading X	Differences	Hypo Auto-correlations	Auto-correlations: X	Y
R_HOST	L_SAC	(.05)(.10)(.24)[d] .04 .19 .21 [e]	T_1-T_2	∓01(∓01)	.05(.05)	∓06 (∓06)	∓10	.46	.44
			T_2-T_3	.31(.31)	.08(.08)	.23[c](.23)	.68	.43	.19
			T_1-T_3	.12(.12)	∓13(∓13)	.25[c](.25)	-2.07	.26	.22
	L_STR	(.62)(.35)(.58) .48 .26 .42	T_1-T_2	.11(.12)	.34(.31)	∓23[c](∓19)	.31		.30
			T_2-T_3	.14(.15)	.10(.09)	.04 (.06)	.13		.20
			T_1-T_3	.14(.16)	.31(.27)	,17 (.11)	.22		.51
	L_PROB	(∓08)(∓13)(∓22) ∓06 ∓10 ∓19	T_1-T_2	.13(.12)	∓18(∓19)	.31[c](.31)	-3.95	.50	.56
			T_2-T_3	.11(.11)	∓01(∓01)	.12 (.12)	∓05	.43	.20
			T_1-T_3	.20(.18)	∓15(∓16)	.35[c](.34)	-2.51	.24	∓03
	L_CONS	(.09)(.27)(.00) .06 .21 .00	T_1-T_2	.29(.28)	.12(.13)	.17 (.15)	2.96		.26
			T_2-T_3	.29(.31)	.04(.04)	.25[c](.27)	83.58		.52
			T_1-T_3	.19(.19)	∓19(∓19)	.38[c](.38)	-641.14		.38
R_SOL	L_FAIR	(.24)(.17)(.40) .20 .15 .37	T_1-T_2	.14(.15)	∓12(∓12)	.26[c](.27)	∓56	.31	.55
			T_2-T_3	.32(.33)	.16(.16)	.16 (.17)	.93	.45	.50
			T_1-T_3	.05(.05)	.02(.02)	.03 (.03)	.02	.28	.40
	L_SAC	(∓06)(∓02)(.25) ∓05 ∓02 .22	T_1-T_2	.04(.04)	∓20(∓19)	.24[c](.23)	-8.96		.44
			T_2-T_3	.29(.31)	.06(.06)	.22[c](.25)	-5.37		.19
			T_1-T_3	∓04(∓04)	∓00(.00)	∓04 (∓04)	∓01		.22
	L_PROB	(.08)(.13)(.02) .06 .11 .02	T_1-T_2	.06(.06)	.08(.08)	∓02 (∓02)	.66	.30	.56
			T_2-T_3	.04(.04)	.01(.01)	.03 (.03)	.20	.43	.20
			T_1-T_3	.11(.10)	∓15(∓16)	.26[c](.26)	-10.57	.24	∓03
	L_CONS	(.27)(.35)(.29) .19 .28 .23	T_1-T_2	.41(.40)	.03(.03)	.38[c](.37)	.22		.26
			T_2-T_3	.28(.31)	.18(.17)	.11 (.14)	.83		.52
			T_1-T_3	.32(.33)	∓16(∓15)	.48[c](.48)	-1.16		.38

Table 14 (Continued)

Synchronous, Cross-Lagged, Hypo Auto, and Autocorrelations for Comparisons Between Racial and Leadership Scales Which Produced Significant Cross-Lagged Differences

X[a]	Y	Synchronous Correlations[b] T_1 T_2 T_3		Cross-Lagged Correlations: X Leading Y	Y Leading X	Differences	Hypo Auto-correlations	Auto-correlations: X	Y
R_AI	L_FAIR	(.19)(.22)(.39) .17 .20 .36	T_1-T_2	.11(.11)	∓10(∓10)	.21 (.21)	∓32	.18	.55
			T_2-T_3	.11(.11)	.18(.18)	∓07 (∓07)	.29	.27	.50
			T_1-T_3	∓15(∓15)	.11(.11)	∓26[c](∓26)	∓26	.06	.40
	L_SAC	(.00)(.00)(.09) .00 .00 .08	T_1-T_2	.13(.13)	∓11(∓11)	.24[c](.24)	704.00		.44
			T_2-T_3	.11(.11)	∓02(∓02)	.13 (.13)	6.08		.19
			T_1-T_3	∓17(∓18)	.03(.03)	∓20 (∓21)	-12.33		.22
	L_PROB	(∓04)(∓08)(∓10) ∓03 ∓07 ∓09	T_1-T_2	.11(.10)	∓03(∓03)	.14 (.14)	-1.70	.14	.56
			T_2-T_3	.16(.15)	∓01(∓01)	.17 (.16)	∓22	.20	.20
			T_1-T_3	.17(.15)	∓14(∓16)	.31[c](.31)	-9.48	∓03	∓03
	L_CONS	(.12)(.21)(.06) .09 .17 .05	T_1-T_2	.25(.24)	.05(.05)	.20 (.19)	.85		.26
			T_2-T_3	.33(.34)	.12(.12)	.21[c](.22)	4.83		.52
			T_1-T_3	.28(.28)	∓10(∓10)	.38[c](.38)	-6.42		.38
R_RULES	L_FAIR	(.48)(.69)(.50) .42 .61 .48	T_1-T_2	.17(.17)	.35(.35)	∓18 (∓18)	.23	.06	.55
			T_2-T_3	.44(.47)	.25(.23)	.19[c](.24)	.37	.26	.50
			T_1-T_3	.14(.15)	.05(.05)	.09 (.10)	.03	∓04	.40
	L_SAC	(.05)(.40)(.31) .04 .34 .27	T_1-T_2	∓10(∓10)	.23(.23)	∓33[c](∓33)	-1.96		.44
			T_2-T_3	.27(.30)	.13(.12)	.14 (.18)	.36		.19
			T_1-T_3	.20(.22)	.10(.09)	.10 (.13)	2.06		.22
	L_STR	(.29)(.12)(.10) .23 .09 .08	T_1-T_2	∓02(∓02)	.22(.21)	∓24[c](∓23)	∓20		.30
			T_2-T_3	.02(.02)	.15(.13)	∓13 (∓11)	.53		.20
			T_1-T_3	.09(.11)	.19(.16)	∓10 (∓05)	1.02		.51
	L_PROB	(.05)(∓29)(∓11) .04 ∓24 ∓10	T_1-T_2	.21(.19)	∓22(∓24)	.43[c](.43)	4.38	.05	.56
			T_2-T_3	.01(.01)	.06(.06)	∓05 (∓05)	.02	.29	.20
			T_1-T_3	.16(.15)	.01(.01)	.15 (.14)	∓36	.01	∓03

Table 14 (Continued)

Synchronous, Cross-Lagged, Hypo Auto, and Autocorrelations for Comparisons Between Racial and Leadership Scales Which Produced Significant Cross-Lagged Differences

X[a]	Y	Syncronous Correlations[b] T_1 T_2 T_3		Cross-Lagged Correlations X Leading Y	Y Leading X	Differences	Hypo Auto-correlations	Auto correlations X	Y
R_RULES	L_CONS	(.10)(.09)(.15) .10 .07 .12	T_1-T_2	.20(.19)	⁻13(⁻14)	.33[c](.33)	-3.52	.05	.26
			T_2-T_3	.11(.12)	.10(.09)	.01 (.03)	1.27	.29	.52
			T_1-T_3	.16(.17)	⁻28(⁻28)	.44[c](.43)	-3.71	.01	.38
R_RC	L_FAIR	(.46)(.53)(.56) .41 .48 .53	T_1-T_2	.37(.37)	.09(.09)	.28[c](.28)	.17	.52	.55
			T_2-T_3	.32(.33)	.18(.17)	.14 (.16)	.23	.26	.50
			T_1-T_3	.24(.24)	⁻02(⁻02)	.26[c](.26)	⁻02	.25	.40
	L_SAC	(.19)(.33)(.34) .16 .29 .30	T_1-T_2	.14(.14)	.01(.01)	.13 (.13)	.02		.44
			T_2-T_3	.32(.34)	.00(.00)	.32[c](.34)	.00		.19
			T_1-T_3	.17(.18)	⁻08(⁻08)	.25[c](.26)	⁻30		.22
	L_CONS	(.07)(.33)(.21) .05 .27 .17	T_1-T_2	.26(.24)	.11(.12)	.15 (.12)	2.16	.54	.26
			T_2-T_3	.31(.33)	.14(.13)	.17 (.20)	.95	.26	.52
			T_1-T_3	.26(.26)	⁻10(⁻10)	.36[c](.36)	-3.19	.14	.38

a. n = 59 except for comparisons with L_PROB and L_CONS where n = 57.
b. $r \geq .25$ $p < .05$; $r \geq .33$ $p < .01$, two tailed.
c. $p < .10$, one tailed, Pearson-Filon z test for correlated correlations (Kenny, 1975).
d. Parenthesized values have been corrected for reliability.
e. Syncronous correlations connected by a line are not significantly different ($p < .10$), Pearson-Filon z test.

It may be that the subjects in the present study no longer view RR/EO seminars as having a positive effect on racial climate in their units, or it may be (as noted in the item analysis) that RR/EO seminars are a part of this scale because, like the other items in L_PROB, it is something that most leaders do not do very often. A final decision will have to await further analysis.

To further explore the relationship between leadership and racial harmony, cross-lagged comparisons were computed between the racial scales and the record data measures of leadership: Article 15s; Unprogrammed Discharges; and Awards. Article 15s are nonjudicial punishments imposed by the company commander for offenses which he feels are not serious enough to warrant courts-martial. Unprogrammed discharges are used to separate soldiers from the service prior to their regular term of enlistment. Only punitive discharges (not hardship or medical) are used in the analysis. Two other record data measures of leadership climate, courts-martials, and bars to re-enlistment were not used in the analysis because of their low reliability. As before, record data measures and scale scores were residualized for the effect of company size, post, and the company size by post interaction. Based on the average across three waves, there were no significant synchronous correlations between racial scales and leadership record variables. Significant cross-lagged comparisons from this analysis are shown in Table 15. Table 15 shows that unprogrammed discharges (UPD) produced negative cross-lagged differences across waves one and three with all of the racial scales (although in the comparisons with R_HOST and R_RULES the stationarity assumption is not justified), while Awards produced negative cross-lagged differences across waves one and two with all of the racial scales except R_RULES. Article 15s produced significant cross-lagged differences with R_HOST across waves one and three, with R_AI across waves two and three, and with R_RC across waves one and two.

For the negative cross-lagged differences found with discharges, the competing hypotheses are that perceptions of racial harmony cause unprogrammed discharges, or that unprogrammed discharges decrease perceptions of racial harmony. The latter hypothesis is the most intuitively appealing, but the larger synchronous correlations are positive, which suggests the former hypothesis. (Recall that numerically high discharges are negative.) Additional evidence for the first hypothesis is found in the fact that the cross-lagged correlations with the racial variables leading are positive and, in all but one case, are larger than the cross-lagged correlations with discharges leading. Thus, the data are most consistent with the hypothesis that good racial climate increases the number of unprogrammed discharges in a company. One possible explanation for this finding is that good racial climate is associated with an atmosphere of openness and good communication within the unit. In such a climate the enlisted soldiers would be less likely to hide problems from their leaders, and, consequently, leaders would be more aware of problems in the company. Since leaders can only punish offenses that they are aware of, increased awareness of problems may increase unprogrammed discharges. A second possible explanation is that in situations of good racial climate, individuals causing problems in the unit might stand out more and, therefore, be more likely to receive unprogrammed discharges.

Table 15

Synchronous, Cross-Lagged, Hypo Auto, and Autocorrelations for Comparisons Between Racial Scales and Leadership Record Data Measures Which Produced Significant Cross-Lagged Differences

X[a]	Y	Syncronous Correlations[b] T_1 T_2 T_3		Cross-Lagged Correlations: X Leading Y	Y Leading X	Differences	Hypo Auto-correlations	Auto-correlations: X	Y
UPD	R_HOST	(∓13)(.00)(.27)[d]	T_1-T_2	∓07(∓07)	∓01(∓01)	∓06 (∓06)	-8.23	.13	.42
		∓08 .00 .18	T_2-T_3	∓04(∓04)	.12(.11)	∓16 (∓15)	30.00	.04	.44
			T_1-T_3	∓15(∓15)	.29(.29)	∓44[c](∓44)	2.90	.18	.26
	R_SOL	(∓02)(.02)(.21)	T_1-T_2	∓12(∓11)	∓06(∓06)	∓05 (∓05)	-17.00		.16
		∓01 .01 .15	T_2-T_3	∓01(∓01)	.10(.10)	∓11 (∓11)	1.01		.46
			T_1-T_3	∓06(∓06)	.36(.37)	∓41[c](∓43)	14.78		.24
	R_AI	(∓05)(.00)(∓10)	T_1-T_2	.00(.00)	∓06(∓06)	∓05 (∓05)	3.06		.06
		∓03 .00 ∓07	T_2-T_3	∓09(∓10)	.12(.11)	∓20 (∓21)	.62		.26
			T_1-T_3	∓07(∓07)	.32(.31)	∓39[c](∓38)	5.15		.00
	R_RULES	(.35)(∓06)(∓08)	T_1-T_2	∓09(∓09)	∓01(∓01)	∓08 (∓08)	∓08		.05
		.22 ∓04 ∓06	T_2-T_3	.00(.00)	.03(.03)	∓03 (∓03)	∓02		.33
			T_1-T_3	∓18(∓18)	.09(.09)	∓26[c](∓26)	1.07		∓05
	R_RC	(∓05)(.20)(.08)	T_1-T_2	∓01(∓01)	∓11(∓11)	.10 (.10)	∓36		.39
		∓03 .13 .06	T_2-T_3	.01(.01)	.07(.07)	∓06 (∓06)	.10		.23
			T_1-T_3	∓10(∓10)	.14(.14)	∓23[c](∓23)	8.53		.20
AWARD	R_HOST	(.05)(.16)(.19)	T_1-T_3	∓17(∓16)	.22(.23)	∓39[c](∓39)	-7.37	.32	.42
		.04 .13 .15	T_2-T_3	.11(.10)	.04(.04)	.07 (.06)	.25	.30	.44
			T_1-T_3	∓03(∓03)	∓07(∓08)	.05 (.05)	.32	.06	.26
	R_SOL	(.08)(.12)(.10)	T_1-T_2	∓12(∓11)	.26(.28)	∓38[c](∓39)	-4.65		.16
		.07 .10 .08	T_2-T_3	.26(.23)	.12(.13)	.14 (.10)	4.01		.46
			T_1-T_3	.07(.06)	∓02(∓02)	.09 (.08)	∓24		.24
	R_AI	(.05)(.02)(∓05)	T_1-T_2	∓09(∓08)	.21(.22)	∓29[c](∓30)	∓90		.06
		.04 .02 ∓04	T_2-T_3	.01(.01)	.06(.06)	∓05 (∓05)	∓79		.26
			T_1-T_3	.15(.13)	.05(.06)	.10 (.07)	-4.84		.00
	R_RC	(.04)(.25)(.18)	T_1-T_2	∓09(∓09)	.24(.25)	∓33[c](∓34)	-2.25		.39
		.05 .22 .15	T_2-T_3	.22(.20)	.20(.22)	.01 (∓02)	1.33		.23
			T_1-T_3	.03(.03)	.06(.07)	∓03 (∓04)	.23		.20

Table 15 (Continued)

Synchronous, Cross-Lagged, Hypo Auto, and Autocorrelations for Comparisons Between Racial Scales and Leadership Record Data Measures Which Produced Significant Cross-Lagged Differences

X[a]	Y	Syncronous Correlations[b] T_1 T_2 T_3		Cross-Lagged Correlations: X Leading Y	Y Leading X	Differences	Hypo Auto-correlations	Auto-correlations: X	Y
AR15	R_HOST	(⁻27)(⁻06)(⁻06)[d] ⁻18 ⁻04 ⁻04 [e]	T_1-T_2	⁻38(⁻41)	⁻18(⁻17)	⁻19 (⁻24)	9.15	.26	.43
			T_2-T_3	⁻18(⁻18)	.02(.02)	⁻20 (⁻20)	⁻1.58	.04	.44
			T_1-T_3	⁻26(⁻29)	⁻01(⁻01)	⁻26[c](⁻28)	.21	.21	.26
	R_AI	(⁻19)(.17)(⁻07) ⁻12 .12 ⁻05 [e]	T_1-T_2	⁻12(⁻12)	⁻02(⁻02)	⁻09	⁻27		.07
			T_2-T_3	⁻17(⁻17)	.13(.13)	⁻30[c]	3.79		.26
			T_1-T_3	⁻14(⁻15)	⁻09(⁻09)	⁻05	2.21		⁻00
	R_RC	(⁻22)(.09)(⁻24) ⁻14 .06 ⁻17 [e]	T_1-T_2	⁻22(⁻23)	.08(.08)	⁻30[c]	2.52		.39
			T_2-T_3	⁻12(⁻12)	.09(.09)	⁻21	1.16		.23
			T_1-T_3	⁻24(⁻25)	⁻04(⁻04)	⁻19	.42		.20

a. n = 59
b. $r \geq .25$ $p < .05$; $r \geq .33$ $p < .01$, two tailed.
c. $p < .10$, one tailed, Pearson-Filon z test for correlated correlations (Kenny, 1975).
d. Parenthesized values have been corrected for reliability.
e. Syncronous correlations connected by a line are not significantly different ($p < .10$), Pearson-Filon z test.

