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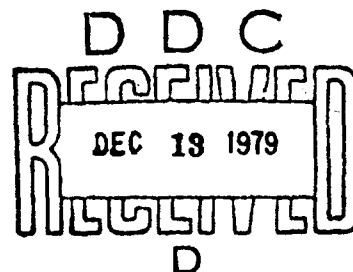
MEASURING MOTIVATION, MORALE, AND JOB SATISFACTION
IN ARMY CAREERS

Walter C. Borman, Paul D. Johnson
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13. ABSTRACT This report describes an extensive investigation of the constructs of motivation, morale, and job satisfaction as they relate to enlisted personnel in the United States Army. A comprehensive literature review helped to delineate definitions of the three constructs and to identify motivation and satisfaction inventories to be tried in the field. In addition to existing inventories, new measures also were developed for field testing. Since the literature review revealed almost no measures explicitly designed to measure morale, another phase of our research was devoted to a series of workshops where Army officers and enlisted personnel recounted actual episodes that they perceived to be indicative of different levels of unit morale. These episodes were used to define eight dimensions of unit morale and to develop scales for rating a unit's morale on those dimensions (Community Relations; Teamwork and Cooperation; Reactions to Adversity; Superior-Subordinate Relations; Performance and Effort; Bearing, Appearance and Military Discipline; Pride in Unit, Army, and Country; and Use of Off-Duty Time). The questionnaires, inventories and rating scales were field tested by administering them to 466 enlisted men (representing 104 platoons and 16 companies) in the Eighth Army (Korea), 614 soldiers (representing 47 platoons and 16 companies) in the Seventh Army (Germany) and 126 men in Minnesota National Guard units. Analysis of results for the questionnaires and inventories showed six distinctly separate motivation and satisfaction constructs with impressively high convergent and discriminant validities. Structures of motivation and satisfaction were found to			

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be identical for men in Korea and in Germany--the structure less clearly defined by responses from National Guardsmen. (U)

Interrater reliabilities of unit morale ratings for both platoons and companies in all test sites were adequate for some scales but disappointingly low for many. Ratings also showed high intercorrelations (halo error) between various of the eight morale dimensions. (U)

Recommendations based on these results include simplifying the format of the unit morale rating scales to assure increased reliability and decreased halo. We also recommend that the content of the morale scales be used to develop self-report morale measures for use by individual soldiers in describing different facets of morale in their units. Most important, we recommend that the standardized instruments identified in this study as most indicative of specific motivation and satisfaction constructs be used in concert with the morale rating scales in a continuing audit of the status of Army units and Army personnel on these important and distinctive aspects of motivation, morale, and job satisfaction. (U)

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T A B L E O F C O N T E N T S

	Page
Chapter I. Synopsis of Literature Review: Theory and Measurement of Motivation, Satisfaction, and Morale	1
Theoretical Issues	1
Motivation	1
Content Theories of Motivation	2
Process Theories of Motivation	2
Satisfaction	4
Determinants of Job Satisfaction	4
Conceptual Models of Job Satisfaction	4
Organizational Consequences of Job Satisfaction	5
Morale	5
Theoretical Integration	6
Instrumentation	8
Motivation Measures	8
Measures of Motivation Content	9
How Important Questionnaire (Carlson, 1970)	11
Job Attitude Scale (Saleh, 1971)	11
Work Components Study (Borgatta, 1967)	11
Minnesota Importance Questionnaire (Weiss et al., 1964)	12
Self-Description Inventory (Ghiselli, 1971)	12
Thematic Apperception Test (Atkinson, 1958)	13
Strong Vocational Interest Blank (Campbell, 1966, 1971)	13

	Page
Expectancy-Valence Measures of Motivation Process	14
Measures of General Work Motivation	14
Job Motivation Indices (Patchen, 1965)	14
Job Involvement (Lodahl & Kejner, 1965)	14
Survey of Work Values (Wollack et al., 1971)	15
Protestant Ethic Scale (Blood, 1967)	15
Alternative Techniques for Measuring Work- Related Motivation	15
Measures of Job-Related Satisfaction and Morale	16
Measures of Overall Satisfaction	16
Hoppock Job Satisfaction Questionnaire (Hoppock, 1935)	17
Job Satisfaction Index (Brayfield and Rothe, 1951)	17
Tear Ballot (Kerr, 1948)	17
Survey of Organizations (Taylor and Bowers, 1972)	18
Measures of Satisfaction with Specific Facets of the Job Situation	18
Job Description Index (Smith et al., 1969)	19
Semantic Differential Scales (Scott, 1967)	19
Minnesota Satisfaction Questionnaire (Weiss et al., 1967)	19
Triple Audit Opinion Survey (Dawis and Weitzel, 1971)	20
SRA Attitude Survey (Science Research Associates, 1970)	20
Cureton's Satisfaction Questionnaire for Airmen (Cureton, 1960)	21

(Table of Contents Cont.)

iii

	Page
Roach's Opinion Survey (Roach, 1958) and Twery's et al. Satisfaction Inventory (Twery et al., 1958) . .	21
Porter Need Satisfaction Questionnaire (Porter, 1961) .	21
Preference Inventory and Job Inventory (Beer, 1966) . .	22
Wanous and Lawler Desire Fulfillment Measure (Wanous and Lawler, 1972)	22
Summary and Conclusions	23
Theoretical Issues	23
Motivation	23
Job Satisfaction	24
Instrumentation	26
Motivation	26
Job Satisfaction	27
Morale	27
References	29
Chapter 2. Construction of Job Satisfaction, Motivation, and Morale Booklet and Behavior Observation Morale Scales	34
Introduction	34
Instrument Construction	35
Participating Military Units	35
Development of Job Satisfaction, Motivation, and Morale Booklet	38
Army Research Institute Background and Opinion Questionnaire (1972)	40
Selected Items from the Racial Questionnaire . . .	40

	Page
Five Most and Least Desirable Outcomes	40
List of Outcomes Expected to be Achieved Prior to Joining the Army and List of Outcomes Currently Available	40
Biographical Items	40
Check Scale	41
Summary	41
Development of Morale Instrument	41
National Guard Incident Writing Workshops	42
Active Army Workshops--Korea	42
Classification of Examples	44
Active Army Rating and Categorizing of Examples	46
Preliminary Morale Scales	46
National Guard Rating and Categorizing of Incidents	48
Comparison of Ratings of National Guard and Active Army	48
Summary	50
Overall Summary	50
References	51
Chapter 3. Pretest of Job Satisfaction, Motivation, and Morale Booklet	52
Introduction	52
Results	53
Intercorrelation Matrix	53
Factor Analysis	53
Summary	72

	Page
Second Draft of Booklet	74
Motivation Section--Blue	74
Satisfaction Section--Yellow	74
General Attitudes and Biographical Section--White	75
Chapter 4. Field Test of Instruments: Eighth Army, Korea	76
Retranslation of Incidents	76
Summary	90
Field Test	90
Sample	90
Morale Ratings	100
Summary	112
Questionnaire Results	113
Identifying Valid Constructs and Selecting Variables to Represent the Constructs	113
Establishing a Framework	113
Selection of Scales and Items to Represent Constructs	118
Conceptual Similarity of Scales or Items	118
Factor Analysis Results	118
Internal Consistency	118
Homogeneity of Scores Within Army Units	121
Convergent and Discriminant Validity	127
Common Method Variance	127

	Page
"Internal" Validity Evidence: The Multiconstruct-Multimethod Analysis	128
Interrelationships Among Satisfaction, Motivation, Morale, and Selected Criteria	130
The Variable Sets	130
Motivation/Satisfaction Constructs	130
Morale Ratings	132
Self-Report Criteria	132
Global Criterion Ratings	132
Platoon Level Analysis	134
Company Level Analysis	143
Trend Analysis	151
Preliminary Conclusions	153
Morale Rating Scales	153
Questionnaire Scale/Item Selection	155
References	156
Chapter 5. Field Test of Instruments: Seventh Army, Germany . .	157
Development of Morale Scales	157
Sample	157
Classification and Rating of Morale Examples	157
Analysis of Categorizations and Ratings	161
Final Retranslation of Effort	164
Scale Construction	165
Summary	173

	Page
Administration of Morale Scales, Job Satisfaction, Motivation, and Morale Booklet, and Development of Criterion Data	173
Sample	173
Morale Ratings	174
Global Criterion Ratings	178
Questionnaire Data Analysis	181
Description of the Data	181
Identifying Valid Motivation/Satisfaction Constructs . . .	181
Cross-Validating Multiconstruct-Multimethod Results Using Seventh Army Data	184
Integrating Seventh and Eighth Army Results: A Final Selection of Variables to Represent the Six Motivation/Satisfaction Constructs	186
Interrelationships Among Satisfaction, Motivation, Morale and Selected Criteria	195
The Variable Sets	195
Motivation/Satisfaction Constructs	195
Morale Ratings	195
Self-Report Criteria	198
Global Criterion Ratings	198
Administrative Criteria	198
Platoon Level Analysis	200
Motivation/Satisfaction Constructs--Self-Report Criteria	200
Motivation/Satisfaction Constructs--Global Criterion Ratings	203
Morale Ratings--Motivation/Satisfaction Constructs .	203

	Page
Morale Ratings--Self-Report Criteria	203
Morale Ratings--Global Criterion Ratings	206
Summary	206
Company Level Analysis	209
Motivation/Satisfaction Constructs--Self-Report Criteria	209
Motivation/Satisfaction Constructs--Global Criterion Ratings	209
Motivation/Satisfaction Constructs--Administrative Criteria	209
Morale Ratings--Motivation/Satisfaction Constructs .	213
Morale Ratings--Self-Report Criteria	213
Morale Ratings--Global Criterion Ratings	213
Morale Ratings--Administrative Criteria	218
Trend Component Analysis Results	218
Chapter 6. National Guard Data Analysis	222
Sample	222
Field Test of Morale Rating Scales	223
Questionnaire Data Analysis	227
Investigating the Relationships Between Unit Morale Ratings and Questionnaire Booklet Variables	230
Chapter 7. Summary of Results and Recommendations to the Army . .	235
The Measurement of Motivation, Satisfaction, and Morale in the United States Army: Construct Validation	235
The Nature of Morale	238

(Table of Contents Cont.)

ix

	Page
Attempts to Measure Motivation, Satisfaction, and Morale in the National Guard	242
Recommendations to the Army	243

x

T A B L E S

Number		Page
2.1	Number of Eighth Army and National Guard Examples Rated Consistently by National Guard and Eighth Army Raters . .	49
2.2	Eighth Army and National Guard Percentage of Examples Rated Consistently by National Guard and Eighth Army Raters	49
3.1	Eighty-three Variables Analyzed from Pretest Job Satisfaction, Motivation, and Morale Booklet	54
3.2	Intercorrelation of Scales Measuring Morale and Discipline	56
3.3	Intercorrelation of Scales Measuring Motivation	57
3.4	Intercorrelation of Scales Measuring General Satisfaction .	58
3.5	Intercorrelation of Scales Measuring Pay Satisfaction . . .	59
3.6	Intercorrelation of Scales Measuring Job Satisfaction . . .	60
3.7	Intercorrelation of Scales Measuring Satisfaction with Superiors	61
3.8	Intercorrelation of Scales Measuring Satisfaction with Co-workers	62
3.9	Intercorrelation of Scales Measuring Satisfaction with Career Progress	63
3.10	Intercorrelation of Scales Measuring Satisfaction with Organization as a Whole	64
3.11	Intercorrelation of Scales Measuring Satisfaction with the General Environment	65
3.12	Intercorrelation of Biographical Items	66
3.13	Factor Analysis	67
3.14	Scales Deleted from Revised Booklet Based Upon Pretest Data Analysis	73

Number		Page
4.1	Percentage of Retranslation Subjects Assigning Incidents to Each Morale Category and the Mean and Standard Deviation of the Morale Rating (N = 27) . . .	78
4.2	Retranslation Data for Morale Scales . . . , ...	82
4.3	Morale Rating Scales (Korea)	91
4.4	The Sample	98
4.5	Means, Standard Deviations, and Intercorrelations of Platoon Morale Ratings (N = 122)	101
4.6	Means, Standard Deviations, and Intercorrelations of Company Morale Ratings (N = 14)	102
4.7	Interrater Reliability of Morale Scales: Platoon Level - All Raters (All Platoons)	105
4.8	Interrater Reliability of Morale Scales: Platoon Level - All Raters (Including Only the 66 Platoons Containing Two or More Persons in the Sample)	106
4.9	Interrater Reliability of Morale Scales: Platoon Level - Officer Raters Only	107
4.10	Interrater Reliability of Morale Scales: Platoon Level - Enlisted Raters Only	108
4.11	Interrater Reliability of Morale Scales: Company Level - All Raters	109
4.12	Interrater Reliability of Morale Scales: Company Level - Officer Raters Only	110
4.13	Interrater Reliability of Morale Scales: Company Level - Enlisted Raters Only	111
4.14	Number of Blank or Unusable Questionnaire Instruments . .	114
4.15	Results of Varimax Rotation Applied to Factor Analysis of Questionnaire Data (65 variables)	115
4.16	Preliminary Assignment of Scales/Items to Constructs . .	119
4.17	Internal Consistencies of Questionnaire Scales	120

Number		Page
4.18	Intraclass Correlation (Unit Homogeneity) Results at Platoon Level	122
4.19	Intraclass Correlation (Unit Homogeneity) Results at Company Level	124
4.20	Data for the Constructs and the Scales/Items Selected to Represent Those Constructs	126
4.21	Multiconstruct-Multimethod Matrix (Korea)	129
4.22	Intraclass Correlation (Unit Homogeneity) Results for Constructs at Platoon and Company Levels (Korea)	133
4.23	Intercorrelations Among Motivation/Satisfaction Constructs, Self-Report Criteria, Morale Ratings, and Global Criterion Ratings (Platoon Level)	135
4.24	Significant Correlations Between Satisfaction/Motivation Constructs and Self-Report Criteria (Platoon Level)	136
4.25	Significant Correlations Between Satisfaction/Motivation Constructs and Global Criterion Ratings (Platoon Level)	139
4.26	Significant Correlations Between Satisfaction/Motivation Constructs and Morale Ratings (Platoon Level)	139
4.27	Significant Correlations Between Global Criterion Ratings and Morale Ratings (Platoon Level)	140
4.28	Significant Correlations Between Morale Ratings and Self- Report Criteria (Platoon Level)	142
4.29	Intercorrelations Among Motivation/Satisfaction Constructs, Self-Report Criteria, and Morale Ratings (Company Level)	145
4.30	Significant Correlations Between Satisfaction/Motivation Constructs and Self-Report Criteria (Company Level)	146
4.31	Significant Correlations Between Satisfaction/Motivation Constructs and Morale Ratings (Company Level)	147
4.32	Significant Correlations Between Morale Ratings and Self- Report Criteria (Company Level)	148
4.33	Trend Component Analysis Results of Relationships Between Company Level Morale Ratings and Selected Variables	152

Number		Page
5.1	Examples Classified Consistently by Seventh Army Officers and Enlisted Men	162
5.2	Percentage of Raters Assigning Each Incident to Each Morale Category (N = 25 Raters)	166
5.3	Categorization and Rating Data of All Incidents Used in Eighth Army Morale Scales	170
5.4	The Sample	175
5.5	Means, Standard Deviations, and Intercorrelations of Platoon Morale Ratings (N = 47)	176
5.6	Means, Standard Deviations, and Intercorrelations of Company Morale Ratings (N = 16)	177
5.7	Interrater Reliability of Morale Scales: Platoon and Company Levels	179
5.8	Means, Standard Deviations, and Interrater Reliability of Global Criterion Ratings	180
5.9	Number of Blank or Unusable Questionnaire Instruments . . .	182
5.10	Results of Varimax Rotation Applied to Factor Analysis of Questionnaire Data (46 Variables)	183
5.11	Multiconstruct-Multimethod Cross-Validity Results (Germany)	185
5.12	Internal Consistency of Questionnaire Scales	187
5.13	Intraclass Correlation (Unit Homogeneity) Results at the Platoon and Company Levels	188
5.14	Data for the Constructs and the Scales/Items Selected to Represent Those Constructs	193
5.15	Multiconstruct-Multimethod Matrix Results (Germany)	194
5.16	Intraclass Correlation (Unit Homogeneity) Results for Constructs at Platoon and Company Levels	197
5.17	Intercorrelations Among Motivation/Satisfaction Constructs, Self-Report Criteria, Morale Ratings, and Global Criterion Ratings (Platoon Level)	201

Number		Page
5.18	Significant Correlations Between Motivation/Satisfaction Constructs and Self-Report Criteria (Platoon Level) . . .	202
5.19	Significant Correlations Between Morale Ratings and Satisfaction/Motivation Criteria (Platoon Level)	204
5.20	Significant Correlations Between Morale Ratings and Self-Report Criteria (Platoon Level)	205
5.21	Significant Correlations Between Morale Ratings and Global Criterion Ratings (Platoon Level)	207
5.22	Intercorrelations Among Motivation/Satisfaction Constructs, Self-Report Criteria, and Morale Ratings (Company Level)	210
5.23	Significant Correlations Between Motivation/Satisfaction Constructs and Self-Report Criteria (Company Level) . . .	211
5.24	Significant Correlations Between Motivation/Satisfaction Constructs and Global Criterion Ratings (Company Level) .	212
5.25	Significant Correlations Between Motivation/Satisfaction Constructs and Administrative Criteria (Company Level) .	214
5.26	Significant Correlations Between Morale Ratings and Motivation/Satisfaction Constructs (Company Level) . . .	215
5.27	Significant Correlations Between Morale Ratings and Self-Report Criteria (Company Level)	216
5.28	Significant Correlations Between Morale Ratings and Global Criterion Ratings (Company Level)	217
5.29	Significant Correlations Between Morale Ratings and Administrative Criteria (Company Level)	219
5.30	Trend Component Analysis Results of Relationships Between Company Level Morale and Selected Variables	220
6.1	Means, Standard Deviations, and Interrater Reliability of Morale Ratings (Company Level Ratings Only)	224
6.2	Means, Standard Deviations, and Interrater Reliability of Morale Ratings (Battalion Level Ratings Only)	225
6.3	Means, Standard Deviations, and Interrater Reliability of Morale Ratings (All Raters)	226

Number		Page
6.4	Intercorrelations Among Morale Scales and the Division Level Morale Rating	228
6.5	Results of Varimax Rotation Applied to Factor Analysis . . of Questionnaire Data for National Guard (46 Variables)..	229
6.6	Mean Morale Ratings for the Three Batteries Whose Soldiers Completed the Questionnaire Booklet (1 = low, 9 = high) .	232
6.7	Trend Component Analysis Results Describing Relationships Between Unit Morale and Selected Variables.	233
7.1	Convergent and Discriminant Validity Evidence For Unit Morale Ratings.	239
7.2	Highest Correlates of Unit Morale Among Motivation/ Satisfaction Variables Used in Platoon and Company Level Analysis	240
7.3	Highest Correlates of Unit Morale Among Criterion Variables	241

F I G U R E S

Number		Page
2.1	Flow Chart of Development of Job Satisfaction, Motivation, and Morale Self-Report Measures	36
2.2	Flow Chart of Morale Instrument Development	37
4.1	Summary Description of the Development of Variable Sets Included in Platoon and Company Level Correlational Analyses (Korea)	131
5.1	Summary Description of the Development of Variable Sets Included in Platoon and Company Level Correlational Analyses	196

A P P E N D I C E S

	Page
A Workshop Booklet for National Guard	248
B Morale Incident Form	249
C Morale Incidents Gathered in National Guard	250
D First Job Satisfaction, Motivation, and Morale Booklet Pretested in Korea	251
E Booklet for Morale Example Writing Workshops Used in Korea .	252
F Morale Incidents Gathered in Active Army (Korea)	253
G Active Army Ratings of Active Army Morale Incidents	254
H Active Army Ratings of National Guard Morale Incidents . . .	255
I First Draft of the Scales for Seven Morale Areas	256
J Second Draft of the Scales for Seven Morale Areas	257
K Morale Rating Scales for Eighth Army Field Test	258
L Morale Rating Scales for Seventh Army Field Test	259
M Global Criterion Rating Form Used in Seventh and Eighth Army Field Tests	260
N Form to Rate the Morale of Individual Soldiers in Seventh Army Field Test	261
O Form Used to Collect Administrative Criterion Data in Seventh Army Field Test	262
P Satisfaction, Motivation, and Morale Booklet for Eighth Army Field Test	263
Q TASCOM and AADCOM Satisfaction, Motivation, and Morale Booklets for Seventh Army Field Test	264
R Integrating Seventh and Eighth Army Questionnaire Results: Selection of Variables for Construct Measurement	265
S Measuring Individual Soldiers' Morale	266

CHAPTER I

SYNOPSIS OF LITERATURE REVIEW: THEORY AND MEASUREMENT OF MOTIVATION, SATISFACTION, AND MORALE

This chapter presents a synopsis of the comprehensive literature review of the theory and measurement of motivation, satisfaction, and morale, completed as part of this research project. First we briefly review the major theories and conceptual issues behind these constructs. Then we summarize results of our efforts to extract from both published and unpublished literature those instruments developed as measures of motivation, satisfaction, and morale at the work place.

Theoretical Issues

Motivation

Motivation is a construct used to explain the direction, vigor, and persistence of behavior, which cannot be accounted for by ability or by overwhelming demands or constraints imposed by the environment. We often refer to some kind of motivational construct when we try to explain why a person performs one particular behavior of a set of possible alternative behaviors, the vigor with which he performs that behavior, and how long he sticks with it (Campbell, Dunnette, Lawler, & Weick, 1970). When we have already observed an individual performing some particular behavior, we infer that he possesses the required ability to perform it and that he would be able to do so again. Therefore, when we see him on subsequent occasions performing the same behavior at different levels of intensity or for varying durations of time or when we see him performing a different behavior entirely, we infer that some motivational determinants are operative to account for these differences. (Of course, we assume that gross environmental conditions inhibiting or facilitating the performance of the behavior are constant. When, for instance, we see a person reading in a quiet library but not while driving his car, we are not likely to explain this behavioral difference solely in terms of his motivation.) Given that a person is able to do something, whether or not he does it and how vigorously and persistently he does it, depend on his motivation.

Many theoretical formulations have been developed to account for the direction, energization, and persistence of work-related behavior. Some focus on the content of motivation and seek to specify factors in the individual, his environment, or his behavior as he interacts with his environment that influence motivational parameters governing his behavior. They attempt to answer the question: What is it that motivates people? Other theories spell out the expectancy and equity processes by which these content factors influence behavior. They try to answer the question: How do environmental factors and individual needs determine behavior?

2.

Content theories of motivation. According to content theories of motivation, there exist classes of environmental stimuli, individual needs, and consummatory behaviors with the capacity of motivating individuals to perform certain behaviors with varying degrees of vigor and persistence. That is, people will behave in certain ways to approach some kinds of environmental stimuli and avoid others, gratify their needs, and have an opportunity to perform certain kinds of consummatory behaviors. These environmental stimuli, states of individual need gratification, and consummatory behaviors--motivation content factors--vary according to how desirable they are for different individuals on different occasions. Three currently prominent theories of motivation content are those put forth by Murray (1938), Maslow (1954), and Herzberg (1966).

Murray's (1938) theory suggests that there are twenty social motives or psychogenic needs, such as "achievement," "dominance," and "nurturance," that people have to varying degrees. People are motivated to perform behaviors leading to the gratification of needs which for them are strongest.

Maslow (1954) proposes five general need categories: physiological, safety, social, ego, and self-actualization needs. His theory stipulates that these needs are hierarchical such that unless the lower-order needs like physiological and safety have been satisfied, the higher-order needs are less likely to motivate behavior.

According to Herzberg and his colleagues (Herzberg, Mausner, & Snyderman, 1959; Herzberg, 1966), there are five major factors related to job satisfaction and motivation and five other factors related to dissatisfaction. The satisfaction factors are achievement, recognition, work itself, responsibility, and advancement; Herzberg terms them "motivators" and interprets them as motivating people to exert greater effort and perform at higher levels. Dissatisfaction factors include company policy and administration, supervision, salary, interpersonal relations, and working conditions; they are called "hygiene" factors and seem related to environmental elements which prevent job dissatisfaction but have little positive effect on job attitudes.

Process theories of motivation. The two major types of process theories of motivation are expectancy theories and equity theories. Expectancy theories maintain that behavior is determined in part by a person's beliefs about the likelihood of behavior leading to various desirable or undesirable consequences. Equity theories differ from expectancy theories in that they emphasize not beliefs about relationships between behavior and desirable or undesirable consequences, but rather feelings of equity or inequity from perceptions that what one puts into his job is relatively greater than, equal to, or less than what he gets out of it.

Expectancy theories set forth by Vroom (1964), Graen (1969), Porter and Lawler (1968), and Campbell, Dunnette, Lawler, and Weick (1970) all make similar predictions about the relationships among expectancy (a person's belief about the likelihood that a certain act will result in a certain outcome), valence (desirability of that outcome), and motivation; namely, that motivation is a multiplicative function of valence times expectancy and that the amount of effort exerted will be maximum when both expectancy and valence are maximum. While these four theories apparently assume that expectancy and valence are independent, Atkinson's (1964) achievement theory, another form of expectancy theory which deals mostly with task achievement and feelings of success, failure, pride, and shame as the salient outcomes, assumes that the valences of these outcomes are inversely related to the expectancies associated with them. Accordingly, when these outcomes are salient (instead of the more external outcomes like pay, promotion, etc.), motivation and effort will be maximum when both valence and expectancy are at intermediate levels. Weiner (1972) amends Atkinson's theory somewhat by proposing that the valences of these outcomes are determined not only by their expectancies but also by whether the person attributes task success to ability and effort or to luck and task difficulty. Also, Weiner argues that the expectancies of these outcomes are influenced by whether the person attributes success to ability and task difficulty or to effort and luck. Locke (1968) adds a new dimension by proposing that if a goal has been accepted--that is, if a person intends to try for the goal--the more difficult the goal, the higher the level of motivation, effort, and, hence, performance. This is not necessarily contradictory with the other expectancy theories if we read "outcome" for "goal" and assume that the probability that a person will accept a goal (i.e., decide to try to reach the outcome), depends on the goal's valence and expectancy for him. The greater the product of goal valence times goal expectancy, the greater the likelihood that he will accept the goal.

As articulated by Adams (1963, 1965), equity theory states that people are motivated to reduce feelings of inequity that result when they perceive their outcome/input ratios are different from the outcome/input ratios of referent others. In formal organizations, this theory has been tested extensively with pay as the major input factor of concern. In conditions of underpayment, these studies provide support for equity theory. There is empirical evidence that when Person feels he is being underpaid compared to Other or Others, he changes his behavior to maximize outcomes, if possible (e.g., increasing productivity in a piece-rate situation). If underpaid Person is working in an hourly pay condition, he will most likely lower his output to reduce his feelings of inequity. How equity theory works in an overpayment situation is less clear. Motivation to lessen inequity seems weak when one perceives that he has been overpaid.

4.

Satisfaction

As used in the context of formal organizations, the term "job satisfaction" generally refers to varying feelings of positive or negative affect that a person has about different aspects of his job. We infer that a person is satisfied if he expresses feelings of happiness or fulfillment when talking about his job; we infer he is dissatisfied if he expresses feelings of unhappiness or frustration.

Determinants of job satisfaction. Researchers who study the causes or determinants of job satisfaction usually emphasize the individual's needs, elements in his job environment, or his interactions with environment. If individual needs are emphasized, sets of needs are identified as fulfilled to varying degrees in different individuals. The environmental approach focuses on factors in the individual's job situation as determinants of his level of satisfaction. Herzberg and his associates (1959; Herzberg, 1966) organized these environmental causes into the Two-Factor Theory. Other researcher (e.g., Smith, Kendall, & Hulin, 1969) studied separate environmental factors like supervision, pay, promotions, co-workers, and work content not integrated into a unified model. Since both individual needs and environmental elements can influence feelings of satisfaction, probably the most useful approach is to focus on them simultaneously and to consider the individual/environment interaction as the individual satisfies his needs with available environmental reinforcers. This approach is central in the Theory of Work Adjustment (Dawis, Lofquist, & Weiss, 1968) which maintains that feelings of satisfaction depend on the degree of correspondence between an individual's needs (what he wants from his environment) and available environmental reinforcers (what he can get from his environment).

Conceptual models of job satisfaction. Much of the empirical and theoretical research in the area of job satisfaction is guided by three distinct, global models of what constitutes satisfaction and what constructs are required to cope conceptually with the major issues surrounding job satisfaction. One of these models, the need fulfillment model (exemplified by the Theory of Work Adjustment), holds that people have positive or negative feelings about their job situation depending on environmental elements available to fill their needs. The equity model is another prevalent conceptual framework, and it maintains that job satisfaction is a function of the degree of match between actual level of a worker's job rewards and perceived equitable level of rewards. A third model, the frame of reference model, departs from the other two models in that it focuses not on the individual's desires and needs, but on the discrepancy between the perceived characteristics of his job and some external standard of comparison. A person is satisfied, according to this model, to the extent that available environmental reinforcers correspond to the reinforcers in his frame of reference.

Each of these three models shows some utility for the study of job satisfaction. None by itself is clearly superior to the others. Feelings of need fulfillment, equity, and the individual's frame of reference all contribute to his level of job satisfaction. Further theoretical research might fruitfully be applied to the integration and synthesis of these three conceptual frameworks.

Organizational consequences of job satisfaction. It is important to ask about consequences as well as causes of job satisfaction. The research addressed to consequences deals mostly with the impact of job satisfaction on five general indices of organizational functioning: accident rates, grievance rates, absenteeism, turnover, and productivity. Of these, turnover (voluntary withdrawal from the organization; termination of employment) is most consistently related to levels of satisfaction and dissatisfaction. Absenteeism and grievances also show some relationship with satisfaction, but not as much or as consistently as turnover. Some researchers now seem to favor considering accidents and productivity as determinants rather than as consequences, the formerly popular view.

Morale

Psychologists have defined "morale" in many different ways (e.g., Guion, 1958), indicating a general lack of consensus about the meaning of this construct. Perhaps a sense of the complexity of the morale construct can be portrayed by describing the characteristics of a group said to have high morale, based on the pooled writings of psychologists and military authors: The high morale group is cohesive with high levels of esprit de corps and unit pride. It has a clearly defined goal to which its members are totally committed. They persist tenaciously, undaunted in the face of even the greatest adversity. They sense that they are advancing toward their goals and are hopeful of reaching them. They cling to ideals like patriotism, honor, and loyalty which are bound up somehow in the group's goal. The group members are cheerful even in the most trying conditions which they shrug off with satiric laughter. They are contented, free from worries or doubts, perform bravely, and are contemptuous of danger. Disciplined and self-confident, they willingly sacrifice themselves for the welfare of the group.

The quality of their morale is determined by factors that impact upon their physical well-being; their pride in the military; cohesiveness of their unit; strength of their ideological convictions; satisfactoriness of their military careers; quality of their leadership; amount and nature of information communicated to them; and some of their feelings such as self-importance, achievement, and competence.

It is possible to ascertain the quality of morale by noting rates of desertions, AWOLs, and requests for transfer; records of disciplinary actions; degree of cheerfulness; hospital reports of illnesses and accidents; general smartness of appearance; performance in jobs, marches, battles, and athletic contests; and esprit de corps.

6.

Morale seems to be so general, pervasive, and complex that apparently any mental state which bears on a soldier's performance reflects his morale, anything at all in his environment can affect his morale, and any aspect of his performance indicates quality of his morale. A construct as general and complex as this is not likely to be readily amenable to rigorous scientific analysis. It probably explains too much to be heuristically useful and might be too internally complex to be empirically workable. It might be easier to conceptualize an explicitly multi-faceted construct--or rather set of constructs--depicting morale. For example, much of morale seems to consist essentially of motivation (goals, determination, persistence, tenacity, progress), satisfaction (cheerfulness, contentment, freedom from worry, satisfaction of physical needs for food, water, rest, etc.), and group cohesiveness (solidarity, cooperation, self-sacrifice for the group, esprit de corps, traditions). A conceptual framework which includes these three distinct constructs and which gives some attention to their interrelationships in the context of the Army probably provides a tighter and more workable model than the loose conglomeration of informal associations suggested by the commonly used definition: "A state of mind with reference to confidence, courage, zeal, and the like, especially of a number of persons associated in some enterprise, as troops (Munson, 1921, p. 3)."

Theoretical Integration

The two constructs, motivation and satisfaction, both rely heavily on the notion of outcome, and they both share concepts drawn from similar theoretical perspectives. To summarize the similarities and differences between satisfaction and motivation, we list some simple parallels drawn between the major theoretical issues previously discussed.

Motivation

1. Outcomes

- a. People are motivated to obtain desired environmental rewards.
- b. People are motivated to gratify their needs.
- c. People are motivated to perform consummatory behaviors

2. Expectancy Theories

People are motivated to perform acts which they expect to result in desired outcomes

Satisfaction

1. Outcomes

- a. People are satisfied when they have obtained desired environmental rewards.
- b. People are satisfied when their needs are gratified.
- c. People are satisfied during and immediately after performing consummatory behavior.

2. Frame of Reference Model

People are relatively more satisfied with a given outcome if it matches or exceeds in desirability what they expected to obtain according to their prior experiences or frame of reference

Motivation3. Equity Theories

People are motivated to reduce feelings of discomfort or inequity which result when they perceive their ratio of inputs/outcomes as different from that of a referent other.

Satisfaction3. Equity Theories

People are dissatisfied when they feel that their ratio of inputs/outcomes is inequitable relative to the ratio of inputs/outcomes of a referent other.

The constructs of motivation and satisfaction are related, but they are not conceptually identical. The primary emphasis of motivational concepts is to explain the direction, vigor, and persistence of behavior--to explain why people perform one behavior rather than another and why they perform a given behavior as vigorously and persistently as they do. On the other hand, the primary emphasis of job satisfaction concepts is to explain feelings of varying positive or negative affect that people have toward aspects of their overall job situation--to explain why people have these feelings and how they are likely to express them in the context of the formal work organization. People are motivated to perform some act with some level of vigor and persistence. People are satisfied with various aspects of their job situation. They experience feelings of varying positive or negative affect when they think about their job situation.

Although motivational concepts focus primarily on behavior while satisfaction concepts focus mostly on feelings, there is also a feeling aspect to motivational terms and a behavioral aspect to job satisfaction. It is the notion of valence in motivation theories that includes this feeling aspect. Outcomes (whether conceptualized as states of need gratification, as rewarding environmental stimuli, or as consummatory behaviors) play a major role in motivational theories precisely because they vary for different individuals according to their valences--according to how desired they are. They are desired according to how much satisfaction a person anticipates he will feel when or if he has those outcomes.

However, a person may not necessarily experience as much satisfaction when he actually has an outcome like promotion to a higher rank as he anticipated. That is, there is not necessarily a one-to-one correspondence between valence and satisfaction. A person might find, for example, that being a sergeant is not as satisfying as he expected or that it is much better than he expected. In either case, the amount of satisfaction he feels on being promoted will likely impact his valence for his next promotion. Porter and Lawler (1968) make this theoretical link when they suggest that a person's valence for a reward (outcome) is partially determined by how much satisfaction he felt when he had that reward before. Thus, although both valence and satisfaction connote feelings of varying positive or negative affect, valence implies the affect (or satisfaction) that is anticipated, while satisfaction implies the affect that is actually experienced.

8.

The behavioral aspects of satisfaction concepts derive from the idea that people who experience dissatisfaction will probably act to reduce these feelings. Thus, if they are generally dissatisfied with their overall job situation, they might submit grievances, avoid their jobs by absenteeism, or terminate employment altogether. In other words, just as people are motivated to seek satisfying experiences (to obtain desired outcomes), they are also motivated to avoid dissatisfying experiences (to avoid undesirable outcomes).

As the term is used in the military, "morale" seems to differ from motivation and satisfaction in that it is a much more encompassing construct that includes components of both motivation and satisfaction, as well as group-related notions like cohesiveness. When a soldier is said to have high morale, this suggests that he is strongly motivated to achieve his goals which are in line with the Army's mission, that he is relatively satisfied with his overall situation, and that he feels a strong sense of togetherness with the other members of his unit. There are, of course, other elements included as well, such as a sense of ideological commitment, a positive and adaptive attitude toward adversity, and so on. Further theoretical research in the area of morale might profitably move toward a conceptual tightening of the many informal and loose concepts that military people have traditionally incorporated into that broad construct.

Instrumentation

Motivation Measures

A wide variety of motivation instruments have been developed for use in formal work organizations, instruments for both motivational content and motivational process.

Content instruments include measures of:

- a. Degree to which things and outcomes in the environment are valued and desired by the individual.
- b. Degree to which individuals have needs or motives to attain some kinds of environmental things and outcomes but not others.
- c. Degree to which individuals have interests in some kinds of activities or preferences for performing some kinds of behaviors over others.

Most process instruments derive from expectancy theory formulations, usually of the type propounded by Vroom (1964) in his valence-instrumentality-expectancy model. Such instruments measure an individual's valence for specified outcomes and his expectancy of attaining them. They generally yield an index which is often computed as the sum over all outcomes of valence times expectancy and which represents the strength of the individual's motivation to perform acts he thinks lead to the desirable outcomes.

Besides these content and process instruments, there are several others that are not products of an explicit content or process theoretical orientation but which have been carefully constructed so that they might be useful measures of job-related motivation. They include measures of motivation broadly conceived as job motivation, job involvement, and orientation toward the Protestant Ethic. Also, there are some interesting physiological and behavioral instruments that may have some utility in measuring motivation in formal organizations.

Measures of motivation content. These are measures of how valent, valued, desirable, or important are events, job characteristics, and job outcomes for people in general. They vary primarily in terms of how specific the outcomes or events are; whether they are rated, ranked, or pair-compared; and whether the ratings, rankings, or pair-comparisons are made according to attractiveness, preference, desirability, or importance. Some of these are measures of perceived importance of outcomes for something, whether that "something" is enlistment, reenlistment, effort, performance, satisfaction, or dissatisfaction.

These instruments vary not only according to their internal characteristics, but also in terms of their intended use. Among the many possible uses are:

- a. To assess valence of outcomes for people in general to estimate their relative effectiveness as reinforcers or incentives. Dattel & Legters (1971) and Bialek & McNeil (1968) appeared to have such a purpose when they measured attractiveness of Army training outcomes for eventual use in a behavior modification program.
- b. To test a theory like Herzberg's dual-factor theory which stipulates that some kinds of outcomes (intrinsic) determine (are important for) satisfaction while other kinds of outcomes (extrinsic) determine dissatisfaction.
- c. To compare defined groups of people on how they differentially value certain kinds of outcomes. It may be important to know, for instance, that men place more importance than women on security, advancement, and benefits, whereas women place more importance on type of work, co-workers, supervisors, hours, and working conditions.
- d. To determine what kinds of outcomes an organization should manipulate to maximize criteria such as satisfaction, performance, or reenlistment. Perhaps, as Nealey (1972) suggests, some outcomes are related to satisfaction but not to productivity or turnover.

There are probably other uses as well. The point is that evaluations of specific instruments such as these should be made in the context of their intended use. A valence instrument evaluated high, for estimating the incentive value of outcomes as possible reinforcers may be useless for testing propositions of dual-factor theory or for determining what specific outcomes to vary to differentially impact job satisfaction, productivity, and turnover.

How should the Army be measuring valence of outcomes? Although the kinds of considerations mentioned earlier imply that there really is no one best way for all purposes, perhaps it would be helpful to list some general guidelines we feel should be followed in developing valence instruments of practical utility in the Army.

. To ensure that outcomes are maximally relevant and meaningful to those judging them, they should be generated by or elicited from the judges. Thus, instead of speculating about what outcomes to list, the investigator should somehow get the judges themselves to tell him. Although conducting interviews or "seminar workshops" is often a useful way to obtain the relevant outcomes, larger samples can be reached by a questionnaire method, perhaps of the type that Olson & Rae (1971) used. They administered an open-ended questionnaire asking respondents to list five things they liked about the Army and five things disliked.

. Once a tentative pool of outcomes has been generated, the investigator may wish to edit them before including them in a final list of outcomes to be judged for valence. This editing should be done so the outcomes are made fairly specific, perhaps not as specific as the outcomes used by Dattel & Legters (1971) (e.g., "one month's supply of Brasso") but certainly more specific than things like "security" or "advancement." Information about valences of relatively specific outcomes is likely to be more useful for suggesting organizational actions or policy changes intended to motivate personnel. Thomas (1970), for instance, found that valences of specific outcomes were more highly correlated with rated intentions of scientists and engineers in the Air Force to reenlist than valences of more general outcomes.

. Although direct self-report methods have some potential flaws such as social desirability bias, they are likely more practical and workable when there are large numbers of respondent judges and many outcomes to be judged. Nealey's (1970, 1972) two-phase method, while an interesting and potentially useful technique, would likely be difficult to use for long lists of outcomes. Other indirect methods which rely on content analysis of free responses [such as the procedure used by Evans & Laseau (1950) in which they analyzed the contents of letters written by General Motors employees during a contest called "My job and why I like it"] may be prone to subjective error on the part of content analyzers.

. Evaluating or judging outcomes according to how liked, attractive, desired, valued, or preferred they are is probably better than evaluating them according to how important they are. Evaluations of importance may be subject to ambiguity, and there may be confusion, if not downright disagreement, among respondents about the meaning of "importance." Of course, if the referent of importance--importance for what--is clearly specified and if the investigator is more concerned about ultimately relating responses to criteria like satisfaction, productivity, or turnover, or about comparing the various relationships an outcome has with each criterion, importance evaluations do appear more useful.

Other motivation content instruments measure individual needs, desires, or interests. They are measures of individual differences and infer need or desire from preferred outcomes, self-descriptions on either objective or projective personality tests, or self-descriptions of interests. Measures of interests tap mainly an individual's preferences for certain kinds of activities over others. Measures of differences among individuals in their needs, desires, and interests that were uncovered in the literature review (Volume 1 of this report) are summarized below:

How Important Questionnaire (Carlson, 1970)

Description: 196 job characteristics and circumstances to be rated on degree of importance. Its three major factors or scales are "Support: Dependence on physical and social environment," "Advantage in environmental returns," and "Competence: Mastery of job and environment."

Samples and Settings: 213 assembly men in the manufacturing department of a moderately large electronics firm.

Reliability: Internal-consistency estimates for the three factors or scales were in the 90s.

Validity: Low to moderate relationships with standardized tests of abilities and personality (not mentioned in main body of text here) suggest some evidence for construct validity.

Job Attitude Scale (Saleh, 1971)

Description: 120 pair-comparison items which reflect intrinsic and extrinsic job outcomes. Yields primarily a "general intrinsic score" as well as scores for each type of intrinsic and extrinsic outcome.

Samples and Settings: Hourly, clerical, and supervisory employees, elderly male managers, male public school teachers; college undergraduates.