For Article 15s the competing hypotheses are that perceptions of racial harmony increase Article 15s or that Article 15s decrease racial harmony. In this instance, the results seem to suggest the more intuitive of the two hypotheses, i.e., that Article 15s decrease perceptions of racial harmony. This is because most of the larger synchronous correlations between Article 15s and the racial scales have negative signs, and because the cross-lagged correlations with Article 15s leading in time are always negative and larger than the cross-lagged correlations are when one of the racial scales leads in time.

Finally, for awards, the negative cross-lagged differences found in comparisons with racial scales could mean either that: (1) racial harmony increases awards, or (2) awards decrease racial harmony. In this case, all available evidence favors the conclusion that racial harmony increases the number of awards.

Leadership and Unit Effectiveness. In order to investigate leadership impacts on unit effectiveness, the leadership scales and record data measures were compared against the unit effectiveness scales and record data measures. Table 16 presents the significant synchronous correlations between leadership scales and unit effectiveness scales. Perceptions of leader consideration and fairness (L_FAIR) show significant positive correlations with all measures of unit effectiveness. Less consistent correlations with unit effectiveness scales were found with perceptions of the willingness of company leaders to make personal sacrifices for their men (L_SAC) and perceptions of leader strictness (L_STR). The two scales based on items from the leader strategies item pool (L_PROB and L_CONS) showed no significant synchronous correlations with any of the unit effectiveness scales.

Table 17 presents the cross-lagged comparisons of the leadership and unit effectiveness scales which produced significant cross-lagged differences. The majority of the interpretable cross-lagged differences involve unit effectiveness scales related to perceptions of hostile acts or intentions against the company (U_HOST), self-reported lawbreaking (U_LAWB), E1-E4 cohesion (U_CLOSE), and general work effectiveness (U_DISPF), compared against leadership scales related to fairness and consideration (L_FAIR), the leader's willingness to sacrifice for his subordinates (L_SAC), and the amount of time that the leaders say they spend consulting with subordinates (L_CONS). The sign of the significant cross-lagged differences is almost universally positive, indicating that either perceptions of unit effectiveness cause perceptions of a positive leadership climate; or that improving perceptions of leadership climate cause decreased perceptions of unit effectiveness. Given the positive sign of the significant synchronous correlations and the counter-intuitive nature of the hypothesis that perceptions of unit effectiveness decrease perceptions of positive leadership climate, it seems most reasonable to conclude that perceptions of unit effectiveness cause perceptions of positive leadership climate. This pattern of results is similar to the one found when the leadership scales were compared with the racial scales, i.e., that variables related to perceptions of leadership were caused rather than causal.

Table 16

Significant Synchronous Correlations Between Leadership and Unit Effectiveness Scales[a]

Unit Effectiveness Scales	Leadership Scales				
	L_FAIR	L_SAC	L_STR	L_PROB	L_CONS
U_HOST	.58		.36		
U-POT	.39	.37			
U_REBV	.47				
U_LAWB	.34				
U_RATE	.88	.67			
U_FIGHT	.48	.35			
U_CLOSE	.29		.45		
U_DISPF	.61	.39	.36		

Note. Correlations presented are averaged across time by converting the three synchronous correlations to their corresponding angles using a cosine transformation (Jöreskog and Sörbom, 1979, p. 10) averaging the angles and converting the average angle back into a correlation coefficient using an arc cosine transformation.

[a] $n = 59$, except for correlations involving L_PROB and L_CONS where $n = 57$, for $r \geq .25$ $p < .05$; for $r \geq .33$ $p < .01$.

Table 17

Synchronous, Cross-Lagged, Hypo Auto, and Autocorrelations for Comparison Between Leadership and Unit Effectiveness Scales Which Produced Significant Cross-Lagged Differences

X[a]	Y	Syncronous Correlations[b] T_1 T_2 T_3		Cross-Lagged Correlations: X Leading Y	Y Leading X	Differences	Hypo Auto-correlations	Auto-correlations: X	Y
U_HOST	L_FAIR	(.61)(.67)(.59)[d] .57 .62 .55[e]	T_1-T_2	.47(.45)	.30(.31)	.17[c](.14)	.39	.55	.55
			T_2-T_3	.40(.40)	.38(.38)	.02 (.02)	.44	.31	.50
			T_1-T_3	.32(.31)	.27(.28)	.05 (.03)	.27	.41	.40
	L_SAC	(.14)(.10)(.17) .13 .09 .15	T_1-T_2	.10(.10)	.07(.07)	.03 (.03)	.62		.44
			T_2-T_3	.34(.35)	.25(.24)	.09 (.11)	6.58		.19
			T_1-T_3	.26(.26)	∓02(∓02)	.28[c](.28)	∓30		.22
	L_CONS	(∓11)(.18)(∓21) ∓09 .15 ∓17	T_1-T_2	.19(.17)	∓12(∓13)	.31[c](.30)	1.75	.55	.26
			T_2-T_3	.26(.27)	∓13(∓12)	.39[c](.39)	1.33	.32	.52
			T_1-T_3	.15(.14)	∓24(∓25)	.39[c](.39)	-2.39	.40	.38
U_POT	L_FAIR	(.43)(.59)(.36) .34 .54 .22	T_1-T_2	.28(.32)	.33(.29)	∓05 (∓03)	.50	.42	.55
			T_2-T_3	.40(.27)	∓06(∓09)	.46[c](.36)	∓19	.12	.50
			T_1-T_3	.22(.17)	∓12(∓16)	.34[c](.33)	∓34	.32	.40
	L_SAC	(.36)(.63)(.30 .27 .55 .17	T_1-T_2	.18(.20)	.33(.29)	∓15 (∓09)	.39		.44
			T_2-T_3	.25(.17)	.06(.09)	.19 (.08)	.17		.19
			T_1-T_3	.18(.14)	∓10(∓13)	.28[c](.27)	.40		.22
U_LAWB	L_FAIR	(.49)(.47)(.24) .38 .42 .19	T_1-T_2	.23(.26)	.20(.18)	.03 (.08)	.29	.06	.55
			T_2-T_3	.27(.24)	.10(.11)	.17 (.17)	.35	.22	.50
			T_1-T_3	.12(.12)	∓11(∓11)	.23[c](.23)	∓18	.15	.40
	L_SAC	(.05)(.00)(∓13) .04 .00 ∓10	T_1-T_2	.07(.08)	.12(.11)	∓05 (∓03)	53.67		.44
			T_2-T_3	.19(.18)	.02(.02)	.17 (.16)	-75.21		.19
			T_1-T_3	.05(.05)	∓24(∓23)	.29[c](.28)	3.01		.22
	L_CONS	(∓27)(∓03)(∓19) ∓18 ∓02 ∓13	T_1-T_2	.12(.13)	∓36(∓34)	.48[c](.47)	14.04	.10	.26
			T_2-T_3	∓06(∓06)	.06(.06)	∓12 (∓12)	-1.44	.21	.52
			T_1-T_3	.06(.06)	∓14(∓14)	.20 (.20)	∓36	.19	.38
U_RATE	L_SAC	(.83)(.72)(.91) .66 .58 .75	T_1-T_2	.43(.43)	.46(.47)	∓03 (∓04)	.52	.54	.44
			T_2-T_3	.25(.27)	.32(.30)	∓07 (∓03)	.18	.45	.19
			T_1-T_3	.18(.18)	.33(.31)	∓16[c](∓13)	.12	.32	.22
	L_CONS	(∓01)(.00)(.00) ∓01 .00 .00	T_1-T_2	.08(.07)	.01(.01)	.07 (.06)	-11.55	.53	.26
			T_2-T_3	.22(.24)	∓14(∓13)	.36[c](.37)	-15,151.00	.47	.52
			T_1-T_3	.14(.14)	∓03(∓03)	.17 (.17)	886.60	.33	.38

Table 17 (Continued)

Synchronous, Cross-Lagged, Hypo Auto, and Autocorrelations for Comparison Between Leadership and Unit Effectiveness Scales Which Produced Significant Cross-Lagged Differences

X[a]	Y	Syncronous Correlations[b] T_1 T_2 T_3		Cross Lagged-Correlations	X Leading Y	Y Leading X	Differences	Hypo Auto-correlations	Auto-correlations X	Auto-correlations Y
U_FIGHT	L_CONS	(.21)(.00)(.16) .14 .00 .13		T_1-T_2	.19(.20)	⁻03(⁻03)	.22 (.23)	-8.03	.27	.56
				T_2-T_3	.22(.23)	⁻16(⁻15)	.38[c](.40)	-54.97	.13	.52
				T_1-T_3	.31(.34)	⁻15(⁻14)	.45[c](.47)	-2.53	.25	.38
U_CLOSE	L_FAIR	(.41)(.21)(.38) .33 .19 .33		T_1-T_2	.32(.35)	.05(.05)	.27[c](.30)	.26	.40	.55
				T_2-T_3	.21(.20)	.11(.12)	.10 (.08)	.35	.22	.50
				T_1-T_3	.18(.19)	.09(.09)	.09 (.10)	.15	.06	.40
	L_SAC	(.06)(⁻06)(.19) .05 ⁻05 .15		T_1-T_2	.04(.04)	⁻05(⁻05)	.10 (.10)	.93		.44
				T_2-T_3	.08(.08)	.04(.04)	.04 (.04)	⁻44		.19
				T_1-T_3	.24(.26)	⁻00(.00)	.24[c](.26)	⁻14		.22
	L_STR	(.65)(.64)(.51) .48 .50 .36		T_1-T_2	.21(.25)	.20(.17)	.01 (.08)	.18		.30
				T_2-T_3	.17(.17)	⁻02(⁻02)	.20 (.20)	⁻02		.20
				T_1-T_3	.35(.41)	.01(.01)	.34[c](.40)	.03		.51
	L_CONS	(.10)(.09)(.16) .07 .07 .12		T_1-T_2	.24(.25)	.05(.05)	.19 (.20)	2.32	.37	.26
				T_2-T_3	.33(.32)	.09(.09)	.24[c](.23)	3.38	.18	.52
				T_1-T_3	.44(.45)	.03(.03)	.40[c](.35)	1.60	.03	.38
U_DISPF	L_FAIR	(.78)(.59)(.64) .68 .54 .59		T_1-T_2	.46(.47)	.27(.26)	.19[c](.21)	.34	.60	.55
				T_2-T_3	.46(.46)	.16(.16)	.29[c](.29)	.23	.43	.50
				T_1-T_3	.38(.39)	.04(.04)	.34[c](.35)	.04	.30	.40
	L_SAC	(.50)(.34)(.52) .42 .30 .44		T_1-T_2	.23(.24)	.16(.16)	.07 (.08)	.30		.44
				T_2-T_3	.29(.30)	.09(.09)	.20 (.21)	.19		.19
				T_1-T_3	.33(.35)	⁻00(.00)	.33[c](.35)	.01		.22
	L_CONS	(.00)(.29)(.00) ⁻00 .24 ⁻00		T_1-T_2	.11(.11)	⁻08(⁻08)	.19 (.19)	71.48	.61	.26
				T_2-T_3	.32(.33)	⁻05(⁻05)	.37[c](.38)	18.61	.42	.52
				T_1-T_3	.26(.26)	⁻10(⁻10)	.36[c](.36)	12,492.50	.32	.38

a. n = 59 except for comparisons with L_PROB and L_CONS where n = 57.
b. $r \geq .25$ $p < .05$; $r \geq .33$ $p < .01$, two tailed.
c. $p < .10$, one tailed, Pearson-Filon z test for correlated correlations (Kenny, 1975).
d. Parenthesized values have been corrected for reliability.
e. Syncronous correlations connected by a line are not significantly different ($p < .10$), Pearson-Filon z test.

Table 18 presents cross-lagged comparisons between the leadership scales and unit effectiveness record data measures which produced significant cross-lagged comparisons. The pattern of interpretable cross-lagged differences in Table 18 is fairly sparse, and inconsistent with respect to the sign of the difference. Therefore, it does not seem appropriate to draw any overall conclusions regarding these relationships. However, several of the individual comparisons are interesting. Perceptions of leader fairness and consideration (L_FAIR) and willingness to make sacrifices (L_SAC) seem to have decreased AWOLs between time one and time two. Perceptions of leader strictness (L_STR) apparently decreased MP reports and increased sick calls, while AWOLs and poorer overall ratings on USR reports increased leader strictness. (Note that a numerically lower USR rating indicates higher readiness.) Poor USR ratings also increased the use of intervention strategies measured by L_PROB (At T_1-T_2 only). On the other hand, L_PROB increased AWOLs (T_2-T_3) and sick calls (T_1-T_2). This pattern of results suggests that leaders respond to problems in their units by imposing strict rules and applying L_PROB strategies. However, indications are that these actions may make some aspects of the situation worse by increasing AWOLs and sick calls and (as shown in Table 14) by decreasing racial harmony.

Table 19 presents significant cross-lagged comparisons which resulted when the leadership record data measures were compared against the unit effectiveness scales. These comparisons produced a fairly consistent pattern of negative cross-lagged differences. Unfortunately, many of these comparisons are not stationary. In fact, the instability of the synchronous correlations is remarkable, with many of the significant differences involving changes in sign. Examination of the distributions of the record data variables indicated a high degree of positive skewness, a common finding when frequency counts are constructed of relatively infrequent events.

To evaluate the possibility that outliers in the positive tail of the frequency distributions were causing the instability of the synchronous correlations, a log transformation was applied to the record data measures and the cross-lagged comparisons recalculated. Although the transformation substantially improved the skewness of the record data, it did not improve the stationarity of the synchronous correlations or change the overall pattern of the cross-lagged differences.