Reliability:

- 1) Split-half estimate is .94.
- 2) Test-retest estimate (two-week interval) is .88.

Validity: Correlations with CPI scores and comparisons between college and high school students and between managers and supervisors provide moderately strong evidence for construct validity of the general intrinsic scale.

Work Components Study (Borgatta, 1967)

Description: 64 items reflecting job situations to be rated for desirability. There are seven scales of needs or types of desires.

Samples and Settings: Male and female college-level new hires in lower level management positions.

12.

Reliability: Internal consistency estimates for the seven scales range from .66 to .83.

Validity:

- 1) No differences were found between WCS scores of those who left at the company's initiative and those who left at their own initiative.
- 2) Some evidence for validity in predicting performance for the "competitive desirability" scale.

Minnesota Importance Questionnaire (Weiss et al., 1964)

Description: 380 pair-comparison items measuring perceived importance of job outcomes. Yields scores on 20 job-related needs like "achievement," "activity," and "authority."

Samples and Settings: Janitors, maintenance men, assemblers, machinists, office clerks, salesmen, engineers, and representatives of miscellaneous other occupations.

Reliability: Internal consistency estimates for the 20 scales range from .73 to .94 with a median of .82.

Validity: Findings that extrinsic outcomes seem more important for blue-collar occupations, whereas intrinsic outcomes are more important for engineers, provide some evidence for construct validity.

Self-Description Inventory (Ghiselli, 1971)

Description: 64 pairs of adjectives, one from each pair to be chosen as most or least self-descriptive. Yields scores on following needs: occupational status, self-actualization, power, high financial reward, and job security.

Samples and Settings: Diverse occupational groups including managers; clerks; foremen; skilled, semiskilled, and unskilled workers; students.

Reliability: Little evidence for reliability available.

Validity:

- 1) Moderately strong evidence for construct validity:
 - a) "Need for occupational status" distinguishes among occupational groups presumed to differ on this need.
 - b) "Need for actualization" correlates .41 with interviewer's ratings.
 - c) "Need for high financial reward" correlates .42 with interviewer's ratings.
- 2) Moderately strong evidence of empirical validity for managers, (correlations with rated performance) but no evidence of empirical validity for line supervisors or line workers.

Thematic Apperception Test (Atkinson, 1958)

Description: Respondent tells stories about 20 ambiguous pictures. The instrument yields scores on a number of variables including needs for achievement, power, and affiliation.

Settings and Samples: A wide diversity of samples and settings over the many years of its use.

Reliability:

- 1) Test-retest estimates for need achievement range from .26 to .78.
- 2) Internal consistency estimates for need achievement rarely exceed .30 to .40 (Entwistle, 1972).

Validity: The voluminous literature on the TAT provides moderately strong construct validity. Very little evidence is available to indicate that it is significantly related to job behaviors in formal work organizations.

Strong Vocational Interest Blank (Campbell, 1966, 1971)

Description: The respondent judges 399 items of varying formats according to whether he like, dislikes, or is indifferent to them. Yields scores indicating how similar a person's interests are to those of people working in various occupations.

Samples and Settings: Used with a wide diversity of samples but predominantly with people considering the type of occupations usually entered by college graduates. Scales have been developed for Army officers, Air Force officers, Navy officers, and Navy midshipmen.

Reliability:

- 1) SVIB scales are very stable: median test-retest reliability even with a 22-year interval has been estimated at .76.
- 2) Navy Officer Retention Scale has test-retest reliability estimated at .57 (ten-year interval) and .65 (eight-year interval).

Validity:

- 1) Extensive research provides strong evidence that SVIB scales predict persistence in an occupation.
- 2) Navy Officer Retention Scale has moderately strong evidence of validity--cross-validated correlations of .24 ($N=599$, $p<.01$) and .30 ($N=412$, $p<.01$) with reenlistment.
- 3) A scale developed to predict voluntary disenrollment from the Naval Academy's "plebe summer" has moderately strong evidence of validity--a cross-validated correlation of .36 ($N=1163$, $p<.01$) with disenrollment.

Expectancy-valence measures of motivation process. These instruments require respondents to indicate how valent, desirable, or important is each outcome in a list, and the perceived expectancy of attaining it. A person's motivation score is generally computed as the sum, across outcomes, of valence times expectancy.

Studies conducted by Hackman & Porter (1968) and Mitchell & Albright (1972) illustrate the kinds of results obtained with process expectancy motivation instruments. Although the magnitude of correlations from such studies is not earthshattering, the consistency with which they occur strongly suggests that an instrument constructed such that it yields a score representing the sum of the products of valence times expectancy for a number of outcomes meaningful and relevant to the questionnaire respondents, is likely to be a valid measure of expectancy process motivation.

Measures of general work motivation. Instruments in this category measure general work motivation by assessing motivational attitudes toward one's job or toward work in general. They usually purport to measure a more global conception of work motivation than motivational content or motivational process instruments discussed previously.

Job Motivation Indices (Patchen, 1965)

Description: Four items intended to reflect "general devotion of energy to job tasks."

Samples and Settings: Employees of an electronics company; employees of the Tennessee Valley Authority.

Reliability:

- 1) Test-retest estimate (one-month interval) for two of the items is .80.
- 2) Internal-consistency estimate for the four items is .54.

Validity: Scores on the indices are weakly related, in the expected direction, to criteria of supervisory rankings on "concern for doing a good job," absenteeism, and productive efficiency.

Job Involvement (Lodahl & Kejner, 1965)

Description: 20 items describing degrees of job involvement. A short-form, six-item scale which correlates .87 with the long form, is also available.

Samples and Settings: Nursing personnel, engineers, graduate students in business administration, and middle managers.

Reliability:

- 1) Internal consistency estimates of the long form range from .72 to .89, with a median of .80.
- 2) Internal consistency of the short form is estimated at .73.

Validity: Correlations in the 20's and 30's with variables like age, supervisory ability, and satisfaction provide some evidence for construct validity.

Survey of Work Values (Wollack et al., 1971)

Description: 67 items representing attitudes, along six dimensions, toward a secularized interpretation of the Protestant Ethic.

Samples and Settings: A wide variety of occupational groups including government employees and employees of a glass manufacturing company; unskilled, semiskilled, clerical, supervisory, professional, and management employees.

Reliability:

- 1) Internal consistency estimates for the six scales range from .53 to .66 with a median of .62.
- 2) Test-retest estimates (one-month interval) range from .65 to .76 with a median of .70.

Validity: Discriminant function analyses showing that the six scales can differentiate among occupational groups and canonical regression analyses showing relationships with variables like sex, race, and education provide some evidence of construct validity.

Protestant Ethic Scale (Blood, 1967)

Description: Eight items representing attitudinal orientations toward or away from the Protestant Ethic.

Samples and Settings: Airmen and noncommissioned officers in the Air Force.

Validity: Positive correlations in the 20's with satisfaction measures provide evidence of validity.

Alternative techniques for measuring work-related motivation. By far the most common technique of measuring motivation or some component of motivation is a self-report questionnaire. People fill out these questionnaires and indicate how desirable certain classes of events or job outcomes are for them. Or they may be describing their personological characteristics, interests, or desires in self-report questionnaires designed as measures of individual needs. Some questionnaires require indications of both relative

desire for a set of job outcomes and beliefs about the probability that the outcomes will occur following high levels of effort or performance. Other self-report questionnaires have respondents indicate relative agreement or disagreement with statements reflecting self-descriptive tendencies to expend energy on one's job, attitudes toward involvement with one's job, or attitudes toward work in general.

Other techniques are also possible, but rarely used. Landy and Guion (1970) developed an instrument in which a person's motivation is measured by peer ratings of his behaviors that reflect varying levels of motivation. Another possible technique is the physiological measure of concentration of serum uric acid in one's bloodstream, with the assumption that its concentration is related to the level of a person's general motivation level (Rahe, Rubin, Arthur, & Clark, 1968). A third technique involves observing how long an individual will perform a specified physical exercise behavior (step test) when told to do so until he feels like stopping (Johnson, 1969). Although these are intriguing techniques which may eventually prove useful, only the peer-behavioral-rating method (Landy & Guion, 1970) is not limited in its present usefulness to the Army by the practical problem of face validity to the would-be user in the Army.

Measures of Job-Related Satisfaction and Morale

A great many instruments have been developed as measures of job-related satisfaction. Some of these instruments have, on occasion, been called morale measures. For example, the SRA Attitude Survey has been described as a measure of morale (Science Research Associates, 1970), as has Scott's Semantic Differential instrument (Scott & Rowland, 1970). Since the content of these instruments seems to reflect mostly feelings of positive or negative affect toward aspects of the job situation, we discuss them as measures of satisfaction. There are practically no measures which reflect the complexity and richness of morale as the term seems to be used in the military. That is, we found no self-report measures in which respondents could indicate both their satisfaction and their motivations as well as their feelings of group cohesiveness, pride, attitudes toward adversity, and the other components of morale as discussed earlier.

We classified satisfaction instruments into two categories: (a) measures of overall satisfaction, and (b) measures of satisfaction with specific facets of the job situation.

Measures of overall satisfaction. These are instruments yielding one index of something globally conceptualized as "overall satisfaction." Both single-item measures and multi-item scales have been developed to tap this construct.

Hoppock Job Satisfaction Questionnaire (Hoppock, 1935)

Description: 4 items rated on seven-point scales. The sum of these four ratings constitutes the satisfaction score.

Samples and Settings: A wide variety of occupational levels have completed the questionnaire, including unskilled, semiskilled, skilled, white collar, lower management, middle management, professional, and upper management.

Reliability: Internal consistency reliability is estimated at .93.

Validity: Moderately strong evidence for construct validity:

- 1) Orders occupational groups according to occupational status.
- 2) Correlates in the 70's and 80's with other measures of overall satisfaction.

Job Satisfaction Index (Brayfield & Rothe, 1951)

Description: 18 items rated on a five-point scale ("strongly agree" to "strongly disagree") yield one overall summed satisfaction score.

Samples and Settings: Clerical and secretarial workers, graduates of professional schools, male and female civil service employees, factory workers.

Reliability: Internal consistency estimates range from .78 to .90 with a median of approximately .87.

Validity: Evidence for construct validity:

- 1) High correlations with other satisfaction instruments, notably Hoppock's questionnaire.
- 2) Factory workers with the most functionally specialized (narrowest; least "enriched") jobs get lowest scores.

Tear Ballot (Kerr, 1948)

Description: 10 items rated on five-point scales.

Samples and Settings: A wide variety of occupational groups including clerks, office employees, supervisors, carpenters, and factory workers.

Reliability:

- 1) Internal consistency estimates range from .65 to .82 with a median of .76.
- 2) Test-retest estimate (one-week duration) is .81.

Validity: Evidence for construct validity:

- 1) Range of correlations between the ten individual items and rate of past turnover is from .14 to .63 with a median of .27.
- 2) Total score correlation with an individual's past job turnover is .25.
- 3) Significant correlations with a number of other criteria, but not always consistent or readily interpretable.

Survey of Organizations (Taylor & Bowers, 1972)

Description: 7 items rated on a seven-point scale from "very dissatisfied" to "very satisfied" yield one overall group satisfaction score.

Samples and Settings: A variety of industrial and business employees, both salaried and nonsalaried.

Reliability: Internal consistency estimate of .87.

Validity:

- 1) Construct validity. The satisfaction scale correlates with a measure of organization climate in a way that suggests organization climate causes satisfaction more than satisfaction causes climate.
- 2) Concurrent and predictive validities. Satisfaction correlates significantly with organizational criteria of efficiency, absenteeism, and turnover.

Measures of satisfaction with specific facets of the job situation. Among the many job facets typically included in such instruments are pay, promotional opportunities, supervision, co-workers, job itself, and company policies. This type of instrument yields a satisfaction index for each job aspect it addresses and may provide scores for anywhere from one to twenty scales. In some instruments, there are multi-item scales; in others, each scale contains only one item.

Difference score measures are discussed as a particular type of multi-item, facet measures. A relatively new development in satisfaction measurement, such instruments have respondents make at least two sets of ratings, one describing the actual job situation surrounding the respondent and another indicating his preferred or ideal job situation. The difference between these two sets of ratings is then assumed to reflect his satisfaction. The less the difference between his preferred and actual job situation, the greater his presumed level of satisfaction.

A commonly used type of single-item, facet instrument is what we term "survey questionnaires." We single these instruments out for special attention because they raise different issues of reliability and validity. These instruments are most typically analyzed item by item. They are commonly constructed and administered in-house by industrial and military organiza-

tions when trying to measure attitudes of employees toward the organization, their jobs, supervision, etc. They are used as diagnostic instruments--to provide management with information bearing on administrative action they should take to maximize organizational goals--more often than as measures of satisfaction in a strictly conceptual sense.

Job Description Index (Smith et al., 1969)

Description: 72 descriptive items distributed among five scales measuring satisfaction with pay, promotions, work itself, co-workers, and supervision.

Samples and Settings: The JDI has been used with people in a wide range of job categories. It is probably less appropriate for very high level occupations such as top-level management or professional jobs.

Reliability:

- 1) Internal consistency estimates for the five scales range from .80 to .88 with a median of .86.
- 2) Test-retest estimates (three-year interval) range from .45 to .75.

Validity: Some scales have correlated with termination and absenteeism indices measured after JDI administration.

Semantic Differential Scales (Scott, 1967)

Description: From 25 to 75 semantic differential, polar-opposite adjectives for each of nine concepts or job facets. Only those polar-opposites that load on an "affective" factor are used to derive satisfaction scores.

Samples and Settings: Engineers; male civil service employees of a naval ammunition depot.

Reliability and Validity: No information available.

Minnesota Satisfaction Questionnaire (Weiss et al., 1967)

Description:

- 1) Long form: 100 items, 4 items for each of 20 facet scales. Yields 20 facet scores plus an overall satisfaction score.
- 2) Short form: 20 items yielding scores for intrinsic satisfaction, extrinsic satisfaction, and overall satisfaction.

Samples and Settings: The MSQ has been used with a very wide range of occupational categories and settings.

Reliability:

1) Long form:

- a) Median internal consistency estimates range from .78 to .93 with a median of approximately .86.
- b) Test-retest estimates (one-week interval) range from .66 to .91 with a median of approximately .84.
- c) Test-retest estimates (one-year interval) range from .35 to .71 with a median of .61.

2) Short form: Internal consistency estimates for the three scales are generally in the 80's.

Validity:

1) Long form: Construct validity:

- a) Seven of the 16 scales studied support hypotheses derived from Work Adjustment Theory about the relationship between (1) the fit between and (2) satisfaction.
- b) The scales generally order occupations on satisfaction levels similarly to the way occupations have been ordered according to satisfaction in previous research.

2) Short form: Some evidence for construct validity in the ordering of occupations on the satisfaction scales.

Triple Audit Opinion Survey (Davis & Weitzel, 1971)

Description: An extension of the MSQ and MIQ. After interviewing a sample of those to be surveyed, the researchers decide on a subset of approximately 25 scales, four items per scale (from a total set of 58 scales) to be included in their "tailor-fitted" survey.

Samples and Settings: The TAOS has been used with a number of occupational categories.

Reliability and Validity: The scales in common with the MIQ and MSQ have adequate reliability and validity, but too little is known about the other 38 scales to evaluate them.

SRA Attitude Survey (Science Research Associates, 1970)

Description: 78 items distributed among 14 job-related dimensions and a fifteenth dimension regarding reactions to the inventory itself.

Samples and Settings: Extensive normative data is available for many occupational categories.

Reliability:

- 1) Test-retest (one-week interval) estimates for the 14 job-related scales are largely in the 70's. For group scores, estimates are in the high 90's for groups of 20 individuals.
- 2) Internal consistency estimates for the 14 job-related scales range from .60 to .84 with a median of .68.

Validity: Some evidence for construct validity comes from studies showing that the 14 job-related scales correlate with such alternative measures as:

- 1) Interview ratings of satisfaction--in the 50's.
- 2) Brayfield-Rothe scale--in the 30's.

Cureton's Satisfaction Questionnaire for Airmen (Cureton, 1960)

Description: Factor analytically derived instrument with 72 items distributed among eight dimensions.

Samples and Settings: Airmen below the rank of master sergeant.

Reliability: Internal consistency estimates for the eight scales range from .65 to .92 with a median of approximately .85.

Validity: Construct validity derives from correlations between some of the scales and such variables as citations received, job performance ratings, morale ratings, performance rankings, military rank, and race.

Roach's Opinion Survey (Roach, 1958) and Twery's et al. Satisfaction Inventory (Twery et al., 1958)

Description: Both have factor analytically derived dimensions, but as far as we know have not been much used as scaled instruments.

Porter Need Satisfaction Questionnaire (Porter, 1961)

Description: 15 items rated twice on seven-point scales. A difference score is obtained on each item by subtracting the rating of "how much is there now?" from the rating of "how much should there be?" Need satisfaction scores are obtained for five need areas: security, social, esteem, autonomy, and self-actualization, by averaging the difference scores for the items in each category.

Samples and Settings: All levels of managerial personnel, commissioned Air Force Officers, and a wide variety of hospital staff personnel.

Reliability: No estimates of reliability available.

Validity: Evidence for construct validity:

- 1) Expected differences in satisfaction for different levels of managers and Air Force Officers.
- 2) Greater satisfaction of security needs in tall organizations than flat organizations, greater satisfaction of self-actualization needs in flat organizations than tall organizations.
- 3) Multiple correlation between overall satisfaction on the Porter questionnaire and the five scales of the JDi of .69.

22.

Preference Inventory and Job Inventory (Beer, 1966)

Description: 30 items representing five need categories: security, social, esteem, autonomy, and self-actualization. Items are arranged in six sets of five, each set containing one item from each of the categories. The six sets of items are ranked twice, first on the basis of "the order of importance to you" (the Preference Inventory), and, second, on the basis of "the opportunity to satisfy them at work" (the Job Inventory). Category scores on each inventory are obtained by summing the ranks assigned each item in a category. Category need satisfaction is obtained by subtracting the total rankings of items in a category on the Preference Inventory from the total rankings of the same items on the Job Inventory.

Samples and Settings: Clerical workers in an insurance company.

Reliability: Median internal consistency reliabilities of:

- 1) Preference Inventory: .74.
- 2) Job Inventory: .68.

Validity:

- 1) Content validity: items selected on the basis of Maslow's definitions of need categories.
- 2) Construct validity: scales emerge as independent factors in a factor analysis of a large number of variables.

Wanous and Lawler Desire Fulfillment Measure (Wanous & Lawler, 1972)

Description: 23 items representing different facets of the work situation, each rated twice on seven-point scales, first on "how much is present?" and, second, on "how much would you like?" The difference score on each facet is obtained by subtracting the "is present" rating from the "would like" rating. An overall satisfaction score may be obtained by summing the difference scores for the 23 facets.

Samples and Settings: Nonmanagerial personnel of a telephone company working on 13 different jobs.

Reliability: Internal consistency reliability of the overall instrument of .28.

Validity: Evidence for construct validity:

- 1) Correlation of the overall score on the instrument with a single item measuring general satisfaction of .54.
- 2) Average correlation of the difference score on each facet with a direct measure of satisfaction on each facet (how satisfied are you with this aspect) of .44.

In addition to these multi-item instruments, many investigators have used single-item measures of both overall and facet satisfaction. Such single-item measures, particularly of facet satisfaction, can be very useful in providing specific, diagnostic information. However, they are not often studied according to their reliabilities and validities.

Summary and Conclusions

Theoretical Issues

Motivation is a construct used to explain the direction, vigor, and persistence of behavior, which cannot be accounted for by ability or by overwhelming demands and constraints imposed by the environment.

The prevailing motivation content theories--those of Murray (1938), Maslow (1954), and Herzberg (1966)--are not specific and comprehensive enough to indicate precisely what are the important outcomes in the Army environment. We need to know which outcomes are most salient for motivating which particular behaviors under what kinds of circumstances and for what types of soldiers. Obviously, this is a highly complex issue. One way to attack it would be through the blatantly empirical route of "trying out" different kinds of outcomes for a carefully specified behavior like "reenlisting." For example, the researcher could test empirically each of a number of possible outcomes (like reenlistment bonus, increased educational opportunities, etc.) to see which work best in explaining and predicting the motivation to reenlist of specified groups of enlisted men (e.g., different job, ability, socio-economic status, and age classifications) under specified conditions (e.g., stationed abroad versus stationed in the continental United States). A number of investigators have studied the relative desirability of outcomes for behaviors like performing well and reenlisting, but the research emphasis should turn now to a closer look at how the importance of such outcomes is moderated by situational variables and individual differences.

Expectancy theories are one major body of motivation theories which seek to explain the process by which motivation content factors impact behavior. Expectancy theories maintain that people have expectancies about the likelihood of obtaining desired or undesired outcomes as consequences of their actions. The probability of a given action depends on the sum of the products of desirability times expectancy for all outcomes salient in that situation.

Expectancy theories of motivation have recently come under close scrutiny by a number of authors (e.g., Campbell & Pritchard, in press; Miner & Dachler, 1973; Heneman & Schwab, 1972; Mobley, 1971; Mitchell & Biglan, 1971; House & Wahba, 1972; and Wahba & House, undated). Besides the logical, methodological, and empirical problems that these authors discuss, one which we feel is particularly pertinent, especially for commanders who

hope to improve motivation with the help of concepts drawn from expectancy theories, is this: What are the most powerful determinants of expectancies and valences? In particular, we need to know to what extent valences and expectancies are determined by factors representing relatively stable, individual differences--which suggest strategies of recruiting, selection, classification, and placement as ways to improve expectancy motivation--and to what extent they are determined by immediate situational factors--which suggest various strategies of altering the organizational environment.

A second theoretical process by outcomes said to influence behavior is the equity process. According to equity theories, a person will perform certain acts to reduce feelings of inequity which arise from his perception that his ratio of outcomes (what he gets out of his job) to inputs (what he puts into it) is different from the ratio of someone else. The stronger the feeling of inequity, the greater the motivation to reduce it.

Equity theories are vague about several issues which demand resolution before they can be more fully and readily applied to problems of measurement and improvement of motivation and satisfaction in the Army. Some central issues previously discussed are:

- . What particular behavior is motivated by feelings of inequity under what circumstances and for what types of individuals?

- . How do individuals differ in their perceptions of inputs and outcomes?

- . How should we define "inputs" and "outcomes" to reduce the confusing conceptual overlap among these terms?

- . What determines who a given individual's "referent other" will be?

Investigators have already begun to address themselves to some of these issues. Further research along these lines should pay additional dividends.

Job satisfaction is a set of feelings of varying positive or negative affect that a person has with respect to different aspects of his overall job situation. These feelings are determined both by factors in the individual (his needs) and by factors in his job environment (rewards). There are three somewhat different ways of conceptualizing how feelings of satisfaction and dissatisfaction at the work place come about: that is, in terms of need fulfillment, equity, and frame of reference models.

The need fulfillment model holds that feelings of satisfaction and dissatisfaction depend on the extent to which elements in the job environment are available to gratify people's needs. Such a model, which considers individual and environmental factors simultaneously as determinants of job satisfaction, seems more heuristically promising than models focusing exclusively on individual or environmental factors.

The frame of reference model differs from need fulfillment in that it seeks to explain satisfaction not in terms of match between needs and reinforcers, but rather in terms of match between an external standard of comparison and available reinforcers. Accordingly, a soldier's job satisfaction depends on how he evaluates his perceived job characteristics in comparison to his external (external to his present job in the Army) standards or frame of reference.

The equity model suggests that a person's standard of comparison is a referent other with whom the person compares ratios of job inputs to job outcomes. Feelings of inequity, which result when the person feels either underrewarded or over-rewarded for his job inputs in comparison to a referent other, lead to feelings of dissatisfaction.

The term "morale" as used by military authors is an exceedingly complex concept that seems to include both notions of motivation and satisfaction as well as group-related notions like cohesiveness. Since we lack a more succinct and rigorous definition, let us define morale according to what military authors include as its aspects:

- . Sense of advancing toward a worthwhile goal
- . Exaltation of ideals
- . Determination to reach the goal
- . Positive and adaptive attitudes toward adverse conditions
- . Feelings of contentment and satisfaction
- . Courage
- . Discipline
- . Self-confidence
- . Feelings of group cohesiveness.

According to military authors, this complex state of mind has a large number of determinants subsumed under the following general categories:

- . Physical welfare and subsistence
- . Pride in the Army and the Unit
- . Unit cohesiveness
- . Individuals' ideology
- . Job-related satisfaction
- . Leadership
- . News and information.

Morale is such a complex notion that it would probably be better to conceptualize it in terms of its components rather than as a single, global, and undifferentiated construct. This calls for a more precise and rigorous theoretical development of morale. It would be good to develop a "nomological net" of the principal components of what military people mean by morale and conceptual interrelationships among them. It would then be possible to tie this nomological net to measurement and change operations by specifying how to observe and manipulate each of its components and how the experimental manipulation of one component is likely to impact others.

Instrumentation

Below we list instruments and methods which seem most likely to be useful as measures of motivation, satisfaction, and morale in the Army.

Motivation

1. A measure of motivational content which lists a set of 50 to 100 fairly specific job outcomes and which requires the respondent to rate each outcome first on a seven-point scale of occurrence following high levels of effort on the job. Ratings of desirability by themselves constitute a measure of valence for outcomes which could be used either to ascertain how desired the outcomes are by enlisted men in general or to infer individual differences in needs or desires for the outcomes. In combination with expectancy ratings, desirability ratings yield a motivation process score for each individual computed as the sum across outcomes of valence times expectancy.

2. A measure of motivation content which lists 25 to 50 broader outcomes more relevant to the enlisted man's MOS, the Army, and the military in general than to his specific job. The respondent rates these outcomes on a seven-point scale of "how important" they are (or were) for:

- . His original enlistment decision
- . His future decision to reenlist
- . His level of job effort
- . His general job satisfaction

3. The Minnesota Importance Questionnaire (Weiss et al., 1967). This is a very well-constructed measure of a person's job-related needs on 20 dimensions like "ability utilization," "activity," and "authority." Items are at the sixth grade level of reading difficulty and consequently should be readily comprehensible to most enlisted men.

4. Patchen's (1965) Job Motivation Indices. The four items in the Job Motivation Index have been shown to have adequate test-retest reliability and at least some concurrent validity with respect to criteria of absenteeism and turnover. Since this is such a short instrument, it could be supplemented by another brief measure of general work motivation, Lodahl and Kejner's six-item Job Involvement Questionnaire. Although little hard evidence regarding its test-retest reliability or validity is available, this is a very carefully constructed instrument and it may prove useful, particularly in conjunction with Patchen's instrument.

Job Satisfaction

1. The Brayfield and Rothe (1951) Job Satisfaction Index. This is a widely used measure of job-related satisfaction suitable for a diverse range of occupational groups.
2. The Survey of Organizations (Taylor & Bowers, 1972). The seven-item satisfaction scale in this instrument has adequate reliability and construct validity as a measure of job-related satisfaction of groups or organizational units.
3. Minnesota Satisfaction Questionnaire (Weiss et al., 1967). The MSQ is a carefully developed measure of satisfaction with 20 job facets. The short form yields a total satisfaction score as well as scores of satisfaction with the intrinsic and extrinsic aspects of the job situation.
4. Job Description Index (Smith et al., 1969). The JDI is a well-known measure of satisfaction with five facets of the job situation--work itself, pay, promotions, supervision, and co-workers.
5. Cureton's (1960) Satisfaction Questionnaire for Airmen. This is a factor analytically derived measure of satisfaction with seven aspects of the working environment in the Air Force as well as an eighth scale measuring overall satisfaction or "general morale." Since it was developed specifically for the military, the instrument should be readily amenable to adaptation for use in the Army.
6. Survey Technique. The attitude measurement program at Sears (Smith, 1962, 1963) illustrates how a careful and systematic use of specific survey questions can provide a valuable diagnostic function for management, especially when supplemented with a set of well-developed evaluative scales of satisfaction. A similar strategy is used with the Triple Audit Opinion Survey (Dawis & Weitzel, 1971) and the SRA Attitude Survey (Science Research Associates, 1970).
7. Difference Score Instrument (e.g., Wanous & Lawler, 1972). This technique of measuring the discrepancy between desired outcomes and available outcomes, a relatively recent development in satisfaction measurement, shows considerable promise as an alternative to the more traditional "direct" measures of satisfaction.

Morale

We found no instruments which measure the complexity and richness of morale as the term is used by military authors. That is, we found no self-report measures in which respondents could indicate both their satisfaction and motivation as well as feelings of group cohesiveness, pride, attitudes toward adversity, and the other components of morale discussed earlier.

28.

Of course, the investigator need not limit himself to self-report measures. Military commanders have traditionally gauged troop morale by attending to indicators like AWOL and sick call rates. Also, they have used behavioral signs like the smartness of troops when marching, how they perform on their duty stations and in athletic contests, and whether they express pride in their units. If he were to classify these behavioral indicators of morale, the investigator might be able to improve the commander's traditional, informal "indicator measure" by designing instruments that helped the commander focus more systematically on those aspects of troops' behaviors that most reliably and validly reflect their morale.

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CHAPTER II

CONSTRUCTION OF JOB SATISFACTION, MOTIVATION,
AND MORALE BOOKLET
AND BEHAVIOR OBSERVATION MORALE SCALES

Introduction

The constructs, job satisfaction, motivation, and morale are discussed at length in the first chapter. A great deal of research has been devoted to defining these terms, attempting to measure them, and relating these measures to organization variables such as productivity, turnover, and organizational success. The purpose of the remainder of this report is to examine these constructs in the Army environment. To do this, two different, yet parallel sub-projects are developed within the overall research design.

The first research sub-project examines the usefulness of these constructs, as they have been defined and measured previously in the literature, to the Army. Generally there is a tendency to talk about job satisfaction and motivation in civilian industry while the term morale is used in the Army. The majority of instruments available to measure job satisfaction and motivation have been developed in industry. The one instrument found in the literature review to measure morale was developed in the Army. All the reported measures of the constructs job satisfaction, motivation, and morale are at least in large part self-report measures of affect. The person completing the measure responds to each item with himself as the referent. He may indicate, for example, how satisfied he is with various aspects of the work situation or how motivated he is. The objectives in this sub-project were to select the best instruments available to measure each construct in the Army, to determine if the constructs are empirically different, and to determine how these measures might be related to Army criteria such as AWOLs, Article 15s, and individual and organization performance.

The second research sub-project is to develop a new instrument to measure morale. This measure of morale is different from the self-report measure(s) previously developed. The new instrument was developed by utilizing the Behavior Observation Scale (BOS) methodology discussed by Smith and Kendall (1963) and refined by Personnel Decisions, Inc. (1973). Briefly, this instrument was developed by asking Army personnel to recall experiences from their respective careers when they were able to gain a feeling of the morale of units or individuals. These experiences or vignettes were then used to create a measure of morale. This measure was based upon the distilled essence of hundreds of years of military experience. The final form of this instrument will allow Army officers (and perhaps senior NCOs) to rate

units on morale based upon observations of what these units do or fail to do. The morale measure, then, utilizes a third person observation of the behavior of units or individuals rather than a first person self-report. The objective of this sub-project was to develop this measure and to see if, or how, it might be related to the self-report measures of job satisfaction, motivation, and morale. Other questions of interest might be: "Is a unit where members report high job satisfaction or motivation also rated high on morale by senior officers and NCOs?" or "Is morale related to AWOLs or Article 15s?"

Figures 2.1 and 2.2 were prepared to outline the steps followed in carrying out the research design. Figure 2.1 specifies the sequence of events for developing the job satisfaction, motivation, and morale booklet. Figure 2.2 provides the same information for the morale instrument. These figures are important because the investigators "boot-strapped" to develop the instruments. That is, as new data was collected, it was used to improve each of the instruments. It should also be noted that the organization of this report does not strictly follow the historical development outlined in these figures. For example, a discussion of the National Guard data is presented in Chapter VI after the Seventh Army data analysis rather than before, as is shown in Figure 2.1.

These figures should help the reader follow the progress of the study which, at times, becomes difficult because the study was carried out on three continents (Minnesota National Guard in U. S., Eighth Army in Korea, and Seventh Army in Germany). Because there are two types of morale instruments, self-report and behavior observation, additional problems of definitions are introduced. The convention of referring to behavior observation morale measure as the "BOS morale instrument" and the behavior vignettes as "examples" should differentiate the BOS instrument from the self-report morale measure and the individual "items" which comprise it.

Instrument Construction

Participating Military Units

As the literature review was proceeding, plans were being made to go to the field to construct instruments and gather data. It was decided jointly between PDI and ARI to work with the Minnesota National Guard and selected units of the Eighth Army in Korea. After the project began, two units from the Seventh Army in Germany also became involved in the study. The National Guard was selected for two reasons: First, the 47th Division Headquarters is located in the Twin Cities. This would provide PDI with an opportunity to test instruments and procedures close to home. Second, and of equal importance, was that developing instruments applicable to National Guard units as well as active Army units was seen as highly desirable.

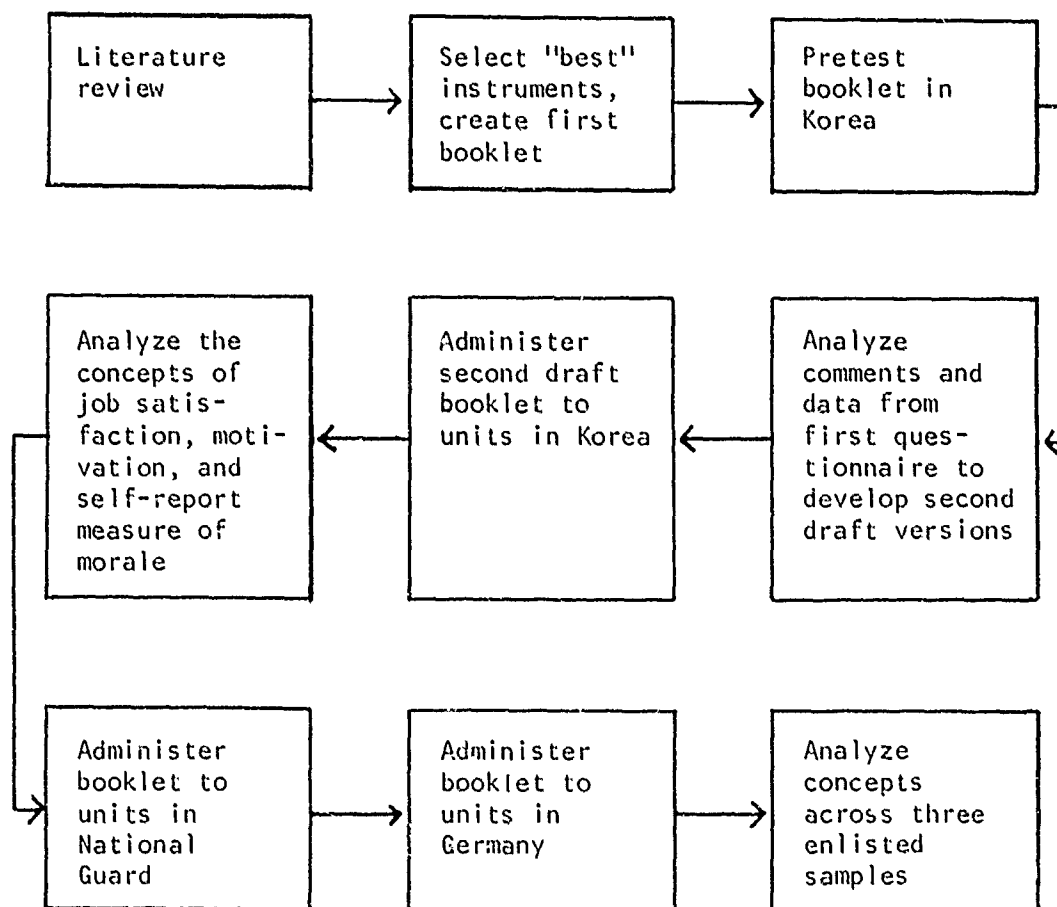


Figure 2.1. Flow Chart of Development of Job Satisfaction, Motivation, and Morale Self-report Measures

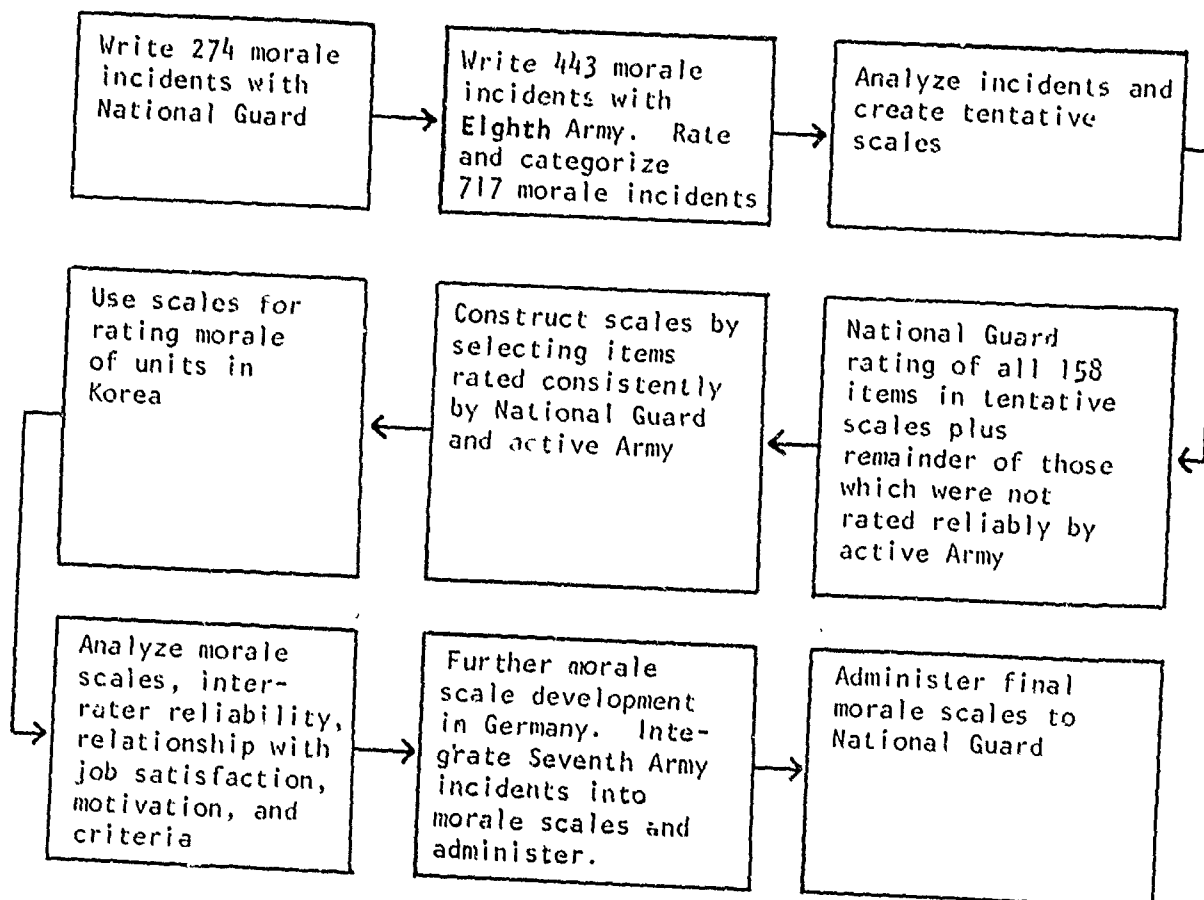


Figure 2.2. Flow Chart of Morale Instrument Development

Development of Job Satisfaction, Motivation, and Morale Booklet

The literature review, while helpful in uncovering instruments, was less helpful in evaluating the instruments for inclusion in the pretest booklet. The review of the literature indicated that most of the instruments reported were not widely used. Often the instruments were developed to be single purpose or study specific, so little data was available to compare psychometrically the various instruments against each other. Based upon the limited psychometric information that was available about reliabilities, validities, extent of use, and supplemented by the expert judgment of PDI and ARI, the following instruments were selected for use in the pretest questionnaire.¹

Job Satisfaction

Overall Satisfaction with Job in the Army (one item)
 Overall Satisfaction with Life in the Army (one item)
 *Minnesota Satisfaction Questionnaire (twenty items)
 Minnesota Job Description Questionnaire (twenty-one items)
 *Selected Scales from the Survey of Organizations (S.O.O.)
 (fifty-three items)
 *Brayfield-Rothe
 *Cureton Air Force Questionnaire (eighty-five items)
 *Selected Scales from the Sears Questionnaire (twenty-five items)
 Army Research Institute Background and Opinion Questionnaire
 (BQ-73) (Bell, Bolin, & Houston, 1972) (twenty-five items)
 Selected Items from ARI Racial Questionnaire (twenty-two items)
 *Job Description Index

Motivation

Five Most Desirable Aspects of Army (five items)
 Five Least Desirable Aspects of Army (five items)
 *List of Outcomes and Expectancy of Receiving Them (one hundred items)
 Protestant Ethic Scale (eight items)
 *Minnesota Importance Questionnaire (twenty items)
 *Desirability of Achieving Outcomes (one hundred items)
 *Patchen Motivation Scale (four items)
 Strong Vocational Interest Blank (selected portions) (twenty items)
 *Job Involvement Scale (seven items)
 List of Outcomes Expected to be Achieved Prior to Joining Army
 (twenty-eight items)
 List of Outcomes Currently Available (twenty-eight items)

¹ This listing is by instrument within construct (i.e., Job Satisfaction, Motivation, and Morale). A more complete listing of actual scales used is provided in Table 3.1.

39.

Self-report of Effort (one item)
Self-report of Performance (one item)

Morale

Military Morale Index (eighty items)
Level of Your Morale (one item)
Level of Morale of Unit (one item)

Biographical Information

Age
Sex
Marital Status
Number of Dependents
Race
Education
Father's Occupation
Father's Education
Present Living Quarters
How Entered Army
Kind of Enlistment
Age at Entry into Army
Length of Army Service
Number of Months on Present Post
Primary MOS
Duty MOS
Unit Designation (revised with insert)
Rank
Social Security Number
Plans for Re-enlistment
Number of Times AWOL
Number of Article 15s
Number of Times Busted

The instruments represented by the asterisk indicate instruments discussed and recommended for Army use in Chapter I. Frequently it was necessary to modify instruments to make them more amenable to the Army or Army use. These changes included such things as altering items in the Cureton where the Air Force was the referent to make the Army the referent, and changing a pay item on the JDI from Satisfactory Profit Sharing to Satisfactory Benefits.