In spite of the inconsistency of the synchronous correlations, the consistency of the negative signs of the cross-lagged differences is suggestive of the presence of some relationship. Again, interpretation of these cross-lagged differences must be considered separately for the punishment variables, Article 15s and Administrative Discharges, and for Awards, which represents a dimension of reward. For the punishment measures, the competing hypotheses are that perceptions of unit effectiveness cause Article 15s and discharges, or that Article 15s and discharges decrease perceptions of unit effectiveness. The hypothesis that Article 15s and discharges decrease perceptions of unit effectiveness seems most reasonable and is supported by the generally negative signs of the synchronous correlations, although their instability suggests that other unmeasured variables are operating in the system. The finding that leader punishments tend to decrease perceptions of unit effectiveness, though mitigated by lack of stationarity, is supported by the fact that components of this analysis replicate a finding by Hart (1978) that Article 15 punishments increase self-reported lawbreaking (the scale Hart used was identical to U_LAWB except for the presence of two additional items) and decrease perceptions

Table 18

Synchronous, Cross-Lagged, Hypo Auto, and Autocorrelations for Comparisons Between Record Data Measures of Unit Effectiveness and Leadership Scales Which Produced Significant Cross-Lagged Differences

X[a]	Y	Syncronous Correlations[b] T_1 T_2 T_3		Cross-Lagged Correlations: X Leading Y	Cross-Lagged Correlations: Y Leading X	Cross-Lagged Correlations: Differences	Hypo Auto-correlations	Auto-correlations: X	Auto-correlations: Y
MPR	L_STR	(∓16)(∓15)(.08,[d] ∓11 ∓10 .05[e]	T_1-T_2	∓05(∓06)	∓39(∓35)	.34[c](.30)	1.74	.17	.31
			T_2-T_3	∓16(∓17)	∓09(∓08)	∓07 (.09)	-2.70	.22	.20
			T_1-T_3	∓11(∓13)	.01(.01)	∓11 (.13)	.13	.22	.49
AWOL	L_FAIR	(∓10)(∓19)(∓20) ∓06 ∓13 ∓13	T_1-T_2	∓07(∓08)	∓45(∓42)	.38[c](.34)	4.16	.22	.54
			T_2-T_3	∓08(∓08)	∓13(∓14)	.05 (.06)	.67	.20	.48
			T_1-T_3	∓13(∓13)	∓11(∓11)	∓02 (∓02)	1.75	.34	.35
	L_SAC	(∓10)(.08)(∓13) ∓06 .05 ∓08	T_1-T_2	∓02(∓02)	∓24(∓22)	.22[c](.20)	-1.78		.44
			T_2-T_3	∓15(∓15)	.01(.01)	∓16 (∓16)	.32		.17
			T_1-T_3	∓06(∓06)	∓09(∓08)	.03 (.02)	1.14		.23
	L_STR	(∓16)(.03)(.02) ∓09 .02 .01	T_1-T_2	∓20(∓23)	.07(.06)	∓27[c](∓30)	6.54		.31
			T_2-T_3	.19(.19)	.12(.12)	.07 (.07)	75.11		.20
			T_1-T_3	∓19(∓22)	.13(.11)	∓32[c](∓33)	18.62		.49
	L_PROB	(.04)(.13)(.37) .02 .08 .23	T_1-T_3	.06(.06)	.08(.08)	∓02 (∓02)	4.53	.24	.54
			T_2-T_3	∓00(.00)	.27(.29)	∓27[c](∓29)	∓05	.20	.19
			T_1-T_3	.08(.07)	.08(.09)	∓01 (∓02)	1.76	.35	∓07
SICK	L_STR	(.20)(.10)(∓16) .16 .08 ∓12	T_1-T_2	.14(.16)	∓11(∓10)	.25[c](.26)	-1.15	.29	.32
			T_2-T_3	∓14(∓15)	∓18(∓17)	.04 (.02)	-2.43	.50	.20
			T_1-T_3	.20(.24)	∓12(∓10)	.31[c](.34)	1.18	.32	.50
	L_PROB	(∓19)(.03)(∓09) ∓14 .03 ∓08	T_1-T_2	∓19(∓19)	.21(.21)	∓40[c](∓40)	10.05	.31	.56
			T_2-T_3	∓00(.00)	∓18(∓18)	.18 (.18)	∓17	.51	.18
			T_1-T_3	∓03(∓03)	∓20(∓19)	.17 (.16)	.56	.32	∓06
USR	L_STR	.00 .07 .02	T_1-T_2	∓05	.01	∓07	-3.58	.80	.30
			T_2-T_3	.33	.04	.29[c]	7.85	.54	.20
			T_1-T_3	.29	.03	.26[c]	.00	.35	.51
	L_PROB	∓02 .11 .05	T_1-T_2	.19	∓05	.24[c]	5.54	.79	.60
			T_2-T_3	.08	.10	∓02	1.57	.58	.20
			T_1-T_3	.04	.01	.04	∓26	.39	∓03

a. n = 59 except for comparisons with L_PROB and L_CONS where n = 57.
b. $r \geq .25$ $p < .05$; $r \geq .33$ $p < .01$, two tailed.
c. $p < .10$, one tailed, Pearson-Filon z test for correlated correlations (Kenny, 1975).
d. Parenthesized values have been corrected for reliability.
e. Syncronous correlations connected by a line are not significantly different ($p < .10$), Pearson-Filon z test.

Table 19

Synchronous, Cross-Lagged, Hypo Auto, and Autocorrelations for Comparisons Between Leadership Record Data Measures and Unit Effectiveness Scales Which Produced Significant Cross-Lagged Differences

X[a]	Y	Synchronous Correlations[b] T_1 T_2 T_3		Cross-Lagged Correlations: X Leading Y	Y Leading X	Differences	Hypo Auto-correlations	Auto-correlations: X	Y
AR15	U_HOST	(+35)(+10)(+08)[d] +23 +07 +06 [e]	T_1-T_2	+26(+28)	+10(+09)	+16 (+19)	1.61	.26	.54
			T_2-T_3	.08(.08)	.01(.01)	.07 (.07)	.20	.04	.30
			T_1-T_3	+23(+25)	.05(.05)	+28[c](+30)	+75	.21	.39
	U_LAWB	(+45)(+29)(.40) +25 +19 .24	T_1-T_2	+29(+27)	+13(+14)	+17 (+13)	.75		.38
			T_2-T_3	.01(.01)	+10(+09)	.11 (.10)	.02		.20
			T_1-T_3	+13(+14)	.27(.25)	+39[c](+39)	.54		.10
	U_RATE	(+54)(.06)(+34) +32 .04 +23	T_1-T_2	+21(+22)	.05(.05)	+26[c](+27)	.70		.55
			T_2-T_3	+00(+00)	+02(+02)	.02 (.02)	+00		.46
			T_1-T_3	+28(+29)	+26(+25)	+03 (+04)	.99		.26
	U_FIGHT	(+40)(.13)(+33) +23 .09 +23	T_1-T_2	+20(+19)	.12(.13)	+31[c](+32)	1.20		.22
			T_2-T_3	+08(+08)	.13(.13)	+20 (+21)	.49		.13
			T_1-T_3	+20(+19)	.04(.04)	+25[c](+23)	+17		.23
	U_DISPP	(+64)(.21)(+24) +38 .13 +16	T_1-T_2	+29(+31)	+01(+01)	+28[c](+30)	+07		.61
			T_2-T_3	+07(+07)	+05(+05)	+02 (+02)	+14		.44
			T_1-T_3	+26(+27)	+08(+08)	+18 (+19)	.32		.33
UPD	U_HOST	(+31)(.05)(.25) +21 .03 .18	T_1-T_2	+09(+09)	+09(+09)	+01 (.00)	-1.17	.13	.56
			T_2-T_3	+14(+15)	+04(+04)	+09 (+11)	1.02	.04	.30
			T_1-T_3	+14(+15)	.13(.12)	+27[c](+27)	.49	.18	.39
	U_POT	(+51)(+13)(.26) +29 +08 .12	T_1-T_2	+13(+11)	+26(+30)	.13 (.19)	1.36		.42
			T_2-T_3	.04(.06)	.07(.04)	+04 (.02)	+28		.14
			T_1-T_3	+19(+26)	.09(.06)	+28[c](+32)	.49		.28
	U_RESV	(+02)(.02)(+12) +01 .01 +07	T_1-T_2	+24(+26)	+34(+32)	.10 (.06)	-672.00		.26
			T_2-T_3	+28(+31)	.03(.03)	+30[c](+34)	8.86		.35
			T_1-T_3	+39(+46)	+05(+04)	+34[c](+42)	29.72		.05
	U_LAWB	(+19)(+29)(.12) +11 +18 .07	T_1-T_2	+14(+12)	+15(+17)	.01 (.05)	1.05		.09
			T_2-T_3	+12(+14)	.05(.14)	+17 (+18)	.47		.21
			T_1-T_3	+15(+16)	.23(.22)	+38[c](+38)	4.45		.13
	U_RATE	(+20)(+10)(+21) +12 +06 +14	T_1-T_3	+09(+09)	+49(+50)	.40[c](.41)	5.53		.55
			T_2-T_3	+04(+04)	+18(+18)	.14 (.14)	.91		.46
			T_1-T_3	+22(+22)	+14(+14)	+08 (+08)	1.90		.26
	U_CLOSE	(.28)(.00)(.03) .16 .00 .02	T_1-T_2	+03(+03)	.19(.22)	+23[c](+25)	.00		.36
			T_2-T_3	+21(+24)	+03(+03)	+18 (+21)	.00		.26
			T_1-T_3	.27(.27)	.16(.16)	.11 (.11)	-2.53		.08

Table 19 (Continued)

Synchronous, Cross-Lagged, Hypo Auto, and Autocorrelations for Comparisons Between Leadership Record Data Measures and Unit Effectiveness Scales Which Produced Significant Cross-Lagged Differences

X[a]	Y	Sycronous Correlations[b] T_1 T_2 T_3		X Leading Y	Y Leading X	Differences	Hypo Auto-correlations	Auto-correlations X	Auto-correlations Y
AWARD	U_HOST	(.21)(.40)(.00) .20 .36 .00	T_1-T_2	.03(.03)	.30(.30)	∓27[c](∓27)	.13	.32	.56
			T_2-T_3	.10(.09)	.14(.15)	∓04 (∓06)	∓1.62	.30	.30
			T_1-T_3	.04(.04)	.06(.07)	∓02 (∓03)	3.80	.06	.39
	U_POT	(.20)(.33)(∓11) .16 .29 ∓06	T_1-T_2	∓10(∓09)	.16(.19)	∓26[c](∓28)	∓36		.42
			T_2-T_3	∓04(∓06)	.02(.01)	∓06 (∓07)	.04		.14
			T_1-T_3	.00(.00)	∓06(∓05)	.06 (.05)	∓02		.28
	U_REBV	(∓04)(.41)(.23) ∓03 .30 .15	T_1-T_2	∓13(∓14)	.07(.07)	∓19 (∓21)	1.05		.26
			T_2-T_3	∓07(∓07)	.28(.29)	∓35[c](∓36)	∓43		.35
			T_1-T_3	∓19(∓19)	∓05(∓05)	∓14 (∓14)	-2.11		.05
	U_LAWB	(.14)(.11)(∓35) .11 .09 ∓25	T_1-T_2	∓10(∓09)	.07(.08)	∓18 (∓17)	∓80		.09
			T_2-T_3	∓34(∓35)	.01(.01)	∓35[c](∓36)	.07		.21
			T_1-T_3	∓05(∓04)	.02(.02)	.07 (∓06)	.04		.13
	U_FIGHT	(∓01)(.38)(.11) ∓01 .33 .09	T_1-T_2	.17(.15)	.32(.37)	∓15 (∓22)	-3.70		.22
			T_2-T_3	.22(.20)	.12(.13)	.11 (.07)	.90		.13
			T_1-T_3	∓12(∓12)	.25(.31)	∓37[c](∓41)	29.51		.23
	U_CLOSE	(∓02)(∓01)(∓20) ∓02 ∓01 ∓15	T_1-T_2	∓02(∓02)	.32(.37)	∓34[c](∓39)	.17		.36
			T_2-T_3	∓06(∓06)	∓13(∓13)	.07 (.07)	5.24		.26
			T_1-T_3	.11(.09)	.19(.22)	∓08 (∓13)	6.71		.08
	U_DISPF	(.10)(.42)(.21) .09 .37 .17	T_1-T_2	.04(.04)	.28(.30)	∓23[c](∓26)	.35		.61
			T_2-T_3	.14(.13)	.09(.10)	.05 (.03)	.20		.44
			T_1-T_3	∓08(∓07)	.12(.14)	∓21 (∓21)	∓66		.33

a. $n = 59$
b. $r \geq .25$ $p < .05$; $r \geq .23$ $p < .01$, two tailed.
c. $p < .10$, one tailed, Pearson-Filon z test for correlated correlations (Kenny, 1975).
d. Parenthesized values have been corrected for reliability.
e. Syncronous correlations connected by a line are not significantly different ($p < .10$), Pearson-Filon z test.

of the overall work effectiveness of the company, as measured by the discipline scale U_DISPF. For awards the finding of negative cross-lagged differences implies that perceptions of unit effectiveness increase awards or that awards decrease perceptions of unit effectiveness. In this case, intuitive considerations and the generally positive synchronous correlations (17 out of 24) make the hypothesis that perceptions of unit effectiveness cause increased numbers of awards the more tenable of the two possibilities. This result is similar to the earlier finding that racial harmony increased the number of awards.

One exception to the overall trend of negative cross-lagged differences is found in the comparison between unprogrammed discharges and the effectiveness rating of the leaders (U_RATE). This comparison shows a large positive difference across waves one and two and a somewhat smaller difference across waves two and three. The negative synchronous correlations suggest the interpretation that favorable evaluations of the leaders decrease unprogrammed discharges, possibly because a favorable evaluation of unit leaders reduces the number of EMs taking actions intended to provoke an administrative discharge.

CONCLUSIONS

At the onset of this research it had been expected that the causal determinants of unit effectiveness would be found in aspects of the racial and leadership climates of the company. However, the general trend of the results is that unit effectiveness impacts both the leadership and the racial climate of the unit.

In regards to racial harmony and unit effectiveness, for example, improvements in effectiveness measures of: unit discipline; E1-E4 cohesion; levels of self-reported lawbreaking; numbers of MP reports; and numbers of AWOLs were all found to reduce perceptions of overt racial hostility. Decreasing AWOLs and MP reports also increased voluntary interactions between blacks and whites, improved attitudes toward integration, and improved perceptions of the overall racial climate. Generally these relationships were found across 5-month intervals but not across 2-month intervals. Only one measure, perception of overall racial climate, was found to cause unit effectiveness variables. Overall racial climate was found to reduce perceptions of insubordination in the unit and increase the rating of and acquiescence to company leaders. These relationships between racial harmony and unit effectiveness are diagramed in Figure 1. Variables with similar patterns of relationships are enclosed in boxes; the arrows indicate the direction of causality. The figure suggests strategies a commander might apply to improve racial harmony in his unit. For example, actions designed to increase E1-E4 cohesion (e.g., group training exercises, team sports, and group recreational activities) would be expected to improve both perceptions of overall racial climate and acts of overt racial hostility in the unit. Improvement in the overall racial climate will, in turn, benefit the leader by decreasing acts of insubordination and increasing subordinates' rating of and willingness to submit to his leadership. In examining this figure, the reader should keep in mind that the relationships illustrated occur over time, some taking several months to manifest themselves, and may be entirely absent over the short run.