This instrument list was supplemented to increase the potential utility and breadth of coverage of the job satisfaction, motivation, and morale domains. Several instruments included in the list were not discussed in the literature review. The BOQ-72 (Bell, Bolin, & Houston, 1974) and selected items from an ARI questionnaire measuring racial attitudes

(Nordlie & Thomas, 1974) were included at the request of ARI with the thought that responses to these instruments might moderate job satisfaction, motivation, or morale. The five most and least desirable outcomes and a comparison measure of outcomes expected versus those available were developed by PDI to supplement the instruments in the literature review. Biographical items were included to serve as moderators and a check scale was used to screen out people who could not or did not read the booklet. Each of these instruments will be discussed briefly.

Army Research Institute Background and Opinion Questionnaire (1972).

This scale was developed by the Army Research Institute to predict disciplinary offenders in the Army. Since some of the criteria in the present study are related to discipline--Article 15s for example--the discipline scale was included to determine if the discipline might be related to job satisfaction, motivation, and morale. Do soldiers scoring high on this scale (indicating a potential disciplinary problem) have lower job satisfaction, motivation, or morale?

Selected items from the Racial Questionnaire. Racial conflict might affect attitudes toward the Army and thereby job satisfaction, motivation, and morale. Because the Army is integrated, individuals or units feeling racial conflict could feel less positively toward the Army. Items were selected which might serve as moderators to job satisfaction and motivation.

Five most and least desirable outcomes. One of the motivation theories to be tested was the valence-expectancy model. To test this model, the investigators reviewed studies in the military literature for outcomes which might be derived from military service. These were analyzed and synthesized to create the list of 100 outcomes. To determine whether this list was sufficiently inclusive or needed to be supplemented, the five most and five least desired characteristics of military service were requested from subjects prior to their completing the previously selected list of 100. By comparing the responses to these two items to the initial list of outcomes, the completeness of the PDI developed list could be evaluated and supplemented if necessary.

List of outcomes expected to be achieved prior to joining the Army and list of outcomes currently available. These two measures were included with the thought that the difference between the outcomes soldiers expected prior to joining the Army and the outcomes that were actually available once they were in the military might be related to their job satisfaction, motivation, or morale.

Biographical items. Biographical items were included to serve as potential moderators to job satisfaction or morale.

For example, are married men more or less satisfied with the Army than single men? Do men working out of their PMOS report less satisfaction than men working in their PMOS? Does age at entry into the Army affect satisfaction? How does length of service impact upon a man's feelings about the Army?

Unit designations were requested to match the mean job satisfaction, motivation, and morale self-report scores from the booklet to the morale ratings assigned units by officers. This allows answers to questions such as, "Do units with high job satisfaction have high morale?" The service numbers were included so that rated morale of individuals might be compared to their individual self-reports of job satisfaction, motivation, and morale.

Check scale. Three check items were used to identify subjects responding randomly to the questionnaire. These items are:

1. I am having a great deal of difficulty reading this questionnaire (Item 5 added to the Job Involvement Questionnaire, p. 19, yellow section).
2. I am not able to read the questionnaire (Item 11 added to the Brayfield-Rothe Questionnaire, p. 12, green section).
3. I have carefully read all of the items that I have answered (Item 21 added to the Brayfield-Rothe Questionnaire, p. 12, green section).

Summary. On the basis of a literature review, a large number of instruments to measure the concepts of job satisfaction, motivation, and morale was selected as being potentially useful to the Army. These instruments were supplemented by additional instruments potentially related theoretically to the concepts. Supplementary instruments included the BOQ-72, a measure of racial conflict, an open-ended item to generate outcomes for the valence-expectancy motivation model, the SVIB, a list of outcomes which men might expect prior to joining the Army, biographical items, and a check scale.

These instruments were assembled into the first job satisfaction, motivation, and morale booklet. This booklet comprised the initial pool of instruments which PDI pretested in military locations in Korea.

Development of Morale Instrument

Two series of workshops were held to develop the first set of behavior observation morale scales. The first workshop was held with the Minnesota National Guard. The second workshops were held with the active Army in Korea. The examples gathered in the workshops with the Guard and the Eighth Army were combined to generate a incident pool large enough for

scale development. It was also hoped that by including both type units in the scale development process a series of morale scales could be developed that would be usable to both.

National Guard incident writing workshops. The workshops with the National Guard were held during the regular monthly meetings of the Guard. Twenty representatives were selected from each of the following groups: officers, NCOs, and EM. The workshops, lasting a full day, were directed toward gathering behavior examples for development of the Behavior Observation Morale Scales.

The objective in the workshops was to develop a large number of observable events which the participants felt were indicative of high or low morale. Participants were asked: "How can you tell whether an individual or unit has high or low morale?" The subsequent discussions were used primarily to try to reformulate the thinking of participants away from trait adjectival descriptions of morale toward behavioral descriptions. The primary difference between adjectival and behavioral descriptions is that the behavioral descriptions are observable first level observations, while trait adjectives are second level generalizations about behavior. Loyalty, for example, is a trait adjective which might be inferred by the observable behaviors of following the chain of command, obeying orders, or saluting crisply. It is the first level behaviors--observable behaviors--which were the focus of the remainder of the workshop sessions. Workshop participants were asked to think back over their careers and to write down specific instances in which they developed an idea of the morale of units or individuals. The incidents were recorded and given to researchers as they were completed. This allowed researchers to "shape" the incident writing as it proceeded, to ensure that incidents were concerned with behavior. The three groups (officers, NCOs, and EM) were used to assure that all viewpoints about what comprises morale were integrated into our analyses.

Two hundred seventy-four morale examples were gathered from the National Guard workshops. Several types of examples were identified which were difficult to assess. The first was the individual versus unit relevant item. At the outset of the project, the investigators hypothesized that morale was a unit phenomenon, but did not want to arbitrarily impose their views upon the workshop participants, so both individual and unit indicators of morale were collected. When the actual rating scales were developed to measure morale, however, commanders felt that it was impossible to evaluate an individual's morale using incidents relevant to units, and it was similarly as difficult to evaluate the morale of units using incidents discussing an individual's actions. More attention will be given this issue later in the report when the issue became a problem and was finally resolved.

Another type of item which posed a problem was the causal example. Examples of these items are given below.

- A. Before arriving for A.I.T., the men were told that training was to last seven to eight weeks. The first sergeant at A.I.T. told the men that training would last 12 to 15 weeks.
- B. During a 30-minute break, six men went to their car for a beer and were caught by the first sergeant. All six men were demoted in rank. One-half an hour later, the beer call was held and everyone could drink.

In both these examples someone did something to someone which evoked a reaction or affected the individual's own morale. The impact of this action on morale is not evaluated by some observable behavior but rather inferred from the individual's self-report of what happened to him. These examples are usually of the form: Someone did something to me which affected my morale. They are different from example C, for instance, where the morale of the unit can be evaluated by observing that the unit "marched back singing cadence all the way."

- C. One day during summer field training there were not enough trucks to move the entire BN in from the range. One of the NCOs said, "That's OK, A company will march back," and they did, counting cadence all the way.

The individual versus unit item and the causal self-report item versus third person behavior observational item posed conceptual problems initially. As more data was gathered from the active Army, however, the problems were resolved and overcome.

Active Army workshops--Korea. The workshops with Army units in Korea were conducted in a manner similar to those with the National Guard, although some modifications were made based upon the National Guard pretest. (For example, specific numbers of field grade officers were requested to assure that the active Army officer sample was not too heavily weighted with company grade officers, as was the case with the Guard sample.) Four separate workshops were held, one each with ten field grade officers, 20 company grade officers, 20 NCOs, and 20 EM E-5 and below. Half of the participants in each group were provided by the 38th ADA, the other half by the 23rd Support Group. The units involved were maintenance companies from the 23rd Support Group and Hawk, Herc, and Headquarters companies from the 38th ADA. Discussion during the workshops of methodology and background information varied as a function of the expressed interest of the group. The remainder of the day was spent with each of these groups writing morale examples.

Almost twice as many examples were gathered from the active Army as from the National Guard. This might be expected, of course, because of the more intensive military experience possessed by the active Army personnel. Nowhere is this contrast more evident than among the E-5 and below. In the National Guard some of these men had spent only weekends on active duty. This is compared to the active Army enlisted personnel, all of whom had at least several months full-time duty in the active Army. Thus, the active Army personnel had a much richer experiential background from which to recall examples.

Many of the same difficulties, of course, arose with these items. The causal versus noncausal dilemma discussed with National Guard incidents was still present as was the individual versus unit relevant item.

Classification of examples. The first step in analyzing the examples was to edit them into a format consistent with the Behavior Observation Scale methodology. During the editing phase, each item was reduced to a single behavioral expression of morale without distorting its meaning. In some cases, two critical incidents were present in a single record form. In others, more than one person wrote about the same incident, and occasionally no incident was actually present in the item written by the workshop participants.

After editing, the items were typed and categorized. Categorization is a subjective process in which the examples are content analyzed and placed in categories which deal with similar content. The categorizations were done independently by each PDI researcher who conducted the three example writing workshops. After each researcher had developed his own set of subjective categories, the categorizations were compared. No important differences among the separate categorizations occurred in the comparison process, and the individual categorizations were synthesized into one final set of dimensions. The same categorization process was used later with Seventh Army data. Once the categorizations were complete, the category definitions were developed. The emergent categories were:

- A. Community Relations. Becoming involved as individuals or units in community activities; establishing friendships with local civilians; treating local civilians with dignity and respect; versus showing a lack of interest in community problems; looking down on persons in the community and treating them disrespectfully or abusively; not participating in civilian activities.
- B. Teamwork and Cooperation. Helping other people in the unit with their personal or job related problems; working and playing well together as a unit; sacrificing for other unit members of the unit as a whole; staying together as a unit even through difficult times; versus showing indifference toward the personal or job related problems of other unit members; failing to work smoothly together on the unit task; displaying selfish interest in one's

45.

own welfare and a lack of concern for the well-being of other individuals or the unit; avoiding other unit members during off-duty hours and recreational activities.

- C. Reactions to Adversity. Tolerating adversity or perceived injustice without complaint; accepting hardships readily; expressing satisfaction with one's own or with the unit's situation; sticking it out in the face of adversity; versus complaining, griping; bitching; giving up; succumbing to adversity; withdrawing from hardship situations; expressing dissatisfaction, resentment, or bitterness about one's own or about the unit's situation.
- D. Superior-Subordinate Relations. Trust and respect between subordinates and superiors in the unit; subordinates and superiors willing to spend informal time together (drinking beer, etc.); talking over personal concerns together; superiors pitching in and helping with the work when called for; working together without regard to rank; versus superiors harassing and nit-picking subordinates; superiors not helping solve subordinates' problems; superiors and subordinates not associating with or talking with each other.
- E. Performance and Effort. Spending extra time and effort to get the job done; volunteering or taking the initiative to do the job well; performing well; versus expending little or no effort toward getting the job done; avoiding or passively resisting doing work; performing poorly.
- F. Discipline and Military Appearance. Crisp military appearance; responding quickly to orders; doing the "right" thing in the absence of explicit orders; low frequency of AWOLs; showing an eagerness to correct nonstandard conditions; being alert; versus sloppy appearance; high frequency of AWOLs; destruction of property; fighting; refusing to obey orders; responding slowly to military orders.
- G. Pride in Unit, Army, and Country. Expressing pride and enthusiasm for one's country and the Army; showing pride in one's unit by taking actions to make the unit distinctive and clearly identifiable; bragging about the accomplishments of the unit; challenging and competing with other units; versus downgrading or expressing indifference for one's country and the Army; showing a lack of concern for one's unit and its accomplishments; resisting wearing the uniform or identifying unit insignia.

The most difficult category to develop was the second to last, Military Discipline, Appearance, and Bearing. There was a definite series of items that related specifically to discipline, such as:

In response to a BN policy that no troops under the grade of E-5 could have doors to their rooms, the troops got drunk and threw beer cans at the COQ, kicked down some of the partitions and broke bottles in the barracks.

But a reading of all the examples dealing with discipline showed that examples were all at the low end of the scale; that is, they dealt with individuals or units with disciplinary problems, so a unipolar scale had evolved. An objective of the BOS methodology is to develop bipolar scales--scales that measure behavior from good to poor on each category or dimension. Generally a unipolar scale indicates that categorizing was done with only one end of a continuum of behavior in mind. When the category of discipline evolved, it was probably because the investigators were failing to consider the opposite end of the scale--that is, units with good discipline. Yet people don't seem to talk about units with good discipline; they talk about units with bad discipline. The high level, or good, discipline is apparently reflected in other ways such as crisp military appearance, responding quickly to orders, doing the "right" thing in the absence of explicit orders (because they are disciplined), showing an eagerness to correct nonstandard or unusual situations, and being alert. Thus, the upper end of the discipline scale is a unit that does the right things, not the wrong things, as a result of their training and disciplined approach to the job.

Active Army rating and categorizing of examples. One of the requirements of the Behavior Observation Scaling process is checking the meaningfulness of the social scientists' categorizations to the eventual users, in this instance members of the Army. This evaluation of meaningfulness is one of the most important advantages of the BOS methodology over earlier categorization strategies. The critical incidents and categories were presented to the same four groups of Eighth Army people that wrote them one week earlier. Participants were asked to assign the items from both the National Guard and active Army to one of seven categories and rate the level of morale shown (from 1 low to 9 high). Because of the large incident pool (718), the incidents were divided among the raters. Officers, both field and company grade, rated one-half of the active Army and one-half of the National Guard items or approximately 360 ($1/2$ of 444 + $1/2$ of 274 = 360). The NCOs each rated one-third of the total incident pool, while the junior enlisted (E-5 and below) each rated one-fourth of the incident pool.

Preliminary morale scales. The first tentative instrument or morale scale is shown in Appendix I. It was developed by extracting examples assigned to the same category by 50 percent or more of the Army raters and then arranging the examples according to the magnitude of the mean of morale rating.² Examples written by the regular Army are on the left side of the scale, items from the National Guard on the right.

²The morale rating or scaling is determined by the raters who assigned it to that category rather than by using all subjects who rated the example. The 50 percent level was chosen for initial search process in categorizing examples. Examples with much higher agreement are desired for actual scale construction.

Examination of the scales in Appendix I shows there are some "gaps" or "holes" in the scales. The lowest rated example in Scale A, "Community Relations," for example, was active Army incident number 173, which has a mean rated morale level of 1.88. On Scale C, "Performance and Effort," the highest rated example was active Army number 259, which received a mean morale rating of 6.6. Similarly, on Scale E, "Reactions to Adversity," there was no example to anchor the scale between active Army incident number 85 rated at 6.88 and active Army incident number 387 which was rated at 3.41. Fortunately there were some National Guard examples to help in Scale E, but additional items were needed to fill these gaps.

The next step then was to find examples which potentially fit in the "gaps" within the scales. The most expedient way to develop additional incidents is to return to the original incident statistics and look for examples which are rated at certain levels or morale but lack the necessary consensus to be assigned to a scale. Examination of these examples in some cases revealed double themes. Often, re-editing the incident to separate the double themes and, in other cases, some further editing or other modification of an unassigned item made the item potentially usable.

An example of a modified item is the one at the bottom of the Community Relations scale. As originally written, this item read:

In a unit that had failed every major inspection, and where discipline was weak, five men were involved in the rape of a local national woman. Most men in the unit saw nothing wrong with it and stated that nothing should be done with the men.

The incident statistics show that 39 percent of the raters assign it to both Category A and Category F (Community Relations and Discipline).

ITEM	N	MEAN.	S.D..	A	B	C	D	E	F	G
171	23	1.43	.648	39	04	00	04	00	39	13

Since discipline is specifically mentioned in the original incident, it is possible that word served as a distractor to encourage 39 percent of the raters to assign it to Category F. In further editing of this incident, the word discipline was removed so it read:

Five men in this unit raped a local national, but the other men in the unit saw nothing wrong with this action and felt nothing should be done about it.

It was hoped that this modification was sufficient to have the example rated in Category A.

The same process demonstrated with this example was used to move from a first draft of the scales shown in Appendix I to the scales shown in Appendix J. Examples in Appendix J which were modified or changed can be identified by the lack of incident statistics. That is, examples which report no standard deviation or percent agreement in Appendix J are modified examples. The mean ratings for these examples were subjectively assigned by the investigators to approximate the position the incident would eventually fill. The process with incident number 171 was shown in some detail to illustrate the rationale and procedure used for increasing the number of anchors from the first draft to the second of the scales. In addition, because of the problems with Dimension F discussed earlier and because the content of the items reflects discipline more than appearance, the title of this dimension was revised to Military Bearing, Appearance, and Discipline.

National Guard rating and categorizing of incidents. To complete the National Guard involvement in the BOS morale instrument development, the officers and men in the National Guard who had previously written incidents, categorized and rated all the examples written by National Guard and Eighth Army soldiers. For the National Guard ratings all 158 examples shown in Appendix J were administered to each National Guard rater. The remaining examples were divided among the raters so each rater rated and categorized the 158 examples in Appendix J plus one-half of the remaining pool.

This procedure served two purposes. First, it provided the maximum number of ratings for the 158 incidents potentially usable in the BOS scales. This, of course, is important for those examples which were modified and thus had not been rated or categorized in their new form. Secondly, this procedure provided a check on the remainder of the examples. An argument could be made that many of the National Guard examples did not appear in Appendix J because they were categorized and rated by Eighth Army personnel and thus could not be categorized or rated as reliably as they might have been by National Guard personnel. These National Guard retranslation ratings provided a test of that possibility.

Comparison of ratings of National Guard and active Army. Table 2.1 summarizes the rating data from these two samples. From Table 2.1 it can be seen that 87 out of 274 National Guard examples are rated consistently (50 percent or more of raters agree on category assignment) by both the National Guard and Eighth Army raters). There are, however, 73 items in addition that the National Guard rated consistently and 26 National Guard items the active Army rated consistently. Perhaps more important are the percentages of incidents rated consistently by each group. Table 2.2 shows that the National Guard raters were able to rate 60 percent of the National Guard examples ($73 + 87/274 = 60$ percent) and 49 percent ($64 + 156/443 = 49$ percent) of the active Army examples consistently. The active Army was able to rate 41 percent ($26 + 87/274 = 41$ percent) of the National Guard and 47 percent ($56 + 156/443 = 47$ percent)

Table 2.1

Number of Eighth Army and National Guard Examples
Rated Consistently³ by National Guard and Eighth Army Raters

<u>Sources of Examples</u>	<u>Examples rated consistently by</u>				
	<u>Both</u>	<u>NG</u>	<u>Eighth Army</u>	<u>Neither</u>	<u>Total</u>
National Guard	87	73	26	88	274
Eighth Army	156	64	156	167	443

Table 2.2

Eighth Army and National Guard Percentage of Examples
Rated Consistently by National Guard and Eighth Army Raters

<u>Sources of Examples</u>	<u>Raters</u>		<u>Rated consistently by percent by source</u>
	<u>NG</u>	<u>Eighth Army</u>	
National Guard	60	41	62
Eighth Army	<u>49</u>	<u>47</u>	68
Percent rated consistently by type of rater	53	45	

³An example is rated consistently if 50 percent or more of the raters assigned the incident to the same morale category. See earlier discussion.

of Active Army examples consistently. Thus, the National Guard was able to rate not only their own but also the active Army examples more consistently than were the active Army personnel.

Several reasons or explanations may be offered for this phenomenon. First, the National Guard sample was better educated and thus may have read the morale examples more carefully or more completely and thus responded more to the actual content of the examples than the active Army personnel did. Secondly, the National Guard sample is much more homogeneous than the active Army sample and, therefore, may have tended to see things more similarly than the active Army sample did.

The thrust of the data in these tables, however, suggests that separate categories are not necessary to describe morale in the active Army and National Guard. Retranslation of items into categories was reasonably consistent for raters from both groups. Thus, it seems reasonable at this point to talk about the seven categories of morale described earlier as being dimensions of morale appropriate for both the National Guard and active Army.

Summary. During workshops with National Guard and active Army officers and men, 718 morale examples were generated. These morale examples described what kinds of things the military personnel in the sample observed when they evaluated the morale of units and individuals. From these examples, seven scales were developed which indicated there were at least seven aspects to morale. These seven aspects of morale include Community Relations; Teamwork and Cooperation; Reactions to Adversity; Superior-Subordinate Relations; Performance and Effort; Military Appearance, Bearing, and Discipline; and Pride in Army, Unit, and Country.

All 718 items were assigned to one of the seven categories and rated on the level of morale by National Guard and active Army personnel. Tentative scales were created by selecting items which 50 percent or more of the raters concurred belonged on a scale. The items within the scales were then ordered according to the mean morale level rating. The results revealed that the seven scales appeared useful to both the active Army and National Guard.

Overall Summary

From the literature review a large number of instruments was selected to measure job satisfaction, motivation, and morale. These instruments were supplemented by items and instruments such as biographical items and a measure of racial attitudes. All of these measures were printed into booklet form to pretest in Korea.

Concurrent with booklet development, researchers began work on a new measure of morale. This morale measure was developed using the Behavior Observation Scaling methodology. Seven tentative scales were constructed which measure seven aspects of morale.

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CHAPTER III

PRETEST OF JOB SATISFACTION, MOTIVATION,
AND MORALE BOOKLET

Introduction

Considerable thought and effort went into developing the job satisfaction, motivation, and morale booklet; nevertheless, pretesting the booklet seemed necessary before administering it to a large military sample. Therefore, 141 enlisted men, E-4 and below plus specialist E-5s, from the 38th ADA and the 23rd Support Group in Korea completed the pretest booklet. Based upon the responses these soldiers made to the pretest booklet, the researchers:

1. evaluated the rewording of items taken from civilian industrial instruments;
2. evaluated the clarity of instructions, particularly for those instruments developed by the researchers;
3. determined which, if any, items or instruments might evoke disruptive or negative reactions from people completing the booklet;
4. determined the time necessary for enlisted men to complete the questionnaire;
5. obtained data relevant for shortening the questionnaire booklet for the field test.

To accomplish the last objective, several analyses were used to determine which instruments, scales, or items could be dropped while still retaining good coverage of the total domain represented by the pretest variables. These analyses included:

1. Intercorrelation matrix. Scales purporting to measure the same facet of satisfaction, motivation, or morale were first grouped together intuitively by content. Then the intercorrelation matrix for each a priori intuitive grouping of scales was evaluated to reduce redundancy. The reasoning was that if two instruments correlate highly, then only one of them is needed.
2. Factor analysis. While the intercorrelation matrix was used to evaluate intuitive groupings of scales, a factor analysis was used to assure that each factor was adequately represented in the revised questionnaire. Therefore, if a scale loaded highly on one of the factors, it was usually retained.

3. Subjective evaluation. The investigators subjectively evaluated the content and method of instruments which had been selected using the procedures outlined in steps 1 and 2 above. PDI and ARI researchers did add a few instruments to the revised booklet based on subjective evaluation rather than the criteria described in 1 and 2.

Results

Intercorrelation Matrix

The 83 items and scales used in the intercorrelation matrix are listed in Table 3.1. From this list, scales thought to measure the same phenomenon were intuitively clustered. We expected, for example, that two or more scales measuring satisfaction with supervision would be related even if the scales were from two different instruments. Thus, these scale clusters were based upon a subjective evaluation of scale name and content before the intercorrelation results were available. Once the statistical data were available, the best instruments or scales for measuring the satisfaction, motivation, or morale clusters were identified.

The first cluster contains measures of morale and discipline. Shown in Table 3.2 are the scales in this intuitive category and the intercorrelations among the scales. Likewise, Tables 3.3 through 3.12 contain measures of the following intuitive clusters and the intercorrelations among the measures within clusters:

Motivation	Table 3.3
General Satisfaction	Table 3.4
Pay Satisfaction	Table 3.5
Job Satisfaction	Table 3.6
Satisfaction with Superiors	Table 3.7
Satisfaction with Co-workers	Table 3.8
Satisfaction with Career Progress	Table 3.9
Satisfaction with Organization as Whole	Table 3.10
Satisfaction with General Environment	Table 3.11
Biographical Items	Table 3.12

The intercorrelations among the measures within each cluster were examined to determine the redundancy within each cluster. Those scales and items which covered the domain without overlapping in content with other measures in each cluster were retained.

Factor Analysis

Another vehicle for identifying redundancy within cluster was a factor analysis of these variables. The factor analysis of the scale measures plus a few selected single item measures are shown in Table 3.13. A 15-factor varimax rotation was used to help select items. The factor

Table 3.1

Eighty-three Variables Analyzed from
Pretest Job Satisfaction, Motivation, and Morale Booklet

<u>Variable Number</u>	<u>Variable Name</u>
1	Military Morale Index
2	Blood's Protestant Ethic Scale
3	Patchen Motivation Scale
4	Lodahl & Kejner Job Involvement Scale
5	Minnesota Satisfaction Questionnaire (MSQ) - Total
6	Minnesota Satisfaction Questionnaire - Intrinsic
7	Minnesota Satisfaction Questionnaire - Extrinsic
8	Sum of Differences [$\Sigma (10-9)$]
9	Sum of "Prior Expectancies"
10	Sum "Is Now"
11	Sum of Effort Expectancies
12	Sum of Valences
13	Sum of Valence x Expectancies
14	Minnesota Job Description Questionnaire (MJDQ)
15	Survey of Organizations (S.O.O.) 1. Supervisory Support
16	Survey of Organizations 2. Supervisory Interaction Facilitation
17	Survey of Organizations 3. Supervisory Goal Emphasis
18	Survey of Organizations 4. Supervisory Work Facilitation
19	Survey of Organizations 5. Peer Support
20	Survey of Organizations 6. Peer Interaction Facilitation
21	Survey of Organizations 7. Peer Goal Emphasis
22	Survey of Organizations 8. Peer Work Facilitation
23	Survey of Organizations 9. Human Resources Primacy
24	Survey of Organizations 10. Decision Making
25	Survey of Organizations 11. Communications Flow
26	Survey of Organizations 12. Motivation Conditions
27	Survey of Organizations 13. Lower Level Support
28	Survey of Organizations 14. Group Process
29	Survey of Organizations 15. Overall Satisfaction
30	Survey of Organizations 16. Supervisory Needs
31	Brayfield-Rothe Job Satisfaction
32	Cureton's Satisfaction with 1. Military
33	Cureton's 2. Job Satisfaction
34	Cureton's Satisfaction with 3. Community
35	Cureton's Satisfaction with 4. Army as a Whole
36	Cureton's Satisfaction with 5. Unit
37	Sears 1. Supervision
38	Sears 2. Kind of Work
39	Sears 3. Amount of Work
40	Sears 4. Co-workers

<u>Variable Number</u>	<u>Variable Name</u>
41	Sears 5. Physical Surroundings
42	Sears 6. Financial Rewards
43	Sears 7. Company Identification
44	Sears 8. Career Future and Security
45	Army Research Institute BQ-72
46	Job Description Index 1. Work
47	Job Description Index 2. Supervision
48	Job Description Index 3. Pay
49	Job Description Index 4. Promotions
50	Job Description Index 5. Co-workers
51	Self-rating of Own Morale
52	Self-rating of Unit Morale
53	Self-rating of Effort
54	Self-rating of Performance
55	Self-rating of Job Satisfaction in the Army
56	Self-rating of Life Satisfaction in the Army
57	Survey of Organizations (single item) Satisfaction with Co-workers
58	Survey of Organizations (single item) Satisfaction with Supervisor
59	Survey of Organizations (single item) Satisfaction with Job
60	Survey of Organizations (single item) Satisfaction with Organization
61	Survey of Organizations (single item) Satisfaction with Pay
62	Survey of Organizations (single item) Satisfaction with Career Progress
63	Survey of Organizations (single item) Opportunities for Getting Ahead
64	Survey of Organizations - Overall Conditions to Encourage Hard Work
65	Cureton (single item) Pay Satisfaction
66	Mood Rating
67	Self-rating of Effort Put Forth for Promotion
68	Age
69	Education
70	Socioeconomic Status
71	Father's Education
72	Living Conditions (on or off post)
73	Drafted versus Enlisted
74	Age at Entry
75	Length of Service
76	Number of Months on Present Post
77	Number of AWOLs in Last Month
78	Number of AWOLs in Last Year
79	Number of AWOLs in Career
80	Number of Article 15s in Last Month
81	Number of Article 15s in Last Year
82	Number of Article 15s in Career
83	Number of Times Busted

Table 3.2
Intercorrelation of Scales Measuring
Morale and Discipline

	Variable Number					Criterion Number		
	<u>1</u>	<u>51</u>	<u>52</u>	<u>66</u>	<u>45</u>	<u>77</u>	<u>80</u>	<u>83</u>
1 Military Morale Index						-.01	-.06	.04
51 Self-rating of Own Morale	.65					-.29	-.25	-.12
52 Self-rating of Unit Morale	.42	.67				-.37	-.32	-.19
66 Mood Rating	-.59	-.59	-.38			.25	-.25	.03
45 ARI BOQ-72	.05	-.17	-.10	-.09		.27	.24	.39

Table 3.3

Intercorrelation of Scales Measuring Motivation

57

	Variable Number												
	<u>2</u>	<u>3</u>	<u>4</u>	<u>10</u>	<u>9</u>	<u>8</u>	<u>11</u>	<u>12</u>	<u>13</u>	<u>26</u>	<u>53</u>	<u>54</u>	<u>67</u>
2 Blood's Protestant Ethic Scale													
3 Patchen Motivation Scale	.44												
4 Lodahl & Kejner Job Involvement Scale	.43	.62											
10 Sum "Is Now"	.36	.46	.42										
9 Sum of "Prior Expectancies"	.27	.17	.28	.28									
8 Sum of Differences [$\Sigma(10-9)$]	.10	.26	.10	.64	-.58								
11 Sum of Effort Expectancies	.50	.39	.38	.72	.19	.45							
12 Sum of Valences	.11	.18	.08	.31	.32	.00	.28						
13 Sum of Valence x Expectancies	.30	.40	.53	.73	.29	.37	.90	.62					
26 S.O.O. Motivation Conditions	.25	.22	.26	.56	.09	.40	.50	-.04	.44				
53 Self-rating of Effort	.41	.66	.45	.50	.16	.21	.46	.29	.47	.38			
54 Self-rating of Performance	.31	.61	.51	.34	.17	.10	.29	.30	.34	.17	.57		
64 S.O.O. Overall Conditions to Encourage Hard Work	.21	.44	.43	.58	-.01	.47	.48	.04	.47	.68	.39	.29	
67 Self-rating of Effort Put Forth for Promotion	-.31	-.49	-.28	-.27	-.09	-.09	-.22	-.05	-.22	-.19	-.44	-.47	-.24

Table 3.4
Intercorrelation of Scales Measuring
General Satisfaction

	Variable Number							
	<u>5</u>	<u>6</u>	<u>7</u>	<u>14</u>	<u>29</u>	<u>31</u>	<u>55</u>	<u>56</u>
5 MSQ Total								
6 MSQ Intrinsic	.96							
7 MSQ Extrinsic	.82	.64						
14 MJDQ	.65	.60	.60					
29 S.O.O. Overall Satisfaction	.71	.65	.62	.74				
31 Brayfield-Rothe Job Satisfaction	.66	.71	.44	.59	.68			
55 Self-rating of Job Satisfaction in the Army	.66	.67	.48	.53	.55	.70		
56 Self-rating of Life Satisfaction in the Army	.52	.51	.45	.43	.54	.52	.56	

Table 3.5
Intercorrelation of Scales Measuring
Pay Satisfaction

		Variable Number			
		<u>48</u>	<u>42</u>	<u>61</u>	<u>65</u>
48	JDI Pay				
42	Sears Financial Rewards	.55			
61	S.O.O. Satisfaction with Pay	.42	.57		
65	Cureton Pay Satisfaction	-.56	-.54	-.60	

Table 3.6
Intercorrelation of Scales Measuring
Job Satisfaction

		Variable Number						
		<u>46</u>	<u>33</u>	<u>37</u>	<u>38</u>	<u>59</u>	<u>31</u>	<u>55</u>
46	JDI Work							
33	Cureton's Job Satisfaction	-.64						
38	Sears Kind of Work	.44	-.40					
39	Sears Amount of Work	.64	-.64	.42				
59	S.O.O. Satisfaction with Job	.73	-.67	.43	.63			
31	Brayfield-Rothe Job Satisfaction	.65	-.67	.42	.63	.81		
55	Self-rating of Job Satisfaction in the Army	.65	-.63	.32	.52	.69	.70	

Table 3.7
Intercorrelation of Scales Measuring
Satisfaction with Superiors

	Variable Number		
	<u>47</u>	<u>37</u>	<u>58</u>
47 JDI Supervision			
37 Sears Supervision	.73		
58 S.O.O. Satisfaction with Supervisor	.65	.59	

Table 3.8
Intercorrelation of Scales Measuring
Satisfaction with Co-workers

		Variable Number			
		<u>57</u>	<u>50</u>	<u>40</u>	<u>36</u>
57	S.O.O. Satisfaction with Co-workers				
50	JDI Co-workers	.37			
40	Sears Co-workers	.32	.36		
36	Cureton's Satisfaction with Unit	-.38	-.41	-.44	

63.

Table 3.9
Intercorrelation of Scales Measuring
Satisfaction with Career Progress

		Variable Number			
		<u>49</u>	<u>44</u>	<u>62</u>	<u>63</u>
49	JDI Promotions				
44	Sears Career Future and Security	.37			
62	S.O.O. Satisfaction with Career Progress	.43	.43		
63	S.O.O. Opportunities for Getting Ahead	.45	.45	.60	

Table 3.10
 Intercorrelation of Scales Measuring
 Satisfaction with Organization as a Whole

	Variable Number			
	<u>43</u>	<u>35</u>	<u>32</u>	<u>60</u>
43 Sears Company Identification				
35 Cureton's Satisfaction with Army as a Whole	-.69			
32 Cureton's Satisfaction with Military	-.57	.73		
60 S.O.O. Satisfaction with Organization	.29	-.43	-.29	

65.

Table 3.11

Intercorrelation of Scales Measuring
Satisfaction with the General Environment

		Variable Number	
		<u>34</u>	<u>41</u>
34	Cureton's Satisfaction with Community		
41	Sears Physical Surroundings		-.39

Table 3.12
Intercorrelation of Biographical Items

	Variable Number										
	<u>68</u>	<u>69</u>	<u>70</u>	<u>71</u>	<u>72</u>	<u>73</u>	<u>74</u>	<u>75</u>	<u>77</u>	<u>80</u>	<u>83</u>
68 Age											
69 Education	.02										
70 Socioeconomic Status	-.27	.20									
71 Father's Education	-.09	.35	.45								
72 Living Conditions (on or off post)	.12	-.01	-.10	-.20							
73 Drafted versus Enlisted	-.03	-.18	-.16	-.15	.14						
74 Age at Entry	.06	.21	-.04	.04	.20	-.01					
75 Length of Service	.93	-.09	-.29	-.16	.18	.06	-.01				
77 Number AWOLs last month	.04	.41	.12	-.01	.22	-.01	-.07	.08			
80 Number of Article 15s last month	.10	.41	.22	.06	.25	-.04	.13	.06	.89		
83 Number times busted	.12	.07	.07	-.02	.03	.13	-.07	.15	.91	.90	

Table 3.13

Factor Analysis

Factor I - Satisfaction with Supervision

<u>Variable Number</u>	<u>Order of Loading</u>	<u>Variable Name</u>	<u>Factor Loading</u>
5	2	MSQ Total	-.31
7		MSQ Extrinsic	-.48
8		Sum of Differences [$\Sigma(10-9)$]	-.35
10	2	Sum "Is Now"	-.35
14	2	MJDQ	-.42
15		S.O.O. Supervisory Support	-.85
16		S.O.O. Supervisory Interaction Facilitation	-.72
17		S.O.O. Supervisory Goal Emphasis	-.68
18		S.O.O. Supervisory Work Facilitation	-.78
23	2	S.O.O. Human Resources Primacy	-.39
24	2	S.O.O. Decision Making	-.34
25		S.O.O. Communications Flow	-.58
29	4	S.O.O. Overall Satisfaction	-.32
36	2	Cureton's Satisfaction with Unit	-.41
37		Sears Supervision	-.66
47		JDI Supervision	-.73
58		S.O.O. Satisfaction with Supervisor	-.80

Factor II - Criteria

30	S.O.O. Supervisory Needs	-.40
77	Number of AWOLs in Last Month	-.92
78	Number of AWOLs in Last Year	-.95
79	Number of AWOLs in Career	-.91
80	Number of Article 15s in Last Month	-.92
81	Number of Article 15s in Last Year	-.95
82	Number of Article 15s in Career	-.93
83	Number of Times Busted	-.90

Factor III - Job Satisfaction

<u>Variable Number</u>	<u>Order of Loading</u>	<u>Variable Name</u>	<u>Factor Loading</u>
1		Military Morale Index	-.65
3		Patchen Motivation Scale	-.64
4		Lodahl & Kejner Job Involvement Scale	-.43
5		MSQ Total	-.66
6		MSQ Intrinsic	-.73
7	3	MSQ Extrinsic	.39
10		Sum "Is Now"	-.38
14	3	MJDQ	-.36
29	2	S.O.O. Overall Satisfaction	-.53
31		Brayfield-Rothe Job Satisfaction	-.74
33		Cureton's Job Satisfaction	.79
34	2	Cureton's Satisfaction with Community	.40
35		Cureton's Satisfaction with Army as a Whole	.66
37	3	Sears Supervision	-.35
38		Sears Kind of Work	-.68
39		Sears Amount of Work	-.55
40	4	Sears Co-workers	-.31
41		Sears Physical Surroundings	-.58
42	3	Sears Financial Rewards	-.36
43		Sears Company Identification	-.56
44		Sears Career Future and Security	-.62
46		JDI Work	-.84
47	2	JDI Supervision	-.35
51		Self-rating of Own Morale	-.50
53	2	Self-rating of Effort	
55		Self-rating of Job Satisfaction in the Army	-.66
56	2	Self-rating of Life Satisfaction in the Army	-.39
59		S.O.O. Satisfaction with Job	-.26
62	2	S.O.O. Satisfaction with Career Progress	-.50
63	2	S.O.O. Opportunities for Getting Ahead	-.44
64	2	S.O.O. Overall Conditions to Encourage Hard Work	-.43
66		Mood Rating	.49
75	2	Length of Service	-.31

Factor IV - Satisfaction with Co-workers

11	2	Sum of Effort Expectancies	-.34
13	2	Sum of Valence x Expectancies	-.39
19		S.O.O. Peer Support	-.81
20		S.O.O. Peer Interaction Facilitation	-.80
21		S.O.O. Peer Goal Emphasis	-.78
22		S.O.O. Peer Work Facilitation	-.81
28		S.O.O. Group Process	-.84
29	3	S.O.O. Overall Satisfaction	-.35
30	3	S.O.O. Supervisory Needs	.33
40		Sears Co-workers	-.40
57		S.O.O. Satisfaction with Co-workers	-.64
62	3	S.O.O. Satisfaction with Career Progress	-.35
64	3	S.O.O. Overall Conditions to Encourage Hard Work	-.34
66	3	Mood Rating	.30

Factor V - Expectancy from Army

<u>Variable Number</u>	<u>Order of Loading</u>	<u>Variable Name</u>	<u>Factor Loading</u>
8		Sum of Differences [$\Sigma(10-9)$]	-.67
9		Sum of "Prior Expectancies"	.86
30		S.O.O. Supervisory Needs	.38

Factor VI - Self-perceived Effort and Value Orientation

2		Blood's Protestant Ethic Scale	.49
3	2	Patchen Motivation Scale	.43
4	3	Lodahl & Kejner Job Involvement Scale	.36
13	3	Sum of Valence x Expectancies	.30
32	2	Cureton's Satisfaction with Military	-.52
53		Self-rating of Effort	.70
54		Self-rating of Performance	.79
56	3	Self-rating of Life Satisfaction in the Army	.38
67		Self-rating of Effort Put Forth for Promotion	-.63

Factor VII - Pay Satisfaction

10	3	Sum "Is Now"	-.34
11		Sum of Effort Expectancies	-.38
34		Cureton's Satisfaction with Community	.42
35	2	Cureton's Satisfaction with Army as a Whole	.48
42		Sears Financial Rewards	.57
48		JDI Pay	-.79
61		S.O.O. Satisfaction with Pay	.49
65		Cureton Pay Satisfaction	.69
66	2	Mood Rating	.36

Factor VIII - Climate

<u>Variable Number</u>	<u>Order of Loading</u>	<u>Variable Name</u>	<u>Factor Loading</u>
10	4	Sum "Is Now"	-.33
23		S.O.O. Human Resources Primacy	-.64
24		S.O.O. Decision Making	-.75
25	2	S.O.O. Communications Flow	-.49
26		S.O.O. Motivation Conditions	-.70
27		S.O.O. Lower Level Support	-.53
29		S.O.O. Overall Satisfaction	-.58
36		Cureton's Satisfaction with Unit	.44
49		JDI Promotions	-.52
59	2	S.O.O. Satisfaction with the Job	-.53
60		S.O.O. Satisfaction with Organization	-.42
61	2	S.O.O. Satisfaction with Pay	-.50
62		S.O.O. Satisfaction with Career Progress	-.60
63		S.O.O. Opportunities for Getting Ahead	.62

Factor IX (Undefined)

72		Living Conditions (on or off post)	.71
73		Drafted Versus Enlisted	.49
74		Age at Entry	.74
76		Number of Months on Present Post	.58

Factor X (Undefined)

69		Education	-.72
71		Father's Education	-.76

Factor XI - Longevity, Satisfaction

38	2	Sears Kind of Work	-.37
40	2	Sears Co-workers	-.34
42		Sears Financial Rewards	-.37
43	2	Sears Company Identification	-.43
68		Age	-.85
75		Length of Service	-.86

Factor XII (Undefined)

<u>Variable Number</u>	<u>Order of Loading</u>	<u>Variable Name</u>	<u>Factor Loading</u>
4	2	Lodahl & Kejner Job Involvement Scale	-.37
37	2	Sears Supervision	.36
40	2	Sears Co-workers	.34
67	2	Self-rating of Effort Put Forth for Promotion	-.43
72	2	Living Conditions (on or off post)	.37

Factor XIII (Undefined)

45	ARI Discipline Scale	.70
56	Self-rating of Life Satisfaction in the Army	-.38

Factor XIV (Undefined)

12	Sum of Valences	-.73
76	Number of Months on Present Post	.38

Factor XV - Morale

1	Military Morale Index	-.35
7	MSQ - Extrinsic	-.40
11	Sum of Effort Expectancies	-.31
49	JDI Promotions	.51
51	Self-rating of Own Morale	.38
52	Self-rating of Unit Morale	-.62

solution contained 15 factors; only minimal contributions in variance accounted for appeared when additional factors were extracted.¹

Table 3.13 shows the 15 factors. Several pieces of information about each variable are shown: the variable number, order of the variable loading,² variable name, and the factor loading of the variable. The following factors emerged:

I	Satisfaction with Supervision
II	Criteria
III	Job Satisfaction
IV	Satisfaction with Co-workers
V	Expectancy from Army
VI	Self-perceived Effort and Value Orientation
VII	Pay Satisfaction
VIII	Climate
IX	Undefined
X	Undefined
XI	Longevity, Satisfaction
XII	Undefined
XIII	Undefined
XIV	Undefined
XV	Morale

Table 3.14 is a list of the scales deleted based upon examining the inter-correlations among variables within each intuitive cluster and the factor solution.

Summary

To reduce the length of the job satisfaction, motivation, and morale booklet, data from the pretest were analyzed. These analyses included inter-correlating variables within each cluster and factor analyzing questionnaire variables. Specifically, scale scores which on an intuitive basis should have intercorrelated were grouped a priori into a number of clusters. If scales in the same cluster intercorrelated highly, the

¹In factor analysis the Kaiser Criterion indicates that factoring proceed until the eigenvalue of a factor falls below 1.00. The number of factors extracted is thus determined by the number of eigenvalues that exceed 1.00.

²"Order of loading" indicates the number of other factors on which a variable has higher loadings. That is, a "4" indicates that a variable loads more highly on three other factors; a "3" indicates that a variable loads more highly on two other factors, etc. A blank shows that a variable loads most highly on that factor.

73.

Table 3.14

Scales Deleted from Revised Booklet Based
Upon Pretest Data Analysis

1. Military Morale Index
2. Blood's Protestant Ethic Scale
4. Lodahl and Kejner Job Involvement Scale
14. Minnesota Job Description Questionnaire (MJDQ)
23. Survey of Organizations--Human Resources Primary
25. Survey of Organizations--Decision Making
26. Survey of Organizations--Communication Flow
27. Survey of Organizations--Lower Level Support
28. Survey of Organizations--Group Process
55. Self-Rating of Satisfaction in the Army
56. Self-Rating of Life Satisfaction in the Army
65. Cureton (single item) Pay Satisfaction
66. Mood Rating

number of scales was reduced, since both conceptually and statistically the scales were measuring the same variable.

A factor analysis was used to supplement the selection of scales and items. Scales loading highly on a factor were added to the pool of retained scales.

These statistical procedures assured that the revised booklet included (1) instruments which measured common notions about individual facets of job satisfaction, motivation, and morale; and (2) instruments which represented the total statistical variance.

In addition to instruments being selected in this manner, some instruments were included for theoretical reasons. The result was the construction of the revised booklet to be used in the Eighth Army field test.

Second Draft of Booklet

The last task in this phase of the study was to put together a revised self-report job satisfaction, motivation, and morale booklet. The rationale for including most of the instruments in the revised booklet has already been provided. This section of the report integrates that information with the rationale for some changes made in format. The version of the booklet to be administered in the Eighth Army (Korea) field test is shown in Appendix P.

Motivation Section--blue

The first section entitled "What Do You Like" is the desirability or valence section of the valence x expectancy model. The list of outcomes was shortened by content analysis from 100 to 50, because soldiers complained that it was too repetitious. The researchers also believed that the model could be adequately tested if the list were shortened. The "If You Work Hard, What Will Happen" is the expectancy section for the same 50 items.

The section entitled "Your Ideal Job" is the MIQ section. The format has been changed somewhat with certain items deleted. "Your Present Job" is the Patchen Motivation Scale. "Your Effort and Performance" are the self-ratings from the pretest booklet, but also include the two new items, 3 and 4, which measure some different features of performance and effort.

Satisfaction Section--yellow

"Feelings about Your Present Job" is the MSQ section and includes both the Intrinsic and Extrinsic scales. "More Feelings about Your Present Job" is the Brayfield-Rothe questionnaire. "Your Expectations about Life in the Army" is a completely new format for the "Prior to Joining the Army"

expectations and "Is Now" scales. With this new format the discrepancy measure is obtained from one rating of the individual items rather than two ratings. By asking how things compare with what was expected and using anchors ranging from "very much worse than what I expected" to "very much better than what I expected," the same information was obtained and the questionnaire shortened.

"Your Job, Superiors, and Fellow Workers" is comprised of the following scales from the Survey of Organizations: Supervisory Support; Supervisory Interaction Facilitation; Supervisory Goal Emphasis; Supervisory Work Facilitation; Peer Interaction Facilitation; Peer Support; Peer Goal Emphasis; Peer Work Facilitation; Overall Satisfaction; and the Supervisory Needs scale. "What It's Like to be in the Army" includes Cureton's Scales of Job Satisfaction, Satisfaction with the Military, Satisfaction with the Army as a Whole, Satisfaction with the Community, Satisfaction with the Unit, and a few single items that were of particular interest as single items. "Your Work, Supervision, Pay, Promotions, and Fellow Workers" are the five scales from the JDI. "Before Joining the Army" is represented by the items from the BOQ-72 scale.

General Attitudes and Biographical Section--white

"General Attitudes about the Army and Army Life" is a Guttman type scale measuring Company Identification, Kind of Work, Amount of Work, Supervision, Co-workers, Physical Surroundings, Financial Rewards, and Career Future and Security from the Sears questionnaire. Last is the biographical section. Several changes made here include better specification of the educational levels in the Father's Education Level item, better definition of Father's occupation, and specification of rank.

Finally, one additional section was added--a five-page insert entitled "Warmup Questions." This section was added because the Army has longitudinal data on these items going back to WW II. It was thought these questions would be of interest to the Army.

CHAPTER IV

FIELD TEST OF INSTRUMENTS: EIGHTH ARMY, KOREA

During this phase the morale examples were retranslated and the scales refined further. The morale scales developed were used to rate the morale of section and company sized units in the Eighth Army. Concurrently the revised job satisfaction, motivation, and morale booklet was administered to soldiers in 16 companies or batteries.

Retranslation of Incidents

To accomplish this retranslation phase of the Behavior Observation Scaling procedure, persons not previously involved in the morale example writing stage independently categorized and rated the examples. Specifically, 27 officers, NCOs, and lower ranking soldiers sorted each morale example into a single morale category according to their opinion of the content of each example. They also evaluated each morale example according to the level of morale they felt was represented by the example. Thus, independent estimates of the category into which each example belonged and the level of morale each example represented were obtained from persons who had no involvement in generating the examples. Those morale examples showing good agreement across raters both in terms of categorization and level rating were judged to be desirable examples for the scales, because a variety of Army personnel could consistently identify in them a particular aspect of morale (category sorting) and a particular level (level rating) of morale.

Recall that morale examples had been generated earlier by National Guard and regular Army troops. Also, these examples had been retranslated--i.e., sorted by category and rated by morale level--by groups from the National Guard and the regular Army. The particular examples being retranslated here are those which showed the most promise for being included in the scales. Thus, the 153 examples included in this retranslation task were those examples which: (a) possessed relatively high agreement in earlier retranslation efforts both in terms of category sorting and morale level ratings, or, (b) were rewritten by PDI staff members to make less ambiguous the meaning of morale examples previously retranslated with low agreement on one or both criteria. Also, an attempt was made to include examples which, as a whole, covered all morale categories and levels of morale from high to low. Therefore, this retranslation phase was a kind of "final screening" for morale examples. It was hoped that the results of this retranslation effort would be the consistent sorting and scoring

of morale examples into categories and levels of morale such that the morale rating scales to be used in the Eighth Army field test would contain truly unambiguous anchors representing precisely the different aspects and levels of morale the scales were designed to tap.

The summary statistics for this retranslation effort involving 27 Eighth Army personnel are shown in Table 4.1. The summary statistics include the percentage of raters assigning the individual examples to each morale category (A-G) and the mean and standard deviation of the morale level (1-9) rating assigned. After examining the percent agreements for each of the examples, Table 4.2 was developed. In order for an example to be selected for Table 4.2 from Table 4.1, 50 percent or more (13) of the raters had to agree on the category assignment. For example, example 1 was selected from Table 4.1 and placed in Table 4.2 because 96 percent of the raters felt it belonged in Category A.

After extracting all examples which met the 50 percent agreement level, examples within each category were ordered according to the mean rated morale level. By examining the examples within each category, decisions could be made about which examples to select for scale anchors.

Also shown in Table 4.2 are retranslation statistics from previous data.¹ In some instances data were not available from either source because the item had been modified significantly by PDI staff members to fill holes in scales or to provide alternate anchors for various scale points.

Examples tentatively selected for the scales based on these retranslation data were shown to a small group of Army officers. The officers, while generally satisfied with the scales, were concerned about the mixture of individually-oriented and unit-oriented examples on the same scale. They felt it would be difficult to use examples oriented to individuals' morale as benchmarks to rate the morale of units. Based upon these comments, examples referring to individual Army soldiers were deleted from consideration before the scales were developed whenever there was a unit-relevant item that could be used in its place.

Several criteria were used to select morale examples for the scales to be used in the Eighth Army field test. The criteria include: (a) percent agreement for the category sorting task; (b) standard deviations of the morale level ratings; and (c) ordinal progression of the mean scale values.

¹The active Army data are from other Eighth Army personnel while the National Guard data are derived from previously gathered National Guard (Minnesota) retranslation information.

Table 4.1

Percentage of Retranslation Subjects Assigning
Incidents to Each Morale Category and the
Mean and Standard Deviation of the Morale Rating
N = 27

Item Number	$\bar{X}$	A	B	C	D	E	F	G	S.D.
1	6.7	96						4	1.50
2	3.5	86	7	7					1.42
3	7.5	4	22	11		63			1.48
4	7.0		4		92	4			1.32
5	2.2	4	15	15	44	11		4	1.55
6	8.2			4		22	7	67	.98
7	1.3							100	1.61
8	8.0	100							1.85
9	5.0	4	52	15	4			26	1.41
10	6.8		11	60		4	7	15	1.21
11	2.5		26	7		63	4		1.26
12	7.0	89				4	4	4	1.36
13	5.5		81			4		15	1.42
14	5.8	4	67	4	4	7	4	11	.99
15	8.0		85			15			1.02
16	2.7		92	4				4	1.49
17	6.3		78			7		15	1.37
18	5.4			85	4	7	4		1.12
19	2.7		7	78		11	4		.92
20	2.7			81		15	4		1.34
21	5.5		15	78	4				1.58
22	3.9		15		81			4	.96
23	6.2		11	7		74	4		1.53
24	7.4							100	1.61
25	6.7		4			4	81	11	1.37
26	2.5		11	15		44	30		1.26
27	3.7	4	7	4			4	78	1.39
28	2.2		11	4	4	7	60	15	1.04
29	7.8							100	1.63
30	7.4				81			18	1.67
31	3.3	15	22	4			48	7	1.62
32	1.7			4		4	87	4	1.17
33	7.8					11	81	7	1.25
34	7.5	78		7				15	1.94
35	2.9	81					15	4	1.78
36	7.4		11	4		81	4		1.62
37	7.2		67	7		4	7	15	1.55
38	5.9		70	4	15	4		7	1.68
39	7.4			33		63		4	1.60
40	2.4	33	41	11				15	1.47
41	5.5		7		85		4		1.96
42	6.9		7	89		4			1.60
43	4.3		4	60	26		4	4	1.23

Item Number	$\bar{X}$	A	B	C	D	E	F	G	S.D.
44	4.3			4	89		7		1.31
45	3.2			70	4	4	7	11	1.39
46	7.9		15		63	7		15	1.33
47	6.8			4	92			4	1.78
48	6.4			7	93				1.82
49	7.5		26	26		48			1.26
50	2.4			15	85				1.13
51	7.2		11		4	85			1.73
52	2.6			4		89	7		1.28
53	1.8		4		4	15	74	4	1.27
54	1.3		4		7		7	81	.92
55	1.8			7	52	7	15	18	1.45
56	7.3	89	7				4		1.19
57	7.3	89					4	7	1.45
58	8.0	4	89				7		1.09
59	3.3		4		92		4		1.32
60	6.3		89				4	4	1.10
61	4.1		7	74	7	4	7		1.30
62	3.5		7	60	11		11	7	1.33
63	7.0		11		85		4		1.26
64	7.3		78	4		7		11	1.21
65	7.4		11		4	4	74	7	1.73
66	7.1		7	4		81		4	1.60
67	3.6	85		4		4	4		1.50
68	3.7	4	7			37	44		1.60
69	2.8		18	30		18	26	4	1.54
70	1.8		26	7		56	11		1.70
71	7.7		15			48	26	11	1.59
72	1.4			52			44	4	.83
73	7.8	100							1.06
74	8.0		7		7		4	83	1.11
75	2.7			89			7	4	1.13
76	7.9	100							1.14
77	1.9	74	7		4		11	4	1.32
78	8.1		96			4			1.25
79	1.7		85	4		4	7		1.31
80	6.9			60		10	15	4	1.28
81	7.8		7		4	74	7	7	1.21
82	3.3		60	18				22	1.32
83	2.1		11	22		60	4		.85
84	1.9			4			92	4	1.10
85	7.8					11	4	85	.99
86	8.2			4			7	89	1.62
87	2.4						15	85	1.57
88	7.6	89		4		7			1.68
89	5.9	4	60	7		11	11		1.20

(Table 4.1 cont.)

80.

Item Number	$\bar{X}$	A	B	C	D	E	F	G	S.D.
90	6.8	100							
91	6.7		7	81		7		4	1.37
92	1.4						7	92	1.61
93	4.0			81			11	7	.80
94	2.3			15	74		11		1.40
95	3.3		11	7	4	67	11		1.27
96	7.3					11	52	37	1.42
97	7.0					4	15	81	1.26
98	2.6	7			4		7	81	1.33
99	6.8	85		4		4		7	1.68
100	7.5	4	7	37	11	7	4	26	1.91
101	7.6		89		4		4	4	2.05
102	5.6	41	22		4		4	30	1.26
103	3.3		89	4	4		4		1.44
104	2.5	78		15			7		1.65
105	7.6				4	4	89	4	1.47
106	7.0		81	4	4	4	4	4	1.55
107	3.2	100							2.01
108	2.9		85	7			7		1.06
109	7.5		4	60		4	15	18	1.50
110	2.1		4	4	4		78	11	1.04
111	2.2							100	.94
112	7.2		56	30	4		4		1.01
113	7.9		89		4	4	4		1.29
114	4.5		4	41	30		15	11	1.69
115	3.4		4	4	85	4	4		1.57
116	7.0				92		4	4	2.03
117	5.4		7	70		11	4	4	1.42
118	2.6			60	30		4	7	1.52
119	7.7		7	4		74	7	7	1.56
120	2.7		4	7		74	11	4	1.17
121	4.7		7			78		15	1.28
122	6.7					5	89	7	.79
123	6.6		92			4		4	1.14
124	6.7			4		7		89	1.52
125	3.2		7	81			7	4	1.76
126	2.8					7	89	5	1.37
127	6.9		56	15		18	7	4	1.15
128	4.9		4	89			4		1.20
129	7.0		4		85	4		4	1.40
130	3.6		7		78	7	4		1.52
131	6.6		74		7	7		11	1.59
132	5.0		4	74		4	7	7	1.32
133	7.0					7	92		1.78
134	6.2				96		4		1.36
135	4.2				92		7		1.62

Table 4 2

Retranslation Data for Morale Scales

A. COMMUNITY RELATIONS

Retranslation			Previous Data					
Item Number	$\bar{x}$	Percent Agreement	Active Army			National Guard		
			$\bar{x}$	Percent Agreement	S.D.	$\bar{x}$	Percent Agreement	S.D.
8	8.0	100	8.00	96	1.17	7.50	89	1.65
76	7.9	100						
73	7.8	100	6.64	96	1.40	7.48	93	1.27
88	7.6	89	7.19	88		7.24	93	1.03
34	7.5	78	8.25	70	.90	7.90	74	1.92
57	7.3	89	6.19	88	1.22	6.77	96	1.45
56	7.3	89	7.19	88	.96	7.32	93	1.16
12	7.0	89	7.05	96	1.05	6.84	92	1.41
90	6.8	100				6.85	100	.97
99	6.8	85				6.74	100	1.90
1	6.7	96	6.85	91	1.06	7.25	89	1.27
67	3.6	85	2.38	67	1.56	2.75	59	.90
2	3.5	86				3.56	93	.94
107	3.2	100				3.15	100	1.51
35	2.9	81	2.53	68	1.59	2.75	59	.90
104	2.5	78	1.88	67	.93	2.68	82	1.69
77	1.9	74				1.85	74	.85

B. TEAMWORK AND COOPERATION

Retranslation			Previous Data					
Item Number	$\bar{x}$	Percent Agreement	Active Army			National Guard		
			$\bar{x}$	Percent Agreement	S.D.	$\bar{x}$	Percent Agreement	S.D.
78	8.1	96	7.00	82	.94	7.00	85	1.72
15	8.0	85	7.95	88	1.09	7.78	87	.93
58	8.0	89	8.11	82	.94	8.20	89	.96
113	7.7	89	8.06	82	.85	7.64	93	.98
101	7.6	89				7.44	93	.80
64	7.3	78	7.00	82				
37	7.2	67						
112	7.2	56	5.82	58	1.19	7.19	60	1.59
106	7.0	81	6.48	88	1.09	6.38	84	1.50
127	6.9	56				7.00	85	1.72
123	6.6	92	7.25	89		6.82	63	1.34
131	6.6	74	6.31	55	.99	7.19	78	1.18
17	6.3	78	7.25	67	.90	7.42	70	1.39
60	6.3	89	6.82	70	1.54	6.29	70	.70
38	5.9	70						
89	5.9	60	6.00	65	1.30	5.85	77	1.11
14	5.8	67	6.06	78				
13	5.5	81	6.62	79	1.49	5.50	67	1.60
9	5.0	52						
82	3.3	60						
103	3.3	89						
108	2.9	85	2.87	63	1.78	3.76	81	1.54
16	2.7	92				2.83	85	1.49
79	1.7	85	1.57	67	.62	2.08	89	.70
						2.16	89	.70

C. REACTION TO ADVERSITY

Retranslation			Previous Data					
Item Number	$\bar{x}$	Percent Agreement	Active Army			National Guard		
			$\bar{x}$	Percent Agreement	S.D.	$\bar{x}$	Percent Agreement	S.D.
108	7.5	60						
42	6.9	89				6.5	89	1.80
80	6.9	60				7.30	74	1.22
10	6.8	60						
91	6.7	81	6.0	72	1.06	6.00	74	1.10
21	5.5	78	4.0	71	1.26	4.91	82	1.73
18	5.4	85	6.62	57	1.27	5.90	70	1.48
117	5.4	70	5.0	71	1.50	4.64	82	1.75
128	4.9	89				4.47	63	1.46
132	5.0	74				4.23	65	1.55
43	4.3	60	3.89	82	1.37	4.12	65	.83
61	4.1	74	2.96	58	.99	3.00	78	1.02
93	4.0	81	3.0	75	1.33	3.38	78	1.25
62	3.1	60				2.70	74	1.27
125	3.2	81	1.89	78	1.05	2.25	--	1.16
45	3.2	70				2.17	85	1.20
19	2.7	78				3.11	70	1.12
20	2.7	81				1.83	60	.69
75	2.7	89				2.84	70	.98
118	2.6	60	2.13	65	.80	2.42	70	.88
72	1.4	52						

D. SUPERIOR-SUBORDINATE RELATIONS

Retranslation			Previous Data					
Item Number	$\bar{x}$	Percent Agreement	Active Army			National Guard		
			$\bar{x}$	Percent Agreement	S.D.	$\bar{x}$	Percent Agreement	S.D.
46	7.9	63	8.19	67	.80			
30	7.4	81						
63	7.0	85				7.17	85	1.13
129	7.0	85				7.26	85	1.11
4	7.0	92	7.18	90	.98	7.96	93	1.08
116	7.0	92				7.39	96	1.21
137	6.8	74				7.11	67	.99
47	6.8	92				7.04	89	.89
146	6.7	89	6.54	92	1.16	7.00	85	.98
48	6.4	93				6.43	85	1.47
134	6.2	96				7.38	89	1.11
152	5.7	96				6.67	89	1.14
141	5.7	89	3.44	70	2.09			
41	5.5	85						
44	4.3	89						
135	4.2	92						
22	3.9	81	4.14	91	.94	3.23	96	1.01
153	3.6	92	4.33	75	1.05	3.60	74	1.20
130	3.6	78	3.83	82	1.26	4.25	89	1.98
115	3.4	85				3.71	89	1.06
59	3.3	92				3.09	78	1.19
144	3.0	89						
50	2.4	85	4.57	--	1.05	4.80	83	--
94	2.3	74	1.35	85	--	2.91	85	1.35
55	1.8	52				2.29	78	1.28

E. PERFORMANCE AND EFFORT

Retranslation			Previous Data					
Item Number	$\bar{x}$	Percent Agreement	Active Army			National Guard		
			$\bar{x}$	Percent Agreement	S.D.	$\bar{x}$	Percent Agreement	S.D.
81	7.8	74	6.98	67	1.16	7.83	67	1.01
119	7.7	74	7.70	83	1.15	8.14	78	1.12
3	7.5	63						
39	7.4	63						
36	7.4	81						
51	7.3	85	7.13	67	1.11	7.30	60	1.26
66	7.1	81	6.35	71	1.23	7.04	89	1.34
143	6.9	67	7.13	71	.88	6.64	82	1.53
23	6.2	74	6.33	71	1.24	6.00	--	1.08
151	4.7	63				4.86	78	.77
121	4.7	78				4.54	89	.76
148	3.8	60				3.68	70	.86
95	3.3	67	3.21	64	1.26	3.35	80	1.11
145	3.2	74	3.41	77	.97	2.95	74	.81
120	2.7	74				2.17	89	.85
142	2.7	70	2.14	64	.99	2.00	89	.76
52	2.6	89	2.23	59	1.12	2.62	89	.99
11	2.5	63						
83	2.1	60	2.71	71	.75	2.90	78	1.38
70	1.8	56	1.63	70	.93	1.45	74	.59

F. BEARING APPEARANCE AND MILITARY DISCIPLINE

Retranslation			Previous Data					
Item Number	$\bar{x}$	Percent Agreement	Active Army			National Guard		
			$\bar{x}$	Percent Agreement	S.D.	$\bar{x}$	Percent Agreement	S.D.
33	7.8	81						
105	7.6	89						
140	7.5	74						
65	7.4	74	6.00	59	1.58			
138	7.4	48						
96	7.3	52						
136	7.1	85						
133	7.0	92						
25	6.7	81	6.85	74	1.55			
122	6.7	89						
150	5.5	67	4.78	67	.94	4.95	70	1.53
68	3.7	44						
31	3.3	48	3.18	63	1.10			
126	2.8	89	2.88	89	1.20			
147	2.7	96	2.26	79	.91	2.64	93	1.20
139	2.6	89				3.58	89	.95
28	2.2	60						
110	2.1	78				2.09	82	1.00
84	1.9	92	1.50	91	.67	2.13	85	1.03
53	1.8	74				1.79	70	1.06
32	1.7	87				2.06	63	1.31

G. PRIDE IN UNIT, ARMY, AND COUNTRY

Retranslation			Previous Data					
Item Number			Active Army			National Guard		
	$\bar{x}$	Percent Agreement	$\bar{x}$	Percent Agreement	S.D.	$\bar{x}$	Percent Agreement	S.D.
6	8.2	67	8.00	56	.82			
86	8.2	89	7.82	77	.98	8.11	70	.72
74	8.0	83	7.38	73	1.27	7.10	78	1.19
85	7.8	85						
29	7.8	100	8.35	83	1.15	7.96	85	1.04
149	7.5	89				7.08	96	1.66
24	7.4	100				7.16	93	1.05
97	7.0	81	7.35	81	1.19	7.53	70	1.19
124	6.7	89				6.81	82	1.15
127	3.7	78	2.50	67	1.12	3.13	88	.99
98	2.6	81	2.42	83	3.73	3.16	97	1.43
87	2.4	85				1.39	67	.49
111	2.2	100	1.63	100	1.02	1.76	96	.71
92	1.4	92				1.50	96	.64
7	1.3	100				1.62	96	.68

- a. Percent agreement. Examples successfully retranslated into a single morale category were preferred to examples which could not be consistently categorized. Scales containing examples with high percent agreement on the categorizing task possess relatively unambiguous meaning and are defined distinctly from other scales.
- b. Standard deviation. Morale examples with relatively low standard deviations for the level ratings were selected for the scales. A low standard deviation for an example indicates that retranslation raters agree closely about the level of morale represented by the example. Low standard deviation examples should provide comparatively unambiguous anchors for scale levels to which they are assigned.
- c. Ordinal progression. For each morale scale, nine examples were selected to represent as much of the entire range of scale values (1-9) as possible. Further, examples were selected such that their mean scale values fell as closely as possible to the ordinal scale positions (1, 2, 3 . . . 9).

Examples underlined in Table 4.2 are those selected for use in the morale scales for the Eighth Army field test. Referring to Table 4.2, it is evident that certain scales still had "holes"--i.e., points on the scale for which there were no acceptable examples with mean scale values reasonably near. Points in the middle of scales were the most difficult to fill. A good example of this problem is the Community Relations scale. Notice that no acceptable morale example exists with a mean scale value of between 3.6 and 6.7. In this and in other cases where "holes" were present in the scales, researchers either wrote new examples or modified other examples to fit into the gap.

For example, with respect to Category A, Community Relations, the following item was written to represent the middle or 5-point on the scale.

The men in this unit did not go out of their way to become involved in community activities but did participate in a few structured programs such as the Red Cross and U. S. Government Bond programs.

Scale B, Teamwork and Cooperation, was well represented by items across the entire continuum. Again, the underlined items are those that were selected for scale inclusion. Scales C, D, and E were similarly represented by items across the entire scale. In Scale F, Bearing, Appearance, and Military Discipline, example number 68 was slightly modified to fit into the 4-point on that scale. Finally, Scale G, Pride in Unit, Army, and Country, suffered a gap in the middle similar to Scale A. The following item was written to fill the middle position on the scale:

When asked about their unit, these soldiers mentioned which one it was, but they didn't say much about it one way or the other.

Table 4.3 contains the morale rating scales used in the Eighth Army field test. In the next section, this field test is described and results reported.

Summary

Morale examples gathered in Korea were assigned to categories and rated according to the level of morale by 27 officers and enlisted men who had not been previously involved in morale example writing. This information was used to develop morale rating scales for use in the Eighth Army. The resultant scales represent seven different facets of morale with examples anchoring appropriate levels on the scales.

Field Test

Sample

The questionnaire booklet described in detail in Chapter III was administered to 466 Army enlisted personnel E-4 and below plus Specialist E-5s. These persons were sampled from a total of 16 companies (batteries) and 104 platoon (section) sized units. Table 4.4 below displays the number of persons in the sample from each company and platoon sized units.

"Platoon sized units" were specified by asking the company commander to identify company subunits which possessed integrity as units or "made sense" in terms of soldiers' day-to-day interaction. The important point was to identify subgroups of companies justifiably called "units." Thus, the platoon (section) column of Table 4.4 variously refers to platoons, sections, or sometimes squads--whatever subunit definition was appropriate for the company.

These soldiers formed essentially an availability sample. That is, for each unit the sample consisted of soldiers who were available for the questionnaire administration on the day the PDI team was present in that unit. PDI had expected to administer the job satisfaction booklet to the entire company, but due to mission requirements and the limited time available in each unit, they were unable to do so.

The data collected allows for evaluation of 110 sets of company morale ratings and 131 sets of morale ratings at the platoon levels. Officers (company COs, company XO's, and platoon leaders) and NCOs (company first sergeants and platoon sergeants) provided ratings of companies and platoons with which they were familiar. At the individual level, self-report questionnaire data were gathered describing the satisfaction, motivation, and morale of individual soldiers in 16 companies and 104 platoons.

Table 4.3

91.

Morale Rating Scales (Korea)

A. COMMUNITY RELATIONS

Becoming involved as individuals or units in community activities; establishing friendships with local civilians; treating local civilians with dignity and respect; versus showing a lack of interest in community problems; looking down on persons in the community and treating them disrespectfully or abusively; not participating in civilian activities.

Which of these statements would you expect to be typical of this individual/unit?

Rating

- _____ 9 While in Viet Nam this unit supported an orphanage by providing them with food and by building a swing set and merry-go-round. The men in the unit felt good about this effort and looked forward to visiting the orphanage every week.
- _____ 8 During a severe hurricane, members of this platoon volunteered to help evacuate people from a city hard hit by the storm; the actions of this unit resulted in a letter of appreciation from the mayor of the stricken city. The men participating in the rescue operations felt very proud that they had been able to help and hung the mayor's letter in platoon headquarters.
- _____ 7 The unit volunteered to help the community by picking up Christmas trees on a designated weekend using government equipment.
- _____ 6 After receiving requests from local villagers to drive slower through their village in the rainy season to avoid splashing water into their houses, vehicle drivers responded by driving slower.
- _____ 5 The men in their unit did not go out of their way to become involved in community activities but did participate in a few structured programs such as the Red Cross and U.S. Government Bond programs.
- _____ 4 The EM took a Korean taxi with the understanding that the trip would cost a certain amount. When he reached his destination, the driver refused to give him change for a large bill. The EM then forced the taxi driver to give him his change. He was later charged with assault.
- _____ 3 The members of this unit complained because Koreans are allowed to ride post-run busses.
- _____ 2 This soldier got drunk in the local village and broke a window in a Korean taxi cab.
- _____ 1 Five men in this unit raped a local national, but the other men in this unit saw nothing wrong with this action and felt nothing should be done about it.

B. TEAMWORK AND COOPERATION

Helping other people in the unit with their personal or job related problems; working and playing well together as a unit; sacrificing for other unit members or the unit as a whole; staying together as a unit even through difficult times; versus showing indifference toward the personal or job related problems of other unit members; failing to work smoothly together on the unit task; displaying selfish interest in one's own welfare and a lack of concern for the well-being of other individuals or the unit; avoiding other unit members during off-duty hours and recreational activities.

Which of these statements would you expect to be typical of this individual/unit?

Rating

- ☐ 9 The men in this unit volunteered to dig a water line by hand. All the men participated to spread the work and prevent heat exhaustion, while the mess hall provided refreshments. The men in the unit felt good that they could work together to get this job done.
- ☐ 8 Many men in this unit pitched together to buy new furniture for their day room.
- ☐ 7 The commander decided that the battery would play volleyball for physical training. All of the men got involved in the games and unit competition was set up.
- ☐ 6 The majority of individuals in this company-sized unit frequented the same bar in a town next to the post. Soldiers having problems (drinking, fights, etc.) were cared for by other members of the unit.
- ☐ 5 Many of the men in this unit played volleyball and basketball in the post's sports center during off-duty hours.
- ☐ 4 During summer camp the company softball team went back to the headquarters area to play in the Division play-off. The rest of the unit was ticked off and bad-mouthed the softball team and system because with the 15 men gone from the field, the work load was heavier on everyone else in the unit.
- ☐ 3 When an EM fell out during a range-run in basic training, the rest of his unit left him behind.
- ☐ 2 The EM from different ethnic groups in this unit grouped off together and never did anything as a unit.
- ☐ 1 When one soldier suffered from an overdose of drugs, the three others with him ran off to get rid of the stuff, leaving him alone.

C. REACTIONS TO ADVERSITY

Tolerating adversity or perceived injustice without complaint; accepting hardships readily; expressing satisfaction with one's own or with the unit's situation; sticking it out in the face of adversity; versus complaining; griping; bitching; giving up; succumbing to adversity; withdrawing from hardship situations; expressing dissatisfaction, resentment, or bitterness about one's own or about the unit's situation.

Which of these statements would you expect to be typical of this individual/unit?

Rating

- ___ 9 When time in service was extended for promotions for the lower enlisted ranks, this individual ignored the change and performed his job without complaint.
- ___ 8 When hot water was not available in the barracks for a week, these men posted an article from a magazine which told the advantages of taking cold showers.
- ___ 7 This on-duty crew finally got cold chow at 2100 hours. The crew complained, but still continued to perform their duties.
- ___ 6 After 20 years of ADA site duty, this warrant officer was reassigned to another battery in CONUS despite a compassionate request for assignment to Ft. Bliss. He complained to the platoon leader and other officers in the battery until DEROS, but his job performance continued to be outstanding.
- ___ 5 When DA cut the tour in Korea from 13 to 12 months, the leave policy was also to be changed from 30 to 18 days. The men in this unit wrote their congressmen to try to stop the change in leave policy.
- ___ 4 The unit planned a ski trip that was called off on the day of the trip. The regular meeting was held but the men worked poorly that day and had hard feelings toward the system.
- ___ 3 This person became quiet and subdued after receiving a "Dear John" letter from his wife. He withdrew from social contacts, drank a lot, and took unnecessary chances in combat.
- ___ 2 When preparing for an inspection, the men in this unit had to improvise due to a shortage of parts. This resulted in complaints, a work slowdown, and finally a flat out refusal to work until the proper parts could be located.
- ___ 1 At a small, closed-in military site that had no recreational facilities, the EMs tore up some jeeps, burned barrack facilities, and destroyed other military property.

D. SUPERIOR-SUBORDINATE RELATIONS

Trust and respect between subordinates and superiors in the unit; subordinates and superiors willing to spend informal time together (drinking beer, etc.); talking over personal concerns together; superiors pitching in and helping with the work when called for; working together without regard to rank; versus superiors harassing and nit-picking subordinates; superiors not helping solve subordinates' problems; superiors and subordinates not associating with or talking with each other.

Which of these statements would you expect to be typical of this individual/unit?

Rating

- ___ 9 Because of the respect and almost personal relationship that the men had with the company commander, each man put forth a little more effort than he normally would have for an inspection. When the company passed with flying colors, the commander threw a bash to show his appreciation to the men.
- ___ 8 The men in this unit interact freely and closely in the barracks with their NCO, but still respect the chain of command.
- ___ 7 When a group of servicemen, mostly NCOs, were sitting at the bar and a company grade officer approached, they invited him for a drink. Since it was after hours, the officer accepted and the men discussed some of the problems that faced the company.
- ___ 6 When the unit commander told an EM that he was supposed to be working on a different detail, an NCO told the officer that he had ordered the EM to continue working in his area. The EM chanked the NCO for sticking up for him.
- ___ 5 At the Forward Observer Area during summer camp, two enlisted men got to play cribbage and drink with two captains.
- ___ 4 The battalion commander let it be known he felt the men wouldn't rap with him and tended to avoid him. However, the men felt that he didn't go out of his way to talk to them and expected the men to seek him out.
- ___ 3 These NCOs rented places in a nearby town so they would not have to stay in the barracks with the EM.
- ___ 2 Although this EM had a personal problem and could have used some help, he would not confide in his superiors.
- ___ 1 The men had a general feeling that the commanding officer was harrassing them. The men sabotaged their own equipment and the mission failed.

E. PERFORMANCE AND EFFORT

Spending extra time and effort to get the job done; volunteering or taking the initiative to do the job well; performing well; versus expending little or no effort toward getting the job done; avoiding or passively resisting doing work; performing poorly.

Which of these statements would you expect to be typical of this individual/unit?

Rating

- ___ 9 When maintenance mechanics found an error in their assembly procedures on an aircraft, they told their platoon leaders of their mistake and requested that the hangar be opened Saturday and Sunday if necessary to meet their previously promised Monday delivery.
- ___ 8 While clearing the brush from an approach to an airport, these dozer operators never shut the dozer off, running in shifts right through lunch.
- ___ 7 This section was asked to prepare a set of firing charts by a specific time. The charts were finished ahead of time.
- ___ 6 Although this section was constantly called upon for typing tasks, the work was done with few mistakes and on a timely basis.
- ___ 5 The men in this unit did not push for top performance, although they did their jobs and kept busy.
- ___ 4 Many troops in this unit would leave the post as quickly as possible after duty hours to avoid doing any extra work.
- ___ 3 The service section of a support unit had a large backlog of equipment needing repair. All EM assigned to this section appeared to be busy, but their output was very low compared to other service sections.
- ___ 2 The men in this section signed out weapons to be cleaned, but sat around and bullshitted until it was time to turn the weapons back in.
- ___ 1 During a period these EM slowed their work down and made mistakes that cost time and new parts. They were working seven-day weeks, but at the end of the period they were accomplishing only the same amount of work in the seven days that they had been accomplishing in five before.

F. BEARING, APPEARANCE AND MILITARY DISCIPLINE

Crisp military appearance; responding quickly to orders; doing the "right" thing in the absence of explicit orders; low frequency of AWOLs; showing an eagerness to correct nonstandard conditions; being alert; versus sloppy appearance; high frequency of AWOLs; destruction of property; fighting; refusing to obey orders; responding slowly to military orders.

Which of these statements would you expect to be typical of this individual/unit?

Rating

- ___ 9 Even though the day was to be spent on the rifle range lying in the dirt, this individual got up at 5:00 a.m. to polish his boots, check over his uniform, and make sure he was clean shaven.
- ___ 8 This unit's clothing was fitted and secured (i.e.. shoes tied tightly, belts tucked in, buttons buttoned). When marching, their heads were held up and their steps were high and quick.
- ___ 7 When this unit holds formations to disseminate information, all the men fall out on time, in correct uniform.
- ___ 6 The overall appearance of this entire unit (including "duds") improved greatly during the period of preparation for an inspection. Personnel who normally required frequent corrective action took those actions without being told. This unit had a low AWOL rate and the EM always maintained a sharp military appearance.
- ___ 5 When an officer saw a man with his field jacket unbuttoned, he told him to button it properly or not to wear it.
- ___ 4 This EM continually showed up for work late, though the way he did his work was satisfactory.
- ___ 3 Members of the unit walked with hands in pockets, hats on the backs of their heads, and a slouchy posture.
- ___ 2 These troops got drunk and threw beer cans at the BOQ, kicked down some of the partitions in the barracks, and broke bottles in the barracks.
- ___ 1 This unit had two AWOLs per month per 200 members, filthy areas in new billets, troops staggered to and from work at their own leisure, and there was a high incidence of drug use.

G. PRIDE IN UNIT, ARMY, AND COUNTRY

Expressing pride and enthusiasm for one's country and the Army; showing pride in one's unit by taking actions to make the unit distinctive and clearly identifiable; bragging about the accomplishments of the unit; challenging and competing with other units; versus downgrading or expressing indifference for one's country and the Army; showing a lack of concern for one's unit and its accomplishments; resisting wearing the uniform or identifying unit insignia.

Which of these statements would you expect to be typical of this individual/unit?

Rating

- ___ 9 The unit passed all major inspections with highest scores in the unit headquarters; its AWOL, VD, and accident rates were the lowest; and it had the highest operational time. Members of the unit told other units that they would have to "go some" to match their accomplishments.
- ___ 8 During an inspection by the commanding general of the 7th Army, the general asked an MP at the gate what he thought of his unit. The man told the general his unit was "the best MP unit in the whole damn Army." The general said that was good enough for him and did not inspect the unit.
- ___ 7 Many members of the unit wanted the unit to be recognized, so they purchased patches which they wore on their hats behind their rank.
- ___ 6 This soldier said he was happy to do his part by serving in the Army.
- ___ 5 When asked about their unit, these soldiers mentioned which one it was, but they didn't say much about it one way or the other.
- ___ 4 Unit members are able to go to baseball games for 50 cents if they wear their uniforms. Not many unit members go.
- ___ 3 During A.I.T. the top student in the class refused the "student of the week" armband from the first sergeant based on his personal feeling about the Army.
- ___ 2 At the end of the day, when the flag was taken down, it was carried dragging on the ground. An officer and an NCO standing nearby said nothing to the person carrying the flag.
- ___ 1 These EM let everyone outside their unit know that they thought their unit was the worst in the Army.

Table 4.4

The Sample

<u>Company (Battery)</u>	<u>N</u>	<u>Platoon (Section)</u>	<u>N</u>	<u>Company (Battery)</u>	<u>N</u>	<u>Platoon (Section)</u>	<u>N</u>
01	35	0102	5	02	42	0201	5
		0103	7			0202	14
		0104	4			0203	3
		0105	1			0204	3
		0107	1			0205	5
		0108	1			0206	7
		0110	1			0207	2
		0111	1			0208	2
		0112	7*				
03	14	0301	1	04	25	0401	4
		0303	3			0402	9
		0304	4			0403	3
		0305	1			0404	1
05	20	0501	3			0405	5
		0502	2	06	77	0601	3
		0503	1			0603	15
		0504	1			0604	19
07	17	0701	1			0605	14
		0702	2			0606	15
		0703	4	08	7	0801	1
		0704	1			0803	1
		0707	7			0804	2
09	42	0901	1			0805	1
		0902	1	10	19	1001	6
		0904	2			1002	2
		0905	2			1003	7
		0907	4				
		0908	7				
		0909	8				
		0910	4				
		0911	8				
		0914	1				

*These codes for platoons correspond to the unit identification codes used on computer printout of Seventh Army data analyses.

<u>Company (Battery)</u>	<u>N**</u>	<u>Platoon (Section)</u>	<u>N**</u>	<u>Company (Battery)</u>	<u>N</u>	<u>Platoon (Section)</u>	<u>N</u>
11	24	1101	2	12	40	1201	2
		1102	1			1203	1
		1103	1			1205	2
		1104	2			1206	12
		1105	1			1207	2
		1106	1			1208	9
		1107	3			1209	5
		1108	4			1210	2
		1109	1				
		1110	2				
		1111	1				
		1112	4				
13	10	1305	2	14	43	1401	5
		1306	1			1402	4
		1307	1			1403	5
		1309	1			1405	2
		1310	1			1406	8
15	17	1501	1	16	22	1601	2
		1506	1			1603	3
		1507	1			1604	5
		1508	1			1605	2
		1509	2			1606	3
		1510	1			1607	2
		1511	1			1608	3
		1512	4			1609	1
		1513	1				

**The number of persons sampled from platoons (sections) is smaller than the number sampled from companies (batteries) because some soldiers could not be reasonably assigned to a specific platoon (section) although they were identifiable in terms of company assignment.

Morale Ratings

The two purposes for field testing the morale rating scales at this point were: (a) to assess their interrater reliability and resistance to various rater errors; and (b) to investigate preliminarily their construct validity. To accomplish these goals, officer and NCO raters evaluated the morale of units--companies and platoons--with which they were familiar. One step in evaluating the format was to investigate the extent of leniency, halo, and restriction or range rater errors and to examine the interrater reliability of the rating scales. Later in this chapter, we discuss data bearing upon the construct validity of the scales.

1. Leniency error. In the context of evaluating the morale of units, the leniency error is a response bias which occurs when a rater assigns consistently high ratings to units even though there are, in fact, some units which have average or low morale. Since it is impossible to know the true level of each unit's morale, it is difficult to be certain that the leniency error is or is not being committed. However, an indirect indication of the degree to which leniency is present in ratings can be derived from examining the mean ratings. If the means are very near the top of the scale (e.g., 8.0 on a scale where 1 = very low, 9 = very high), it can be inferred that leniency error is present in the ratings. On the other hand, if the mean ratings are in the average range, there is some assurance that the ratings are at a realistic level and that the leniency error has been avoided.