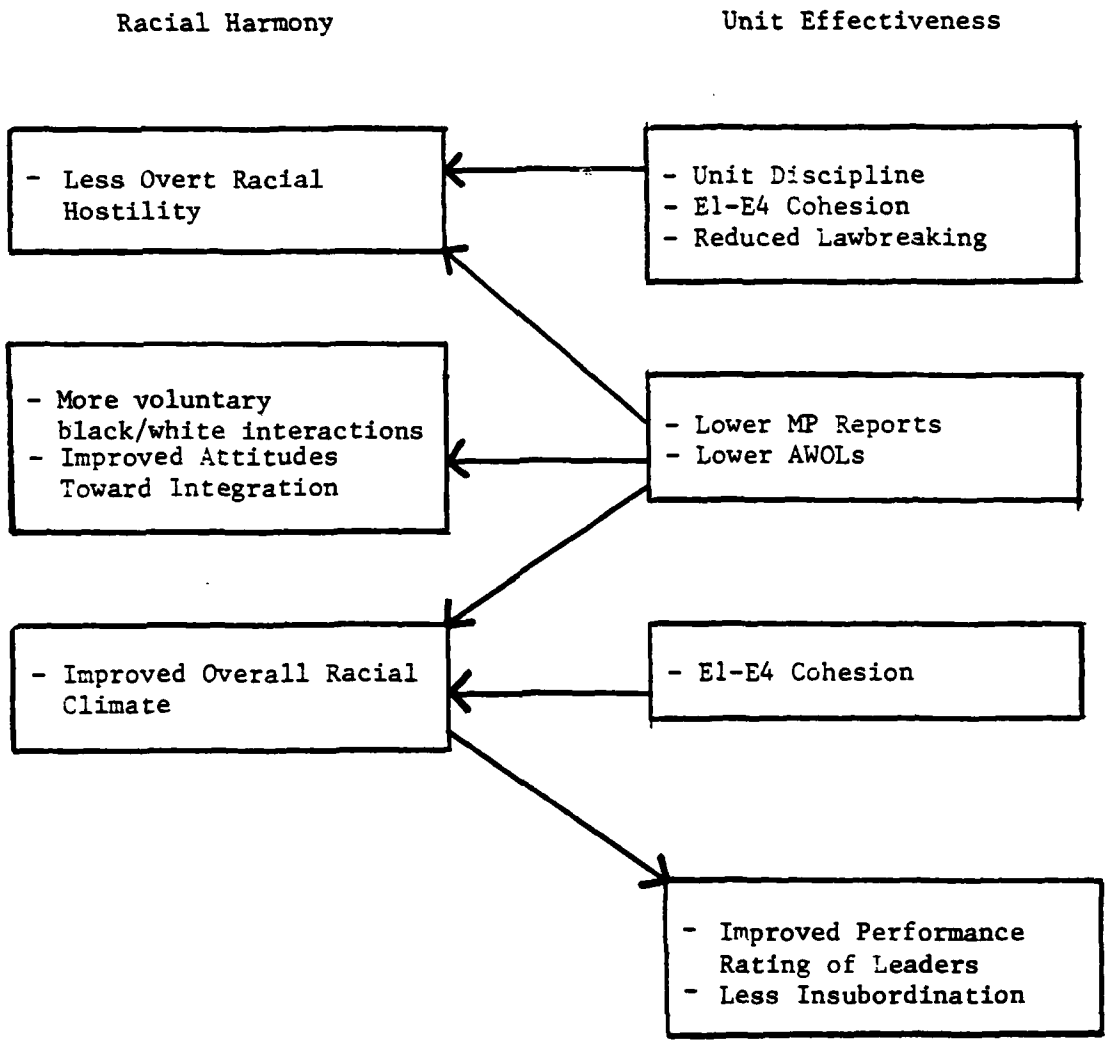

Figure 1. Causal relationships between racial harmony and unit effectiveness.

When various aspects of leadership climate were examined for factors which cause improved unit effectiveness and racial harmony, several relationships were found. Perceptions of leader fairness and willingness to sacrifice for their troops were found to decrease AWOLs, and leader strictness was found to decrease MP reports (although leader strictness also had the undesirable effect of increasing sick calls). Also, unprogrammed discharges were reduced when ratings of unit leaders were high (but increased when racial harmony was good). Other variables were found to be detrimental to unit effectiveness. Article 15s produced greater perceptions of insubordination, higher lawbreaking, lower ratings of unit leaders, lower unit discipline, and lowered the percentage of company members who respondents would trust in battle. Similar negative effects were seen with unprogrammed discharges. Also, application of so-called "problem strategies" (e.g., calling in outside assistance, relieving individuals, breaking up racial groups, etc.) increased AWOLs and sick calls.

It should be noted, however, that except for the specific relationships detailed above in which leadership caused a unit effectiveness variable, the general trend of the data was such that changes in the racial climate and unit effectiveness variables caused changes in the leadership variables. Measures such as perceived leader fairness and consideration, perceived leader willingness to sacrifice for their subordinates, the amount of time leaders spend conferring with subordinates on company matters, and the number of awards and commendations given were caused by a broad range of various racial climate and unit effectiveness scales. This finding suggests that, at least along a number of dimensions which have traditionally been considered aspects of leadership, perceived leader characteristics are not causes of unit performance but rather, are reactions to it, and that these dimensions can not generally be looked to for interventions designed to impact on unit effectiveness.

The various causal relationships found when the leadership variables were compared with the racial harmony and unit effectiveness variables are illustrated in Figure 2. Unfortunately, because of the pattern of results discussed in the preceding paragraph, the figure does not suggest many strategies which could be used to improve unit effectiveness. The figure does illustrate, however, that leaders cannot increase the effectiveness of their units through punitive actions such as Article 15s and unprogrammed discharges. In fact, such actions are likely to increase subsequent offense rates and lower several aspects of unit effectiveness and racial harmony as well. Figure 2 also illustrates an instance where the response leaders tend to make to a problem in their unit actually makes things worse. The figure shows that leaders tend to respond to poor unit status reports or high AWOLs by becoming more strict and applying "problem strategies." While these actions will tend to have a positive impact on MP reports, they will actually tend to worsen the AWOL problem, and have the additional negative effect of increasing sick calls. The figure suggests that a better strategy would be to concentrate on fair and considerate leadership of the unit. Again, it is important to remember that these relationships occur over time and may not manifest themselves immediately, but only after a delay of several months.

What then are the factors which cause unit effectiveness? The present research provides a few clues: as stated above, perceptions of overall racial climate were found to decrease acts of insubordination and increase the evaluation of unit leaders; perceptions of leader fairness, consideration, and sacrifice decreased the number of AWOLs, but these sparse results leave the

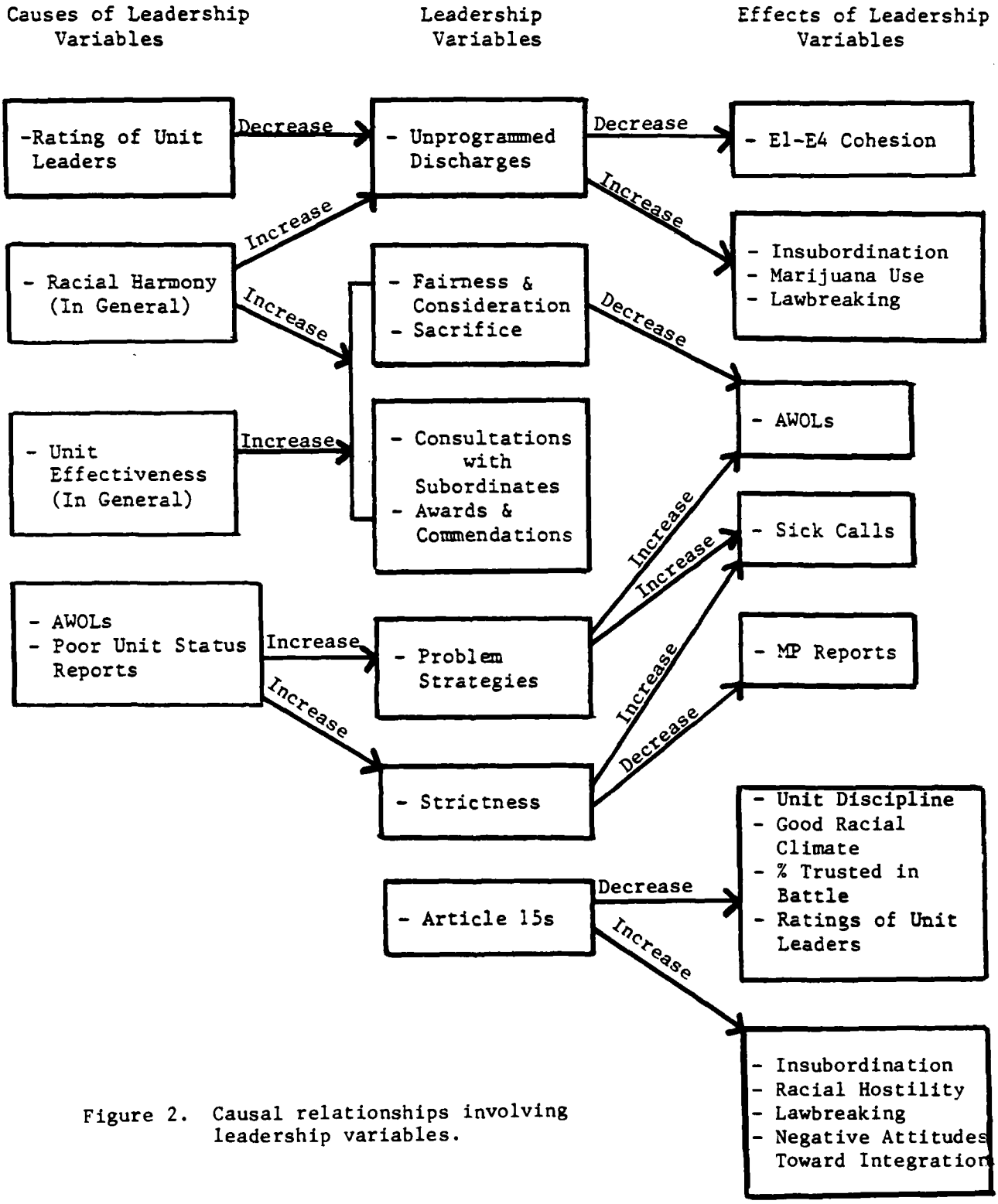

Figure 2. Causal relationships involving leadership variables.

question largely unanswered. Perhaps the primary influences on unit effectiveness are to be found in institutional factors beyond the control of the company commander. Factors such as high personnel turbulence, the quality of incoming personnel, and the promotion system are frequently mentioned as potential determinants of unit effectiveness. Or, it may be that some of the more traditional concepts of leadership, such as fairness and willingness to sacrifice, are effective in promoting unit effectiveness, but the perceptual measures used in the present study do not effectively capture these behaviors. Future research may be able to address these questions by developing more objective measures, possibly from Army record keeping systems such as SIDPERS.

Finally, it seems appropriate to comment briefly on the methodology of this study. It can be readily seen that the pattern of results when variables are compared across time is vastly different from that found using same time comparisons. Many of the relationships found in this study would have been misinterpreted, or left undiscovered, if the cross-lagged correlations had not been examined.

Unfortunately, cross-lagged panel analysis as a technique is still being developed and its many assumptions and nuances of interpretation make it a difficult technique to apply objectively. There is some evidence from the present effort that cross-lagged panel analysis may be fairly robust to violations of its stationarity and quasi-stationarity assumptions. Corrections for reliability shifts changed the interpretation of only three of the many comparisons presented in the paper. In other cases, cross-lagged differences remained significant across time waves within a comparison, even though some of the synchronous correlations were significantly different. The comparisons of R_HOST and R_RC with U_CLOSE are good examples of this phenomenon. It might also be noted that collecting the sort of data necessary for a panel study is not an easy matter. The 7-month data collection effort required for the present study was a task that often tried the patience of the researchers, and, more importantly, severely tried the patience of the subjects. In any case, for field studies of complex social systems such as this one, the advantage gained by being able to look at relationships across time would seem to outweigh the effort required to overcome the problems.

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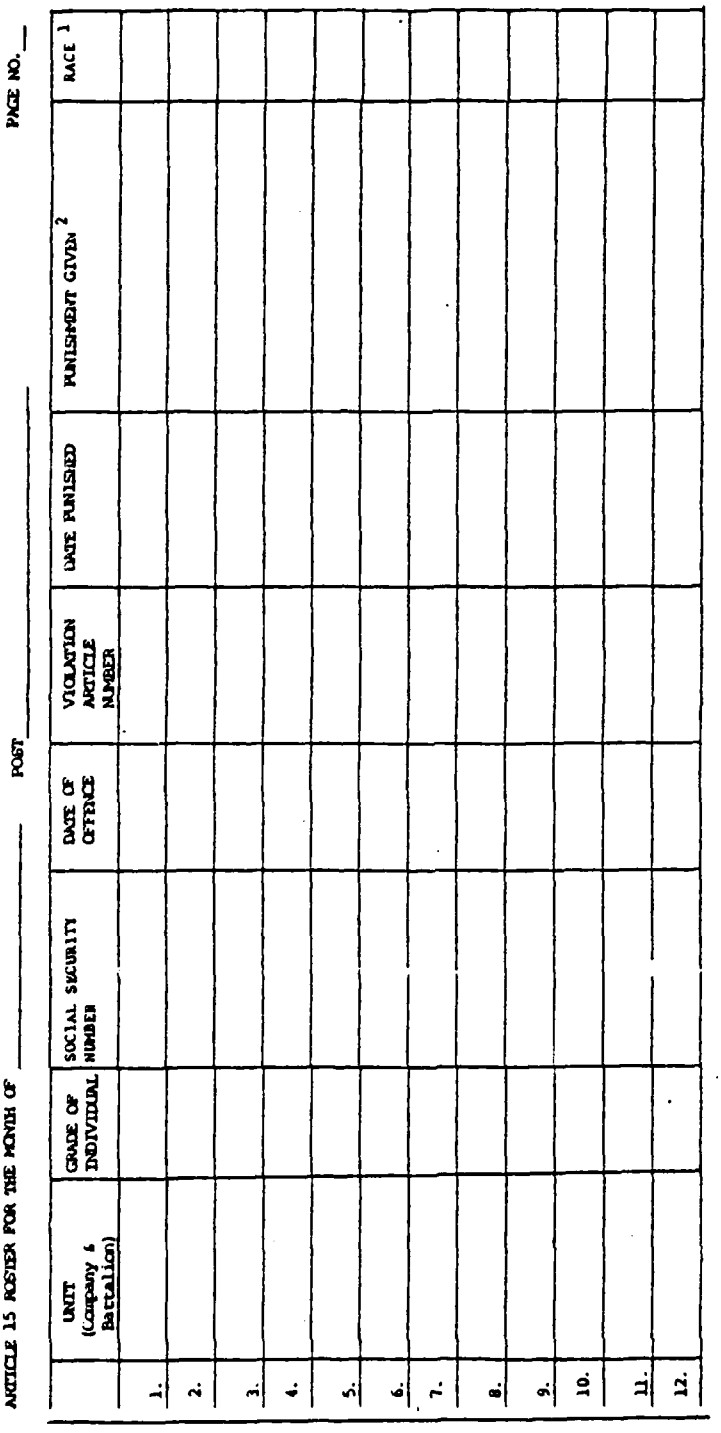
APPENDIX A

RECORD DATA COLLECTION FORMS

Article 15 Roster



ARTICLE 15 ROSTER FOR THE MONTH OF _____ POST _____ PAGE NO. ___

	UNIT (Company & Battalion)	GRADE OF INDIVIDUAL	SOCIAL SECURITY NUMBER	DATE OF OFFENCE	VIOLATION ARTICLE NUMBER	DATE PUNISHED	PUNISHMENT GIVEN [2]	RACE [1]
1.								
2.								
3.								
4.								
5.								
6.								
7.								
8.								
9.								
10.								
11.								
12.								

1. Indicate black, white, other.
2. Abbreviate using standard notation.

BARS TO RE-ENLISTMENT ROSTER

POST _____

MONTHLY BARS TO RE-ENLISTMENT ROSTER FOR THE MONTH OF _____

UNIT (Company & Battalion)	DATE	GRADE of Individual	RACE[2]

1. Complete one line of the table for each bar of an individual from a company in the sample.

2. Indicate black, white, other. If race is unknown, code social security #.

COMMENDATIONS & AWARDS ROSTER

POST _____

MONTHLY COMMENDATIONS/AWARD ROSTER FOR THE MONTH OF _____

BATTALION _____

COMPANY	GRADE	RACE[1]	TYPE OF AWARD[2]

1. If race is unknown, code social security #. Indicate black, white, other.

2. Letters of appreciation, commendations, battalion certificate, etc. .

COMPANY LEVEL UNIT STATUS INFORMATION

COMPANY LEVEL UNIT STATUS INFORMATION

[ ][ ][ ][ ][ ][ ] Date of Report (YYMMDD)

POST _____ CONFIDENTIAL(When filled in)

SECTION A

1. BATTALION _____

2. COMPANY _____

3. PERSONNEL READINESS DATA

a. [ ][ ][ ] Operating Strength %

b. [ ][ ] MOS Trained %

c. [ ][ ] Senior Grade %

d. [ ][ ] Personnel Turnover %

e. [ ][ ] Deployable Strength % (Designated Units Only)

4. EQUIPMENT ON HAND DATA

a. [ ][ ][ ] Total Line Items

b. [ ][ ][ ] Number of Lines Rated 1

c. [ ][ ][ ] Number of Lines Rated 2

d. [ ][ ][ ] Number of Lines Rated 3

e. [ ][ ][ ] Number of Lines Rated 4

f. [ ][ ] Pacing item(s) Percentage of Fill (EOH)

5. EQUIPMENT STATUS DATA

a. [ ][ ] % of Equipment Operationally Ready

b. [ ] Pacing Item ES Rating (1,2,3,4)

c. [ ][ ][ ][ ][ ][ ] Missile System Availability

6. TRAINING DATA

a. [ ][ ] Weeks to Complete Training

b. [ ] Availability of Funds

c. [ ] Availability of Equipment/ Material

d. [ ] Availability of Qualified Leaders

e. [ ] Availability of Training/ Areas/Facilities

f. [ ] Availability of Fuel

g. [ ] Availability of Ammunition

h. [ ] Availability of Time

7. [ ] Overall Unit Rating(Enter 1,2,3 or 4)

8. [ ] Authorized Level of Organization

MONTHLY COURTS-MARTIAL ROSTER FOR THE MONTH OF_____ POST_____ PAGE NO._____

Complete one line of the table for each court-martial of an individual from a company in the sample.

	UNIT (Company & Battalion)	GRADE OF INDIVIDUAL	RACE[1]	SEX M/F	DATE OF[2] RESTRAINT OR PREFERRAL OF CHARGE	TYPE OF[3] COURT	DATE OF COURT-MARTIAL (FINAL SESSION)	ARTICLE NO. & TYPE OF OFFENCE	GUILTY OR INNOCENT	PUNISHMENT	PREVIOUS OFFENCES	PRE-TRIAL CONFINE-MENT
1.												
2.												
3.												
4.												
5.												
6.												
7.												
8.												
9.												
10.												
11.												
12.												

1. Indicate black, white, other.
2. Use the date the company commander prefers charges for each month's report. In other words, the report for one month should include all courts covering charges that were preferred during the month in question -- not courts for that month. In the event that a court-martial for a given charge is not complete by the end of the month, hold this report until the court-martial is complete and the information on guilt and punishment can be filled in.
3. General, Bad Conduct, Special, Regular Special, Summary.

I.G. COMPLAINT ROSTER

MONTHLY I.G. COMPLAINT ROSTER FOR THE MONTH OF_____

POST_____

Complete one line of the table for each I.G. complaint from a company in the sample.

UNIT (Company & Battalion)	LOC.[3]	DATE OF COMPLAINT	COMPLAINT CATEGORY	S/US[2]	COMPLAINANT'S		
					RACE[1]	SEX	GRADE

1. Indicate black, white, other.
2. Substantiated/Unsubstantiated.
3. The location at which the complaint was registered. Use "IS" for a complaint registered at the site of an I.G. Inspection; use "O" for a complaint registered at the I.G. Office.

MP REPORT ROSTER

POST_____

MP REPORT ROSTER FOR THE MONTH OF_____

List ALL subjects, victims, and complainants (Status codes A, C, and D) assigned to companies in the sample. More than one subject, victim , or complainant from the companies in the sample may appear on the report.

	MP REPORT DATE	UNIT (Company & Battalion)	STATUS [1] (A, C, or D)	TYPE OF COMPLAINT [2]			RACE OF SUBJECT	RANK
				First	Second	Third		
1.								
2.								
3.								
4.								
5.								
6.								
7.								
8.								
9.								
10.								
11.								
12.								
13.								
14.								
15.								
16.								
17.								
18.								
19.								
20.								

1. Codes for status/ A= subjects; C= victims; D= complainants.
2. Code type of complaint from form attached. Code up to 3 complaints if that many are listed.
3. Indicate black, white, other. Indicate for subject only.

MP REPORT ROSTER

TYPE OF COMPLAINT CODES

TYPE OF COMPLAINT

TRAFFIC

01 Non-moving(no registration, no plates, no license in possession, etc.)
02 Speeding
03 Reckless driving/Following too close
04 Running stop sign/Flashing red
05 Improper left turn/Driving on shoulder/One-way traffic
06 Hit and Run

70= Impeding speed

TRAFFIC ACCIDENT

07 Traffic Accident/No Injuries/Minor Damage
08 " " /No Injuries/Moderate Damage
09 " " /No Injuries/Major Damage

10 " " /Minor Injuries/Minor Damage
11 " " /Minor Injuries/Moderate Damage
12 " " /Minor Injuries/Major Damage

13 " " /Moderate Injuries/Minor Damage
14 " " /Moderate Injuries/Moderate Damage
15 " " /Moderate Injuries/Major Damage

16 " " /Major Injuries/Minor Damage
17 " " /Major Injuries/Moderate Damage
18 " " /Major Injuries/Major Damage

19 DWI(Driving While Intoxicated)
20 Implied Consent
21 Driving While Impaired

DRUGS

23 Marijuana(possession)
24 Marijuana(selling)
25 Narcotics(possession)
26 Narcotics(selling)
27 Found Contraband
28 Possession of controlled substance
29 Possession of Open Container

VIOLATIONS PARTICULAR TO MILITARY

30 Uniform Violation
31 No Military ID
32 Altered ID
33 Disobeying a lawful order
34 Impersonating an NCO
35 Possession of Illegal Weapon
36 AWOL
37 Desertion
38 Return to Military Authority
39 Derilict ion of Duty
40 Off Limits Area
41 Failure to Appear

OTHER

PROPERTY

42 Unlawful or illegal entry
43 Larceny of Private Property (including shoplifting)
44 Damage to Private Property
45 Larceny of Government Property
46 Damage to Government Property
47 Housebreaking
48 Burglary
49 Armed Robbery
50 Grand Theft Auto
51 Burning & Destroying
52 Attempted Theft
53 Lost Property
54 Misappropriation of Government Property/Funds
55 Possession of Stolen Goods

VIOLENT

56 Communicating a Threat
57 Firing Fire Arms from a Public Highway
58 Malicious Mischief
59 Aggravated Assualt
60 Disorderly Conduct
61 Resisting Arrest
62 Murder
63 Rape
64 Kidnapping
65 Attempted Suicide
66 Harassing Phone Calls
67 Bomb Threat
68 Reported Death
69 Child Abuse

SICK CALL ROSTER

POST_____

SICK CALL ROSTER FOR THE MONTH OF_____

Tally the frequency of the sick calls from each company during the month covered by this report. Tally the sick calls for the odd numbered days(e.g. 1st, 3rd, 5th, etc.) in column A. Tally the sick calls for the even numbered days(e.g. 2nd, 4th, 6th, etc.) in column B. Use hash marks to indicate the sick calls. Separating the sick calls by odd and even days is necessary to calculate the statistical reliability of the data.

UNIT NUMBER OF PERSONS ON SICK CALL

Battalion & Company	Column A (odd numbered days)	Column B (even numbered days)

UNPROGRAMMED DISCHARGE ROSTER FOR THE MONTH OF _____ POST _____

	UNIT (Company & Battalion)	GRADE OF INDIVIDUAL	SOCIAL SECURITY NUMBER	DATE SEPARATION INITIATED by Company Commander (date of letter)	DISCHARGE CHAPTER[2] AR-635-200	DATE SEPARATION COMPLETE	TYPE OF DISCHARGE[3] H G OTH BC D	RACE
1.								
2.								
3.								
4.								
5.								
6.								
7.								
8.								
9.								
10.								
11.								
12.								

1. Indicate black, white, other.
2. Code number from list on instructions page.
3. Honorable, General, Other than Honorable, Bad Conduct, Dishonorable.
4. List date Chapter 10 discharge was requested by the defendant for Chapter 10's.

APPENDIX B

A TAXONOMY OF RACIAL, ETHNIC, AND SEXISM PROBLEMS

One of the secondary objectives of the present study was the development of a taxonomy of racial, ethnic, and sexism problems which occur in the Army. Using the company as the unit of analysis, these problems were to be related to the following general areas:

1. Cross-cultural communications,
2. Minority justice and discipline,
3. Polarization, and
4. First-line military leadership.

As an initial step in the development of this taxonomy, LJA reviewed the previous research conducted for the armed services which dealt with these issues. Based upon the results of these studies, a preliminary list of problems within these four areas was developed.

This list of problems or perceived problems identified in previous research was then used to develop an interview protocol for gathering additional data on racial, ethnic, and sexism problems. The protocol was used to interview 19 NCOs and officers. The interviews were conducted at the site of the pretest of the survey instruments that were developed to assess the causal relationships between racial harmony and unit effectiveness.

These 19 personnel were asked to list any racial, ethnic, or sexism problems which they had seen or heard about in a military unit. Then, they were asked what the chain of command should do to reduce these problems. In addition, the list of problems identified in previous research was presented to them, and they were asked to rate the frequency of occurrence of these problems and what the chain of command should do to prevent or reduce these problems.

Based upon the results of previous research and the survey of NCOs and officers at the pretest site, LJA developed the following taxonomy of racial, ethnic, and sexism problems which occur in these four general areas of concern.

Cross-cultural communications

1. Ethnic or racial name calling
2. Ethnically or racially offensive language and symbols
3. Ethnic and racial stereotyping
4. Sex stereotyping

Minority justice and discipline

1. High minority discharge rate
2. High minority punishment rate
3. Unequal or inconsistent punishments given to different ethnic, racial, or sex groups

Polarization

1. Ethnically or racially motivated fights and arguments
2. Interracial group harassment
3. Voluntary, de facto segregation
4. Racial groups banding together to defy authority

First-line military leadership

1. Degrading treatment of groups by NCOs and officers
2. Discrimination and sexism in promotions
3. Discrimination and sexism in duty and work assignments
4. Ethnic, racial, and sexual favoritism in granting of leaves and passes

As previously mentioned, respondents were asked to judge the frequency of occurrences of certain general or specific ethnic, racial, or sexist problems. The responses to these items are summarized in Table 20.

Table B-1

Judged Frequency of Occurrence of Selected Ethnic, Racial, and Sexist Problems*

Problem	Response			
	Frequently	Sometimes	Hardly Ever	No Answer
1. Ethnically/racially motivated fights and arguments		3	14	2
2. Degrading treatment of groups by NCOs and officers	2	3	11	3
3. Interracial group harassment	1	3	13	2
4. Name calling	4	6	7	2
5. Use of ethnically/racially offensive language and symbols	1	7	8	3
6. Racial group solidarity	12		1	6
7. Cross-cultural communications problems	3	7	4	5
8. Banding together to defy authority	2	2	13	2
9. Discrimination in promotions	1	9	4	5
10. Discrimination in work/duty assignments	1	3	10	5
11. Racial favoritism by NCOs	3	5	7	4
12. Ethnic/racial stereotyping	4	5	7	3
13. Sexism in work/duty assignments	3	1	3	12
14. Sexism in promotions	1		6	12

Table B-1 (Continued)

Judged Frequency of Occurrence of Selected Ethnic, Racial, and Sexist Problems*

Problem	Response			
	Frequently	Sometimes	Hardly Ever	No Answer
15. Sexism in granting leaves/passes			6	13
16. Sexism caused by first-line military leadership	2	2	3	12
17. Sex stereotyping	2	3		14
18. Sexism in training	1	1	2	15
19. Sexism in guard duty assignments	2		3	14
20. Sexism in justice/discipline		3	3	13

* Due to the length of the interview, a number of respondents did not have sufficient time to complete all the items. This accounts for the relatively high number of "No answer" responses to items 13-20.

APPENDIX C

RACIAL CLIMATE ITEM POOL

1. Within the last eight weeks, how many racial incidents occurred in your company that you know or heard about? (NOTE: Racial incidents might include such things as fights, thefts, arguments, etc.)

   NONE 0 1 2 3 4 5 6 7 8 9 OR MORE INCIDENTS — B37

2. How often do members of your company let racial conflict interfere with their work?

   VERY FREQUENTLY 8 7 6 5 4 3 2 1 NEVER — C13

3. In my opinion, Blacks and Whites should work in separate groups (all Blacks in one group, all Whites in another group).

   STRONGLY AGREE 8 7 6 5 4 3 2 1 STRONGLY DISAGREE — C14

4. Has your job performance gotten worse because the person giving commands belonged to a different racial group than you?

   VERY MUCH 8 7 6 5 4 3 2 1 NOT AT ALL — C15

5. Blacks and Whites would be better off if they lived and worked only with members of their own race.

   STRONGLY AGREE 8 7 6 5 4 3 2 1 STRONGLY DISAGREE — C16

6. In your company, have race relations been good or bad during the last eight weeks?

   VERY GOOD 8 7 6 5 4 3 2 1 VERY BAD — C17

7. The answer to the racial problem is the total separation of Blacks and Whites.

   STRONGLY DISAGREE 1 2 3 4 5 6 7 8 STRONGLY AGREE — C18

8. In your company, have race relations been getting better or worse during the last eight weeks?

   GETTING BETTER 8 7 6 5 4 3 2 1 GETTING WORSE — C19

9. Black Americans should not have a separate country of their own.

STRONGLY AGREE 8 7 6 5 4 3 2 1 STRONGLY DISAGREE C20

10. In your company, have good solutions been found for racial problems?

NOT AT ALL 1 2 3 4 5 6 7 8 VERY MUCH C21

11. Black Americans should try to integrate into American society.

STRONGLY DISAGREE 1 2 3 4 5 6 7 8 STRONGLY AGREE C22

12. Black soldiers in my company have both Black and White buddies.

STRONGLY AGREE 8 7 6 5 4 3 2 1 STRONGLY DISAGREE C23

13. It is wrong for Blacks and Whites to date inter-racially.

STRONGLY DISAGREE 1 2 3 4 5 6 7 8 STRONGLY AGREE C24

14. Black soldiers in my company have a lot in common with White soldiers.

STRONGLY DISAGREE 1 2 3 4 5 6 7 8 STRONGLY AGREE C25

15. There have been fights between Blacks and Whites in my company.

NEVER 1 2 3 4 5 6 7 8 VERY FREQUENTLY C26

16. Black and White soldiers in my company hang around together after duty hours.

STRONGLY DISAGREE 1 2 3 4 5 6 7 8 STRONGLY AGREE C27

17. In your company, do Black soldiers get together and make Whites feel unwelcome in company areas that are supposed to be open to everybody?