Tables 4.5 and 4.6 contain mean ratings provided by all raters evaluating the morale of companies and platoons in the Korean sample. Notice that the highest dimension mean for the company ratings is 6.39 and for the platoon ratings, 6.70, both considerably below the top point on the scale (9.0). The median rating using data from both levels is 6.31. These data suggest that the leniency effect was not operating to any great degree within the morale ratings.

2. Halo error. The halo response tendency occurs when a rater makes an overall judgment about a unit's morale and then records ratings at approximately the same level on all categories of morale regardless of the true level of morale exhibited by the unit on the various facets of the construct. Assuming that many units show comparatively high morale in some facets and lower morale in others, it is important that a rating system be used in such a way as to reflect these units' high and low standing on different aspects of morale. The halo error operates against obtaining an accurate portrayal of the variability of morale level on different categories.

Table 4.5

Means, Standard Deviations, and Intercorrelations
of Platoon Morale Ratings (N = 122*)

<u>Mean</u>	<u>Standard Deviation</u>	<u>Dimension</u>	1	2	<u>Intercorrelations**</u>					6	7
					3	4	5				
6.25	.98	1. Community Relations	--								
6.44	.93	2. Teamwork and Cooperation	.47	--							
6.49	1.09	3. Reactions to Adversity	.47	.40	--						
6.62	1.29	4. Superior-Subordinate Relations	.38	.36	.61	--					
6.70	1.07	5. Performance and Effort	.30	.37	.56	.64	--				
6.10	1.09	6. Discipline and Military Appearance	.34	.38	.44	.60	.62	--			
6.65	1.19	7. Pride in Unit, Army, and Country	.29	.22	.19	.23	.41	.38	--		

* Raters evaluated some platoons which contributed no individuals to the questionnaire sample

** Intercorrelations of mean unit morale ratings for each platoon

Table 4.6

Means, Standard Deviations, and Intercorrelations
of Company Morale Ratings (N = 14)

Mean	Standard Deviation	Dimension	Intercorrelations ^a						
			1	2	3	4	5	6	7
6.26	1.01	1. Community Relations	--						
6.22	1.11	2. Teamwork and Cooperation	.50	--					
6.31	1.47	3. Reactions to Adversity	.31	.90	--				
6.39	1.54	4. Superior-Subordinate Relations	.16	.73	.87	--			
6.21	1.03	5. Performance and Effort	.14	.51	.63	.62	--		
5.43	1.38	6. Discipline and Military Appearance	.25	.75	.76	.72	.74	--	
5.91	1.42	7. Pride in Unit, Army, and Country	.40	.80	.82	.81	.65	.83	--

^a Intercorrelations of mean unit morale ratings for each company

Correlations among seven morale scales in Tables 4.5 and 4.6 provide results bearing upon the question of halo. Unfortunately, it is impossible to be sure of the true degree of halo error present in these ratings because the true intercorrelations among the seven scales are unknown. Whether the correlations obtained are overly large, and thus contain halo error, is unknown. Another problem in interpreting the size of scale intercorrelations as indicating directly the extent of halo bias is that the magnitude of these correlations depends partially on the reliability of individual scales. More specifically, low reliability for an individual scale makes it less likely that the scale will be correlated highly with other scales. Consequently, low interrelationships among scales is only impressive vis-a-vis the halo error when the reliability of the scales is high.

One way to estimate the degree of halo is to use the correction for attenuation formula (e.g., Ghiselli, 1964) to provide a crude estimate of what the magnitude of the scale intercorrelations would be if the ratings were perfectly reliable. Using median reliability estimates for company morale ratings (.82) and platoon morale ratings (.40) along with the median scale intercorrelations at company level (.72) and at platoon level (.38), the correlation for attenuation procedure suggests that the scale intercorrelations would be approximately .90 for companies and near 1.00 for platoons if the scales were perfectly reliable. Thus, although the judgment must be subjective because the true scale intercorrelations are unknown, it seems fair to say that the company morale ratings and the platoon ratings possess a severe halo bias.

3. Restriction of range error. Again, within the context of morale ratings, the restriction of range error occurs when a rater fails to differentiate among units in his ratings on a given scale dimension to the extent that these units actually differ on that aspect of morale. This error is also impossible to assess directly because there is no way of knowing the true variation in morale across different units. Again, an indirect means of investigating rater error must be used. Operationally, the standard deviation of ratings for each dimension provides an estimate of the extent of restriction of range error present in the ratings. Although there is no absolute standard for judging the correctness of the magnitude of these standard deviations, they provide some notion of the degree to which raters are able to differentiate among morale levels exhibited by different units.

Referring to the standard deviations of individual morale scales displayed in Tables 4.5 and 4.6, all but two scales possess standard deviations greater than 1.0. The mean standard deviation is 1.21. The magnitude of this average suggests that there is little if any undue restriction of range in the morale ratings, both at the company and platoon levels.

4. Interrater reliability. A meaningful index of rating scale reliability is the degree of interrater agreement present in a set of ratings. If raters can agree closely in their evaluations of different units' morale, then more confidence can be placed in the pooled ratings than if there is no agreement among raters.

In addition to investigating overall interrater agreement for company and platoon morale ratings, interrater reliability results were generated for different rater groups to provide diagnostic information about who might be best qualified to use the scales. Tables 4.7-4.13 display these interrater agreement results. In each of these analyses the intraclass correlation coefficient (Haggard, 1958) was used as an index of reliability. This coefficient is appropriate when varying numbers of ratings are available for different units. In addition, the K column in each table (4.7-4.13) indicates the average number of raters per unit providing morale ratings for individual scales. Finally, the purpose of the 2-Rater Reliability column is to provide common grounds for judging the size of reliability coefficients. Since the magnitude of the reliability indices depends in part on K, the Spearman-Brown Prophecy formula was used to "correct" reliability coefficients up or down to the reliability which might be expected if two sets of ratings for each unit were available.

Results of analyses at the platoon level suggest that when all raters' morale ratings are included, the reliability is generally low to moderate, depending on the scale investigated (see Table 4.7). One possible explanation for these disappointing results is that officers and NCOs possess significantly different perspectives on the morale of their units, causing severe disagreement between the two groups in the levels of morale they assign to the units. Therefore, each rater group's morale ratings were investigated separately. Results of these analyses appear in Tables 4.9 and 4.10. Clearly, this hypothesis was not confirmed. The interrater agreement among members of each of the two groups is lower than when the two groups' ratings are pooled. Overall, the interrater reliability results at the platoon level are disappointing. They suggest that platoon morale is simply very difficult to evaluate reliably (especially in the area of Teamwork and Cooperation on the Job). This is interesting information in its own right, of course, but it also indicates that to obtain platoon morale ratings of acceptable reliability, a relatively large number of qualified raters may be required.

Table 4.7

Interrater Reliability of Morale Scales:
Platoon Level - All Raters (All Platoons)

<u>Dimension</u>	<u>N</u>	<u>K</u>	<u>Reliability</u>	<u>2-Rater Reliability*</u>
1. Community Relations	136	4.35	.29	.15
2. Teamwork and Cooperation	136	4.35	.21	.11
3. Reactions to Adversity	136	4.25	.40	.24
4. Superior-Subordinate Relations	136	4.33	.48	.30
5. Performance and Effort	136	4.31	.40	.24
6. Discipline and Military Appearance	136	4.32	.52	.34
7. Pride in Unit, Army and Country	136	4.28	.50	.32

* Spearman-Brown adjusted to two raters

Table 4.8

Interrater Reliability of Morale Scales: Platoon Level -
 All Raters (Including Only the 66 Platoons Containing
 Two or More Persons in the Sample)

<u>Dimension</u>	<u>N</u>	<u>K</u>	<u>Reliability</u>	<u>2-Rater Reliability</u>
1. Community Relations	57	5.27	.25	.11
2. Teamwork and Cooperation	57	5.25	.03	.01
3. Reactions to Adversity	57	5.13	.42	.22
4. Superior-Subordinate Relations	57	5.25	.31	.15
5. Performance and Effort	57	5.24	.30	.14
6. Discipline and Military Appearance	57	5.27	.40	.20
7. Pride in Unit, Army and Country	57	5.18	.59	.36

* Spearman-Brown adjusted to two raters

Table 4.9

Interrater Reliability of Morale Scales:
Platoon Level - Officer Raters Only

<u>Dimension</u>	<u>N</u>	<u>K</u>	<u>Reliability</u>	<u>2-Rater Reliability*</u>
1. Community Relations	93	1.97	.15	.15
2. Teamwork and Cooperation	93	1.94	-.37	---
3. Reactions to Adversity	93	1.94	.14	.14
4. Superior-Subordinate Relations	93	1.95	-.02	---
5. Performance and Effort	93	1.96	.35	.36
6. Discipline and Military Appearance	93	1.94	.29	.30
7. Pride in Unit, Army and Country	93	1.93	.57	.58

* Spearman-Brown adjusted to two raters

Table 4.10

Interrater Reliability of Morale Scales:
Platoon Level - Enlisted Raters Only

<u>Dimension</u>	<u>N</u>	<u>K</u>	<u>Reliability</u>	<u>2-Rater Reliability*</u>
1. Community Relations	111	3.89	-.12	---
2. Teamwork and Cooperation	111	3.83	.07	.04
3. Reactions to Adversity	111	3.77	.08	.04
4. Superior-Subordinate Relations	111	3.86	.24	.14
5. Performance and Effort	111	3.84	.37	.23
6. Discipline and Military Appearance	111	3.86	.24	.14
7. Pride in Unit, Army and Country	111	3.30	.23	.14

* Spearman-Brown adjusted to two raters

Table 4.11

Interrater Reliability of Morale Scales:
Company Level - All Raters

<u>Dimension</u>	<u>N</u>	<u>K</u>	<u>Reliability</u>	<u>2-Rater Reliability*</u>
1. Community Relations	14	7.70	.60	.28
2. Teamwork and Cooperation	14	7.70	.77	.47
3. Reactions to Adversity	14	7.70	.84	.58
4. Superior-Subordinate Relations	14	7.70	.85	.60
5. Performance and Effort	14	7.64	.80	.51
6. Discipline and Military Appearance	14	7.70	.83	.57
7. Pride in Unit, Army and Country	14	7.70	.82	.55

* Spearman-Brown adjusted to two raters

Table 4.12

Interrater Reliability of Morale Scales:
Company Level - Officer Raters Only

<u>Dimension</u>	<u>N</u>	<u>K</u>	<u>Reliability</u>	<u>2-Rater Reliability</u>
1. Community Relations	13	2.61	.05	.04
2. Teamwork and Cooperation	13	2.61	.53	.46
3. Reactions to Adversity	13	2.61	.56	.49
4. Superior-Subordinate Relations	13	2.61	.54	.47
5. Performance and Effort	13	2.55	.62	.56
6. Discipline and Military Appearance	13	2.61	.73	.67
7. Pride in Unit, Army and Country	13	2.61	.74	.69

* Spearman-Brown adjusted to two raters

III.

Table 4.13

Interrater Reliability of Morale Scales:
Company Level - Enlisted Raters Only

<u>Dimension</u>	<u>N</u>	<u>K</u>	<u>Reliability</u>	<u>2-Rater Reliability</u>
1. Community Relations	13	5.67	.73	.48
2. Teamwork and Cooperation	13	5.67	.75	.51
3. Reactions to Adversity	13	5.67	.82	.62
4. Superior-Subordinate Relations	13	5.67	.84	.64
5. Performance and Effort	13	5.67	.74	.50
6. Discipline and Military Appearance	13	5.67	.78	.55
7. Pride in Unit, Army and Country	13	5.67	.78	.56

* Spearman-Brown adjusted to two raters

Company level interrater agreement results were more encouraging. Referring to the analysis which includes all raters (see Table 4.11) the lowest reliability coefficient is .60 with five of the seven reliabilities in the 80s. Comparing the 2-rater adjusted reliability of company morale ratings with those computed for the platoon level (Tables 4.11 and 4.7 respectively), it is clear that interrater agreement in evaluating morale at the company level was higher than it was at the platoon level.

Again, the rater sample was divided into officer and enlisted groups and the reliability of ratings provided by each group separately assessed. Results of these analyses appear in Tables 4.12 and 4.13. In general, enlisted men's ratings appeared to be slightly more reliable, though more enlisted morale ratings per unit were available; nevertheless, the 2-rater reliability data suggest that enlisted men provided somewhat more reliable ratings. Again, the hypothesis that within officer and enlisted groups reliability is higher than reliability computed using both enlisted and officer raters was not confirmed, although enlisted men's ratings were approximately as reliable as the ratings of the two groups combined. Thus, company level interrater agreement results were gratifying and at least according to these data, morale at the company level can be evaluated considerably more reliably than can the morale of platoons.

Summary

The job satisfaction/motivation booklet was administered to enlisted men in 104 sections/platoons in 16 companies in Korea. Unfortunately, the degree to which the sample is representative of the units tested is largely unknown.

One hundred ten sets of company level and 131 sets of section/platoon level morale ratings were collected. Investigation of these ratings revealed that while the leniency and restriction of range errors are within acceptable limits, a pronounced halo error exists in the morale ratings for both section/platoon and company sized units. Analysis of the interrater reliabilities is more complex. At the platoon level, the interrater reliabilities are in the low to moderate range while at the company level they are substantially higher. Hypothesizing that either officer or NCO ratings, taken as subgroups, might yield higher interrater agreement, these subgroups' ratings were analyzed separately. Interrater reliabilities were not improved by this separation. Indeed, pooling officer and NCO ratings generally provided higher interrater reliability than either group provided when analyzed alone.

Questionnaire Results

Description of the data. Four hundred fifty-six soldiers completed all or part of the questionnaire booklet. The number of blank or unusable booklet sections (presented by individual instruments) is shown in Table 4.14. For subsequent analyses, subjects were dropped only for three scales which they had left blank or provided unusable data. Three check items (11 and 21 from the Brayfield-Rothe, and item 5 from the Patchen) were used as a screening tool to eliminate subjects who were suspected of failing to respond conscientiously. Eight to ten percent of the subjects were identified as responding inappropriately to these check items. Because the investigators were reluctant to eliminate so many subjects from the sample, the factor structures of the questionnaire variables were compared, using first the total sample and then a sample which eliminated those persons screened out by the check items. If the factor structures using the two different samples were similar, it could be assumed that no significant amount of error variance was added by including individuals who were suspected of not completing the booklet conscientiously to the sample.

Results of these analyses showed that the two factor structures were practically identical; thus, no significantly different data was introduced (e.g., random or severely biased) by including those subjects responding to the check items in a questionable manner. In all future data analyses involving the questionnaire scales and items, these subjects were included.

Identifying valid constructs and selecting variables to represent the constructs. One of the central objectives of this project was to identify paper-and-pencil measures which do the best job of assessing the satisfaction and motivation to work of soldiers in the Army. Toward this end, the investigators sought to discover a framework or structure to measure job satisfaction and motivation. In the section to follow methods used to develop this framework are discussed, and the procedures used to select variables to represent constructs within the framework are outlined.

Establishing a framework. The first step in establishing a framework within which to select items/scales for assessing satisfaction, motivation, and morale in the Army was to factor analyze questionnaire responses relevant to these domains. To accomplish this first step, 68 questionnaire variables tapping satisfaction, motivation, or morale were intercorrelated and factored using a principal components factor analysis and varimax rotation. A six factor rotated solution (see Table 4.15) seemed most conceptually meaningful.

The rotated factors can be interpreted as follows (percent variance accounted for by each factor is in parentheses):

Table 4.14

Number of Blank or Unusable Questionnaire Instruments*

<u>Instrument</u>	<u>Number Blank or Unusable</u>
NIQ	65
Patchen Motivation Scale	38
Brayfield-Rothe Job Satisfaction	15
Sum of Effort Expectancies	25
Minnesota Satisfaction Questionnaire Total	17
Sum of Valences.	15
ARI Discipline Scale	17
Sears Satisfaction Scales	29
Sum of "Prior Expectancies"	14
Survey of Organizations Scales	17
Cureton Scales	5
Job Description Index	22

*The data in this table might also be used as an inobtrusive measure of the acceptability of various instruments to the Army enlisted sample. Obviously it would be unwise to use instruments which have a large number of potential respondents responding in an unacceptable manner.

Table 4.15

Results of Varimax Rotation Applied to Factor Analysis
of Questionnaire Data (65 variables)

		I	II	III	IV	V	VI
Motivation	Sum of Valence x Expectancies	-.35	.16	-.70	-.17	-.04	-.29
	Patchen Motivation Scale	-.20	.08	-.42	-.42	.15	-.02
	Self-rating of Effort	-.10	.02	-.63	-.25	.14	-.00
	Worthwhile to Try Hard (self-rating)	-.34	.05	-.56	-.20	.12	.02
Overall Satisfaction with the Army	MSQ Total	-.51	.22	-.22	-.41	.19	-.55
	Prior Expectations about Army Life	-.68	.33	-.04	-.29	.14	-.27
	Cureton Military	.54	-.23	.51	.09	-.10	-.08
	Cureton Army as a Whole	.64	-.18	.25	.24	-.05	-.03
	Life Satisfaction in the Army	-.54	.05	-.29	-.20	.04	.07
Satisfaction with the Job	MSQ Intrinsic	-.45	.17	-.30	-.44	.12	-.52
	Brayfield-Rothe Job Satisfaction	-.32	.20	-.23	-.63	.13	-.17
	S.O.O. Overall Satisfaction	-.60	.44	-.11	-.40	.17	-.24
	Cureton's Job Satisfaction	.52	-.22	.20	.49	-.05	.18
	JDI Work	-.37	.24	-.26	-.62	.09	-.13
	Sears Kind of Work	-.23	.14	-.23	-.72	.14	-.06
	S.O.O. Satisfaction with Job	-.33	.26	-.10	-.64	.02	-.24
	S.O.O. Supervisory Support	-.24	.43	-.15	-.08	.58	-.20
Satisfaction with Superiors	S.O.O. Supervisory Interaction Facilitation	-.18	.52	-.20	-.05	.47	-.21
	S.O.O. Supervisory Goal Emphasis	-.25	.43	-.20	-.03	.51	-.21
	S.O.O. Supervisory Work Facilitation	-.30	.46	-.13	-.15	.57	-.24
	JDI Supervision	-.35	.30	-.18	-.16	.56	-.06
	Sears Supervision	-.21	.28	-.19	-.38	.50	.05
	S.O.O. Peer Support	-.10	.76	-.07	-.04	.05	-.05
Satisfaction with Co-workers	S.O.O. Peer Interaction Facilitation	-.31	.73	-.09	-.15	.10	-.09
	S.O.O. Peer Goal Emphasis	-.28	.71	-.05	-.15	.14	.01
	S.O.O. Peer Work Facilitation	-.30	.75	-.06	-.14	.10	-.11
	Cureton's Satisfaction with Unit	.68	-.22	.13	.12	-.31	.03
	JDI Co-workers	-.07	.55	-.18	-.21	.04	.13
	Sears Co-workers	-.07	.47	-.14	-.34	.10	.18
	S.O.O. Co-workers	-.01	.68	-.09	-.09	.11	-.06

(Table 4.15 cont.)

		I	II	III	IV	V	VI
Promotion	Cureton additional items #42	.64	-.19	.16	.28	-.11	.11
	JDI Promotions	-.47	.05	.01	-.27	.20	-.04
	Sears Career Future and Security	-.37	.13	-.18	-.52	.07	.04
	S.O.O. Opportunities for Getting Ahead	-.59	.22	-.18	-.25	.09	-.13
Satisfaction with Pay	JDI Pay	-.40	.05	.04	-.22	-.08	.02
	Sears Financial Rewards	-.48	.10	.06	-.38	.02	.03
	S.O.O. Satisfaction with Pay	-.52	.17	.14	-.20	-.09	-.30
Extrinsic Rewards	MSQ Extrinsic	-.55	.19	-.05	-.27	.31	-.53
	Cureton Community	.66	-.16	-.03	.04	-.16	.12
	Cureton additional items #12	.61	-.11	.10	.12	.03	-.06
	Cureton additional items #34	.48	-.07	-.15	.07	-.09	.04
	Cureton additional items #41	.39	-.08	.18	.07	.12	.05
	Cureton additional items #65	.50	.04	.02	.03	-.04	.19
Selected Criteria	Sears Physical Surroundings	-.35	.16	-.04	-.54	.19	.03
	Self-rating of Performance	.09	.10	-.59	-.16	.14	.05
	Self-rating of Overall Effectiveness as a Soldier	-.13	.09	-.56	-.09	.14	.03
	Self-rating of Own Morale	-.55	.09	-.17	-.28	.23	.10
	AWOLs in Last Year	-.08	.15	-.75	.08	-.17	-.26
	Article 15s in Last Month	-.55	.14	-.34	-.30	.12	-.19
	Re-enlistment	.20	.14	-.28	-.07	-.03	-.14
Others	Sum of Valences	.04	-.00	-.01	-.15	.49	.13
	Sum of Effort Expectancies	.83	-.15	.11	.17	-.14	.06
	MIQ Total Score	.55	-.15	.40	.17	-.04	-.07
	S.O.O. Supervisory Needs	.60	-.14	.21	.15	-.03	.02
	Cureton Communication	.10	-.38	-.00	.13	-.02	-.06
	Cureton additional items #15	.61	-.13	.15	.13	-.21	.08
	Cureton additional items #18	.45	-.09	.05	.11	-.18	-.03
	Cureton additional items #20	.48	-.23	.13	.29	-.12	.00
	Cureton additional items #24	.61	-.09	.43	.14	-.12	.01
	Cureton additional items #29	.07	-.01	.17	-.00	-.04	-.17
	Cureton additional items #33	.49	-.05	.13	.12	.06	.14
	Cureton additional items #51	.03	.08	.08	-.04	.01	.12
	Cureton additional items #58	-.46	.09	-.25	-.36	.12	.05
	Cureton additional items #66	-.21	.20	-.06	-.58	.13	.10
	ARI Discipline Scale	-.50	.06	-.03	-.08	.34	.16

- I General Satisfaction and Satisfaction with Extrinsic Considerations such as Communications, Promotions, Pay, and the Community (29 percent)
- II Satisfaction with Co-workers (13 percent)
- III Motivation, Performance, and Effectiveness (11 percent)
- IV Satisfaction with the Job (13 percent)
- V Satisfaction with Superiors (7 percent)
- VI MSQ Specific (5 percent)

(Total variance accounted for = 77 percent)

This solution is similar in many respects to the factor solution obtained with the pretest data, particularly the Supervision, Co-workers, and satisfaction with the Job factors. Factor I is a General Satisfaction factor which includes three additional aspects of satisfaction--Satisfaction with Pay, Promotions, and Extrinsic Considerations. Clearly Satisfaction with the Job, with Superiors, and with Co-workers appeared as separate factors in this analysis. Also, Motivation to Work formed its own factor. The MSQ Specific factor seemed to a method factor. Examination of 7 through 16 varimax rotated factor solutions confirmed that the data provide only five meaningful factors.

At this point, a reasonable structure for describing the satisfaction/motivation domain was emerging. Empirical data suggested that these domains could be measured multidimensionally using a series of psychologically and practically meaningful constructs. It is difficult conceptually, however, when discussing occupational satisfaction to delete a consideration of pay. A great deal of evidence in the literature review suggests that Pay should be a separate construct. This is supported by the pretest factor analysis when Satisfaction with Pay emerged as a separate factor. Using this rationale, Satisfaction with Pay was considered separately in subsequent analyses.

Based upon factor analysis results and the conceptual considerations just outlined, the constructs used to represent the satisfaction/motivation domain on a trial basis were:

- I Motivation
- II Overall Satisfaction with the Army
- III Satisfaction with the Job

IV Satisfaction with Superiors

V Satisfaction with Co-workers

VI Satisfaction with Pay

The next section describes the selection of variables to represent these six constructs.

Selection of scales and items to represent constructs. A number of criteria were established for inclusion of scales or items in a construct. Six criteria were used to screen variables for the constructs. These criteria were:

1. a priori intuitive or conceptual similarity of scales or items within each construct;
2. factor loadings on the factor analysis of questionnaire scales and selected items;
3. Internal consistency;
4. homogeneity of scores within Army units;
5. convergent and discriminant validity;
6. amount of common method variance with other measures within the same construct.

Conceptual similarity of scales or items: For this criterion, the literature review was relied upon heavily. Judgments were made about how each scale's or item's content compared to the content of the constructs. See Table 4.16 for these initial assignments of variables to constructs.

Factor analysis results: Results of the factor analysis of questionnaire variables have been described earlier. In general, for inclusion as a construct measure, the item/scale was required to load on the same factor as other variables measuring that construct.

Internal consistency: In general, item/scale variables were required to have high internal consistency unless other factors made them especially attractive measures to include in a construct. Table 4.17 presents the KR-20 reliabilities of all scale variables included in the questionnaire booklet.

Table 4.16

Preliminary Assignment of Scales/Items to Constructs

<u>Constructs</u>	<u>Scales/Items</u>
Motivation	. Sum of Valence x Expectancies . Patchen Motivation Scale . Self-rating of Effort . Worthwhile to Try Hard (self-rating)
Overall Satisfaction with the Army	. MSQ Total . Prior Expectations about Army Life . Cureton's Satisfaction with Military . Cureton's Satisfaction with Army as a Whole . Life Satisfaction in the Army . S.O.O. Satisfaction with Organization
Satisfaction with the Job	. MSQ Intrinsic . Brayfield-Rothe Job Satisfaction . S.O.O. Overall Satisfaction . Cureton's Job Satisfaction . JDI Work . Sears Kind of Work . S.O.O. Satisfaction with Job
Satisfaction with Superiors	. S.O.O. Supervisory Support . S.O.O. Supervisory Interaction Facilitation . S.O.O. Supervisory Goal Emphasis . S.O.O. Supervisory Work Facilitation . JDI Supervision . Sears Supervision . S.O.O. Satisfaction with Supervisor
Satisfaction with Co-workers	. S.O.O. Peer Support . S.O.O. Peer Interaction Facilitation . S.O.O. Peer Goal Emphasis . S.O.O. Peer Work Facilitation . Cureton's Satisfaction with Unit . JDI Co-workers . Sears Co-workers . S.O.O. Co-workers
Promotion	. Cureton additional items . JDI Promotions . Sears Career Future and Security . S.O.O. Satisfaction with Career Progress . S.O.O. Opportunities for Getting Ahead
Satisfaction with Pay	. JDI Pay . Sears Financial Rewards . S.O.O. Satisfaction with Pay

Table 4.17
Internal Consistencies of Questionnaire Scales

<u>Scale</u>	<u>Number of Items</u>	<u>Reliability</u>
1. Sum of Valences	50	.93
2. Sum of Effort Expectancies	50	.97
3. Sum of Valence x Expectancies	50	.96
4. MIQ Total Scores	6	.08
5. Patchen Motivation Scale	4	.43
6. MSQ Total	20	.70
7. MSQ Intrinsic	12	.88
8. MSQ Extrinsic	6	.75
9. Brayfield-Rothe Job Satisfaction	18	.86
10. Prior Expectations about Army Life	24	.92
11. S.O.O. Overall Satisfaction	3	.88
13. S.O.O. Supervisory Interaction Facilitation	2	.78
14. S.O.O. Supervisory Goal Emphasis	3	.87
15. S.O.O. Supervisory Work Facilitation	3	.80
16. S.O.O. Peer Support	3	.86
17. S.O.O. Peer Interaction Facilitation	2	.76
18. S.O.O. Peer Goal Emphasis	3	.86
19. S.O.O. Peer Work Facilitation	5	.90
20. S.O.O. Supervisory Needs	7	.75
21. Cureton's Satisfaction with Military	7	.75
22. Cureton's Job Satisfaction	8	.83
23. Cureton's Satisfaction with Community	5	.64
24. Cureton's Satisfaction with Army as a Whole	12	.91
25. Cureton's Satisfaction with Unit	11	.84
26. Cureton's Satisfaction with Management and Communication	12	.86
42. JDI Work	18	.82
43. JDI Supervision	18	.90
44. JDI Pay	9	.76
45. JDI Promotions	9	.85
46. JDI Co-workers	18	.91
47. ARI Discipline Scale	22	.38
48. Sears Company Identification	4	.55
49. Sears Supervision	6	.78
50. Sears Kind of Work	6	.71
51. Sears Amount of Work	4	.25
52. Sears Co-workers	5	.37
53. Sears Physical Surroundings	6	.66
54. Sears Financial Rewards	4	.48
55. Sears Career Future and Security	5	.54

Homogeneity of scores within Army units: One of the data analysis strategies called for an investigation of the interrelationships among morale (at the platoon and company level) and facets of satisfaction and motivation. To justify using unit scores to assess the satisfaction and motivation of troops in company or platoon sized units, researchers examined the homogeneity within unit of variables measuring these domains. Homogeneity of scores within companies or platoons were assessed using an intraclass correlation (R_1) analysis of each satisfaction and motivation variable both at the platoon and the company levels. R_1 , within an analysis of variance framework, compares the variance across individuals' scores within each unit (company or platoon) to the variance of scores across all units. For example, with respect to a given job satisfaction variable, the analysis compares the variance of these scores across subjects within unit to the variance across all scores. Low within unit variance compared to total variance indicates that the variable is a good candidate for a unit measure, because soldiers in individual units tend to have relatively similar scores on the variable.² Table 4.18 contains the R_1 results at the platoon level and Table 4.19 displays the same kind of information at the company level.

The general level of homogeneity within the unit, both company and platoon, is high for the questionnaire scales and items. This suggests that the satisfaction and motivation constructs represented by these measures can be justifiably used as unit measures. That is, it appears to be legitimate and psychometrically meaningful to combine the scores of individuals in each unit--platoon or company--and to treat these composites as unit scores. The R_1 results are also of considerable interest because they strongly indicate that Satisfaction with Superiors, the Job Itself, Co-workers, and General Satisfaction with the Army can be viewed as unit phenomena (see construct R_1 results in Table 4.22).

Further evidence for considering the satisfaction and motivation variables as unit phenomena is derived from a comparison between average R_1 level for these variables and the average R_1 level for 18 demographic variables included in this study. In general, these indices of unit homogeneity are smaller for the demographic variables. The mean R_1 for demographic variables at the company level is .24 (negative R_1 s are treated as zero since they are not interpretable in terms of their absolute value in the negative direction).

²Evidence for this use of R_1 is provided by the finding that although motivation and satisfaction measures demonstrated relatively high positive R_1 s, Satisfaction with Pay variables in general possessed comparatively low (or negative) R_1 s. This result makes sense because presumably uniform pay policies across units should provide uniform levels of satisfaction across those units, while satisfaction with other facets related to organizational factors such as Supervision and the Job Itself more likely vary across jobs in different units.

Table 4.18

Intraclass Correlation (Unit Homogeneity)
Results at Platoon Level

<u>Variable</u>	<u>N</u>	<u>Intraclass Correlation</u>	<u>5 Respondent Reliability</u>
Sum of Valences	67	.32	.35
Sum of Effort Expectancies	67	.23	.25
Sum of Valence x Expectancies	67	.24	.28
MIQ Total Scores	67	.17	.18
Patchen Motivation Scale	67	.17	.19
MSQ Total	67	.41	.43
MSQ Intrinsic	67	.39	.41
MSQ Extrinsic	67	.35	.37
Brayfield-Rothe Job Satisfaction	67	.51	.54
Prior Expectations about Army Life	67	.51	.53
S.O.O. Overall Satisfaction	67	.31	.32
S.O.O. Supervisory Support	67	.29	.30
S.O.O. Supervisory Interaction Facilitation	67	.15	.16
S.O.O. Supervisory Goal Emphasis	67	.33	.35
S.O.O. Supervisory Work Facilitation	67	.30	.31
S.O.O. Peer Support	66	.34	.36
S.O.O. Peer Interaction Facilitation	67	.18	.19
S.O.O. Peer Goal Emphasis	67	.40	.42
S.O.O. Peer Work Facilitation	67	.36	.38
S.O.O. Supervisory Needs	66	.41	.43
Cureton's Satisfaction with Military	67	-.09	-.00
Cureton's Job Satisfaction	67	.44	.48
Cureton's Satisfaction with Community	67	.52	.55
Cureton's Satisfaction with Army as a Whole	67	.48	.50
Cureton's Satisfaction with Unit	66	.39	.41
Cureton's Satisfaction with Management and Communication	67	.49	.51
Cureton Pride in Army	67	.28	.30
JDI Work	67	.55	.58
JDI Supervision	67	.44	.46
JDI Pay	67	.11	.13
JDI Promotions	66	.36	.43
JDI Co-workers	67	.41	.45
ARI Discipline Scale	67	-.01	-.00
Sears Company Identification	66	.08	.09
Sears Supervision	66	.43	.47
Sears Kind of Work	67	.44	.48
Sears Amount of Work	67	.21	.24
Sears Co-workers	66	.20	.23
Sears Physical Surroundings	67	.24	.28
Sears Financial Rewards	67	.22	.25
Sears Career Future and Security	65	.09	.11

Variable	N	Intraclass Correlation	5 Respondent Reliability
S.O.O. Satisfaction with Co-workers	67	.17	.17
S.O.O. Satisfaction with Supervisor	67	.38	.39
S.O.O. Satisfaction with Job	67	.30	.31
S.O.O. Satisfaction with Organization	66	.29	.29
S.O.O. Satisfaction with Pay	67	.35	.36
S.O.O. Satisfaction with Career Progress	67	.38	.40
S.O.O. Satisfaction with Opportunities for Getting Ahead	67	.44	.45
Self-rating of Effort	67	.10	.10
Self-rating of Performance	67	.02	.02
Worthwhile to Try Hard (self-rating)	67	.18	.19
Self-rating of Overall Effectiveness as a Soldier	67	.09	.10
Self-rating of Own Morale	67	.15	.16
Self-rating of Unit Morale	67	.10	.10
Age	67	-.02	-.00
Sex; male=1; female=2	67	.70	.73
Single or Divorced; widowed=1, married=2	67	-.06	-.00
Number of Dependents	67	-.56	-.00
White=1; all others=2	67	.08	.09
White=1; black=2	66	.20	.26
Education (with all 9 response choices)	67	.24	.26
Education (leaving out response 4 and 5)	67	.24	.28
Primary Occupation of Father	67	.20	.22
Educational (with all 9 response choices)	67	.20	.22
Educational (leaving out 4 and 5)	67	.15	.18
Living Conditions (on or off pos)	67	.08	.09
Drafted versus Enlisted	67	.06	.06
First Tour - Careerist (drop others)	67	.16	.19
Age of Entry (in months)	67	.15	.17
Length of Service	67	.15	.17
Number of Months on Present Post	67	-.03	-.00
Number of AWOLs in Last Month	63	-1.09*	-.00
Number of AWOLs in Last Year	64	-1.30	-.00
Number of AWOLs in Career	65	-1.73	-.00
Number of Article 15s in Last Month	63	-1.91	-.00
Number of Article 15s in Last Year	63	-.84	-.00
Number of Article 15s in Career	65	.44	.50
Number of Times Busted	67	-2.55	-.00
Number of Sick Calls in Last Month	67	-.66	-.00
VD in Last Month 0-1; 1=1 or more times	62	.16	.21
VD during Korean Tour 0-1-2-3; 3=3 or more	66	-.11	-.00
Rank E1-E5	67	.16	.17
Reenlistment	67	.22	.24

*Negative intraclass correlation coefficients can be larger than 1.00. These negative coefficients are not readily interpretable.

Table 4.19
Intraclass Correlation (Unit Homogeneity)
Results at Company Level

<u>Variable</u>	<u>N</u>	<u>Intraclass Correlation</u>	<u>5 Respondent Reliability</u>
Sum of Valences	16	.64	.26
Sum of Effort Expectancies	16	.64	.26
Sum of Valence x Expectancies	16	.71	.35
MIQ Total Scores	16	.53	.18
Patchen Motivation Scale	16	.55	.20
MSQ Total	16	.76	.37
MSQ Intrinsic	16	.75	.36
MSQ Extrinsic	16	.70	.31
Brayfield-Rothe Job Satisfaction	16	.63	.25
Prior Expectations about Army Life	16	.80	.33
S.O.O. Overall Satisfaction	16	.70	.30
S.O.O. Supervisory Support	16	.55	.18
S.O.O. Supervisory Interaction Facilitation	16	.62	.24
S.O.O. Supervisory Goal Emphasis	16	.53	.17
S.O.O. Supervisory Work Facilitation	16	.54	.18
S.O.O. Peer Support	16	.60	.22
S.O.O. Peer Interaction Facilitation	16	.51	.16
S.O.O. Peer Goal Emphasis	16	.64	.26
S.O.O. Peer Work Facilitation	16	.48	.15
S.O.O. Supervisory Needs	16	.75	.37
Cureton's Satisfaction with Military	16	.27	.07
Cureton's Job Satisfaction	16	.54	.19
Cureton's Satisfaction with Community	16	.85	.53
Cureton's Satisfaction with Army as a Whole	16	.69	.30
Cureton's Satisfaction with Unit	16	.79	.42
Cureton's Satisfaction with Management and Communication	16	.76	.39
Cureton additional item	16	.55	.19
JDI Work	16	.73	.35
JDI Supervision	16	.71	.32
JDI Pay	16	-.96	-.00
JDI Promotions	16	.06	.01
JDI Co-workers	16	.57	.21
ARI Discipline Scale	16	.46	.14
Sears Company Identification	16	.55	.20
Sears Supervision	16	.69	.32
Sears Kind of Work	16	.50	.17
Sears Amount of Work	16	.51	.17
Sears Co-workers	16	.44	.15
Sears Physical Surroundings	16	.51	.19
Sears Financial Rewards	16	-.42	-.00
Sears Career Future and Security	16	-.41	-.00

<u>Variable</u>	<u>N</u>	<u>Intraclass Correlation</u>	<u>5 Respondent Reliability</u>
S.O.O. Satisfaction with Co-workers	16	.31	.08
S.O.O. Satisfaction with Supervisor	16	.66	.27
S.O.O. Satisfaction with Job	16	.53	.17
S.O.O. Satisfaction with Organization	16	.79	.41
S.O.O. Satisfaction with Pay	16	.64	.25
S.O.O. Satisfaction with Career Progress	16	.54	.18
S.O.O. Satisfaction with Opportunities for Getting Ahead	16	.73	.34
Self-rating of Effort	16	.41	.12
Self-rating of Performance	16	.14	-.00
Worthwhile to Try Hard (self-rating)	16	.60	.22
Self-rating of Overall Effectiveness as a Soldier	16	.37	.10
Self-rating of Own Morale	16	.68	.28
Self-rating of Unit Morale	16	.74	.35
Age	16	.29	.08
Sex; male=1; female=2	16	.19	.04
Single or Divorced; widowed=1, married=2	16	-1.39	-.00
Number of Dependents	16	.29	.08
White=1; all others=2	16	.23	.06
White=1; black=2	16	.41	.14
Education (with all 9 response choices)	16	.61	.23
Education (leaving out response 4 and 5)	16	.62	.26
Primary Occupation of Father	16	-.73	-.00
Educational (with all 9 response choices)	16	-.73	-.00
Educational (leaving out 4 and 5)	16	-.87	-.00
Living Conditions (on or off post)	16	.21	.05
Drafted versus Enlisted	16	.35	.10
First Tour - Careerist (drop others)	16	-.77	-.00
Age of Entry (in months)	16	-.20	-.00
Length of Service	16	.58	.22
Number of Months on Present Post	16	.11	.03
Number of AWOLs in Last Month	16	-.92	-.00
Number of AWOLs in Last Year	16	.06	.02
Number of AWOLs in Career	16	-1.56	-.00
Number of Article 15s in Last Month	16	-.15	-.00
Number of Article 15s in Last Year	16	.48	.20
Number of Article 15s in Career	16	.39	.13
Number of Times Busted	16	-1.49	-.00
Number of Sick Calls in Last Month	16	-.25	-.00
VD in Last Month 0-1; 1=1 or more times	16	.53	.23
VD during Korean Tour 0-1-2-3; 3=3 or more	16	.38	.12
Rank E1-E5	16	.43	.13
Reenlistment	16	.72	.33

Table 4.20

Data for the Constructs and the Scales/Items
Selected to Represent those Constructs

1. Motivation	Variable	Factor Loaded on	Mean Within and Across Construct Correlation	
			Within	Across
1. Motivation	Sum of Valence x Expectancies	III	.45	.30
	Patchen Motivation Scale	III-IV		
	Self-rating of Effort	III		
	Worthwhile to Try Hard (self-rating)	III		
2. Overall Satisfaction with the Army	MSQ Total	I-VI	.64	.41
	Prior Expectations about Army Life	I		
	Cureton's Satisfaction with Army as a Whole	I		
	S.O.O. Overall Satisfaction	--		
3. Satisfaction with the Job	Brayfield-Rothe Job Satisfaction	IV	.66	.35
	Cureton's Job Satisfaction	I-IV		
	JDI Work	IV		
	Sears Kind of Work	IV		
4. Satisfaction with Superiors	S.O.O. Satisfaction with Job	IV	.58	.34
	S.O.O. Supervisory Support	V		
	JDI Supervision	V		
	Sears Supervision	V		
5. Satisfaction with Co-workers	S.O.O. Peer Support	II	.44	.24
	JDI Co-workers	II		
	Sears Co-workers	II		
	JDI Pay	I		
6. Satisfaction with Pay	Sears Financial Rewards	I	.44	.26
	S.O.O. Satisfaction with Pay	I		
		I		

126.

In contrast, the mean R_1 for the 53 questionnaire variables is .55.³ Thus, it appears that a significant "unit effect" exists for many construct variables, even with the demographic variables "partialled out."

Still other information can be derived from the R_1 analyses by comparing the magnitude of R_1 s at the company and platoon levels. Five-Respondent Reliability columns of Tables 4.18 and 4.19 provide the best comparison because the size of R_1 depends partially upon the number of respondents per unit. By equalizing the number of respondents via the Spearman-Brown procedure, a crude estimate of the size of R_1 for companies and platoons independent of the number of persons in each unit can be made. Using this comparison procedure, 38 of the 53 corrected R_1 s for platoons are higher (with two ties) than at the company level. With respect to the 18 demographic variables, nine of the platoon level R_1 s are larger, with four ties. And finally, four of the eleven platoon level criterion variable R_1 s are larger than their company level counterparts (with five ties). Overall, it appears that platoons are more homogeneous than companies in this sample, particularly with regard to satisfaction and motivation. Although this comparison must be regarded as rather gross, it suggests that facets of satisfaction and motivation may be considered more platoon phenomena than company level phenomena.

Convergent and discriminant validity: In selecting instrument scales and items for the constructs the correlations these variables exhibited with other measures from the same construct and with measures representing conceptually different constructs were considered. For each of the six constructs, we retained scales or items possessing relatively high correlations with other measures of the same construct (convergent validity) and relatively low correlations with measures of other constructs (discriminant validity). The purpose of this procedure was to develop relatively "pure" construct composites.