VERY FREQUENTLY 8 7 6 5 4 3 2 1 NEVER C28

18. Close friendships occur between Black and White soldiers in this company.

STRONGLY AGREE 8 7 6 5 4 3 2 1 STRONGLY DISAGREE C29

19. White officers in this company have trouble handling Black enlisted soldiers(E1-E4).

NEVER 1 2 3 4 5 6 7 8 VERY FREQUENTLY C30

20. Do you hear Whites in your company refer to Blacks in such terms as "nigger" or "coon" ?

NEVER 1 2 3 4 5 6 7 8 VERY FREQUENTLY C31

21. In your company, do White soldiers get together and make Blacks feel unwelcome in company areas that are supposed to be open to everybody?

NEVER 1 2 3 4 5 6 7 8 VERY FREQUENTLY C32

22. Do you hear Blacks in your company refer to Whites in such terms as "honky" or "rabbit" ?

NEVER 1 2 3 4 5 6 7 8 VERY FREQUENTLY C33

23. In the last eight weeks, how often have Black and White enlisted men gotten into fights over female companions?

NEVER 1 2 3 4 5 6 7 8 VERY FREQUENTLY C34

24. How often do you hear racial jokes in your company?

VERY FREQUENTLY 8 7 6 5 4 3 2 1 NEVER C35

25. How often have Black and White enlisted soldiers(E1-E4) in your company gotten into fights or arguments over pot, or lending money, or selling drugs?

NEVER 1 2 3 4 5 6 7 8 VERY FREQUENTLY C36

Think of those enlisted soldiers(E1-E4)who belong to a <u>different racial group than you</u>.

If you are White, think of Blacks.

If you are Black, think of Whites.

If you are neither White nor Black, think of Whites.

26. Do these soldiers get angry at you when you do what is right?

NEVER 1 2 3 4 5 6 7 8 VERY FREQUENTLY C37

27. Do these soldiers encourage you to do things that are wrong?

VERY FREQUENTLY 8 7 6 5 4 3 2 1 NEVER C38

28. Do these soldiers inform on(tell on)you to get you into trouble?

NEVER 1 2 3 4 5 6 7 8 VERY FREQUENTLY C39

29. Do these soldiers play up to("brown nose")company leaders (CO,1SG)to try to get special treatment?

VERY FREQUENTLY 8 7 6 5 4 3 2 1 NEVER C40

30. Do you inform on(tell on)these soldiers for things they do wrong?

NEVER 1 2 3 4 5 6 7 8 VERY FREQUENTLY C41

31. Do you try to make these soldiers respect your authority?

NEVER 1 2 3 4 5 6 7 8 VERY FREQUENTLY C42

Think of the enlisted soldiers(E1-E4)that belong to a different racial group than you. Think of the rules that they live by.

32. Are these rules good or bad?

GOOD 8 7 6 5 4 3 2 1 BAD C43

33. Are these rules fair or unfair?

FAIR 8 7 6 5 4 3 2 1 UNFAIR C44

34. Are the rules that you live by good or bad?

GOOD 8 7 6 5 4 3 2 1 BAD C45

APPENDIX D

UNIT EFFECTIVENESS ITEM POOL

1. Assume a military union had been established and recognized. Would you have joined a military union in the last eight weeks if you had been given the chance?

   DEFINITELY JOINED 8 7 6 5 4 3 2 1 DEFINITELY NOT JOINED

   A61

2. During the last eight weeks, how much of your duty time has been spent working on individual or group training exercises? (Percent of your time spent on training)

   ALL OF MY TIME 100% 95% 90% 85% 80% 75% 70% 65% 60% 55%

   50% 45% 40% 35% 30% 25% 20% 15% 10% 5% 0% NONE OF MY TIME

   A66

3. During the last eight weeks, how much of your time has been spent sitting around doing nothing? (Percent of your time spent doing nothing)

   ALL OF MY TIME 100% 95% 90% 85% 80% 75% 70% 65% 60% 55%

   50% 45% 40% 35% 30% 25% 20% 15% 10% 5% 0% NONE OF MY TIME

   A69

4. During the last eight weeks, how much duty time have enlisted soldiers (E1-E4) spent on illegal activities?

   ALL OF ENLISTED SOLDIERS' TIME 100% 95% 90% 85% 80% 75% 70% 65% 60%

   55% 50% 45% 40% 35% 30% 25% 20% 15% 10% 5% 0% NONE OF ENLISTED SOLDIERS' TIME

   A72

5. Have you ever been arrested by the police or MPs?

   (Circle one number)

   No----------0
   Yes, once----------1
   Yes, more than once---2

   A75

6. Do you follow a policy of making your company strong and combat ready?

NEVER 1 2 3 4 5 6 7 8 VERY FREQUENTLY B13

7. How many of the enlisted soldiers(E1-E4)in your company violate Army rules to make your company powerless? (Circle a percentage number)

ALL ENLISTED
SOLDIERS 100% 95% 90% 85% 80% 75% 70% 65% 60% 55%

50% 45% 40% 35% 30% 25% 20% 15% 10% 5% 0% NO ENLISTED SOLDIERS B15

8. How many of the enlisted soldiers(E1-E4)in your company would like to make your company weak and ineffective?

ALL ENLISTED
SOLDIERS 100% 95% 90% 85% 80% 75% 70% 65% 60% 55%

50% 45% 40% 35% 30% 25% 20% 15% 10% 5% 0% NO ENLISTED SOLDIERS B19

9. Do you feel it is right or wrong to try to make your Army company strong and effective?

RIGHT 8 7 6 5 4 3 2 1 WRONG B25

10. Do some enlisted soldiers(E1-E4)lend money to other enlisted soldiers in your company for high rates of interest?

VERY FREQUENTLY 8 7 6 5 4 3 2 1 NEVER B31

11. How often do enlisted soldiers(E1-E4)in your company make extra money by selling pot to members of your company?

VERY FREQUENTLY 8 7 6 5 4 3 2 1 NEVER B33

12. In the last eight weeks, how many times have enlisted soldiers (E1-E4)in your company insulted a member of the chain of command?

NONE 0 1 2 3 4 5 6 7 8 9 OR MORE TIMES B35

13. Within the last eight weeks, how many incidents of <u>destruction</u> of personal or government <u>property</u> in your company have you seen or heard about?

NONE 0 1 2 3 4 5 6 7 8 9 OR MORE INCIDENTS B39

14. From your observation, how many of the enlisted men(E1-E4)in your company do you think had sex at least once with a prostitute within the last eight weeks?

ALL ENLISTED
MEN 100% 95% 90% 85% 80% 75% 70% 65% 60% 55% 50%

45% 40% 35% 30% 25% 20% 15% 10% 5% 0% NO ENLISTED MEN B41

15. Within the last eight weeks, how many thefts occured <u>in your company</u> that you heard about? (Consider a theft to have occurred even if no one reported that something was stolen to the appropriate authorities.)

NONE 0 1 2 3 4 5 6 7 8 9 OR MORE THEFTS B45

16. Within the last eight weeks, how many fist fights between <u>members of your company</u> did you see or hear about?

NONE 0 1 2 3 4 5 6 7 8 9 OR MORE FIST FIGHTS B47

17. From your observation, how many of the enlisted soldiers (E1-E4)in your company do you think smoked pot at least once within the last eight weeks?

ALL ENLISTED
SOLDIERS 100% 95% 90% 85% 80% 75% 70% 65% 60% 55%

50% 45% 40% 35% 30% 25% 20% 15% 10% 5% 0% NO ENLISTED SOLDIERS B49

18. Within the last eight weeks, how many of the enlisted soldiers (E1-E4)in your company broke laws that they could reasonably be punished for? (NOTE: "Laws" refer to Army Regulations, civilian laws, and company rules.) Indicate how many of the enlisted soldiers in your company broke laws regardless of whether or not the soldiers are caught or punished.

ALL ENLISTED
SOLDIERS 100% 95% 90% 85% 80% 75% 70% 65% 60% 55%

50% 45% 40% 35% 30% 25% 20% 15% 10% 5% 0% NO ENLISTED SOLDIERS B65

19. In your company, how many Black enlisted soldiers(E1-E4) have gotten together and talked about plans for dealing with company leaders(CO,1SG)?
(Percent of Blacks who have talked about plans.)

ALL BLACK ENLISTED SOLDIERS 100% 95% 90% 85% 80% 75% 70% 65% 60% 55%

50% 45% 40% 35% 30% 25% 20% 15% 10% 5% 0% NO BLACK ENLISTED SOLDIERS C46

20. In your company, how many White enlisted soldiers(E1-E4) have gotten together and talked about plans for dealing with company leaders(CO,1SG)?
(Percent of Whites who have talked about plans.)

ALL WHITE ENLISTED SOLDIERS 100% 95% 90% 85% 80% 75% 70% 65% 60% 55%

50% 45% 40% 35% 30% 25% 20% 15% 10% 5% 0% NO WHITE ENLISTED SOLDIERS C49

21. In the last eight weeks, how many, if any, enlisted soldiers (E1-E4) talked about organizing an underground group to interfere with the effectiveness of your company?
(Percent of enlisted soldiers who have talked about this.)

ALL ENLISTED SOLDIERS 100% 95% 90% 85% 80% 75% 70% 65% 60% 55%

50% 45% 40% 35% 30% 25% 20% 15% 10% 5% 0% NO ENLISTED SOLDIERS C52

22. In the last eight weeks, how many, if any, White enlisted soldiers(E1-E4) talked about organizing an underground group to decrease the effectiveness of your company?
(Percent of White enlisted soldiers who have talked about this)

ALL WHITE ENLISTED SOLDIERS 100% 95% 90% 85% 80% 75% 70% 65% 60% 55%

50% 45% 40% 35% 30% 25% 20% 15% 10% 5% 0% NO WHITE ENLISTED SOLDIERS C55

23. In the last eight weeks, how many, if any, Black enlisted soldiers(E1-E4)talked about organizing an underground group to decrease the effectiveness of your company?
(Percent of Black enlisted soldiers who have talked about this)

ALL BLACK ENLISTED
SOLDIERS 100% 95% 90% 85% 80% 75% 70% 65% 60% 55%

50% 45% 40% 35% 30% 25% 20% 15% 10% 5% 0% NO BLACK ENLISTED SOLDIERS C58

24. In your company, are enlisted soldiers(E1-E4)out to get company leaders they think are unfair?

NEVER 1 2 3 4 5 6 7 8 VERY FREQUENTLY C61

25. Have you heard an enlisted soldier(E1-E4)privately threatening to harm one of the unit leaders?

NEVER 1 2 3 4 5 6 7 8 VERY FREQUENTLY C62

26. In the last eight weeks, how many times have you gone on sick call?

NONE 0 1 2 3 4 5 6 7 8 9 OR MORE TIMES C64

27. If your company was called upon to go overseas to fight, would you report for duty or go AWOL?

I would

DEFINITELY REPORT FOR DUTY 8 7 6 5 4 3 2 1 DEFINITELY GO AWOL D13

28. How many of the enlisted soldiers(E1-E4)in your company have received adequate training to do the job they are now doing?

ALL ENLISTED
SOLDIERS 100% 95% 90% 85% 80% 75% 70% 65% 60% 55%

50% 45% 40% 35% 30% 25% 20% 15% 10% 5% 0% NO ENLISTED SOLDIERS D17

29. How many of the enlisted soldiers(E1-E4)in your company act like they really don't want to be promoted?

ALL ENLISTED
SOLDIERS 100% 95% 90% 85% 80% 75% 70% 65% 60% 55%

50% 45% 40% 35% 30% 25% 20% 15% 10% 5% 0% NO ENLISTED SOLDIERS D20

30. Do some enlisted soldiers(E1-E4)inform on(tell on)other enlisted soldiers to get them into trouble?

NEVER 1 2 3 4 5 6 7 8 VERY FREQUENTLY D25

31. In your company, is an enlisted soldier(E1-E4)in danger of being hurt or beat up if he informs company leaders about what other enlisted soldiers are doing wrong?

NOT AT ALL 1 2 3 4 5 6 7 8 VERY MUCH D27

32. How often do enlisted soldiers(E1-E4)encourage each other to break rules?

VERY FREQUENTLY 8 7 6 5 4 3 2 1 NEVER D29

33. In your company, is it good or bad for enlisted soldiers (E1-E4)to rebel against company leaders(CO,1SG)?

GOOD 8 7 6 5 4 3 2 1 BAD D33

34. In your company, is it fair or unfair for enlisted soldiers (E1-E4)to rebel against company leaders(CO,1SG)?

FAIR 8 7 6 5 4 3 2 1 UNFAIR D35

35. Do you feel like protesting the actions of your company leaders(CO,1SG)?

NOT AT ALL 1 2 3 4 5 6 7 8 VERY MUCH D36

36. Does rebelling against your company leaders (CO, 1SG) make you a better person or a worse person?

BETTER PERSON 8 7 6 5 4 3 2 1 WORSE PERSON D37

37. Would you like to free yourself from your company leaders' (CO, 1SG) authority?

VERY MUCH 8 7 6 5 4 3 2 1 NOT AT ALL D38

38. How many of the enlisted soldiers (E1-E4) rebel against what company leaders (CO, 1SG) ask them to do?

ALL ENLISTED
SOLDIERS 100% 95% 90% 85% 80% 75% 70% 65% 60% 55%

50% 45% 40% 35% 30% 25% 20% 15% 10% 5% 0% NO ENLISTED SOLDIERS D39

39. Do you try to break as many rules and regulations as you can without getting caught?

VERY FREQUENTLY 8 7 6 5 4 3 2 1 NEVER D56

40. How often do you seriously violate the law? (NOTE: the "law" refers to Army Regulations, civilian laws, and company rules.) Indicate how often you violate the law regardless of whether or not you are caught or punished.

VERY FREQUENTLY (Everyday) 8 7 6 5 4 3 2 1 NEVER D57

41. Overall, do you show respect for the law? (NOTE: the "law" refers to Army Regulations, civilian laws, and company rules.)