Common method variance: Only one variable from each instrument was accepted for each construct. This guideline was designed to avoid accepting measures which might contain common method variance, thereby artificially raising the within construct correlations. For example, using this criterion two Survey of Organizations scales both measuring satisfaction with co-workers would not both be accepted for the Satisfaction with Co-worker construct because they are part of the same instrument.

³ If the demographic variable R_1 s would have been as high as the construct variable R_1 s, a possible explanation of the large, positive construct variable R_1 s would be that an uneven assignment of different "kinds" of persons to different units occurred. In other words, the homogeneity within units in terms of expressions of satisfaction and motivation could have been due to the homogeneity of person characteristics and background.

In summary, questionnaire scales and items were evaluated by a variety of standards. The screening process was designed to yield multiple measures for each of the six satisfaction and motivation constructs identified. Variables were selected for these constructs according primarily to their conceptual appropriateness, convergent and discriminant validity, internal consistency, and suitability as a unit measure. The results of this screening process and evidence for the construct validity of this set of variables are presented in the next section.

"Internal" validity evidence: The multiconstruct-multimethod analysis. In Table 4.20 the questionnaire variables representing each construct are shown, along with the factors on which each variable loads, and the mean within and across construct correlations. Then, Table 4.21 contains the multiconstruct-multimethod matrix for the field test. Diagonal indices in the matrix were formed by transforming the correlations among variables within the construct to Fisher z scores and then computing the mean of these z's. The numbers which appear in the diagonal are the mean z's transformed back to correlations. Each off-diagonal correlation in the matrix was obtained by computing the mean of all across construct correlations between variables in the two constructs. Again, Fisher z's were used to calculate the averages.

In every case the diagonal correlations are significantly different from zero beyond the .01 level. This finding indicates that these 22 variables demonstrate excellent convergent validity. Also, the diagonals are larger than off-diagonal indices in the corresponding row or column in every case. Thus, the variables within this system demonstrate superior discriminant validity as well.

It should be noted that one of the criteria for selecting variables for this analysis was that they demonstrate convergent and discriminant validity. Therefore, there is some possibility that the multiconstruct-multimethod results take advantage of sample specific correlations within and across construct. However, a closer look at the manner in which variables were selected renders it unlikely that a serious overestimate of the convergent and discriminant validity of these measures is present in these data. First, overestimates of this type of validity are a function of the ratio of number of variables selected/total number of variables available. The higher the ratio, the less likely that distortion of the true relationships exists. The variable selection ratios for the six constructs in Table 4.21 are: 1.00, .67, .71, .43, .38, 1.00. Considering the first construct, for example, every variable initially assigned conceptually to that construct was ultimately selected for inclusion as a construct measure. Clearly, in four of the six cases it is highly unlikely that a "selection effect" occurred. Still, it is possible that a certain "shrinkage" will take place if these results are replicated in an independent

Table 4.21

Multiconstruct - Multimethod Matrix (Korea)

	Mot.	Gen. Sat.	Job Sat.	Sat. Sup.	Sat. Cowork.	Sat. Pay
1. Motivation	45					
2. Overall Satisfaction with the Army	37	64				
3. Satisfaction with the Job	40	53	66			
4. Satisfaction with Superiors	29	41	37	58		
5. Satisfaction with Co-workers	19	26	27	34	44	
6. Satisfaction with Pay	15	41	30	22	16	44

sample using the same 22 variables in a multiconstruct-multimethod analysis. Seventh Army data gathered in Germany provided an opportunity to investigate this possibility. Relevant results are discussed in Chapter V of this volume.

Based on convergent and discriminant validity results and on the unit homogeneity results with respect to these constructs (see Table 4.20), it was judged that sufficient justification existed for developing construct composite scores for individual companies and platoons. Development of these unit construct scores permits unit level correlational analyses relating construct composites to morale ratings and other variables which have meaning at the unit level.

Interrelationships among Satisfaction, Motivation, Morale, and Selected Criteria

To investigate the relationships among the constructs of satisfaction, motivation, and morale as well as the relationship between these constructs and certain criterion variables, units (companies and platoons) were defined as data points and correlational analyses performed at these two levels. Variables included in the unit level data analyses were the satisfaction and motivation constructs contained in the multiconstruct-multimethod analysis, unit morale as rated by officers and NCOs, and selected self-report criteria. At the platoon level, ratings of units by officers and NCOs on global criteria such as overall effort and performance were also included in the correlational analysis. Finally, because of the small number of data points ($N = 14-16$) available for the company level correlational analysis, a trend analysis was used to assess the relationship between morale and the motivation/satisfaction constructs along with selected self-report criteria. The variable sets are described more completely in the following section. Also, Figure 4.1 summarizes the development of variable sets included in subsequent unit level analyses.

The Variable Sets

Motivation/satisfaction constructs. Unit motivation/satisfaction construct scores were developed for each platoon and company included in unit level analyses. Variables selected to represent constructs were used to form composite scores for each construct on each unit. Specifically, for a given unit, a motivation construct score was developed by first computing for each individual soldier in the unit the sum of his standard scores (standardized across all soldiers completing the questionnaire) on the four variables representing the motivation construct. The mean of these summed scores for all individuals in the unit responding to the questionnaire formed the motivation composite score for that unit. Identical procedures were followed for all units and constructs. This approach resulted in unit scores representing six motivation/satisfaction constructs: Motivation, Overall Satisfaction with the Army, Satisfaction with the Job, Superiors, Co-workers, and Pay.

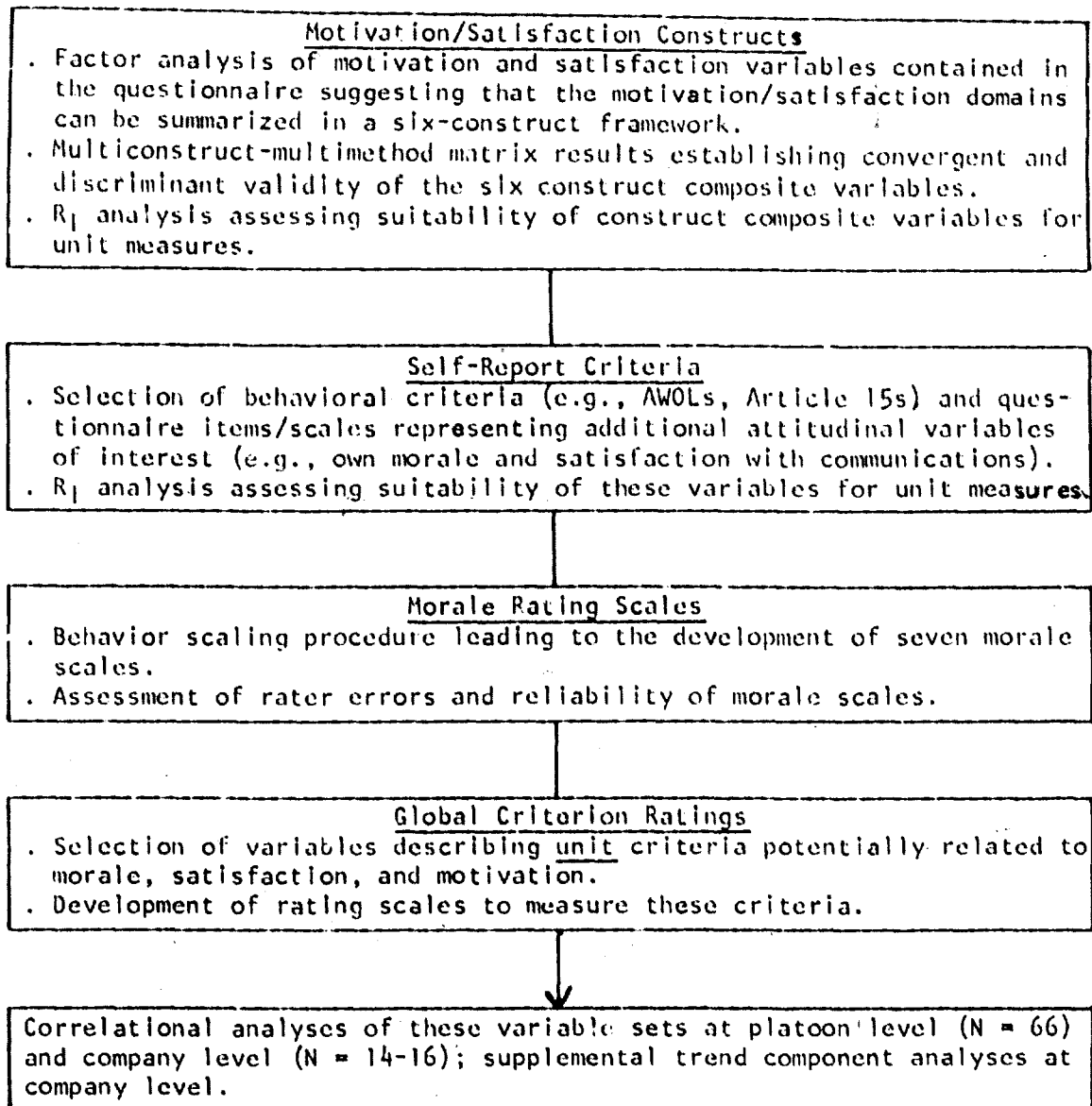


Figure 4.1. Summary Description of the Development of Variable Sets Included in Platoon and Company Level Correlational Analyses (Korea)

Table 4.22 contains unit homogeneity indices (R_1 s) for the six constructs. Also included is a 5-respondent column to facilitate comparisons among sets of units containing different average numbers of members (e.g., companies and platoons in Korea). In general, R_1 s seem large enough to warrant using unit construct scores in subsequent unit level analyses, although Satisfaction with Pay scores for units may not be readily interpretable. Thus, these six constructs were included in platoon and company level correlational analyses reported in this chapter.

Morale ratings. All seven morale scales were included in both the platoon and company level correlational analyses. Because the halo effect seemed so severe, an overall morale variable was also created by summing morale ratings on the seven individual dimensions. The overall morale composite rating also provided a summary morale measure to correlate with other variables in the unit level analyses.

Self-report criteria. Unit criterion scores were developed in the same manner as were motivation/satisfaction scores. Those self-report criteria (from the questionnaire) attaining reasonably high R_1 s were included in platoon and company level analyses. They were:

- . Pride in Army
- . Own Morale
- . Unit Morale
- . Career Article 15s
- . Self-perceived Performance
- . Plans to Reenlist
- . Article 15s Last Year
- . Incidents of VD During Korean Tour
- . Self-perceived Effectiveness

Global criterion ratings. PDI researchers developed seven rating scales designed to measure unit criteria potentially related to the motivation, satisfaction, and morale of soldiers. Company commanders used the scales to provide criterion ratings of platoons with which they were familiar. For the platoon level analysis then, it was possible to correlate global criterion ratings of platoons with scores these units obtained on other variables. The global criteria were:

- . Unit Effectiveness
- . Racial Disturbances
- . Dissent
- . Drug Abuse
- . VD Rate
- . Destruction/Sabotage
- . Participation in Drives

Table 4.22

Intraclass Correlation (Unit Homogeneity)
Results for Constructs at Platoon and Company Levels
(Korea)

<u>Construct</u>	Platoon		Company	
	<u>R_I</u>	<u>5 Respondent Reliability</u>	<u>R_I</u>	<u>5 Respondent Reliability</u>
Motivation	.18	.23	.60	.26
Overall Satisfaction with Army	.47	.51	.80	.46
Satisfaction with Job	.45	.54	.60	.29
Satisfaction with Supervision	.46	.51	.72	.37
Satisfaction with Co-workers	.43	.49	.55	.25
Satisfaction with Pay	.22	.27	.12	.03

Platoon level analysis. For the correlational analysis platoons which were represented by less than two soldiers were eliminated. Therefore, all 66 platoons in the sample contained at least two soldiers who had completed the questionnaire booklet. Morale ratings were also available for 56 of these platoons. Table 4.23 contains the complete correlation matrix at the platoon level. To facilitate interpreting the results of the platoon level correlational analysis, pairwise sets of interrelationships will be discussed among: (a) satisfaction/motivation constructs; (b) morale ratings; (c) self-report criteria; and (d) global criterion ratings.

1. Satisfaction/motivation construct--self-report criteria: Table 4.24 presents the satisfaction/motivation construct--self-report criteria relationships which are significantly different from zero beyond at least the .05 level (2-tailed). One benchmark against which to interpret the general magnitude of relationships is to compare the number of significant correlations with the number of such relationships to be expected by chance. In the case of the construct-criteria interrelationships, 24 of 54 were significant beyond the .05 level. Since approximately 3 of 54 would be expected by chance, it can be concluded that there is a strong relationship between satisfaction/motivation constructs and the self-report criteria.

One of the strongest relationships across these two variable sets is between motivation and self-perceived effectiveness ($r = .61, p < .01$). This result, along with the finding that self-perceived effectiveness correlated considerably higher with motivation than with any of the other five constructs, provides evidence for the construct validity of the motivation composite. Two other relationships of the same magnitude are correlations between Overall Satisfaction with the Army and both Pride in the Army and Plans to Reenlist. Thus, according to platoon results, the average level of affect toward the Army found in a platoon is a good indicator of that platoon's likelihood of having high reenlistment rates and members possessing pride in the Army. In terms of relationships between self-report morale and motivation/satisfaction constructs, several aspects of satisfaction (and motivation) correlate moderately with estimates of "own morale" at the platoon level. However, Overall Satisfaction with the Army is the highest correlate of soldiers' unit morale self-reports ($r = .33, p < .01$).

Finally, only the motivation construct is related significantly to any of the three variables having to do with negative incidents (Article 15s and incidents of VD). VD incidents correlate $-.27$ with motivation.

TABLE 4.23
INTERCORRELATIONS AMONG MOTIVATION/SATISFACTION CONSTRUCTS,
SELF-REPORT CRITERIA, MORALE RATINGS, AND GLOBAL CRITERION RATINGS (PLATOON LEVEL)

	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	
1. Motivation	--																															
2. Overall Satisfaction with Army	.46	--																														
3. Satisfaction with Job	.57	.61	--																													
4. Satisfaction with Supervisor	.35	.36	.54	--																												
5. Satisfaction with Co-workers	.37	.30	.39	.51	--																											
6. Satisfaction with Pay	.32	.36	.31	.65	.33	--																										
7. Self-perceived Performance	.27	.15	.20	.30	.21	.10	--																									
8. Self-perceived Effectiveness	.61	.24	.37	.35	.39	.20	.33	--																								
9. Satisfaction with Community	.31	.62	.46	.27	.32	.27	.58	.15	--																							
10. Satisfaction with Communications	.39	.65	.60	.41	.38	.26	.60	.22	--																							
11. Pride in Being Member of Army	.40	.61	.39	.26	.08	.19	-.08	.32	.42	.60	--																					
12. Own Morale Item	.37	.43	.53	.50	.44	.30	.09	.33	.10	.57	.41	--																				
13. Unit Morale Item	.11	.33	.16	.26	.28	.16	.08	.27	.17	.42	.37	.70	--																			
14. Article 15s in Career	.05	-.01	.53	-.17	-.04	.13	.01	.02	.12	.09	-.02	-.65	.01	--																		
15. Plans to Re-enlist	.33	.61	.33	.22	.12	.23	.06	.24	.24	.40	.63	.34	.34	.09	--																	
16. Article 15s in Last Year	.08	.11	.07	.02	-.09	.34	-.14	.66	.01	.08	.18	.02	.06	.13	--																	
17. VO during Korean Tour	-.27	.00	-.01	.08	-.23	-.02	-.12	-.34	-.01	.09	-.02	-.18	-.10	.34	-.03	.19	--															
18. Community Relations	-.12	-.14	-.11	-.04	-.02	-.17	-.14	-.09	-.13	-.11	.12	.11	.12	-.15	-.03	-.03	-.32	--														
19. Teamwork and Cooperation	-.14	-.03	.00	-.02	-.07	-.30	-.08	-.15	.08	.08	.04	.03	.14	-.05	-.02	.14	-.66	.42	--													
20. Reactions to Adversity	.02	.07	.01	.08	.15	.19	.07	.10	.10	.02	-.04	.25	.30	-.02	.18	-.11	.21	.59	.23	--												
21. Superior-Subordinate Relations	.04	-.03	.09	.13	.05	-.37	.17	.08	-.10	.09	-.16	.22	.23	.01	.07	.08	-.11	.45	.35	.51	--											
22. Performance and Effort	.13	.02	.16	.16	.24	.13	.13	.14	.01	.19	.04	.23	.13	.11	.08	.05	-.24	.33	.39	.59	.61	--										
23. Bearing, Appearance, etc.	.12	.14	.11	.11	.02	.35	.00	.11	.10	.29	.29	.30	.36	.05	.28	.12	.02	.31	.41	.42	.57	.66	--									
24. Pride in Unit, Army and Country	.08	.17	.10	.04	.25	.05	-.03	.17	.14	.18	.14	.05	.14	-.15	.19	.17	.34	.42	.34	.45	.44	.63	.51	--								
25. Overall Morale	.04	.04	.08	.10	.14	.00	.04	.09	-.01	.15	.04	.27	.24	-.09	.14	.04	-.26	.68	.57	.74	.77	.82	.75	.76	--							
26. Unit Effectiveness	-.13	-.02	.02	.00	.25	.04	.18	-.04	.14	-.04	-.13	-.07	-.07	-.11	.61	.03	.24	-.03	.17	.12	.21	.26	.15	.17	.18	--						
27. Racial Disturbances	.06	.32	.05	-.12	.06	.23	-.08	-.01	.55	.43	.29	-.11	.11	.27	.19	.24	.20	-.59	-.39	-.18	-.23	-.11	.14	.08	-.21	-.26	--					
28. Dissent	-.03	.16	-.02	-.14	-.19	.05	.04	-.21	.31	.15	.18	-.17	.00	.40	.23	.11	.16	-.16	-.28	-.16	-.24	-.32	-.10	.14	-.26	-.41	.57	--				
29. Drug Abuse	-.16	-.15	-.33	-.25	-.05	.0	-.01	-.23	-.09	-.08	-.14	-.16	-.04	-.01	-.11	-.56	-.03	-.24	-.26	-.19	.02	-.09	-.19	-.11	-.19	-.12	.30	.39	--			
30. VC Rate	.11	.14	.17	-.03	.02	.13	.04	-.02	.25	.23	.14	-.16	-.12	.05	.12	.05	.33	-.55	-.46	-.35	-.20	-.22	-.37	-.20	-.41	-.12	.49	.49	.64	--		
31. Destruction/Sabotage	.03	.04	.00	-.22	.11	.16	.03	.25	.12	.02	.15	-.29	.03	-.14	.22	.11	-.06	-.19	-.15	.11	-.16	.14	.00	.35	.02	.03	.36	.21	.18	.47	--	
32. Participation in Drives	.00	-.15	.13	.22	.17	.17	.00	-.16	-.21	.54	-.16	.24	.05	-.09	-.17	.05	-.04	.24	.29	.08	.16	.24	.15	-.53	.19	.34	-.42	-.35	-.09	-.29	-.37	--

Table 4.24

Significant Correlations Between Satisfaction/Motivation
Constructs and Self-report Criteria (Platoon Level)

<u>Variables</u>	<u>Correlations</u>	<u>Significance Level</u>
Motivation -		
Self-perceived Performance	.27	.05
Motivation -		
Self-perceived Effectiveness	.61	.01
Motivation -		
Pride in Being Member of Army	.40	.01
Motivation -		
Own Morale	.27	.01
Motivation -		
Plans to Re-enlist	.33	.01
Motivation -		
VD Incidents	-.27	.05
Overall Satisfaction with Army -		
Self-perceived Effectiveness	.24	.05
Overall Satisfaction with Army -		
Pride in Being Member of Army	.61	.01
Overall Satisfaction with Army -		
Own Morale	.43	.01
Overall Satisfaction with Army -		
Unit Morale	.33	.01
Overall Satisfaction with Army -		
Plans to Re-enlist	.61	.01
Satisfaction with Job -		
Self-perceived Effectiveness	.37	.01
Satisfaction with Job -		
Pride in Army	.39	.01
Satisfaction with Job -		
Own Morale	.53	.01
Satisfaction with Job -		
Plans to Re-enlist	.33	.01
Satisfaction with Superiors -		
Self-perceived Performance	.30	.05
Satisfaction with Superiors -		
Self-perceived Effectiveness	.35	.01
Satisfaction with Superiors -		
Pride in Army	.26	.05
Satisfaction with Superiors -		
Own Morale	.50	.01

<u>Variables</u>	<u>Correlations</u>	<u>Significance Level</u>
Satisfaction with Superiors - Unit Morale	.26	.05
Satisfaction with Co-workers - Self-perceived Effectiveness	.39	.01
Satisfaction with Co-workers - Own Morale	.44	.01
Satisfaction with Co-workers - Unit Morale	.28	.05
Satisfaction with Pay - Own Morale	.30	.05

2. Satisfaction/motivation constructs--global criterion ratings: Examining the proportion of relationships between these two variable sets significant at the .05 level or greater, only two of 42 are significantly different from zero (see Table 4.25). Since two such significant relationships would be expected by chance alone, the correlations which are significant must be interpreted with caution. In fact, one of the two relationships displayed in Table 4.25 makes little sense. Thus, it seems reasonable to conclude that the motivation/satisfaction constructs are unrelated to the global criteria in these data.
3. Satisfaction/motivation constructs--morale ratings: The relationship between these two variable sets is extremely weak based on these data. The only correlation which reaches significance is the one between Pay Satisfaction and the Teamwork and Cooperation morale scale, and even that relationship is counter intuitive (see Table 4.26).
4. Morale ratings--global criterion ratings: Eight of 56 possible across domain correlations (see Table 4.27 for results) reached significance at the .05 level or better--whereas only two or three would be expected by chance. The highest correlation within this set is between the VD criterion rating and the Community Relations morale scale ($-.55, p < .01$). This relationship provides some evidence of validity for the Community Relations scale. Evidence of validity for the Teamwork and Cooperation morale scale is provided by the $-.38$ ($p < .01$) and $.29$ ($p < .06$) relationships between ratings on that scale and ratings of Racial Disturbances and Participation in Drives, respectively. Finally, a limited degree of construct validation is supplied by a $.26$ ($p < .10$) correlation between the rating of Unit Effectiveness and the Performance-Effort morale scale.

In general, although certain relationships provided support for the validity of the morale scales at the platoon level, the magnitude of the correlations between variables within the two domains was disappointingly low. Possible reasons for the low relationships include unreliability of the global criterion ratings and/or difficulties with the morale scales at the platoon level (including unreliability).

Evidence bearing on the "goodness" of one of the global criterion dimensions--Unit Effectiveness--is provided by the correlations between that variable and the two self-report criterion variables--self-perceived performance and self-perceived effectiveness. Although conceptually the global rating dimension

Table 4.25

Significant Correlations Between Satisfaction/Motivation
Constructs and Global Criterion Ratings (Platoon Level)

<u>Variables</u>	<u>Correlation</u>	<u>Significance Level</u>
Overall Satisfaction - Racial Disturbance	.32	.05
Satisfaction with Job - Drug Usage	-.33	.05

Table 4.26

Significant Correlations Between Satisfaction/Motivation
Constructs and Morale Ratings (Platoon Level)

<u>Variables</u>	<u>Correlation</u>	<u>Significance Level</u>
Satisfaction with Pay - Teamwork and Cooperation	-.30	.05

Table 4.27

Significant Correlations Between Global Criterion
Ratings and Morale Ratings (Platoon Level)

<u>Variables</u>	<u>Correlation</u>	<u>Significance Level</u>
Racial Disturbance - Teamwork and Cooperation	-.39	.01
Dissent - Performance and Effort	-.32	.05
VD Rate - Community Relations	-.55	.01
VD Rate - Teamwork and Cooperation	-.46	.01
VD Rate - Reactions to Adversity	-.35	.05
VD Rate - Bearing and Appearance	-.37	.05
VD Rate - Overall Morale	-.41	.01
Destruction/Sabotage - Pride in Unit	.35	.05

seems highly related to self-perceived effectiveness, the correlation between the two is $-.03$. A weak but slightly more promising relationship exists between the Unit Effectiveness global criterion rating and self-perceived performance ($.18$). These relationships suggest that ratings of unit effectiveness are yielding a different kind of information than that provided by self-reports of soldier performance and effectiveness. One possible reason for this problem is that the global criterion ratings are error prone.

5. Morale ratings--self-report criteria: Ten of 72 correlations between these two domains are significant beyond the $.05$ level. That proportion is greater than what would be expected by chance, but the relationship between the two domains cannot be regarded as strikingly large. Table 4.28 depicts the relationships which were found to be significant at the $.05$ level or better. Two mildly encouraging results are the correlations between morale ratings and self-reported "own morale" and "unit morale" provided by soldiers in the sample's platoons. Self-perceived own morale is significantly related to the following morale rating scales: Superior-Subordinate Relations; Bearing, Appearance, etc.; and Overall Morale. Soldier estimates of unit morale correlate significantly with Reaction to Adversity ($p < .05$) and Bearing, Appearance, etc. ($p < .01$). The relationship between overall platoon morale⁴ as measured by the rating scales and self-perception of unit morale nears significance as well ($r = .24$).

These correlations, though certainly not large in magnitude, are mildly encouraging because they are derived from variables measuring the same construct in very different ways. The results discussed in this section provide some evidence for the validity of the morale ratings and of the unit composites of self-reported morale. That is, these measures demonstrate convergent validity in the Campbell and Fiske (1959) sense, and they indicate a certain degree of discriminant validity as well. Discriminant validity is indicated because the morale ratings relate more substantially to self-reported morale than they do to self-report variables measuring other content areas. In addition, it is likely that the relationships between self-report and rated morale are attenuated considerably by the relatively low reliability possessed by the morale rating scales at the platoon level. Even reliability of the composite overall morale scale reached only $.49$.

⁴ Recall that an overall morale variable was developed by summing ratings across the seven individual morale scales.

Table 4.28

Significant Correlations Between Morale Ratings
and Self-report Criteria (Platoon Level)

<u>Variables</u>	<u>Correlation</u>	<u>Significance Level</u>
Community Relations - VD Korea	-.30	.05
Reactions to Adversity - Unit Morale	.30	.05
Superior-Subordinate Relations - Own Morale	.32	.05
Bearing and Appearance - Pride in Being Member of Army	.29	.05
Bearing and Appearance - Own Morale	.30	.05
Bearing and Appearance - Unit Morale	.36	.01
Bearing and Appearance - Plans to Reenlist	.28	.05
Pride in Unit - VD Korea	-.34	.05
Overall Morale - Own Morale	.27	.05
Overall Morale - VD Korea	-.26	.05

Another relationship which indicates validity for the morale scales is the Community Relations-Incidence of VD in Korea correlation ($-0.30, p < .05$). Those platoons which have a relatively high incidence of VD apparently tend to have low morale directed toward the Korean nationals, and platoons with a low incidence of VD tend to possess relatively high morale with respect to surrounding communities.

In sum, the platoon level correlational analysis demonstrated some evidence for the validity of the various measures. However, certain questions remain, especially concerning the relationships between the satisfaction/motivation constructs and both the global criterion and morale ratings. The vast majority of the relationships were either nonsignificant or counter-intuitive. These results suggest either that the satisfaction/motivation domain is related to morale and unit criteria much differently than assumed or that one or more sets of variables was poorly measured at the platoon level. The latter "possibility" appears more likely. Recall that often a very small percentage of a platoon's soldiers was available for questionnaire administration. The small number of persons representing each platoon may well have seriously affected the stability of composite construct and self-report criterion measures at the platoon level. If a significant distortion of mean platoon scores occurred for these variables, then obviously the relationships between morale ratings and these variables would also be distorted. Thus, as present, final judgments cannot be made about the adequacy of platoon level measures of satisfaction/motivation constructs and self-report criteria for reflecting accurately a platoon's standing on these variables. It can be concluded that rating platoon morale may be very difficult. The low interrater agreement indices obtained for platoon morale ratings vividly illustrate the problem. However, a more extensive and representative sampling of platoons' soldiers is required to insure a proper assessment of the relationships between morale and the variables within the areas of motivation/satisfaction and self-reported criteria at the platoon level.

Company level analysis. A correlation analysis very similar to that performed at the platoon level was used with the company data. Therefore, the same reporting format is used within this section as was used in the platoon analysis section. Again, the relationships across the three⁵ domains are examined in a pairwise fashion. Since the Ns for these analyses are very

⁵There is one less "domain" to consider at the company level because global criterion ratings were not available for companies.

small (14-16), all relationships exceeding the .10 level of significance are reported. A trend analysis designed to study further the relationship between morale and other domains is also reported. Table 4.29 displays the complete correlation matrix among variables within the motivation/satisfaction, morale, and self-reported criterion domains.

1. Satisfaction/motivation constructs--self-report criteria: In terms of relationships between these two domains, 21 of 54 correlations are significant at the .10 level, while only about five would be expected by chance. Clearly the relationship between variables from these two domains is strong. Referring to Table 4.30, first notice that self-reported morale is strongly related to Overall Satisfaction with the Army and Satisfaction with Superiors. Of the six constructs, Overall Satisfaction with the Army also is most highly correlated with Pride in the Army and with Plans to Reenlist. As with the platoon level analysis, self-report variables related to incidents such as Article 15s were not very predictable using motivation/satisfaction constructs. Perhaps the extremely low base rate of these incidents in the data precludes the possibility of obtaining substantial relationships with other variables.
2. Satisfaction/motivation constructs--morale ratings: The general level of the relationships between these domains is weak--only 4 of 42 correlations are significant at the .10 level or better compared to 4 of 42 to be expected by chance. Therefore, results displayed in Table 4.31 should be interpreted with extreme caution. However, Overall Satisfaction with the Army correlates significantly with three aspects of morale and with the unit weighted composite of overall morale ($r = .54, p < .05$). Consequently, it seems fair to conclude that overall satisfaction relates substantially to company morale ratings. Although not reflected in Table 4.31, it is of interest to notice that Satisfaction with Management and Communications (a 12-item Cureton scale) correlates significantly with five morale scales and overall morale.
3. Morale ratings--self-report criteria: Finally, the relationships between self-report criteria and morale ratings at the company level are examined. The significantly related variables are displayed in Table 4.32. The most consistently high relationships across these two domains are between self-reported company morale (both self and unit), and company level morale as rated by officers and NCOs. Overall, the pattern of intercorrelations between self-reported morale and morale ratings provides substantial evidence for the validity of our morale rating scales when they are used at the company level. Not only are the correlations high between

TABLE 4.29
INTERCORRELATIONS AMONG MOTIVATION/SATISFACTION
CONSTRUCTS, SELF-REPORT CRITERIA, AND MORALE RATINGS (COMPANY LEVEL)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
1. Motivation	--																								
2. Overall Satisfaction with Army	.62	--																							
3. Satisfaction with Job	.80	.51	--																						
4. Satisfaction with Supervision	.51	.70	.70	--																					
5. Satisfaction with Co-workers	.32	.58	.54	.77	--																				
6. Satisfaction with Pay	.32	.44	.56	.42	.23	--																			
7. Self-perceived Performance	.42	.15	.30	.43	.43	-.23	--																		
8. Self-perceived Effectiveness	.53	.51	.59	.68	.50	.45	.63	--																	
9. Satisfaction with Community	.66	.78	.58	.57	.56	.36	.42	.62	--																
10. Satisfaction with Communications	.64	.84	.63	.63	.46	.64	.30	.67	.88	--															
11. Pride in Being Member of Army	.55	.83	.45	.54	.29	.62	-.03	.57	.66	.73	--														
12. Own Morale Item	.39	.73	.42	.64	.43	.42	.30	.62	.61	.81	.53	--													
13. Unit Morale Item	.45	.74	.34	.64	.28	.39	.34	.68	.59	.77	.68	.89	--												
14. Article 15s in Career	.40	.52	.20	.27	.16	.24	.09	.33	.53	.53	.50	.37	.38	--											
15. Plans to Re-enlist	.55	.73	.31	.45	.08	.44	.04	.42	.41	.56	.84	.50	.73	.23	--										
16. Article 15s in Last Year	.32	.32	.09	-.12	-.08	.47	-.03	.19	.28	.32	.41	-.08	.12	.15	.42	--									
17. VD during Korean Tour	-.03	.19	-.01	-.01	.19	.15	-.40	-.26	.01	-.02	.05	-.13	-.22	.49	-.14	.19	--								
18. Community Relations	-.04	.18	.06	.30	.32	-.25	-.06	-.12	.03	.02	-.10	.46	.27	-.13	.02	-.67	-.07	--							
19. Teamwork and Cooperation	.27	.63	.13	.50	.34	.14	.34	.50	.39	.55	.47	.85	.82	.23	.64	-.06	-.23	.50	--						
20. Reactions to Adversity	.27	.62	.22	.40	.30	.41	.25	.58	.45	.67	.49	.82	.73	.28	.56	.14	-.18	.29	.89	--					
21. Superior-Subordinate Relations	.22	.43	.05	.31	.21	.21	.51	.54	.36	.53	.27	.64	.62	.36	.38	.14	-.16	.16	.73	.88	--				
22. Performance and Effort	-.06	.35	-.11	.14	.43	.15	.26	.44	.45	.48	.27	.51	.35	.40	.03	-.02	-.08	.12	.51	.65	.63	--			
23. Bearing, Appearance, etc.	.13	.54	.05	.39	.22	.28	.17	.44	.45	.64	.53	.70	.68	.38	.50	-.04	-.26	.24	.76	.77	.72	.74	--		
24. Pride in Unit, Army and Country	-.13	.33	-.16	.36	.27	.09	.30	.40	.17	.33	.24	.61	.58	.02	.36	-.18	-.39	.40	.80	.82	.81	.65	.83	--	
25. Overall Morale	.12	.54	.04	.42	.35	.19	.32	.49	.40	.58	.39	.79	.71	.28	.44	-.09	-.24	.44	.90	.93	.88	.75	.89	.93	--

Table 4.30

Significant Correlations Between Satisfaction/Motivation
Constructs and Self-report Criteria (Company Level)

<u>Variables</u>	<u>Correlation</u>	<u>Significance Level</u>
Motivation -		
Self-perceived Effectiveness	.53	.05
Motivation -		
Pride in Being Member of Army	.55	.05
Motivation -		
Unit Morale	.45	.10
Motivation -		
Plans to Reenlist	.55	.05
Overall Satisfaction -		
Self-perceived Effectiveness	.51	.05
Overall Satisfaction -		
Pride in Being Member of Army	.83	.01
Overall Satisfaction -		
Own Morale	.73	.01
Overall Satisfaction -		
Unit Morale	.74	.01
Overall Satisfaction with Army -		
Article 15s in Career	.52	.05
Overall Satisfaction -		
Plans to Reenlist	.73	.01
Satisfaction with Job -		
Self-perceived Effectiveness	.59	.05
Satisfaction with job -		
Pride in Army	.45	.10
Satisfaction with Superiors -		
Self-perceived Effectiveness	.68	.01
Satisfaction with Superiors -		
Pride in Being Member of Army	.54	.05
Satisfaction with Superiors -		
Own Morale	.64	.01
Satisfaction with Superiors -		
Unit Morale	.64	.01
Satisfaction with Superiors -		
Plans to Reenlist	.45	.10
Satisfaction with Co-workers -		
Self-perceived Effectiveness	.50	.05
Satisfaction with Pay -		
Self-perceived Effectiveness	.45	.10
Satisfaction with Pay -		
Pride in Being Member of Army	.62	.05
Satisfaction with Pay -		
Article 15s Last Year	.47	.10

Table 4.31

Significant Correlations Between Satisfaction/Motivation
Constructs and Morale Ratings (Company Level)

<u>Variables</u>	<u>Correlation</u>	<u>Significant Level</u>
Overall Satisfaction - Teamwork and Cooperation	.63	.01
Overall Satisfaction - Reactions to Adversity	.62	.01
Overall Satisfaction - Bearing and Appearance	.54	.05
Satisfaction with Superiors - Teamwork and Cooperation	.50	.05

Table 4.32

Significant Correlations Between Morale Ratings
and Self-report Criteria (Company Level)

<u>Variables</u>	<u>Correlation</u>	<u>Significance Level</u>
Community Relations - Article 15s Last Year	-.67	.01
Teamwork and Cooperation - Self-perceived Effectiveness	.50	.10
Teamwork and Cooperation - Pride in Being Member of Army	.47	.10
Teamwork and Cooperation - Own Morale	.85	.01
Teamwork and Cooperation - Unit Morale	.82	.01
Teamwork and Cooperation - Plans to Reenlist	.64	.05
Reactions to Adversity - Self-perceived Effectiveness	.58	.05
Reactions to Adversity - Pride in Being Member of Army	.49	.10
Reactions to Adversity - Own Morale	.82	.01
Reactions to Adversity - Unit Morale	.73	.01
Reactions to Adversity - Plans to Reenlist	.56	.05
Superior-Subordinate Relations - Self-perceived Performance	.51	.10
Superior-Subordinate Relations - Self-perceived Effectiveness	.54	.10
Superior-Subordinate Relations - Own Morale	.64	.05
Superior-Subordinate Relations - Unit Morale	.62	.05
Performance and Effort - Own Morale	.51	.10
Bearing and Appearance - Pride in Being Member of Army	.53	.10
Bearing and Appearance - Own Morale	.70	.01
Bearing and Appearance - Unit Morale	.68	.01
Bearing and Appearance - Plans to Reenlist	.50	.10

149.

(Table 4.32 cont.)

<u>Variable</u>	<u>Correlation</u>	<u>Significance Level</u>
Pride in Unit - Own Morale	.61	.05
Pride in Unit - Unit Morale	.58	.05
Overall Morale - Self-perceived Effectiveness	.46	.10
Overall Morale - Own Morale	.79	.01
Overall Morale - Unit Morale	.71	.01

self-report and rated morale but also they are higher than the correlations between rated morale and other self-report criteria and between rated morale and the satisfaction/motivation constructs. These results demonstrate a certain degree of discriminant validity which in turn suggests that at the company level the morale construct is being measured validly separate from the satisfaction, motivation, and performance domains. These findings are especially gratifying because, as mentioned earlier, company morale was being measured in two very different ways--officer and NCO ratings of each company and questionnaire responses summed across members of each company. Despite these differences in measurement technique the relationship between the two company morale estimates is strong.

The highest correlation between these two groups of variables is between the Teamwork and Cooperation scale and own morale item ($r = .85, p < .01$). The same scale correlates .82 ($p < .01$) with soldiers' estimates of unit morale. This result is inconsistent with the platoon level analysis where Bearing, Appearance, Etc., and Reaction to Adversity were correlated most highly with soldiers' estimates of their own and their unit's morale. Thus, we can make no definite inference about what facet or facets of morale reflect most closely soldiers' implicit definitions of the morale construct.

Other self-report criteria "predictable" with one or more dimensions of the morale rating scales are Plans to Reenlist, Pride in the Army, Self-perceived Performance and Effectiveness, Incidents of VD in Korea, and Article 15s Last Year. Teamwork and Cooperation is the scale most highly related to Plans to Reenlist ($r = .64, p < .01$), but two other scales also correlate significantly with company members' Plans to Reenlist. The self-perceived effectiveness criterion is related significantly to Superior-Subordinate Relations ($r = .54, p < .05$), Teamwork and Cooperation ($r = .50, p < .05$), Reaction to Adversity ($r = .58, p < .05$), and Overall Morale ($r = .49, p < .10$). Thus, in companies which contain relatively effective performers, the morale tends to be high. In those companies containing relatively ineffective performers, morale tends to be lower. Other significant relationships between morale ratings and self-report criteria are shown in Table 4.32.

Trend analysis. Because of the small N in the company level correlational analysis, a trend component analysis⁶ was used to confirm the relationships between company morale ratings and the satisfaction/motivation construct variables along with selected self-report criterion measures. The trend analysis, an application of analysis of variance, tests the null hypothesis that two variables are not related to each other in any systematic manner. This analysis possesses the advantage of providing an estimate of the strength of quadratic and higher order relationships as well as linear effects. Also, trend analysis uses individual respondents' variable scores as data points, using within company variability to estimate the strength of the relationship. For this project, the 14 companies were rank ordered from highest to lowest according to their mean morale ratings (using all company level morale ratings) and each "dependent" variable was submitted to a trend component analysis.

Table 4.33 displays the results of 17 separate trend analyses. The linear trend column is of most interest. Seven of the 17 variables studied possess significant linear relationships with morale beyond the .05 level, two well beyond the .001 level. The two self-report morale variables--own morale and unit morale--were the most highly related to average morale, confirming the earlier correlational results. In terms of composite constructs, Overall Satisfaction and Satisfaction with Superiors were significantly related to overall morale. Thus, although the company level correlational analysis suggested a weak relationship, in general, between morale and the composite constructs, Overall Satisfaction and Satisfaction with Superiors seem definitely related (in a positive direction) to company morale. Further, these results suggest that company morale is not simply synonymous with the sum of individuals' satisfaction. Instead, it seems to be related selectively to certain aspects of satisfaction--overall affect toward the Army and the way soldiers feel about their superiors.

The other variables significantly related to morale ratings are Satisfaction with Community, Satisfaction with Communications, and Plans to Reenlist. Results also confirm reasonably substantial relationships between rated morale and these three variables in the company level correlational analysis. Finally, one quadratic trend is highly significant--rated company morale and Pride in the Army. Inspection of the Pride in the Army means for the 14 companies shows that these two variables have a U-shaped relationship--comparatively high pride in the Army being exhibited both by high and low morale companies with companies intermediate in terms of morale consisting of soldiers low on the Pride in Army variable.

⁶ G. A. Ferguson describes trend component analyses in his text, Statistical analysis in psychology and education. New York: McGraw Hill, 1966 (Chapter 21).

Table 4.33

Trend Component Analysis Results of Relationships Between
Company Level Morale Ratings and Selected Variables

<u>Dependent Variables</u>	<u>Significance Level for Linear Trend</u>	<u>Significance Level for Quadratic Trend</u>
1. Motivation	.49	.99
2. Overall Satisfaction with the Army	.00004	.49
3. Satisfaction with Job	.71	.13
4. Satisfaction with Superiors	.02	.84
5. Satisfaction with Co-workers	.11	.67
6. Satisfaction with Pay	.82	.02
7. Self-perceived Performance	.33	.42
8. Self-perceived Effectiveness	.12	.06
9. Satisfaction with Community	.002	.06
10. Satisfaction with Communication	.001	.03
11. Pride in Being Member of Army	.13	.008
12. Own Morale Item	.000001	.44
13. Unit Morale Item	.000002	.22
14. Article 15s in Career	.18	.39
15. Plans to Reenlist	.03	.24
16. Article 15s Last Year	.76	.27
17. VD During Korean Tour	.46	.46

Referring to company level results in general, tentative support was provided for the construct validity of satisfaction and motivation constructs and of the morale rating scales. This "construct validity" took the form of significant relationships between variables across these three domains which seemed reasonable conceptually. For example, the satisfaction and motivation construct variables related with self-report criteria to an extent well beyond that expected by chance. Furthermore, the significant correlations between such variable pairs as Self-perceived Effectiveness and Motivation, and Plans to Reenlist and Overall Satisfaction with Army life imply that the constructs developed from questionnaire scales and items are measuring what they "should be." Perhaps the single most striking pattern of results at company level involved the relationship between self-reported troop morale and ratings of company morale using our seven dimension rating format. Despite the two very different methods of measuring morale--summed questionnaire responses and ratings--empirical relationships between the two variable sets were very large, with correlations reaching the .80s. These results indicate that the morale rating scales are providing information about company units conceptually very similar to what soldiers think of when they are asked to report their own and their unit's morale. This "convergent validity," in addition to the excellent interrater reliability provided by the morale scales used at the company level, suggests that the morale rating instrument is validly tapping the company morale construct.