A GREAT DEAL OF RESPECT FOR THE LAW 8 7 6 5 4 3 2 1 NO RESPECT FOR THE LAW AT ALL D58

42. How many of the enlisted soldiers(E1-E4)in your company would you trust in battle?
(Percent of enlisted soldiers you would trust)

ALL ENLISTED
SOLDIERS 100% 95% 90% 85% 80% 75% 70% 65% 60% 55%

50% 45% 40% 35% 30% 25% 20% 15% 10% 5% 0% NO ENLISTED SOLDIERS D59

43. How many of the enlisted soldiers(E1-E4)in your company would actively fight the enemy in battle?

ALL ENLISTED
SOLDIERS 100% 95% 90% 85% 80% 75% 70% 65% 60% 55%

50% 45% 40% 35% 30% 25% 20% 15% 10% 5% 0% NO ENLISTED SOLDIERS D62

44. How many of the enlisted soldiers(E1-E4)in your company break rules on purpose to try to get out of the Army?

ALL ENLISTED
SOLDIERS 100% 95% 90% 85% 80% 75% 70% 65% 60% 55%

50% 45% 40% 35% 30% 25% 20% 15% 10% 5% 0% NO ENLISTED SOLDIERS D65

45. Have enlisted soldiers(E1-E4)in your company been close to each other during the last eight weeks?

VERY CLOSE 8 7 6 5 4 3 2 1 VERY DISTANT E25

46. Have enlisted soldiers(E1-E4)in your company been distant from each other during the last eight weeks?

VERY DISTANT 1 2 3 4 5 6 7 8 VERY CLOSE E29

47. Do members of your company process paperwork in an efficient manner?

VERY FREQUENTLY 8 7 6 5 4 3 2 1 NEVER E36

47. Do members of your company show up on time?

VERY FREQUENTLY 8 7 6 5 4 3 2 1 NEVER E37

48. Do members of your company fail to work together as a team?

NEVER 1 2 3 4 5 6 7 8 VERY FREQUENTLY E38

49. Do members of your company display orderly conduct off-post?

VERY FREQUENTLY 8 7 6 5 4 3 2 1 NEVER E39

50. Do members of your company cooperate with each other?

VERY FREQUENTLY 8 7 6 5 4 3 2 1 NEVER E40

51. Do members of your company sit around on duty hours doing nothing?

NEVER 1 2 3 4 5 6 7 8 VERY FREQUENTLY E41

52. Do members of your company keep living and working areas in clean and orderly condition?

NEVER 1 2 3 4 5 6 7 8 VERY FREQUENTLY E42

53. Do members of your company get the job done right without needing direct supervision?

VERY FREQUENTLY 8 7 6 5 4 3 2 1 NEVER E43

54. Do members of your company maintain a low level of combat readiness?

VERY FREQUENTLY 8 7 6 5 4 3 2 1 NEVER E44

55. Do members of your company do high quality work?

VERY FREQUENTLY 8 7 6 5 4 3 2 1 NEVER E45

56. Do members of your company fail to maintain and properly wear their uniforms?

NEVER 1 2 3 4 5 6 7 8 VERY FREQUENTLY E46

57. Do members of your company do just enough work to get by?

VERY FREQUENTLY 8 7 6 5 4 3 2 1 NEVER E47

58. What is your evaluation of the overall work effectiveness of your company?

NOT VERY EFFECTIVE 1 2 3 4 5 6 7 8 VERY EFFECTIVE E50

59. How many improvements would it take to make this unit the most effective company that you have ever served in?

VERY MANY 8 7 6 5 4 3 2 1 VERY FEW E52

You are asked below to rate the performance of various leaders during the last eight weeks. If they have not been in the position for eight weeks, rate them for as long as they have had the position.

60. Rate your company commander.

In my judgement, this soldier's performance of duty was...

OUTSTANDING 8 7 6 5 4 3 2 1 INADEQUATE E75

61. Rate your first sergeant.

In my judgement, this soldier's performance of duty was...

OUTSTANDING 8 7 6 5 4 3 2 1 INADEQUATE E76

62. Rate your platoon sergeant/section chief.

In my judgement, this soldier's performance of duty was...

OUTSTANDING 8 7 6 5 4 3 2 1 INADEQUATE E77

63. Rate your squad leader.

In my judgement, this soldier's performance of duty was...

OUTSTANDING 8 7 6 5 4 3 2 1 INADEQUATE E78

64. Rate yourself.

In my judgement, this soldier's performance of duty was...

OUTSTANDING 8 7 6 5 4 3 2 1 INADEQUATE E79

APPENDIX E

LEADERSHIP ITEM POOL

1. My company commander is friendly and easy to approach.

   STRONGLY AGREE 8 7 6 5 4 3 2 1 STRONGLY DISAGREE A14

2. My first sergeant is friendly and easy to approach.

   STRONGLY AGREE 8 7 6 5 4 3 2 1 STRONGLY DISAGREE A16

3. My company leaders(CO,1SG)put suggestions made by the group into operation.

   STRONGLY DISAGREE 1 2 3 4 5 6 7 8 STRONGLY AGREE A18

4. My company leaders(CO,1SG)treat all group members as their equals.

   STRONGLY DISAGREE 1 2 3 4 5 6 7 8 STRONGLY AGREE A20

5. My company leaders(CO,1SG)put pressure on members to work harder.

   STRONGLY AGREE 8 7 6 5 4 3 2 1 STRONGLY DISAGREE A22

6. My company leaders(CO,1SG)put pressure on members to do better work.

   STRONGLY DISAGREE 1 2 3 4 5 6 7 8 STRONGLY AGREE A24

7. My company leaders(CO,1SG)threaten members who are not keeping up with company requirements.

   STRONGLY AGREE 8 7 6 5 4 3 2 1 STRONGLY DISAGREE A26

8. My platoon sergeant/section chief puts pressure on members to work harder.

   STRONGLY AGREE 8 7 6 5 4 3 2 1 STRONGLY DISAGREE A28

9. My company commander decides what shall be done and how it shall be done.

STRONGLY DISAGREE 1 2 3 4 5 6 7 8 STRONGLY AGREE A29

10. My platoon sergeant/section chief threatens members who are not keeping up with company requirements.

STRONGLY AGREE 8 7 6 5 4 3 2 1 STRONGLY DISAGREE A30

11. My company leaders(CO,1SG)make company policies clear to the group.

STRONGLY AGREE 8 7 6 5 4 3 2 1 STRONGLY DISAGREE A31

12. My company leaders(CO,1SG)maintain definite standards of performance.

STRONGLY AGREE 1 2 3 4 5 6 7 8 STRONGLY DISAGREE A33

13. My company leaders(CO,1SG)ask that all group members follow the same rules and regulations.

STRONGLY DISAGREE 1 2 3 4 5 6 7 8 STRONGLY AGREE A37

14. My first sergeant decides what shall be done and how it shall be done.

STRONGLY DISAGREE 1 2 3 4 5 6 7 8 STRONGLY AGREE A39

15. My company leaders(CO,1SG)persuade enlisted soldiers(E1-E4) that their ideas are to the advantage of enlisted soldiers.

STRONGLY AGREE 8 7 6 5 4 3 2 1 STRONGLY DISAGREE A41

16. My platoon sergeant/section chief persuades enlisted soldiers (E1-E4)that his ideas are to the advantage of enlisted soldiers.

STRONGLY AGREE 1 2 3 4 5 6 7 8 STRONGLY DISAGREE A43

17. The arguments used by my company leaders(CO,1SG)are convincing.

STRONGLY DISAGREE 1 2 3 4 5 6 7 8 STRONGLY AGREE A49

18. My company leaders(CO,1SG)persuade others when they talk.

STRONGLY DISAGREE 1 2 3 4 5 6 7 8 STRONGLY AGREE A50

19. Do the company leaders(CO,1SG)treat each individual in your company in a positive way no matter what they may have done wrong?

VERY MUCH 8 7 6 5 4 3 2 1 NOT AT ALL A56

20. Does your company commander emphasize to everyone in your company a policy of treating each individual equally and fairly?

NOT AT ALL 1 2 3 4 5 6 7 8 VERY MUCH A58

21. Does your first sergeant emphasize to everyone in your company a policy of treating each individual equally and fairly?

NOT AT ALL 1 2 3 4 5 6 7 8 VERY MUCH A60

22. Are punishment and discipline handled unfairly in your company by the company commander and first sergeant?

VERY FREQUENTLY 8 7 6 5 4 3 2 1 NEVER A62

23. Do company leaders(CO,1SG)treat all enlisted soldiers(E1-E4) in your company fairly and justly?

VERY FREQUENTLY 8 7 6 5 4 3 2 1 NEVER A64

24. Do company leaders(CO,1SG)discriminate against Black enlisted soldiers?

VERY FREQUENTLY 8 7 6 5 4 3 2 1 NEVER A65

25. Have you been punished by your company leaders(CO,1SG) within the last eight weeks?

(CIRCLE ONE NUMBER) No---------0
Yes---------1 A76

26. Are company leaders(CO,1SG)willing to risk getting a poor Efficiency Report(OER,EER)so that they can protect enlisted soldiers(E1-E4)from unnecessary and unfair demands?

NEVER 1 2 3 4 5 6 7 8 VERY FREQUENTLY B46

27. Are your company leaders(CO,1SG)willing to risk being punished by their superiors to protect and help enlisted soldiers(E1-E4)with problems?

VERY FREQUENTLY 8 7 6 5 4 3 2 1 NEVER B48

28. Are company leaders(CO,1SG)willing to sacrifice their own welfare in order to advance the welfare of the enlisted soldiers(E1-E4)in your company?

NEVER 1 2 3 4 5 6 7 8 VERY FREQUENTLY B52

29. In time of war, would your company leaders(CO,1SG)be willing to sacrifice the lives of enlisted soldiers(E1-E4)in battle order to make the company look good?

NOT AT ALL 1 2 3 4 5 6 7 8 VERY MUCH B54

30. Do company leaders(CO,1SG)push hard for enlisted soldiers (E1-E4)to make everything look good in public so that the leaders will look good to their superiors?

VERY FREQUENTLY 8 7 6 5 4 3 2 1 NEVER B58

31. How often do company leaders(CO,1SG)call the Military Police to watch out for enlisted soldiers(E1-E4)in your company?

VERY FREQUENTLY 8 7 6 5 4 3 2 1 NEVER B58

32. Do company leaders(CO,1SG)talk unfavorably about enlisted soldiers(E1-E4)in front of the whole company?

NEVER 1 2 3 4 5 6 7 8 VERY FREQUENTLY B60

33. Do company leaders(CO,1SG)talk favorably about themselves in front of the whole company?

NEVER 1 2 3 4 5 6 7 8 VERY FREQUENTLY B62

34. Do company leaders(CO,1SG)feel that enlisted soldiers(E1-E4) in the company set a bad example?

VERY FREQUENTLY 8 7 6 5 4 3 2 1 NEVER B64

35. Do company leaders(CO,1SG)consider themselves to be good examples to the company?

VERY FREQUENTLY 8 7 6 5 4 3 2 1 NEVER B66

36. How often do company leaders talk in public about "baby-sitting" enlisted soldiers(E1-E4)?

NEVER 1 2 3 4 5 6 7 8 VERY FREQUENTLY B69

37. Are enlisted soldiers(E1-E4)in your company insulted by the kind of work they are required by their leaders to do?

NEVER 1 2 3 4 5 6 7 8 VERY FREQUENTLY B70

38. Do your company leaders(CO,1SG)consider you to be a bad influence on other enlisted soldiers?

VERY FREQUENTLY 8 7 6 5 4 3 2 1 NEVER B71

39. Within the last eight weeks, how many race relations/equal opportunity seminars have you attended in your company? (CIRCLE ONE NUMBER ONLY)

No race relations seminars-----0
One race relations seminar-----1
Two race relations seminars----2
Three race relations seminars--3
Four or more race relations----4 seminars C68

40. Are company leaders(CO,1SG)out to get enlisted soldiers (E1-E4)who cause problems?

VERY FREQUENTLY 8 7 6 5 4 3 2 1 NEVER D44

41. Do company leaders(CO,1SG)keep score on the number of mistakes some enlisted soldiers(E1-E4)make in order to find a good reason for punishing them?

VERY FREQUENTLY 8 7 6 5 4 3 2 1 NEVER D45

42. In the past eight weeks, has the company commander been close to the enlisted soldiers(E1-E4)in your company?

VERY CLOSE 8 7 6 5 4 3 2 1 VERY DISTANT E17

43. In your company, how many of the enlisted soldiers (E1-E4) agree with the company leaders(CO,1SG)about who deserves to be punished?

ALL ENLISTED
SOLDIERS 100% 95% 90% 85% 80% 75% 70% 65% 60% 55%

50% 45% 40% 35% 30% 25% 20% 15% 10% 5% 0% NO ENLISTED SOLDIERS E14

44. In the past eight weeks, has the first sergeant been close to the enlisted soldiers(E1-E4)in your company?

VERY CLOSE 8 7 6 5 4 3 2 1 VERY DISTANT E17

45. In your company, how many of the enlisted soldiers(E1-E4) agree with company leaders(CO,1SG)about who deserves to be promoted?

ALL ENLISTED
SOLDIERS 100% 95% 90% 85% 80% 75% 70% 65% 60% 55%

50% 45% 40% 35% 30% 25% 20% 15% 10% 5% 0% NO ENLISTED SOLDIERS E18

46. Are the company leaders(CO,1SG)close to the enlisted soldiers(E1-E4)in your company, or are they distant from them ?

VERY CLOSE 8 7 6 5 4 3 2 1 VERY DISTANT E21

47. Do company leaders(CO,1SG)establish strict rules requiring respect for their authority?

NOT AT ALL 1 2 3 4 5 6 7 8 VERY MUCH E61

48. Do company leaders(CO,1SG)promote the most intelligent or least intelligent enlisted soldiers(E1-E4)in your company?

MOST INTELLIGENT 8 7 6 5 4 3 2 1 LEAST INTELLIGENT E62

49. Do company leaders(CO,1SG)establish strict rules against disobedience to their authority?

VERY MUCH 8 7 6 5 4 3 2 1 NOT AT ALL E63

50. Do company leaders(CO,1SG)promote enlisted soldiers(E1-E4) who are "yes men", who do not stand up for their own convictions?

NEVER 1 2 3 4 5 6 7 8 VERY FREQUENTLY E64

51. Do company leaders(CO,1SG)establish strict rules requiring enlisted soldiers(E1-E4)to stay in their place?

VERY MUCH 8 7 6 5 4 3 2 1 NOT AT ALL E65

52. Do company leaders(CO,1SG)promote enlisted soldiers(E1-E4) who play up to("brown nose")their leaders?

VERY FREQUENTLY 8 7 6 5 4 3 2 1 NEVER E66

53. Do company leaders(CO,1SG)establish strict rules requiring NCOs and officers in your company to keep their distance from enlisted soldiers(E1-E4)?

NOT AT ALL 1 2 3 4 5 6 7 8 VERY MUCH E67

54. Does your company commander live up to his own rules?

VERY MUCH 8 7 6 5 4 3 2 1 NOT AT ALL E68

55. Does your first sergeant live up to his own company rules?

VERY MUCH 8 7 6 5 4 3 2 1 NOT AT ALL E69

56. Do your company leaders(CO,1SG)break Army regulations and company rules when they think no one is watching?

NEVER 1 2 3 4 5 6 7 8 VERY FREQUENTLY E70

57. Have your company leaders(CO,1SG)punished innocent enlisted soldiers(E1-E4)?

NEVER 1 2 3 4 5 6 7 8 VERY FREQUENTLY E71

Items which appeared in Leader survey only:

58. During the last eight weeks, how much of your duty time has been spent on individual or group training exercises?

ALL OF MY TIME 100% 95% 90% 85% 80% 75% 70% 65% 60% 55%

50% 45% 40% 35% 30% 25% 20% 15% 10% 5% 0% NONE OF MY TIME F13

59. During the last eight weeks, how much of your duty time has been spent sitting around doing nothing?

ALL OF MY TIME 100% 95% 90% 85% 80% 75% 70% 65% 60% 55%

50% 45% 40% 35% 30% 25% 20% 15% 10% 5% 0% NONE OF MY TIME F16

60. In the last eight weeks, how much of your duty time has been spent on administrative requirements unrelated to training?

ALL OF MY TIME 100% 95% 90% 85% 80% 75% 70% 65% 60% 55%

50% 45% 40% 35% 30% 25% 20% 15% 10% 5% 0% NONE OF MY TIME F19

61. In the last eight weeks, how much of your duty time has been spent on activities related to discipline and punishment?