Preliminary Conclusions

The two central purposes of this project are (a) to develop rating scales to evaluate the morale of units; and (b) to recommend questionnaire scales/items best suited for measuring the satisfaction, motivation, and morale of individual soldiers in the Army. What is the status now with respect to these goals?

Morale Rating Scales

First, morale scales have been developed and field tested in Korea. The scales' leniency and restriction of range errors were judged to be of minimal concern based on the Eighth Army data. The halo error did seem to be quite severe, especially at the platoon level. However, it is always difficult to know the extent of the true correlations among morale categories and thus the seriousness of the halo error.

The approach to assessing the morale instrument also included attention to the ancillary but important questions of "who can best use the scales?" and "what kinds of units (companies or platoons) are most legitimately rated using the scales?" Interrater reliability results using Eighth Army data suggest that officers and NCOs are probably equally qualified

to use the scales, but that reliability is increased (especially at the platoon level) when both officers and NCOs provide ratings. This increase in reliability is accomplished because of the increased number of raters. Furthermore, it appears that the morale of companies can be rated significantly more reliably than platoon morale.

Still another facet of the assessment of the morale rating scales involved an examination of the relationships between rated morale and other variables available within this study. This was essentially a construct validation approach in which the relationships between morale and other variables conceptually similar were examined to evaluate the construct validity of the instrument. One major problem with this approach is that the relationships between the morale construct and the domains of satisfaction and motivation as well as the areas measured by certain criterion variables are not well known, a priori. That is, one cannot simply outline the relationships that should exist among the domains of morale, satisfaction, motivation, and certain criteria and then compare the empirical results with this a priori, known correlation matrix. Indeed, one contribution this study can hopefully provide is a notion of what morale is and what it is related to. Thus, our approach included a broad brush examination of relationships between morale and other variables to ascertain the sensibility of these relationships.

Data analysis results suggest that morale as measured at the platoon level relates significantly to very few variables in the satisfaction, motivation, and criterion domains. This information is not too damaging in its own right; however, rated morale also correlates only modestly with self-report morale at the platoon level, and as previously discussed, the interrater agreement concerning the level of platoon morale is discouragingly low for the scales.

Results of this preliminary construct validation effort at the company level were more successful. First, the interrater reliability of the scales is adequate. Second, the linear relationship between rated morale and self-report morale is high, suggesting that company morale ratings and soldier perceptions of morale are tapping the same domain. Finally, the correlations between rated morale and other variables seem "sensible," although relationships between the ratings and the two other domains--satisfaction/motivation constructs and self-report criteria--are low in general. An example of a "sensible" relationship is that morale is significantly related to two aspects of satisfaction which seem conceptually related to morale. Overall, company level results from the Seventh Army data suggest that morale can be reliably and validly evaluated. Further, the morale construct appears to be moderately related to certain aspects of satisfaction and very weakly related to company members' motivation to work.

Questionnaire Scale/Item Selection

The strategy for selecting questionnaire scales and/or items to measure the satisfaction and motivation domains was first to identify a reasonable structure for the two domains. That is, we sought to develop a framework for the satisfaction/motivation "space" capable of describing comprehensively the multivariate domain represented by these two broad constructs. This was treated as at least partially an empirical question. Therefore, after gathering questionnaire instruments which together seemed to "cover" all areas of satisfaction and motivation mentioned in relevant literature, a sample of soldiers completed these scales and items. Then, the intercorrelations among these variables were submitted to a factor analysis. Results of the factor analysis along with conceptual considerations provided the rationale for selecting six constructs each being of practical and theoretical interest in its own right.

Next, instrument scales and items measuring these aspects of motivation and satisfaction were selected using six criteria which insured relatively "pure" measures of each construct. For the 22 variables so chosen, considerable convergent and discriminant validity was demonstrated through a multiconstruct-multimethod analysis of the Eighth Army questionnaire responses. If the satisfaction/motivation construct framework developed in Korea also provides a reasonable means for structuring Seventh Army data, the instruments generating these 22 variables should form the core of the final satisfaction/motivation questionnaire package to be delivered to the Army. That is, provided that the validity of the multiconstruct-multimethod framework is confirmed in Germany using these 22 variables, the conceptual and empirical usefulness of measuring satisfaction and motivation within this structure makes imperative the inclusion of variables contributing to this framework. Also contingent upon Seventh Army data analysis results, instruments containing other variables may be selected for the final package if they relate well to criteria or to rated morale in both samples. For example, based on Eighth Army results alone, it appears that Satisfaction with Communications (Cureton) and the items measuring unit and own morale should be included in the questionnaire package because of their correlations with criteria and morale ratings.

Thus, one of our final products delivered to the Army will be not only a list of questionnaires considered promising for measuring soldiers' satisfaction and motivation but also a framework for meaningfully summarizing responses in a theoretically and practically useful manner. Discovery and validation of such a framework should provide Army decision makers with a convenient way to conceptualize these domains, and an empirically defensible method for assessing soldiers and units on individual facets of these domains.

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CHAPTER V

FIELD TEST OF INSTRUMENTS: SEVENTH ARMY, GERMANY

The purpose of this phase of the study was twofold: (a) to evaluate the generalizability of the morale scales and motivation and satisfaction constructs to a different military setting; and (b) to add behavioral richness to the morale scales when the data so dictated--a bootstrapping approach. The several steps planned for the Seventh Army phase of the study, therefore, included (a) gathering additional behavioral examples using the same workshop procedure as was used in the National Guard and Eighth Army; (b) comparing the morale scales developed in the first two settings with the scales developed in the Seventh Army; (c) conducting a final retranslation and scaling procedure for all--National Guard, Eighth Army, and Seventh Army--morale examples; and (d) administering the same motivation and job satisfaction measures to Seventh Army enlisted personnel as had been administered to Eighth Army enlisted personnel.

Development of Morale Scales

Sample

The major units furnishing personnel for the Seventh Army were 32nd AADCOR and TASCOR. The procedure used to gather examples was identical to the procedure used with the National Guard and Eighth Army samples. The participating units were asked to furnish 20 officers, 20 NCOs, and 20 EM (for the purpose of this study EM are E-4 and below but including SP-5). Eighteen officers, 19 NCOs, and 20 EMs attended one of the three workshops with each workshop lasting an entire day. The participants were instructed to think about situations which had actually occurred which they thought indicated the morale of individuals or units and write those situations down. The participants generated 445 examples.

Classification and Rating of Morale Examples

PDI researchers edited and tentatively classified each example that the Seventh Army personnel wrote. Ten categories resulted. The ten categories and definitions are:

- A. Community Relations. Becoming involved as individuals or units in community activities; establishing friendships with local civilians; treating local civilians with dignity and respect; versus showing a lack of interest in community problems; looking down on persons in the community and treating them disrespectfully or abusively; not participating in civilian activities.

- B. Teamwork and Cooperation. Working and playing well together as a unit; pitching in to help others get things done; sacrificing for other unit members or the unit as a whole; versus showing indifference toward the job related or personal problems of other unit members; displaying selfish interest in one's own welfare and a lack of concern for the well-being of other individuals or the unit; failing to work together smoothly; fighting and conflicts among members of the unit.
- C. Reactions to Adversity. Accepting hardships readily; sticking it out in the face of adversity; putting up with hardship conditions without complaint; versus giving up or withdrawing when faced with obstacles; sustained bitching and grumbling about isolated, uncomfortable, or unpleasant conditions; refusing to persist in accomplishing the mission when personal comfort, safety, or other basic needs are not being met.
- D. Superior-Subordinate Relations. Trust and respect between subordinates and superiors in the unit; subordinates and superiors willing to spend informal time together (drinking beer, etc.); talking over personal concerns together; superiors pitching in and helping with the work when called for; working together without regard to rank; versus superiors and subordinates not associating with or talking with each other; superiors harassing and nit-picking subordinates; subordinates "getting back at" superiors by reprisals or threats of reprisals.
- E. Performance and Effort on the Job. Trying hard to do well on the job; performing well; spending extra time and effort to get the job done; suggesting ways to improve the way the job is done; taking the initiative to do the job well; versus expending little or no effort toward doing well on the job; lack of concern for job effectiveness; poor performance.
- F. Bearing, Appearance, Marching, and Military Courtesy. Crisp military appearance; having military haircuts; pride in personal and barracks appearance; marching smartly; good military courtesy; versus unshined shoes, unkempt and long hair; dirty or nonstandard living quarters; slouchy posture; failure to salute; poor drill and ceremonies or parade performance.
- G. Pride in Unit, Army, and Country. Expressing pride and enthusiasm for one's country and the Army; showing pride in one's unit by taking actions to make the unit distinctive and clearly identifiable; bragging about the accomplishments of the unit; challenging and competing with other units; versus downgrading or expressing indifference for one's country and the Army; showing a lack of concern for one's unit and its accomplishments; resisting wearing the uniform or identifying unit insignia.

- H. Use of Time During Off-Duty Hours. Being involved in constructive or enriching activities off duty; taking advantage of travel opportunities; being involved in recreational activities; using military-sponsored recreational activities and facilities; versus complaining about having nothing to do; not supporting unit activities; using drugs or alcohol with other individuals in the unit to relieve boredom.
- I. "Gung Ho" Versus FTA (Anti-Army) Behavior. Volunteering for assignments; responding enthusiastically to requests; doing the "right" thing in the absence of explicit orders; showing eagerness to correct nonstandard conditions through personal actions or complaints to the chain of command; versus general bitching; carrying out the letter but not the spirit of orders and regulations; responding slowly to orders; refusing to obey orders; willful destruction of property.
- J. Personal Adjustment. General adjustment and adaptation to Army life; versus general withdrawal from others; homesickness; excessive and nonsocial use of alcohol, marijuana, and other drugs; depression; losing touch with reality; excessive aggression in response to frustration (killing, destruction of property, etc.).

Several similarities and differences are apparent in these scale definitions compared to previous morale scales. Scales A, Community Relations; C, Reactions to Adversity; D, Superior-Subordinate Relations; and G, Pride in Unit, Army and Country possess the same scale titles or names in both categorizations. For the most part, the scale definitions of these four scales remain the same.

Scales F, Bearing, Appearance, Marching and Military Courtesy; B, Teamwork and Cooperation on the Job; and E, Performance and Effort on the Job changed slightly in scale name. The changes in Scale F, Bearing, Appearance, Marching, and Military Courtesy were largely dictated by the researchers' efforts to make this scale "cleaner" than it formerly was. The multidimensionality of the Korean scale had been a problem during scale development yet the field test data from Korea suggested that it was a valid scale. The major changes reflect the researchers' effort to downplay the emphasis on discipline and to take account of examples collected in Germany which reflect marching and parade appearance.

Scale B, Teamwork and Cooperation on the Job and Scale E, Performance and Effort on the Job were narrowed to include only "on-the-job" behavior to separate these scales from the new scales, H, Use of Off-Duty Hours and I, "Gung Ho" Versus FTA (Anti-Army) Behavior. Both of the new scales have elements in their definitions which would overlap with the Korean

scale definitions of Teamwork and Cooperation and Performance and Effort if the scales are not limited to "on the job." For example, cooperation can be shown in places other than work situations. Thus, the addition of Off-Duty Hours and "Gung Ho" Versus FTA (Anti-Army) Behavior necessitated changing the Korean Teamwork and Cooperation scale and Performance and Effort scale to reflect only work situations.

Three different scales or aspects of morale were added as a result of the Seventh Army classification. Scales H, Use of Time During Off-Duty Hours, I, "Gung Ho" Versus FTA (Anti-Army) Behavior, and J, Personal Adjustment are all new. Use of Off-Duty Hours seemed to be an especially important facet of morale in Germany. Because of trips, tours, and recreational opportunities which are available in Europe, use of off-duty hours is more evident than it seemed to be in Korea. In Korea, the almost complete isolation, or dissimilarity in the cultures, made it more difficult for the soldier to take advantage of his foreign assignment. Rather in Korea, use of off-duty hours frequently became subsumed under the category Community Relations. Because the U. S. forces became involved in so many helping activities such as building schools or supporting orphanages, many off-duty examples are included in the Community Relations scale. Without the Korean and National Guard examples, the definition of a separate scale for Community Relations would not have been possible. Thus, a major difference between Germany and Korea was the lack of community relations type items in Germany and the lack of off-duty time examples in Korea. A new scale "Use of Off-Duty Hours" was created to more completely define the aspects of morale. The "Gung Ho" Versus FTA (Anti-Army) Behavior scale is also a new scale. This scale includes the volunteering aspect which was in the Korean Performance and Effort scale, the correction of nonstandard conditions, and destruction of property from the Bearing, Appearance and Military Discipline. Indeed, the low end of the new scale is largely the low end of the Korean discipline scale. The low end includes refusing to obey orders, responding to the letter but not the spirit of orders and willful destruction of property.

The last scale added from this categorization was Scale J, Personal Adjustment. The personal Adjustment scale was added to try to assess the difference in individual adjustment to the Army. With the Army's new policy of discharging men early who are not suited to the Army, this scale seemed particularly important. Units with individuals who are well-adjusted to the Army should have higher morale than a unit with a large number of people commonly referred to as "duds," "misfits," "odd balls," or "eight balls."

After the PDI researchers edited the examples, tentatively classified the examples and defined the scales, the persons who had participated in the Seventh Army workshops classified and rated the 445 examples. Each

example was assigned to one of the ten categories and given a rating on morale. A morale rating was given from 9 (high morale) to 1 (low morale), depending upon the level of morale the rater thought the example displayed. The officers rated all 445 examples while the enlisted men each rated one half of the examples.

Analysis of Categorizations and Ratings

Each category was examined to identify examples which 50 percent or more of the raters assigned to the same category. Compared with the Eighth Army sample and the National Guard sample, the persons in the Seventh Army sample classified fewer examples consistently. In addition, within the Seventh Army sample officers tended to rate examples more consistently than enlisted men. Table 5.1 shows the number of examples classified consistently for each scale for officers and enlisted men. Table 5.1 also shows that officers categorized more examples consistently than enlisted men for seven of the ten scales. The enlisted men categorized more examples consistently for two of the ten scales and on one scale the officers and enlisted men categorized an equal number of examples consistently.

Because the officers classified more items consistently, their data were used for the subsequent analysis.

Even using the officers' classifications, however, the scales did not hold up as well as did the scales developed with the Eighth Army and National Guard. Scale F, Bearing, Appearance, Marching, and Military Courtesy had a particularly small number of examples reliably classified in it. The officers' sample categorized only three items consistently on this scale. Scale J, Personal Adjustment, while represented by 17 examples, was unipolar. The 17 examples ranged from a morale score of 1.31 to 2.86.

Why should this decrement in the consistency of classifying occur? The researchers feel in retrospect that ten scales may have been too many. It would be expected that the reliability of the categorization of examples might decrease as the number of scales or options increase. Yet this decrement appeared to be too large to justify this as a singular explanation. It seemed, rather, that splitting the existing scales and adding additional scales was "splitting hairs." These splits made sense conceptually to the researchers but required the raters to make decisions they were unable to make.

To resolve these problems it seemed wise to utilize the earlier dimensions more heavily for the retranslation process. Consequently, the categories were redefined and some categories were dropped. Scale I, "Gung Ho" Versus FTA (Anti-Army) Behavior was deleted and absorbed by Performance and Effort on the Job. Scale F was renamed Bearing, Appearance, and

Table 5.1

Examples Classified Consistently
by Seventh Army Officers and Enlisted Men

<u>Category</u>	<u>Number of Examples which 50 Percent or More Raters Categorized Similarly</u>		<u>Number of Examples Both Groups Classified Consistently</u>
	<u>Officers N=15*</u>	<u>Enlisted Men N=33</u>	
A	9	9	8
B	39	29	23
C	10	2	2
D	70	58	47
E	22	13	7
F	3	7	3
G	8	6	5
H	10	7	7
I	22	1	1
J	<u>17</u>	<u>18</u>	<u>14</u>
	210	150	117

*The men that classified these examples were the same men that wrote the incidents. The Ns in the writing group and rating group are unequal because some men didn't return for the rating session.

Military Discipline. Scale J, Personal Adjustment was deleted because all the items on Scale J were at the low end of the scale (2.86 or lower).

The final scale definitions used for the retranslation--categorizations and ratings--were:

- A. Community Relations. Becoming involved as individuals or units in community activities; establishing friendships with local civilians; treating local civilians with dignity and respect; versus showing a lack of interest in community problems; looking down on persons in the community and treating them disrespectfully or abusively; not participating in civilian activities.
- B. Teamwork and Cooperation on the Job. Working well together as a unit; pitching in to help others get things done; sacrificing for other unit members or the unit as a whole; staying together as a unit through difficult times; versus showing indifference toward the job related or personal problems of other unit members; displaying selfish interest in one's own welfare and a lack of concern for the well-being of other individuals in the unit.
- C. Reactions to Adversity. Accepting hardships readily; sticking it out in the face of adversity; putting up with hardship conditions without complaint; versus giving up or withdrawing when faced with obstacles; sustained bitching and grumbling about isolated, uncomfortable, or unpleasant conditions; refusing to persist in accomplishing the mission when personal comfort, safety, or other basic needs are not being met; excessive aggression in response to frustration.
- D. Superior-Subordinate Relations. Trust and respect between subordinates and superiors in the unit; talking over personal concerns together; superiors pitching in and helping with the work when called for; working together without regard to rank; versus superiors and subordinates not associating with or talking with each other; superiors harassing and nit-picking subordinates; subordinates "getting back at" superiors by reprisals or threats of reprisals.
- E. Performance and Effort on the Job. Trying hard to do well on the job; performing well; spending extra time and effort to get the job done; volunteering for assignments; responding enthusiastically to requests; versus expending little or no effort toward doing well on the job; lack of concern for job effectiveness; poor performance.
- F. Bearing, Appearance, and Military Discipline. Crisp military appearance; responding quickly to orders; doing the "right" thing in the absence of explicit orders; low frequency of AWOLs; showing an eagerness to correct nonstandard conditions; being alert; versus sloppy appearance; high frequency of AWOLs; willful destruction of property; fighting; refusing to obey orders; carrying out the letter but not the spirit of orders and regulations; responding slowly to military orders.

- G. Pride in Unit, Army, and Country. Expressing pride and enthusiasm for one's country and the Army; showing pride in one's unit by taking actions to make the unit distinctive and clearly identifiable; bragging about the accomplishments of the unit; challenging and competing with other units; versus downgrading or expressing indifference for one's country and the Army; showing a lack of concern for one's unit and its accomplishments; resisting wearing the uniform or identifying unit insignia.
- H. Use of Time During Off-Duty Hours. Being involved in recreational activities; helping to construct additional recreational facilities; using military sponsored recreational activities; being involved in constructive or enriching activities off duty; taking advantage of travel opportunities; versus complaining about having nothing to do off duty; not supporting unit recreational activities; using drugs with other individuals in the unit or alone to relieve boredom.

Final Retranslation Effort

One hundred sixty-five examples were selected for the final retranslation pool. The examples came from three sources: (a) the examples from the morale scales used with National Guard and Eighth Army samples; (b) examples classified consistently from the first Seventh Army categorizations; and (c) selected examples from the National Guard and Eighth Army example pool.

All examples from the National Guard and Eighth Army morale scales were included in the retranslation sample, except those examples which were strictly concerned with individual behavior rather than unit behavior. An example of this individual-type item is the example at the 2-position on Scale A, Community Relations on the morale scales used in the Eighth Army.

This soldier got drunk in the local village and broke a window in a Korean taxi cab.

Examples classified consistently during the first ratings by Seventh Army men were added to the examples from the National Guard and Korean scales. This second group of examples included the consistently classified ones from the Use of Off-Duty Hours scale. No examples for this scale came from the National Guard and Eighth Army pool because the scale was developed in Germany. To identify examples for this scale, all of the examples in the National Guard and Eighth Army pools were reread. Examples which the researchers felt might be classified in this scale were extracted and added to the Seventh Army retranslation example pool.

Nine officers and 16 enlisted men classified and rated the 165 examples in the retranslation pool. The percentage of raters assigning each example to the eight categories and the mean morale rating is shown in Table 5.2. PDI researchers assigned items to categories based upon the consistency of the category assignments. Examples which were assigned to categories by 50 percent or more of the raters were arrayed within each of the categories according to their mean morale ratings.

The final scales were developed by selecting examples from these arrays within categories. The criteria used for selecting examples is explained in Chapter II.

Scale Construction

Judgments obtained from the final retranslation sample were considered first in constructing the final scales. To support the selection of these examples and capitalize upon all the data collected, summary statistics were available on all examples which had been classified consistently by raters in all the other four (National Guard rating, Eighth Army rating, Eighth Army retranslation, and Seventh Army rating) ratings. A few of these items were used in the final scale construction when there were anchors missing from the retranslation pool examples and some items had to be modified slightly to complete the final scales.

Table 5.3 shows the summary statistics for all the examples finally selected for scale development. Table 5.3 identifies the example by scale position and proceeds to show the source of the example¹ and all the data available for each example. Some examples, i.e., example A-9, have an abundance of information about their statistical properties over a large number of Army personnel. On the other hand, example A-3 has summary statistical information available from only the initial rating and retranslation in Germany.

The final scales and scale definitions are shown in Appendix L. To complete the final scales, one slight modification was made in category label. The name of Scale B, Teamwork and Cooperation on the Job was slightly modified to Teamwork and Cooperation.

¹While a large number of these examples are attributed to PDI, this is somewhat misleading. Occasionally a PDI researcher would write an example to fill a hole in a scale. More often, however, previous examples were changed, altered, or modified. Whenever these changes significantly altered the example, the new incident was assigned to PDI. This overemphasizes the number of examples assigned to PDI but has the advantage of completely preserving the etiology of each example. Only three examples were modified in any way after the final Seventh Army Rating. These are the items marked with an asterisk in Table 5.3.

Table 5.2

Percentage of Raters Assigning
Each Incident to Each Morale Category
N = 25 Raters

Item Number	$\bar{X}$	A	B	C	D	E	F	G	H	S.D.
1	6.0		16	60		12	8	4		1.29
2	8.1	4	8					8	80	1.10
3	6.7	84							16	1.58
4	8.6							100		.47
5	1.5						88	12		1.59
6	8.4		52		20			28		.68
7	8.3		4		88	8				.83
8	7.3				8	8	76	8		1.92
9	6.9		8				4		88	1.58
10	7.4	92				4			4	1.15
11	7.1			88			4	8		1.53
12	6.4		12					8	80	1.19
13	7.4			4	4			12	80	1.42
14	8.1		12			12		76		.85
15	2.5						84	12	4	.95
16	7.0		20	4	60	12		4		1.29
17	7.4	96		4						1.19
18	7.3	4	24			68		4		1.47
19	5.8		4	48	8	32		8		1.62
20	7.4		72		4	20		4		1.13
21	7.5	4							96	1.10
22	5.9				8	4	80	8		1.58
23	8.5		4			8		88		.80
24	5.8			80		12	4	4		1.72
25	5.5								100	1.09
26	7.7	4	44	32	8			12		1.16
27	6.6	96		4						1.34
28	1.6				8		60	20	12	1.17
29	7.8		16			80		4		1.17
30	7.5						4	96		1.27
31	7.5				88	4			8	1.06
32	2.2						4	20	76	.95
33	7.4	4	16	8	52	8		4	4	1.33
34	7.6	4	8	16	20			52		1.90
35	5.8	4			4				92	1.65
36	7.3		4			12		84		1.41
37	5.2		16	68	4	4	8			1.21
38	6.6		20		40			24	16	1.17
39	7.7		4	8	80	8				1.03
40	6.8		8	4		76	8	4		1.00
41	1.6				8	24	52	8	8	1.00
42	5.9		8	28	20		24	4	16	1.77
43	7.0		12		4			84		1.29

(Table 5.2 cont.)

167.

Item Number	$\bar{X}$	A	B	C	D	E	F	G	H	S.D.
44	7.8				72			4	24	1.13
45	7.5		80	8		4		8		1.30
46	8.5		8	4		64	4	20		1.12
47	2.6		12	36	4	24	20	4		1.39
48	7.5		4	80	4	4		8		1.61
49	4.5		28	4	4	8	4	20	32	1.79
50	6.9			8		20		72		1.26
51	6.8		76	12		12				1.18
52	7.9	76	4					20		1.00
53	5.5		8	8				4	80	.96
54	3.8		56		4	20	20			1.70
55	1.8		4		60		24	12		1.00
56	7.3		8	12	56	16	4			1.29
57	3.5			32	40		12	12		1.35
58	6.6	92							4	1.22
59	7.6		8		12	16	48	12		1.52
60	7.0							4	96	1.21
61	7.9	4	4					92		1.19
62	4.0		8	44	12		8	12	16	1.86
63	6.8				92	4	4			1.50
64	7.3	88		4			8			1.36
65	3.1				12	8	64	16		1.20
66	3.8		8					48	44	1.42
67	6.8			4		4	4	88		1.70
68	8.2			4		4	40	52		1.21
69	7.1				92				8	1.86
70	3.4			4	8			20	68	1.71
71	1.7			28		32	8	8	24	1.00
72	1.4	64					20	16		1.20
73	2.5		80	4	4			8	4	1.39
74	2.3				8	9	4	80		1.77
75	7.5		20		4	56	12	8		1.40
76	2.7		8	16	24		48	4		1.52
77	6.2	36	12		4			48		1.10
78	7.2				88			4	8	1.26
79	3.0		16	32	4	36	8	4		1.59
80	2.4		80	12		4	4			1.51
81	7.4	72	4			8	4	12		1.18
82	7.7								100	1.06
83	3.5		4	52	4	12	8	8	12	1.18
84	7.5		24			76				1.20
85	3.6				84				16	1.13
86	2.2	76					20	4		.95
87	8.2					4	76	20		1.18
88	1.5				4		8	88		1.32
89	6.7		32	4	8		12	28	16	1.91

Item Number	$\bar{X}$	A	B	C	D	E	F	G	H	S.D.
90	2.5				80	4	12		4	1.73
91	1.5						12	88		1.16
92	6.8				8	8	72	12		1.82
93	2.8								100	1.20
94	3.8		40	12	20	28				1.99
95	3.4		8	44	4	4	32	8		1.26
96	4.6		8	12	8	68		4		1.50
97	2.9	24		4			12	52	8	1.89
98	3.3			4	88		4	4		1.87
99	2.7						52	16	28	1.21
100	2.4		8	44		16	24	8		1.63
101	4.9		44		12	12	20	12		2.30
102	7.6			12		80	8			1.40
103	6.6		4			8		4	84	1.62
104	7.2			4	88		4	4		1.50
105	3.8			4				96		1.29
106	6.3		28		4		12	48	8	1.54
107	3.6		4			88	4			1.38
108	5.9					32	44	24		1.29
109	5.9				86				12	1.18
110	4.4	88						8	4	.90
111	1.7					4	4	92		1.46
112	3.2			32	36	8	20	4		1.26
113	3.6		12	20		56	12			1.17
114	6.4	4	12	4	4	4	4	12	56	1.40
115	2.9		32	24	20	12	4	8		2.43
116	1.8		12		76	4	4		4	1.44
117	3.3		8	4		64	4	20		1.56
118	1.6			8	48		44			1.70
119	7.5		4					36	60	1.11
120	1.6		36	28			12		24	.84
121	2.0		4		92	4				1.35
122	4.1		4	44	12	4	20	12	4	2.00
123	7.1		4			12	60	24		1.30
124	7.6	76	8	4	4			8		1.17
125	3.6		20	8		32	8	24	8	1.84
126	3.0	4						84	12	1.59
127	1.6							4	96	1.42
128	1.8		8	4	76		8		4	2.08
129	6.9	88						4	8	1.62
130	2.2		8	8	20	52	8	4		1.30
131	1.9		20	24	8	8	40			1.38
132	2.8		4	36	4	4	48	4		1.20
133	1.2		12		84	4				.98
134	1.9	46		4		30	16	4		1.55
135	2.1	4		4		4			88	1.36

(Table 5.2 cont.)

169.

Item Number	$\bar{X}$	A	B	C	D	E	F	G	H	S.D.
136	2.3		16			64	0	4		1.29
137	2.8	92			4		4			1.29
138	7.0		4		92		4			1.97
139	1.8			4	76	4	4	12		1.43
140	2.7		16	8	4		56	16		1.30
141	2.1		30			70				1.10
142	2.7	88				4		4	4	1.65
143	2.4		4			76	16		4	1.29
144	1.6		8		4	80	8			.78
145	2.5			4	80	8	8			1.24
146	2.0	84					4		12	1.41
147	1.6	76					20	4		1.15
148	7.8		28	4	4	60		4		1.19
149	7.6		12	4		76		8		1.23
150	2.4		16	4	72	8				2.04
151	1.7		8	4	88					1.58
152	3.2		16			36	48			1.32
153	7.7	100								1.04
154	2.7		28			4	16	48	4	.94
155	7.3			60	4		12	24		2.06
156	1.9			4	88		4	4		1.67
157	2.2			32	64			4		1.68
158	5.3		8	4		68	4	16		1.23
159	7.7		20	44		8		28		1.50
160	2.3			24		20	52	4		1.18
161	2.2		16	4	72	8				1.21
162	4.7		4	4	4	4	72	12		2.63
163	2.1		16	40	8		36			1.52
164	8.0		8	16		4	20	48	4	.89
165	1.5		8	4	4	48	24	12		1.26

Table 5.3
Categorization and Rating Data
of All Incidents Used in Eighth Army Morale Scales

Final Scale Designation	Source of Item	National Guard			Eighth Army Rating			Eighth Army Retranslation			Seventh Army Rating			Seventh Army Retranslation		
		$\bar{X}$	S.D.	%	$\bar{X}$	S.D.	%	$\bar{X}$	S.D.	%	$\bar{X}$	S.D.	%	$\bar{X}$	S.D.	%
A-9	8A	7.50	1.65	89	8.00	1.17	96	8.0	1.85	100				7.4	1.15	92
A-8	8A	7.90	1.92	74	8.25	.90	70	7.5	1.94	78				7.9	1.00	76
A-7	7A										8.06	1.74	100	7.4	1.19	96
A-6	8A	7.25	1.27	89	6.85	1.06	91	6.7	1.50	96				6.6	1.34	96
A-5	PDI													4.4	.90	88
A-4	NG	3.15	1.51	100										2.7	1.65	88
A-3	7A										1.62	.86	57	2.2	.95	76
A-2	PDI													2.0	1.41	84
A-1	NG	1.85	.85	74				1.9	1.32	74				1.4	1.20	64
B-5	7A										8.61	.49	67	8.4	.68	52
B-8	8A	7.78	.93	87	7.95	1.09	88	8.0	1.02	85				7.4	1.13	72
B-7	NG	6.82	1.34	63				6.9	1.20	54				6.8	1.18	76
B-6	NG	6.31	.99	57				6.6	1.32	74				6.6	.80	40
B-5	PDI													2.5	1.39	80
B-4	7A	3.76	1.54	81				3.3	1.65	89				3.8	1.70	56
B-3	PDI	2.08	.70	89				2.7	1.49	92	2.89	.74	60	2.4	1.51	80
B-2	PDI															
B-1	NG	2.16	1.15	93	1.57	.62	67	1.7	1.51	85				1.3	.67	36
C-9	PDI															
C-8	PDI													7.8	1.50	44
C-7	NG	5.45	1.80	89				6.9	1.60	89				7.3	2.06	60
C-6	8A	6.00	1.06	72	6.0	1.06	73	6.7	1.61	81				7.1	1.50	88
C-5	8A	4.64	1.75	82	5.0	1.50	71							6.0	1.29	60
C-4	NG	4.47	1.43	63				4.9	1.40	89				5.2	1.21	68
C-3	8A	2.86	.99	58	3.00	1.33	75	4.1	1.30	74				3.8	1.53	44
C-2	NG	3.11	1.12	70				2.7	.92	78				3.5	1.13	52
C-1	7A										1.86	.64	58	1.8	.83	36
														2.6	.99	44

* indicates modification after rating

Table 5.3 (continued)

Final Scale Designation	Source of Item	National Guard			Eighth Army Rating			Eighth Army Retranslation			Seventh Army Rating			Seventh Army Retranslation		
		$\bar{X}$	S.D.	%	$\bar{X}$	S.D.	%	$\bar{X}$	S.D.	%	$\bar{X}$	S.D.	%	$\bar{X}$	S.D.	%
D-9	7A										8.30	.85	92	3.3	.83	88
D-8	8A				7.35	.85	91							7.5	1.06	88
D-7	7A	7.04	.89	89	6.55	1.16	92	6.8	1.78	92				7.1	1.86	92
D-6	PDI	7.38	1.11	85				6.2	1.62	96						
D-5	PDI	4.25	1.98	89				3.6	1.36	92				3.6	1.13	84*
D-4	NG	3.09	1.19	78				3.4	2.03	85				3.3	1.87	88
D-3	8A	2.23	1.04	82	1.93	.96	58				1.50	.76	60	2.4	2.04	72
D-2	7A										2.00	.94	69	1.2	.98	84
D-1	7A													1.7	1.58	88
E-9	7A										8.70	.48	60			
E-8	7A	8.14	1.12	78	7.70	1.15	83	7.7	1.17	74				8.5	1.12	64
E-7	8A	7.31	1.26	60	7.13	1.11	67	7.3	1.73	85				7.8	1.17	80
E-6	PDI	5.93	1.12	65				6.9	1.42	67				7.3	1.47	68
E-5	PDI	4.54	.76	89				4.7	.79	78				6.8	1.00	76
E-4	8A	2.95	.81	74	3.41	.97	77	3.2	1.05	74				5.3	1.23	68
E-3	8A	2.62	.99	89	2.23	1.12	59	2.6	1.28	89				3.6	1.38	88
E-2	8A	2.90	1.38	78	2.71	.75	71	2.1	.85	60				2.4	1.29	76
E-1	8A										1.88	.93	62	2.3	1.29	64
F-9	PDI													1.6	.78	80
F-8	PDI							7.6	1.55	87				8.2	1.18	76
F-7	NG	6.00	1.58	59				7.4	1.73	74				8.2	1.21	52
F-6	NG	6.85	1.55	74				6.7	1.37	81				7.3	1.92	76
F-5	8A	4.95	1.53	70	4.78	.94	67							7.1	1.30	60
F-4	8A													5.9	1.58	80
F-3	8A	2.64	1.20	93	2.26	.91	79	2.7	1.30	96				3.2	1.32	48*
F-2	NG	2.09	1.00	82				2.1	.94	78				2.5	.95	84
F-1	PDI	1.79	1.06	70				1.8	1.27	74				1.6	1.17	60

* indicates modification after rating

Table 5.3 (continued)

Final Scale Designation	Source of Item	National Guard			Eighth Army Rating			Eighth Army Retranslation			Seventh Army Rating			Seventh Army Retranslation		
		$\bar{X}$	S.D.	$\%$	$\bar{X}$	S.D.	$\%$	$\bar{X}$	S.D.	$\%$	$\bar{X}$	S.D.	$\%$	$\bar{X}$	S.D.	$\%$
G-9	2A	8.11	.72	70	7.82	.98	77	8.2	1.62	87				6.5	.80	88
G-8	PDI	7.08	1.66	96										7.9	1.19	92
G-7	PDI													7.5	1.27	96
G-6	2A				6.53	.98	71	7.4	1.61	100				6.8	1.70	88
G-5	PDI													3.6	1.29	96
G-4	4G	3.13	.99	88	2.50	1.12	67	3.7	1.39	78				3.0	1.50	84
G-3	PDI													2.7	1.30	56
G-2	4G	1.62	.68	96				1.3	1.61	100				1.7	1.46	92
G-1	7A	1.86	.77	78	1.53	.81	65	1.3	.92	81				1.5	1.32	88
H-9	7A															
H-8	PDI										6.42	.95	92	8.1	1.10	80
H-7	7A													7.5	1.10	96
H-6	7A													7.0	1.21	96
H-5	2A										7.33	1.11	80	6.4	1.19	80
H-4	2A													5.5	1.09	100
H-3	7A													3.4	1.71	68
H-2	PDI										2.86	1.19	93	2.8	1.20	100
H-1	PDI													2.2	.95	76
														1.6	1.42	95

Summary

Workshops were held with officers and enlisted men from the Seventh Army in Germany. The morale examples gathered in these workshops were edited, categorized, and then submitted to the workshop participants one week later for categorization and rating. Several changes in the Eighth Army-National Guard scales were tentatively made in the Seventh Army version. A Use of Off-Duty Hours scale was developed which necessitated changing the names and definitions of two other scales slightly, i.e., the Teamwork and Cooperation scale and Performance and Effort scale were renamed Teamwork and Cooperation on the Job and Performance and Effort on the Job.

The Bearing, Appearance, and Military Discipline scale was split into two scales: Bearing, Appearance, Marching, and Military Courtesy and "Gung Ho" Versus FTA (Anti-Army) Behavior. One completely new scale was added, Personal Adjustment, to measure the ability of unit members to adjust to the military environment.

When summary statistics from the categorization and ratings were analyzed, not all ten of the scales survived. Either the raters had been required to make too fine discriminations in categorizing examples or unintended overlap in the category definitions existed. As a result, some scales had too few examples to justify retaining the scale.

As a result, the Personal Adjustment scale was dropped because the examples represented only the negative or unfavorable end of the dimension. The "Gung Ho" Versus FTA (Anti-Army) Behavior scale was dropped and reabsorbed into the old Bearing, Appearance and Military Discipline scale. The examples used in the National Guard and Eighth Army morale scales, the examples categorized consistently by the first Seventh Army rating, and selected items from the original National Guard and Eighth Army example pools were categorized and rated by Seventh Army personnel. As a result of this final retranslation effort, one final change in a scale name was made; Teamwork and Cooperation on the Job was changed to simply Teamwork and Cooperation.

In summary, the scale developed with the National Guard and Eighth Army held up relatively well in the Seventh Army. The major changes were the addition of the Use of Off-Duty Hours scale and the modification of some scale names and definitions.

Administration of Morale Scales,
Job Satisfaction, Motivation, and Morale Booklet,
and Development of Criterion Data

Sample

Six hundred fourteen soldiers E-4 and below (plus Spec. 5s) represent the Seventh Army sample. Three hundred twenty-one soldiers were drawn from the 32nd AADCOM and 293 drawn from TASCOC. Sixteen companies and 47 platoons

were represented in the sampling plan. Table 5.4 depicts the number of persons from each company and platoon included in the Seventh Army sample. Notice that the sampling plan for these units was clearly superior to the sampling of Eighth Army units. Much better representation within platoons was obtained. The minimum number of persons representing a platoon was seven, with most platoon sized units contributing ten or more individuals to the sample. In addition, these soldiers were sampled randomly from each platoon. Soldiers in TASCUM and AADCOM were drawn carefully to achieve this random sample. For TASCUM units, researchers first selected three platoon sized units which represented as faithfully as possible the total company makeup. For example, in a transportation company containing three truck platoons and one headquarters platoon, the PDI researchers requested that two of the truck platoons and the headquarters platoon participate in the study. Then, at the platoon level, the research staff and company first sergeant identified randomly 12 soldiers according to last digit of their service numbers. If one or more soldiers were not available among the group selected initially, other soldiers were selected randomly. Fortunately, because the first sergeant rosters were relatively current, few substitutions were required.

In AADCOM, researchers used the same procedures except that 15 individuals were selected randomly from each platoon sized unit. Again, the sampling plan was adhered to closely except for four or five platoons which were severely undermanned. In those cases, virtually every available soldier in the platoon participated.

Morale Ratings

Eight individual scales and an overall morale scale were used by raters to evaluate the morale of platoon and company sized units. At the platoon level, the company commander and first sergeant performed the ratings, while the battalion commander, company commander, and first sergeant provided morale ratings for companies. The quality of ratings was evaluated according to the following criteria:

1. Leniency error. As was demonstrated using Eighth Army data, the mean ratings obtained at both the platoon and company levels in the Seventh Army suggest that the leniency error was largely overcome (see Tables 5.5 and 5.6).

The highest mean rating (6.91) is still considerably below the top of the scale. Further, the median of the 18 mean ratings shown in Table 5.5 is 6.27, approximately equivalent to the median (6.31) found with Eighth Army data in Korea and far below the "ceiling" on the scales (9.0). Thus, the morale scales seem resistant to the leniency error.

Table 5.4

The Sample

TASCOM				AADCOM			
Company (Battery)	N	Platoon (Section)	N	Company (Battery)	N	Platoon (Section)	N
1	37	0110*	13	1	39	0101	9
		0210	12			0202	16
		0309	12			0303	14
2	38	0110	13	2	41	0101	10
		0210	13			0202	16
		0309	12			0303	15
3	35	0110	12	3	41	0101	16
		0210	12			0215	11
		0909	11			0316	7
						0417	7
4	34	0110	12	4	40	0101	7
		0210	10			0205	14
		0309	12			0304	19
5	37	0101	11	5	40	0101	21
		0211	13			0204	19
		0309	13				
6	36	0109	9	6	39	0107	15
		0209	11			0208	10
		0301	16			0306	14
7	37	0101	13	7	40	0101	10
		0209	15			0204	17
		0312	9			0305	13
8	35	0101	11	8	38	0101	9
		0213	12			0202	14
		0314	12			0303	15

*These codes for platoons correspond to the unit identification codes used on computer printout of Seventh Army data analyses.