ALL OF MY TIME 100% 95% 90% 85% 80% 75% 70% 65% 60% 55%

50% 45% 40% 35% 30% 25% 20% 15% 10% 5% 0% NONE OF MY TIME F22

62. In the last eight weeks, how much of your duty time has been spent on race relations?

ALL OF MY TIME 100% 95% 90% 85% 80% 75% 70% 65% 60% 55%

50% 45% 40% 35% 30% 25% 20% 15% 10% 5% 0% NONE OF MY TIME F25

63. In the last eight weeks, how much time have you spent in informal conversations with enlisted soldiers(E1-E4)?

0 1 2 3 4 5 6 7 8 9 OR MORE HOURS F28

64. In the last eight weeks, how much time have you spent counseling individuals?

0 1 2 3 4 5 6 7 8 9

10 11 12 13 14 15 OR MORE HOURS F29

65. In the last eight weeks, how much time have you spent conducting RR/EO seminars?

0 1 2 3 4 5 6 7 8 9 OR MORE HOURS F31

66. In the last eight weeks, how much time have you spent talking to recognized enlisted leaders to find out what could be done about a problem in the company?

0 1 2 3 4 5 6 7 8 9 OR MORE HOURS F32

67. In the last eight weeks, how much time have you spent seeking advice from chain of command personnel about promotions?

0 1 2 3 4 5 6 7 8 9 OR MORE HOURS F33

68. In the last eight weeks, how much time have you spent seeking advice from chain of command personnel(platoon leaders & NCOs)about a discipline problem?

0 1 2 3 4 5 6 7 8 9 OR MORE HOURS F34

69. In the last eight weeks, how many times have you called upon the Equal Opportunity office for assistance?

NEVER 0 1 2 3 4 5 6 7 8 9 OR MORE TIMES F35

70. In the last eight weeks, how many times have you called upon an Organizational Effectiveness office for assistance?

NEVER 0 1 2 3 4 5 6 7 8 9 OR MORE TIMES F36

71. In the last eight weeks, how often have you used on-the-spot correction?

NEVER 0 1 2 3 4 5 6 7 8 9 OR MORE TIMES F37

72. In the last eight weeks, how often have you relieved an individual?

NEVER 0 1 2 3 4 5 6 7 8 9 OR MORE TIMES F38

73. In the last eight weeks, how often have you explained ethnic or racial gestures, customs, and words to soldiers on an individual basis?

NEVER 0 1 2 3 4 5 6 7 8 9 OR MORE TIMES F39

74. In the last eight weeks, how often have you ignored a problem you knew about because you didn't think it was serious enough to require intervention?

NEVER 0 1 2 3 4 5 6 7 8 9 OR MORE TIMES F40

75. In the last eight weeks, how often have you tried to break up groups of soldiers that were sticking together with their own race?

NEVER 0 1 2 3 4 5 6 7 8 9 OR MORE TIMES F41

76. In the last eight weeks, how often have you arranged racially mixed recreational opportunities?

NEVER 0 1 2 3 4 5 6 7 8 9 OR MORE TIMES F42

APPENDIX F

TABLES OF RESULTS OF FACTOR ANALYSES

LIST OF TABLES

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Table F-1

Racial Climate Item Pool

Questionnaire Items Loading ≥ .35 on Rotated Factors

Item Number	Factor Loading	Item Description
	Factor 1	
C13	.48	Racial conflicts interfere with work
C17	.36	Race relations good/bad during last eight weeks
C26	.54	Fights between blacks and whites in company
C28	.50	Blacks make whites unwelcome in areas meant for all
C30	.47	White officers have trouble handling blacks
C31	.61	Whites refer to blacks as "nigger" or "coon"
C32	.55	Whites make blacks unwelcome in areas meant for all
C33	.64	Blacks refer to whites as "honky" or "rabbit"
C34	.54	Blacks and whites fight over female companions
C35	.55	Racial jokes in company
C36	.58	Blacks and whites fight over pot, lending money, or selling drugs
C37	.56	Other racial groups get angry when I do right things
C38	.54	Other racial groups encourage me to do wrong things
C39	.56	Other racial groups inform on me
C40	.48	Other racial groups play up to leaders

Table F-1 (Continued)

Racial Climate Item Pool

Questionnaire Items Loading $\geq$ .35 on Rotated Factors

Item Number	Factor Loading	Item Description
	Factor 1 - Continued	
B37	.46	Number of racial incidents within last eight weeks
	Factor 2	
C19	.40	Race relations getting better/worse during last eight weeks
C23	.56	Blacks in company have black and white buddies
C25	.58	Blacks and whites in company have a lot in common
C27	.66	Blacks and whites in company hang around together after duty hours
C29	.64	Close friendships between blacks and whites occur in company
	Factor 3	
C14	.72	Blacks and whites should work in separate groups
C15	.39	Job performance worse because leader belongs to different racial group
C16	.73	Blacks and whites should live and work with their own race
C18	.64	Total separation of blacks and whites the answer to racial problems

Table F-1 (Continued)

Racial Climate Item Pool

Questionnaire Items Loading $\geq$ .35 on Rotated Factors

Item Number	Factor Loading	Item Description
	Factor 4	
C43	.77	Other racial group's rules are good/bad
C44	.81	Other racial group's rules are Fair/unfair
C45	.47	Respondent's rules are good/bad
	Factor 5	
C13	.38	Racial conflicts interfere with work
C17	.58	Race relations good/bad during last eight weeks
C19	.52	Race relations getting better/worse during last eight weeks
C21	.39	Good solutions for racial problems within the company
	Factor 6	
C41	.64	Respondent informs on other racial groups
C42	.39	Respondent tries to make other racial group respect his authority

Table F-2

Unit Effectiveness Item Pool

Questionnaire Items Loading $\geq$ .35 on Rotated Factors

Item Number	Factor Loading	Item Description
	Factor 1	
A72	.50	Percentage of time enlisted soldiers spend on illegal activities
B15	.71	Percentage of enlisted soldiers who violate rules to make company powerless
B19	.71	Percentage of enlisted soldiers who would like to make company weak
B25	.41	Feel it's right to make company strong
B41	.41	Percentage of enlisted soldiers who have had sex with a prostitute within last eight weeks
B47	.44	Number of fist fights in company within last eight weeks
C46	- .52	Percentage of blacks who talked about dealing with leaders
C49	- .50	Percentage of whites who talked about dealing with leaders
C52	- .67	Percentage of enlisted soldiers who talked about organizing an underground group
C55	- .66	Percentage of white enlisted soldiers who talked about organizing an underground group
C58	- .66	Percentage of black enlisted soldiers who talked about organizing an underground group
D20	- .42	Percentage of enlisted soldiers who act as if they don't want to be promoted

Table F-2 (Continued)

Unit Effectiveness Item Pool

Questionnaire Items Loading $\geq$ .35 on Rotated Factors

Item Number	Factor Loading	Item Description
	Factor 1 - Continued	
D39	- .47	Percentage of enlisted soldiers who rebel against what leaders ask them to do
D65	.58	Percentage of enlisted soldiers who break rules on purpose to try to get out of the Army
	Factor 2	
B13	.35	Respondent follows a policy of making the company strong and combat ready
D13	.38	Respondent would report for duty/ go AWOL if company sent overseas to fight
D36	- .49	Respondent feels like protesting actions of company leaders
D38	- .41	Respondent would like to be free of company leaders' authority
E36	.40	Company members process paperwork efficiently
E50	.42	Effectiveness of company compared to other units
E75	.60	Rating of company commander
E76	.54	Rating of first sergeant
E77	.50	Rating of platoon sergeant

Table F-2 (Continued)

Unit Effectiveness Item Pool

Questionnaire Items Loading $\geq$ .35 on Rotated Factors

Item Number	Factor Loading	Item Description
	Factor 3	
E37	.38	Members of company show up on time
E40	.48	Members of company cooperate with each other
E42	.47	Members of company keep areas clean and orderly
E43	.56	Members of company get jobs done right without direct supervision
E45	.51	Members of company do high quality work
E48	.39	Overall work effectiveness of company
	Factor 4	
B33	.57	Enlisted soldiers in company make money by selling pot
B35	.38	Enlisted soldiers in company insult chain of command
B49	.67	Percentage of enlisted soldiers who smoked pot
B65	- .50	Percentage of enlisted soldiers who broke laws within last eight weeks
	Factor 5	
E38	.35	Members of the company fail to work together as a team
E39	.39	Members of company display orderly conduct off post

Table F-2 (Continued)

Unit Effectiveness Item Pool

Questionnaire Items Loading ≥ .35 on Rotated Factors

Item Number	Factor Loading	Item Description
	Factor 5 - Continued	
E46	.44	Members of company fail to maintain and properly wear uniforms
E47	.50	Members of company do just enough work to get by
	Factor 6	
B39	.56	Number of incidents of property destruction during last eight weeks
B45	.56	Number of thefts in company during last eight weeks
B47	.46	Number of fist fights between company members during last eight weeks
	Factor 7	
D33	.58	Good/bad for enlisted soldiers to rebel against company leaders
D35	.68	Fair/unfair for enlisted soldiers to rebel against company leaders
D37	.56	Better/worse person if you rebel against company leaders
	Factor 8	
D56	.51	Try to break as many rules as possible without getting caught
D57	.61	How often respondent seriously violates law

Table F-2 (Continued)

Unit Effectiveness Item Pool

Questionnaire Items Loading $\geq$ .35 on Rotated Factors

Item Number	Factor Loading	Item Description
	Factor 8 - Continued	
D58	.48	Respondent's overall respect for the law
	Factor 9	
D59	.72	Percentage of enlisted soldiers in company respondent would trust in battle
D62	.71	Percentage of enlisted soldiers in company who would actively fight enemy in battle
	Factor 10	
E25	.67	Enlisted soldiers in company close during last eight weeks
E29	.71	Enlisted soldiers in company distant during last eight weeks
	Factor 11	
C52	.57	Percentage of enlisted soldiers who talked about organizing an underground group
C55	.56	Percentage of white enlisted soldiers who talked about organizing an underground group
C58	.51	Percentage of black enlisted soldiers who talked about organizing an underground group

Table F-2 (Continued)

Unit Effectiveness Item Pool

Questionnaire Items Loading $\geq$ .35 on Rotated Factors

Item Number	Factor Loading	Item Description
	Factor 12	
C46	.60	Percentage of blacks who talked about dealing with leaders
C49	.60	Percentage of whites who talked about dealing with leaders
	Factor 13	
A69	.63	Percentage of time spent sitting around during last eight weeks
	Factor 14	
E48	.36	Overall work effectiveness of company
E50	.42	Effectiveness of company compared to other units
E52	.40	Number of improvements necessary to make this company the best one served in

Table F-3

Leadership Item Pool

Questionnaire Items Loading $\geq$ .35 on Rotated Factors

Item Number	Factor Loading	Item Description
	Factor 1	
A65	.42	Leaders discriminate against black enlisted soldiers
B58	.43	Leaders call MPs to watch out for enlisted soldiers
B60	.59	Leaders talk unfavorably about enlisted soldiers in front of the whole company
B62	.50	Leaders talk favorably about themselves in front of the whole company
B64	.47	Leaders feel enlisted soldiers set a bad example
B69	.49	Leaders talk publically about "baby-sitting" enlisted soldiers
B70	- .40	Enlisted soldiers are insulted by the type of work required by their leaders
B71	.49	Leaders consider respondent a bad influence
D45	.36	Leaders keep score on enlisted soldiers
E70	- .48	Leaders break regulations when they think no one is watching
E71	- .47	Leaders have punished innocent enlisted soldiers
	Factor 2	
A14	.43	Company commander is friendly and easy to approach
A18	.37	Leaders put suggestions made by group into operation

Table F-3 (Continued)

Leadership Item Pool

Questionnaire Items Loading ≥ .35 on Rotated Factors

Item Number	Factor Loading	Item Description
	Factor 2 - Continued	
A31	.46	Leaders make company policy clear to group
A33	.45	Leaders maintain definite performance standards
A41	.53	Leaders persuade enlisted soldiers that their ideas are advantageous
A43	.37	Platoon sergeant persuades enlisted soldiers that his ideas are advantageous
A49	.49	Leaders' arguments are convincing
A50	.43	Leaders persuade others when they talk
A56	.44	Leaders treat all in a positive way
A58	.50	Company commander emphasizes treating all equally and fairly
A60	.45	First sergeant emphasizes treating all equally and fairly
A64	.44	Leaders treat all fairly and justly
E13	.45	Company commander close to enlisted soldiers
E21	.42	Leaders close to enlisted soldiers
	Factor 3	
A18	.40	Leaders put suggestions made by the group into operation
A20	.39	Leaders treat all groups as their equals
B46	.64	Leaders risk poor OER/EER to protect enlisted soldiers

Table F-3 (Continued)

Leadership Item Pool

Questionnaire Items Loading ≥ .35 on Rotated Factors

Item Number	Factor Loading	Item Description
	Factor 3 - Continued	
B48	.63	Leaders risk punishment by superiors to protect enlisted soldiers
B52	.63	Leaders sacrifice their welfare for that of their enlisted soldiers
B56	- .39	Leaders push enlisted soldiers hard to make themselves look good
	Factor 4	
E61	.61	Leaders establish rules requiring respect for authority at all times
E63	.68	Leaders establish rules against disobedience
E65	- .49	Leaders establish rules requiring enlisted soldiers to stay in their place
	Factor 5	
A16	.52	First sergeant is friendly and easy to approach
A60	.36	First sergeant emphasizes treating all equally and fairly
E17	.71	First sergeant is close to enlisted soldiers
E21	.36	Leaders are close to enlisted soldiers
E69	.39	First sergeant lives up to own rules

Table F-3 (Continued)

Leadership Item Pool

Questionnaire Items Loading $\geq$ .35 on Rotated Factors

Item Number	Factor Loading	Item Description
	Factor 6	
E14	.64	Percentage of enlisted soldiers who agree with leaders about who deserves punishment
E18	.61	Percentage of enlisted soldiers who agree with leaders about who deserves promotion
	Factor 7	
A22	.43	Leaders pressure enlisted soldiers to work harder
A26	- .46	Leaders threaten members not keeping up with company requirements
A28	.52	Platoon sergeant pressures enlisted soldiers to work harder
A30	- .49	Platoon sergeant threatens members not keeping up with company requirements
	Factor 8	
E68	.61	Company commander lives up to own rules
E69	.50	First sergeant lives up to own rules
	Factor 9	
A24	.42	Leaders pressure enlisted soldiers to do better work
	Factor 10	
E66	.44	Leaders promote "brown nosers"

Table F-4

Leadership Strategies Item Pool

Questionnaire Items Loading $\geq$ .35 on Rotated Factors

Item Number	Factor Loading	Item Description
		Factor 1
F16	.37	Percentage of duty time spent doing nothing
F31	.60	Number of RR/EO seminars conducted
F35	.75	Number of calls to EO office for assistance
F36	.66	Number of calls to Organizational Effectiveness office for assistance
F38	.57	Number of individuals relieved by respondent
F39	.44	Number of times respondent explained ethnic or racial gestures, customs, or words
F40	.53	Number of times problem was ignored because respondent did not think it was serious
F41	.71	Number of times tried to break up single race groups
		Factor 2
F28	.57	Number of hours spent in informal conversations with enlisted soldiers
F29	.64	Number of hours spent in counseling individuals
F32	.60	Number of hours spent talking to enlisted leaders about company problems
F33	.67	Number of hours spent seeking chain of command advice about promotions

Table F-4 (Continued)

Leadership Strategies Item Pool

Questionnaire Items Loading $\geq$ .35 on Rotated Factors

Item Number	Factor Loading	Item Description
	Factor 2 - Continued	
F34	.72	Number of hours spent seeking advice from enlisted leaders about discipline problems
	Factor 3	
F13	.47	Percentage of time spent on training exercises
F19	.72	Percentage of time spent on administration duties
F22	.41	Percentage of time spent on discipline and punishment
	Factor 4	
F22	.40	Percentage of time spent on discipline and punishment
F25	.54	Percentage of time spent on race relations
	Factor 5	
F37	.47	Number of on the spot corrections administered
F42	.39	Number of racially mixed recreational opportunities arranged