Means, Standard Deviations, and Intercorrelations of Platoon Morale Ratings ($N = 47$)

Mean	Standard Deviation	Dimension	1	2	3	Intercorrelations						
						4	5	6	7	8	9	
5.98	1.38	Community Relations	--									
6.02	1.67	Teamwork & Cooperation on the Job	.66	--								
5.89	1.61	Reactions to Adversity	.49	.66	--							
6.56	1.56	Superior-Subordinate Relations	.57	.65	.47	--						
6.26	1.61	Performance & Effort on the Job	.64	.61	.70	.70	--					
6.00	1.27	Bearing, Appearance, & Military Discipline	.51	.64	.70	.65	.70	--				
6.70	1.60	Pride in Unit, Army and Country	.55	.71	.66	.65	.71	.70	--			
5.47	1.66	Use of Time During Off-Duty Hours	.54	.40	.72	.49	.76	.66	.57	--		
6.15	1.56	Overall Morale	.64	.73	.69	.81	.81	.80	.83	.70	--	

Means, Standard Deviations, and
Intercorrelations of Company Morale Ratings
(N = 16)

Mean	Standard Deviation	Dimension	1	2	3	Intercorrelations						
						4	5	6	7	8	9	
6.67	.95	Community Relations	--									
6.28	1.12	Teamwork & Cooperation on the Job	.76	--								
6.43	1.00	Reactions to Adversity	.61	.89	--							
6.91	1.36	Superior-Subordinate Relations	.18	.45	.36	--						
6.43	.99	Performance & Effort on the Job	.33	.60	.66	.71	--					
6.10	1.01	Bearing, Appearance, & Military Discipline	.45	.70	.67	.65	.67	--				
6.69	1.22	Pride in Unit, Army and Country	.62	.68	.65	.62	.77	.78	--			
5.80	1.26	Use of Time During Off-Duty Hours	.42	.47	.62	.52	.70	.74	.74	--		
6.35	1.14	Overall Morale	.45	.55	.64	.86	.86	.75	.88	.75	--	177.

2. Restriction or range. It is difficult to assess the restriction of range of the morale ratings, given that the true variability in morale across units is not known (see Chapter IV). However, the median standard deviation for company and platoon ratings in the Seventh Army sample (1.37), along with the median obtained for Eighth Army raters (1.21), suggests that little, if any, restriction of range is present in the morale ratings.
3. Halo. The median intercorrelation between scales measuring the eight aspects of morale is .65 both at platoon and company level (see Tables 5.5 and 5.6). The magnitude of this average is larger than the magnitude of reliability either at the platoon or company level. Thus, the ratings appear to suffer considerably from the halo error.
4. Interrater reliability. Interrater reliability results at both the platoon and company levels appear in Table 5.7. As in Eighth Army data analyses, intraclass correlation was used to estimate reliability. And, since the size of the reliability coefficients depends on the number of raters providing ratings, 2-rater reliability indices (Spearman-Brown corrected for two raters) appear in the table, as well. The corrected coefficients enable us to make crude comparisons regarding the level of reliability attained under different conditions.

Clearly, agreement among raters is greater in rating platoons than in rating companies. This result differs from the results obtained in Korea where raters showed higher agreement for company ratings. In addition, Seventh Army platoon level ratings are more reliable (five of seven comparisons) than company ratings gathered in the Eighth Army (Korea) when the Spearman-Brown correction is applied. Interrater reliability results in the Seventh and Eighth Armies suggest that to ensure adequate reliability for the morale scales it is advantageous to gather five or six sets of ratings from persons qualified to evaluate morale of the units being studied. Nevertheless, the reliability of several individual scales and the overall morale scale is sufficiently high to enable assessment of relationships at the company/platoon level between morale and other variables.

Global Criterion Ratings

Global criterion ratings for companies and platoons were provided by the same raters who provided morale ratings--company commanders and first sergeants at platoon level and battalion commanders, company commanders, and first sergeants at company level. Interrater reliability results at the platoon and company levels are depicted in Table 5.8. Here again the

Table 5.7

Interrater Reliability of
Morale Scales: Platoon and Company Levels

<u>Dimension</u>	Platoon				Company			
	<u>N</u>	<u>K*</u>	<u>Relia- bility</u>	<u>2-Rater Relia- bility</u>	<u>N</u>	<u>K*</u>	<u>Relia- bility</u>	<u>2-Rater Relia- bility</u>
Community Relations	47	2.00	49	49	16	2.94	12	09
Teamwork & Cooperation on the Job	47	2.00	57	57	16	2.94	43	34
Reactions to Adversity	47	2.00	70	70	16	2.94	46	37
Superior-Subordinate Relations	47	2.00	34	34	16	2.94	70	61
Performance & Effort on the Job	47	2.00	54	54	16	2.94	40	32
Bearing, Appearance, & Military Discipline	47	2.00	47	47	16	2.94	43	34
Pride in Unit, Army and Country	47	2.00	68	68	16	2.94	62	53
Use of Time During Off-Duty Hours	47	2.00	60	60	16	2.94	54	44
Overall Morale	47	1.96	77	77	16	2.62	70	64

179.

*Mean number of raters providing ratings for units.

Table 5.8

Means, Standard Deviations, and Interrater Reliability of Global Criterion Ratings

Variables	Platoon Level					Company Level				
	<u>N</u>	<u>K</u>	<u>Mean</u>	<u>Standard Deviation</u>	<u>Relia- bility</u>	<u>N</u>	<u>K</u>	<u>Mean</u>	<u>Standard Deviation</u>	<u>Relia- bility</u>
1. Unit Effectiveness	47	2.00	5.00	1.38	.75	15	2.45	5.13	1.12	.33
2. Racial Disturbances	47	2.00	1.79	.79	.18	15	2.38	2.08	.84	.63
3. Dissent	47	2.00	2.71	1.07	.51	15	2.45	2.64	.70	-.03
4. Drug Abuse	47	2.00	3.52	1.10	.49	15	2.32	3.90	.64	-.05
5. Destruction/Sabotage	47	2.00	1.68	.65	.48	15	2.38	1.73	.57	.33
6. Participation in Drives	47	2.00	4.13	1.05	.10	15	2.38	4.22	.92	.38

*For variables 1 and 6, 1 = very low, 7 = very high; for variables 2, 3, 4, and 5, 1 = very low rate, 7 = very high rate.

platoon results are more promising than company results. At the company level the dissent and drug abuse scales are unusable because of insufficient reliability, and two others--destruction/sabotage and participation in drives possess marginal reliability. Two scales at the platoon level (racial disturbances and participation in drives) lack sufficient reliability to be used in later analyses.

Questionnaire Data Analysis

In this section the data derived from scales/items included in the questionnaire are described. Also presented are results of a factor analysis of Seventh Army questionnaire variables and our choices of scales/items to be used to represent motivation and satisfaction constructs in subsequent analyses.

Description of the Data

ARI wished to include a number of questionnaires in the AADCOM questionnaire booklet, and since the size of the booklet had to be limited to assure manageable administration time, certain scales and items were eliminated from the AADCOM questionnaire booklet on the basis of Eighth Army results. Specifically, several scales/items which had not entered into the motivation/satisfaction construct framework were dropped. All scales/items which showed some promise for representing constructs or which were of conceptual interest (e.g., Satisfaction with Communications--Cureton; Pride in the Army item--Cureton) remained in the AADCOM booklet.

Table 5.9 displays the number of unusable questionnaire instruments within the Seventh Army sample. As was discussed in Chapter IV, these figures provide one criterion of instrument "goodness" for Army use. If many Army personnel refuse to complete a particular instrument, this measure may be less desirable for use than a measure which soldiers complete properly. Overall, results presented in Table 5.9 are promising. Few instruments were left blank or completed in a grossly incompetent manner.

Identifying Valid Motivation/Satisfaction Constructs

Again, a factor analytic approach was used as a guide in developing a framework of constructs meaningful for measuring motivation and satisfaction in the Army. Variables entering into the factor analysis are those appearing in both the TASCOT and AADCOM booklets. These 46 motivation, satisfaction, and morale variables were subjected to a principal components factor analysis and the resultant factors were rotated to the varimax criterion. A six factor solution appears to be the most psychologically meaningful. Complete results of the factor solution appear in Table 5.10. The following factors emerge from the analysis (percent variance accounted for by each factor appears after the factor label):

Table 5.9

Number of Blank or Unusable Questionnaire Instruments

<u>Instrument</u>	<u>Number Blank or Unusable</u>
MIQ ^{**}	15
Patchen Motivation Scale	29
Brayfield-Rothe Job Satisfaction	45
Sum of Effort Expectancies	27
Minnesota Satisfaction Questionnaire Total	34
Sum of Valences	19
ARI Discipline Scale*	13
Sears Satisfaction Scales	28
Sum of "Prior Expectancies"	49
Survey of Organizations Scales	6
Cureton Scales	12
Job Description Index	37

*Instruments used only in TASCOM

Table 5.10

Results of Varimax Rotation Applied to
Factor Analysis of Questionnaire Data (46 variables)

Variables	Factors					
	I	II	III	IV	V	VI
Valence	.02	-.77	-.05	.06	.22	-.07
Expectancy	-.34	-.36	.42	-.25	.11	-.34
Valence x Expectancy	-.15	-.73	.19	-.13	.21	-.27
Patchen	-.20	-.42	.12	-.60	-.02	-.02
MSQ Total Satisfaction	-.33	-.18	.55	-.49	.06	-.22
MSQ Intrinsic Satisfaction	-.32	-.23	.44	-.56	.07	-.16
MSQ Extrinsic Satisfaction	-.29	-.06	.67	-.28	.04	-.35
Brayfield-Rothe Satisfaction	-.40	-.21	.22	-.71	.09	-.03
Prior Expectancy About Army Life	-.56	-.11	.45	-.33	.15	-.30
S.O.O. Supervisory Support	-.20	-.06	.81	-.08	.17	-.07
S.O.O. Supervisory Goal Emphasis	-.10	-.29	.64	.04	.18	.06
S.O.O. Peer Support	-.04	-.17	.15	.08	.76	.09
S.O.O. Peer Goal Emphasis	-.27	-.21	.23	-.27	.48	.08
S.O.O. Overall Satisfaction	-.43	-.22	.49	-.34	.20	-.50
Cureton Job Satisfaction	.49	.19	-.23	.66	-.16	.11
Cureton Community	.61	.07	-.18	.11	-.22	.17
Cureton Army as a Whole	.66	.28	-.23	.31	-.04	.39
Cureton Communication	.65	.13	-.33	.20	-.20	.30
Cureton Item No. 18 (AADCOM Item No. 9)	.51	.17	-.20	.20	-.04	.20
Cureton Item No. 29 (AADCOM Item No. 15)	.48	-.06	-.34	.02	.00	.12
Cureton Item No. 33 (AADCOM Item No. 17)	.59	.12	-.14	.13	-.19	.04
Cureton Item No. 51 (AADCOM Item No. 32)	.53	.45	-.13	.23	.03	.22
Cureton Item No. 58 (AADCOM Item No. 37)	.01	.18	.06	.17	-.17	.01
Cureton Item No. 70 (AADCOM Item No. 43)	-.57	-.24	.06	-.24	-.04	-.26
JDI Work	-.40	-.16	.28	-.67	.17	-.10
JDI Supervision	-.24	-.06	.70	-.19	.19	-.14
JDI Pay	-.26	.05	.05	-.05	.11	-.67
JDI Promotions	-.33	.02	.40	-.27	.10	-.36
JDI Co-Workers	-.13	.03	.10	-.16	.71	-.14
Sears Supervision	-.09	-.01	.57	-.35	.13	-.24
Sears Kind of Work	-.17	-.19	.09	-.74	.09	-.14
Sears Co-Workers	-.05	-.13	.10	-.47	.53	-.16
Sears Financial Rewards	-.16	-.11	.17	-.14	-.10	-.60
Self-Rating of Effort	-.16	-.66	.10	-.37	.08	.01
Self-Rating of Performance	-.06	-.66	.15	-.21	.09	.04
Worthwhile to Try Hard (Self-Report)	-.40	-.55	.21	-.24	-.01	-.10
Self-Rating of Effectiveness	-.26	-.60	.09	-.22	-.05	-.01
Own Morale	-.70	-.17	.12	-.24	.10	-.13
Unit Morale	-.71	.03	.11	-.14	.13	-.04
S.O.O. Item No. 1 (Satisfaction with Co-Workers)	-.01	-.13	.29	-.08	.66	-.06
S.O.O. Item No. 2 (Satisfaction with Supervisor)	-.22	-.09	.78	-.15	.14	-.13
S.O.O. Item No. 3 (Satisfaction with Job)	-.29	-.16	.26	-.67	.15	-.15
S.O.O. Item No. 4 (Satisfaction with Army)	-.55	-.20	.14	-.22	-.15	-.31
S.O.O. Item No. 5 (Satisfaction with Pay)	-.17	-.01	.13	.04	.08	-.78
S.O.O. Item No. 6 (Satisfaction with Progress)	-.29	-.25	.29	-.25	.08	-.42
S.O.O. Item No. 7 (Satisfaction with Getting Ahead in the Army)	-.38	-.23	.59	-.15	-.00	-.45

- I General Satisfaction; Overall Satisfaction with the Army; Satisfaction with Community and Communications; Morale (14 percent)
- II Motivation, Performance, and Effort (9 percent)
- III Satisfaction with Superiors (12 percent)
- IV Satisfaction with the Job (11 percent)
- V Satisfaction with Co-workers (6 percent)
- VI Satisfaction with Pay (8 percent)

(Total variance accounted for = 60 percent)

This solution is highly similar to the factor solution obtained with Eighth Army data in Korea. The results confirm the six construct framework used with Eighth Army data. In fact, the main difference between the two factor solutions is that Satisfaction with Pay breaks out separately in the Germany data, supporting the separate consideration of pay satisfaction in earlier analyses. Based on these results, the same construct framework was retained to summarize soldiers' self-reported motivation to work and their affect toward various aspects of the Army and their job. These constructs are:

- Motivation
- Overall Satisfaction with the Army
- Satisfaction with the Job
- Satisfaction with Supervision
- Satisfaction with Co-workers
- Satisfaction with Pay

Cross-validating multiconstruct-multimethod results using Seventh Army data. Recall that 22 questionnaire variables were selected to represent the six motivation/satisfaction constructs developed using Eighth Army data. As an independent check on these variables' convergent and discriminant validity, the six construct framework represented by the same 22 variables was submitted to a multiconstruct-multimethod analysis using Seventh Army data. Table 5.11 displays the results. Construct measurement within this framework still possesses consistent convergent and discriminant validity. Mean within-construct correlations range from .39 to an impressive .70. The magnitude of these diagonal indices is in every case greater than relevant off-diagonal indices, although in some cases differences are slight. Still, these cross-validation

Table 5.11
Multiconstruct-Multimethod Cross-Validity Results
(Germany)

	Motivation	Overall Satisfaction with Army	Satisfaction with the Job	Satisfaction with Superiors	Satisfaction with Co-workers	Satisfaction with Pay
Motivation*	.48					
Overall Satisfaction with Army	.42	.61				
Satisfaction with the Job	.46	.55	.70			
Satisfaction with Superiors	.28	.44	.40	.61		
Satisfaction with Co-workers	.21	.22	.27	.27	.39	
Satisfaction with Pay	.17	.36	.22	.25	.10	.44

*Constructs are represented by the 22 variables selected using Eighth Army (Korea) data.

results show that variables purportedly measuring the same construct intercorrelate more highly than do variables intended to measure different constructs. Even in an independent, "hold-out" sample, these 22 variables have provided relatively "pure" construct measurement of the six motivation/satisfaction constructs.

Integrating Seventh and Eighth Army results: A final selection of variables to represent the six motivation/satisfaction constructs.

Although adequate cross-validity results were obtained for motivation and satisfaction construct measurement, researchers decided to use results from both Seventh and Eighth Army data analyses to form a single list of variables best representing the six constructs. Such a list based on results from two separate samples should be more generally representative of these constructs across regular Army units than a list of variables derived from a single sample.

To accomplish this step, the same criteria for variable selection applied to items and scales in the Eighth Army data analysis were applied to motivation and satisfaction variables using Seventh Army questionnaire data. Then, items and scales best satisfying criteria with respect to both data sets were selected to represent the six motivation/satisfaction constructs. Below, we discuss this process.

1. Conceptual similarity of scales or items within each construct. This criterion was met by all variables initially placed tentatively in constructs (see Table 4.16 for a list of these variables).
2. Factor analysis results. With certain exceptions to be discussed in detail later, the same scales and items loading most highly on factors representing constructs in Eighth Army data also loaded on the appropriate factors in these data.
3. Internal consistency. KR-20 reliability results for all scales appear in Table 5.12. These results suggest no dramatic changes in the scales' internal consistency between the Seventh and Eighth Army data.
4. Suitability for unit measurement. Intraclass correlation analyses at platoon and company levels appear in Table 5.13. Recall that a positive intraclass correlation coefficient (R_i) within this context indicates that the variability within units on a measure (e.g., JDI-Work) is smaller than the variability of scores across all units. That is, each unit is relatively homogeneous with respect to scores on the measure. A high positive R_i for a variable suggests that the sum of a unit's individual soldiers' scores on the variable can be reasonably considered as a unit score. Since later analyses require such unit scores on motivation and satisfaction variables, the intraclass correlation criterion for inclusion into constructs is an important one.

Table 5.12

Internal Consistency of Questionnaire Scales

<u>Scale</u>	<u>Number of Items</u>	<u>TASCOM Reliability</u>	<u>AADCOM Reliability</u>
Sum of Valences	50/24*	.94	.87
Sum of Effort Expectancies	50/24	.95	.95
Sum of Valence x Expectancies	50/24	.94	.92
MIQ Total Scores	6/6	.14	—
Patchen Motivation Scale	4/4	.40	.23
MSQ Total	20/20	.90	.91
MSQ Intrinsic	12/12	.89	.90
MSQ Extrinsic	6/6	.80	.79
Brayfield-Rothe Job Satisfaction	18/18	.87	.87
Prior Expectations About Army Life	24/24	.92	.92
S.O.O. Overall Satisfaction	3/3	.90	.90
S.O.O. Supervisory Interaction Facilitation	2/2	.66	.69
S.O.O. Supervisory Goal Emphasis	3/3	.84	—
S.O.O. Supervisory Work Facilitation	3/3	.78	.80
S.O.O. Peer Support	3/3	.84	—
S.O.O. Peer Interaction Facilitation	2/2	.72	.82
S.O.O. Peer Goal Emphasis	3/3	.83	—
S.O.O. Peer Work Facilitation	5/5	.90	—
S.O.O. Supervisory Needs	7/7	.76	.76
Cureton's Satisfaction with Military	7/7	.74	—
Cureton's Job Satisfaction	8/8	.85	.86
Cureton's Satisfaction with Community	5/5	.63	.61
Cureton's Satisfaction with Army as a Whole	12/12	.88	.89
Cureton's Satisfaction with Unit	11/11	.83	—
Cureton's Satisfaction with Management and Communication	12/12	.84	.87
JDI Work	18/18	.81	.85
JDI Supervision	18/18	.88	.89
JDI Pay	9/9	.69	.80
JDI Promotions	9/9	.83	.86
JDI Co-workers	18/18	.89	.90
ARI Discipline Scale	22/22	.45	—
Sears Company Identification	4/4	.54	—
Sears Supervision	6/6	.68	.75
Sears Kind of Work	6/6	.70	.69
Sears Amount of Work	4/4	.45	—
Sears Co-workers	5/5	.35	.32
Sears Physical Surroundings	6/6	.68	—
Sears Financial Rewards	4/4	.46	.54
Sears Career Future and Security	5/5	.47	—

*AADCOM versions of the valence-expectancy instrument contained 24 items, while the TASCOM version contained 50.

Table 5.13

Intraclass Correlation (Unit Homogeneity)
Results at the Platoon and Company Levels

Variable	Platoon Level			Company Level		
	N	Intraclass Correlation	5-Respondent Reliability	N	Intraclass Correlation	5-Respondent Reliability
Sum of Valences	47	.14	.06	16	.31	.06
Sum of Effort Expectancies	47	.40	.21	16	.47	.11
Sum of Valence x Expectancies	47	.29	.15	16	.20	.03
MIQ Total Scores	23	.09	.04	8	.01	--
Patchen Motivation Scale	47	.38	.20	16	.46	.11
MSQ Total	47	.61	.39	16	.68	.23
MSQ Intrinsic	47	.63	.42	16	.75	.27
MSQ Extrinsic	47	.59	.39	16	.69	.24
Brayfield-Rothe Job Satisfaction	47	.68	.48	16	.84	.42
Prior Expectations About Army Life	47	.61	.41	16	.77	.32
S.O.O. Overall Satisfaction	47	.70	.49	16	.63	.19
S.O.O. Supervisory Support	23	.44	.25	8	-.20	--
S.O.O. Supervisory Interaction Facilitation	47	.52	.31	16	.47	.11
S.O.O. Supervisory Goal Emphasis	23	.58	.37	8	.48	.11
S.O.O. Supervisory Work Facilitation	47	.26	.13	16	.41	.09
S.O.O. Peer Support	23	.07	.03	8	-1.00	--
S.O.O. Peer Interaction Facilitation	47	.40	.22	16	.48	.11
S.O.O. Peer Goal Emphasis	23	.07	.03	8	-.72	--
S.O.O. Peer Work Facilitation	23	-.20	--	8	.24	.04
S.O.O. Supervisory Needs	47	.49	.29	16	.51	.13
Cureton's Satisfaction with Military	23	.13	.06	8	.30	.06
Cureton's Job Satisfaction	47	.77	.60	16	.88	.50
Cureton's Satisfaction with Community	47	.26	.13	16	.61	.18
Cureton's Satisfaction with Army as a Whole	47	.53	.32	16	.60	.17
Cureton's Satisfaction with Unit	23	.54	.34	8	.60	.18
Cureton's Satisfaction with Management and Communication	47	.60	.39	16	.75	.29
Cureton Pride in Army	47	.46	.26	16	.64	.19
JDI Work	47	.70	.49	16	.83	.40
JDI Supervision	47	.66	.45	16	.68	.23
JDI Pay	47	.25	.12	16	.48	.12
JDI Promotions	47	.58	.38	16	.74	.29
JDI Co-workers	47	-.41	--	16	-.37	--
ARI Discipline Scale	23	.38	.21	8	.60	.17
Sears Company Identification	23	-.41	--	8	-.06	--
Sears Supervision	47	.41	.23	16	.60	.17
Sears Kind of Work	47	.42	.23	16	.64	.20

(Table 5.13 cont.)

Variable	Platoon Level			Company Level		
	N	Intraclass Correlation	5-Respondent Reliability	N	Intraclass Correlation	5-Respondent Reliability
Sears Amount of Work	23	.27	.14	8	.14	.02
Sears Co-workers	47	.18	.09	16	-.14	--
Sears Physical Surroundings	23	-.33	--	8	.13	.02
Sears Financial Rewards	47	-.28	--	16	-.32	--
Sears Career Future and Security	23	.17	.03	8	.41	.09
S.O.O. Satisfaction with Co-workers	47	.20	.09	16	-.64	--
S.O.O. Satisfaction with Supervisor	47	.60	.37	16	.52	.13
S.O.O. Satisfaction with Job	47	.57	.35	16	.49	.11
S.O.O. Satisfaction with Organization	47	.41	.22	16	.63	.18
S.O.O. Satisfaction with Pay	47	.21	.10	16	.40	.08
S.O.O. Satisfaction with Career Progress	47	.28	.13	16	.43	.09
S.O.O. Satisfaction with Opportunities for Getting Ahead	47	.43	.23	16	.55	.14
Self-rating of Effort	47	.53	.31	16	.61	.17
Self-rating of Performance	47	.13	.05	16	.34	.06
Worthwhile to Try Hard (self-rating)	47	.47	.28	16	.55	.14
Self-rating of Overall Effectiveness as a Soldier	47	.15	.07	16	.16	.03
Self-rating of Own Morale	47	.53	.31	16	.67	.21
Self-rating of Unit Morale	47	.70	.48	16	.86	.45
Age	47	.44	.24	16	.53	.13
Sex; male=1; female=2	47	.12	.05	16	.28	.05
Single or divorced; widowed=1, married=2	47	.37	.19	16	.48	.11
Number of dependents	47	.25	.15	16	.43	.12
White=1; all others=2	47	.35	.18	16	.46	.10
White=1; black=2	47	.23	.12	16	.40	.09
Education (with all 9 response choices)	47	.38	.20	16	.71	.25
Education (leaving out response 4 and 5)	47	.37	.21	16	.69	.25
Primary Occupation of Father	47	.19	.09	16	.11	.02
Educational (with all 9 response choices)	47	.06	.03	16	.20	.03
Educational (leaving out 4 and 5)	47	--	--	16	.14	.02
Living conditions (on or off post)	47	.40	.21	16	.60	.17
Drafted versus Enlisted	47	.58	.36	16	.46	.10

Variable	Platoon Level			Company Level		
	N	Intraclass Correlation	5-Respondent Reliability	N	Intraclass Correlation	5-Respondent Reliability
First Tour - Careerist (drop others)	47	.56	.38	16	.60	.19
Age of Entry (in months)	47	-.03	--	16	-.21	--
Length of Service	47	.41	.22	16	.64	.20
Number of Months on Present Post	47	.66	.44	16	.79	.34
Number of AWOLs in Last Month	47	.12	.07	16	.03	.01
Number of AWOLs in Last Year	47	.02	.01	16	-.27	--
Number of AWOLs in Career	47	.30	.17	16	-.07	--
Number of Article 15s in Last Month	47	.11	.06	16	.11	.02
Number of Article 15s in Last Year	47	.18	.11	16	.30	.06
Number of Article 15s in Career	47	-.04	--	16	.36	.08
Number of Times Busted	47	-.20	--	16	-.79	--
Number of Sick Calls in Last Month	47	.11	.05	16	.19	.03
VD in Last Month 0-1; 1=1 or more times	--	--	--	--	--	--
VD during Korean Tour 0-1-2-3; 3=3 or more	--	--	--	--	--	--
Rank E1-E5	47	.65	.43	16	.76	.30
Reenlistment	47	.36	.19	16	.62	.18

Results of the R_i analyses demonstrate that almost all scales/items tentatively considered as representative of constructs attained high positive R_i s both at platoon and company levels. A notable exception is the Satisfaction with Co-workers construct. JDI-Co-workers show $-.37$ and $-.41$ R_i s at company and platoon level respectively. The Sears-Co-worker scale company level R_i is $-.14$, and the S.O.O. item measuring satisfaction with co-workers has an R_i of $-.64$ at company level. Apparently, the variability in unit members' affect toward their fellow soldiers is relatively large within unit. Therefore, unit level analyses involving relationships between Satisfaction with Co-workers and other variables must be interpreted with caution, because a unit score on the Satisfaction with Co-workers variable is difficult to interpret. Comparatively high variability within units on this construct makes it doubtful that unit characteristics have much effect on member's attitudes in this area. This in turn means that correlations between Satisfaction with Co-workers and other unit measures do not necessarily reflect relationships between unit characteristics.

Satisfaction with pay variables demonstrated reasonably high R_i s within the Seventh Army sample in contrast to R_i results obtained with Eighth Army data. Pay satisfaction is apparently more of a unit phenomenon in units in Germany than it is with Eighth Army companies and platoons. It is difficult to know why this discrepancy occurs between Seventh and Eighth Army data.

Two further questions potentially important to the Army were addressed with the help of these R_i indices. Recall that using Eighth Army data, satisfaction and motivation were found to be more platoon level than company level phenomena based on the higher adjusted R_i s found at the platoon level. Also, motivation and satisfaction were assessed to be unit phenomena even when the potentially contaminating effects of the demographic variables were removed. These same analyses were performed on the Seventh Army data.

Motivation and satisfaction, as measured in this study, again appear to be more platoon level than company level phenomena. Forty of the 46 (four ties) R_i s (adjusted to the five respondent level) are higher at the platoon level than the corresponding adjusted R_i s at the company level. This finding strongly supports Eighth Army results.

To obtain an idea of the extent to which demographic variables contribute to the size of motivation/satisfaction R_i s in the Seventh Army, the magnitude of R_i s for 12 demographic variables

as the platoon level was compared with the magnitude of the 46 motivation/satisfaction R_{ij} s at the platoon level. As with the Eighth Army data, the mean of the latter set of R_{ij} s is larger than the mean of the demographic variable R_{ij} s but the difference is smaller (R_{ij} means $\approx .42$ and $.35$). Therefore, it is possible that much of the unit homogeneity in terms of motivation and satisfaction is due to the within unit homogeneity of soldiers on demographic variables such as age and kind of enlistment.

5. Common method variance. Again, the investigators attempted to ensure that high within construct correlations between variables were not a function of common method variance because of overly similar ways of measuring the same construct.
6. Convergent and discriminant validity. In general, the same items and scales that best satisfied convergent and discriminant validity criteria in Eighth Army data also most clearly satisfied these criteria when applied to Seventh Army data. Four exceptions are discussed in Appendix R.
7. Final changes in construct measurement. On the basis of data bearing on the criteria just discussed, four changes were made in the variable list used in the Eighth Army data analysis to represent the six motivation/satisfaction constructs. These changes are discussed in Appendix R.

Table 5.14 summarizes the final choice of scales/items for the constructs. Also contained in Table 5.14 is the factor(s) on which each variable loads, using Seventh Army (Germany) data. Then, Table 5.14 depicts the multiconstruct-multimethod matrix results for Seventh Army data using the 19 variables shown in Table 5.15.

As expected, convergent and discriminant validity improves somewhat when these 19 variables are used to represent motivation/satisfaction constructs. Comparing Table 5.15 results with Table 5.12 results, the magnitude of diagonal entries is slightly greater (0-.12), while the magnitude of off-diagonal indices is a little lower (0-.05). The matrix indicates that, using the 19 variables, composites representing each motivation/satisfaction construct are relatively pure measures of those constructs. Because it now appeared that the 19 variable-six construct framework provided purer measurement of individual motivation and satisfaction than did the 22 variable system, the revised construct composites were used in subsequent data analysis steps. Using the slightly purer measures of satisfaction and motivation hopefully makes more meaningful the relationships obtained between these composites and other variables at the unit level for Seventh Army data analyses.

Table 5.14

Data for the Constructs and the
Scales/Items Selected to Represent Those Constructs

	Variable	Factor Loaded on	
		I	II
1. Motivation	Valence-Expectancy Pachter Effort-single item	IV-11 II	II
2. Overall Satisfaction with the Army	Prior Expectancy Satisfaction-Army as a Whole (Cureton) S.0.0. Item-General Satisfaction	I I I	
3. Satisfaction with Job	Brayfield-Rothe Job Satisfaction-Cureton JDI-Work Sears-Kind of Work S.0.0. Item-Job Satisfaction	IV IV IV IV IV	
4. Satisfaction with Superiors	S.0.0.-Supervisory Support JDI-Supervision Sears-Supervision	III III III	
5. Satisfaction with Co-workers	S.0.0.-Peer Support JDI-Co-worker S.0.0. Item-Satisfaction with Co-workers	V V V	
6. Satisfaction with Pay	JDI-Pay S.0.0. Item-Satisfaction with Pay	VI VI	

Table 5.15

Multiconstruct-Multimethod Matrix Results (Germany)

	Mot.	Overall	Job	Sup.	Co-workers	Pay
Motivation	.49					
Overall Sat.	.39	.63				
Job Sat.	.46	.53	.70			
Sat. w/Sup.	.27	.42	.40	.61		
Sat. w/Co-workers	.18	.17	.22	.26	.44	
Sat. w/Pay	.13	.36	.21	.24	.11	.56

Interrelationships Among Satisfaction, Motivation, Morale and Selected Criteria

To assess the relationships between unit morale and other variables such as motivation, facets of satisfaction, and certain unit criteria, the morale ratings were correlated with these measures taken at the unit level in Germany. Relationships between motivation/satisfaction constructs and selected criteria were also investigated. Figure 5.1 summarizes the variable sets entering into unit level correlational analyses.

The Variable Sets

Motivation/satisfaction constructs. Unit motivation/satisfaction construct scores were developed by computing the mean construct scores of individuals in units. To justify using unit scores to represent fairly the "state of a unit" with respect to satisfaction or motivation of its members, the variability within each unit on the relevant measures should be relatively low compared to across unit variability. Recall that Table 5.13 contained intraclass correlations (unit homogeneity indices) for individual item/scale variables. Table 5.16 depicts the intraclass correlations (R_{ij} s) for constructs at both the platoon and company levels. All are at acceptable levels except for the Satisfaction with Co-workers construct which possesses low R_{ij} s at both levels. Thus, Satisfaction with Co-workers cannot be interpreted as a unit phenomenon. Consequently, for unit level analyses, this construct was dropped.

Table 5.16 also contains five-responder R_{ij} s corrected by the Spearman-Brown formula to provide a means of comparing the degree of homogeneity across samples. A comparison of these corrected R_{ij} s with five-responder results from Korea (Table 4.22) suggests that, as a whole, companies in the Seventh Army (Germany) are least homogeneous in terms of construct scores on these motivation and satisfaction composites. Also, as mentioned earlier in this chapter, platoon homogeneity is somewhat greater than company homogeneity on these variables.

Morale ratings. Based on the reliability results reported earlier, all morale scales were included in the analysis. Still, some potentially meaningful relationships between morale and other variables were undoubtedly attenuated due to the low reliability attained for certain aspects of morale. Because correlations among the morale dimensions were relatively high, considerable attention was focused on the overall morale measure and its relationship with other variables.

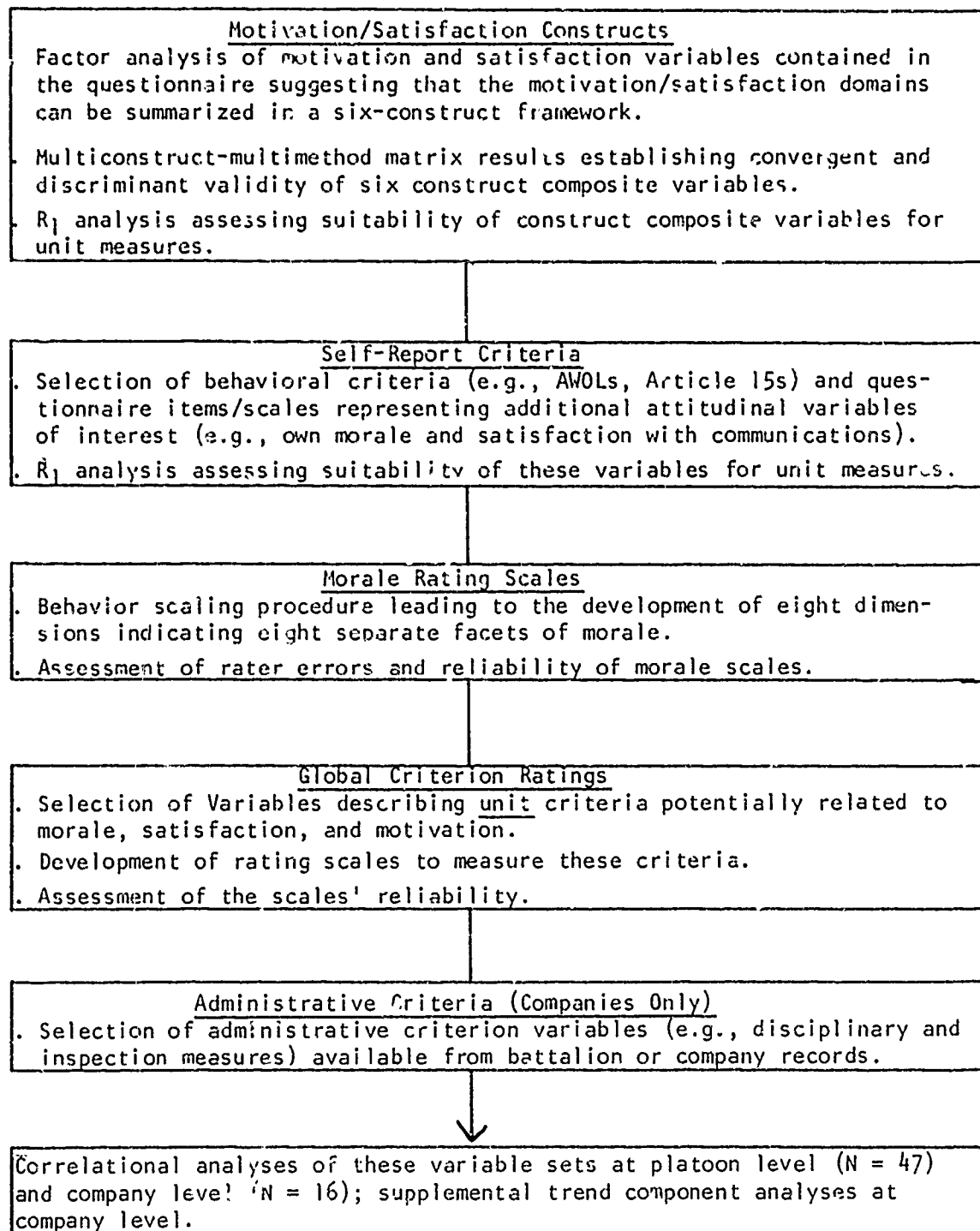


Figure 5.1. Summary Description of the Development of Variable Sets Included in Platoon and Company Level Correlational Analyses

Table 5.16

Intraclass Correlation (Unit Homogeneity)
Results for Constructs at Platoon and Company Levels

<u>Construct</u>	<u>Platoon</u>		<u>Company</u>	
	<u>R_I</u>	<u>5 Respondent Reliability</u>	<u>R_I</u>	<u>5 Respondent Reliability</u>
Motivation	.50	.30	.39	.08
Overall Satisfaction with Army	.55	.36	.70	.25
Satisfaction with Job	.65	.48	.77	.36
Satisfaction with Superiors	.62	.43	.64	.22
Satisfaction with Co-workers	.02	.01	-.20	--
Satisfaction with Pay	.29	.15	.44	.10

Self-report criteria. Unit criterion scores were developed in the same way as were unit motivation/satisfaction scores. Those self-report criterion variables attaining reasonably high R 's are included in the unit level analyses. The following ten self-report criteria were used at the platoon level:

- . Pride In Army
- . Own Morale
- . Unit Morale
- . AWOLs Last Month
- . AWOLs In Career
- . Article 15s Last Year
- . Sick Calls Last Month
- . Plans to Re-enlist
- . Self-perceived Performance
- . Self-perceived Effectiveness

The two AWOL variables were dropped from the company level analysis due to insufficient R 's.

Global criterion ratings. Interrater reliability results described earlier (see page 178) suggest that two scales (Racial Disturbances and Participation In Drives) should be dropped from platoon level analyses and that two others (Dissent and Drug Abuse) should be dropped from company level analyses. Thus, four global criterion dimensions were available both for platoon and for company level correlational analyses.

For platoons:

- . Unit Effectiveness
- . Dissent
- . Drug Usage
- . Destruction/Sabotage

For companies:

- . Unit Effectiveness
- . Racial Disturbances
- . Destruction/Sabotage
- . Participation In Drives

Administrative criteria. Data on a number of company level criterion indices were gathered from persons familiar with administrative criteria at the company level. The criteria of interest here are inspection, drug program, and disciplinary action data. Many pieces of information bearing on the other criteria were not available from some of the companies, so they were not considered in this analysis. In addition, certain data were not directly comparable for different companies. For example, it is not reasonable to compare different sized companies on the variable, Number of Sick Calls. Therefore, for many variables, our staff combined data from different time periods and from different variables to form composite variables with sufficient N s. Further, most variables were transformed to incidents per person according to the size of a company. Then, on the basis of N s and conceptual considerations, the following administrative criteria were retained:

- . narcotics/drug abuse incidents
- . POV accidents
- . AMV accidents
- . total serious incidents
- . AWOLs
- . Article 15s
- . awards received by EM
- . incidents of congressional inquiries
- . sick calls
- . re-enlistment

Each variable is expressed as the number of incidents per soldier in the company. The time period for which the data apply is January through March, 1974. The following four inspection variables were also retained for the company level correlational analysis:

- . total battalion inspections
- . 1973 total inspections
- . 1974 total inspections
- . all inspections (1973 and 1974)

Criteria for selecting these variables from all inspection data were the Ns and intercorrelations among administrative criteria. Inspection data are expressed as the percentage of times a company passed the inspections it stood.

Some of the administrative criteria provide different ways to measure criterion variables assessed by self-report criteria and global criterion ratings. The relationships among self-report, global, and administrative criteria will now be examined to ascertain the degree of convergence of different variables measuring the same or very similar criteria. For example, the correlation between self-reported AWOLs (last month) and January-March, 1974, AWOLs from the administrative criteria is .45. Article 15s Last Year (self-report) and Article 15s (administrative criteria) correlate .37, and the correlation between the global criterion drug usage and the administration criterion incidents of narcotics/drug abuse is .32. However, self-reported sick calls correlate only .05 with January-March, 1974, sick calls. Thus, overall, there is at least moderate overlap between AWOL, Article 15, and drug abuse criterion measures, but little convergence is evident between measures of sick calls. It is also interesting to examine the correlations between the global criterion Unit Effectiveness scores and the four inspection criteria. The highest correlation is .59 (with 1973 total inspections). The other three correlations are .34, .19, and -.08. In terms of correlations between Unit Effectiveness and other administrative criteria, the highest are .66 with EM awards and .52 with re-enlistments.

It is likely that these correlations reflect difficulties in measuring criteria by any of the three methods--self-report, record search, or ratings. Some Army persons completing the questionnaire (self-report) may have been reluctant to divulge AWOL or Article 15 information, for example. Other soldiers may have simply failed to recall accurately information related to these criterion variables. In addition, PDI researchers observed considerable variability in the status of company records relevant to assessing administrative criteria. In some cases, estimates appeared to be based on thorough and accurate records. Other times, there emerged questions about how to derive the desired indices from company records. Finally, the global criterion ratings may have suffered from different raters defining the scales differently. For example, "dissent" to one officer may well mean something different to another officer or NCO. Although an attempt was made to define these criteria carefully, it remains likely that different raters often keyed on slightly different information in making their evaluations of units. Interrater reliability results, though comparatively good for most of the scales, confirms that some "slippage" did occur in these criterion ratings.

As with Eighth Army data, correlational analyses were performed at both platoon and company level using the variable sets discussed above. Because of the low N (16) at the company level, a trend component analysis was used to supplement the company level correlational analysis (see Chapter IV for a description of trend component analysis).

Platoon Level Analysis

To facilitate reporting platoon level results, we consider relationships between morale and various variable sets one at a time--motivation/satisfaction constructs, self-report criteria, and global criterion ratings. Also, this section will contain information about relationships between motivation/satisfaction variables and criterion data. The complete correlation matrix containing intercorrelations among variables for all four sets appears in Table 5.17.

Motivation/satisfaction constructs-self-report criteria. Table 5.18 displays the significant (.05 level) relationships between these two variable sets. As with Seventh Army data presented in Chapter IV, the number of significant correlations between the two domains will be compared with the number of correlations expected to be significant by chance. Since 31 of 50 relationships are significant compared with two or three to be expected by chance, clearly the relationships between these constructs and self-report criteria is strong. Pride in the Army, Own and Unit Morale, Plans to Re-enlist, and Self-perceived Performance and Effectiveness all are strongly related to the motivation and satisfaction constructs. Unit morale is most highly correlated with Overall Satisfaction with the Army, and Plans to Re-enlist is associated most strongly with overall satisfaction, job satisfaction and the motivation to work. It should also be noted that the Cureton scale Satisfaction with Communications correlates very highly with Own and Unit Morale (.81 and .74 respectively).

TABLE 5.17
INTERCORRELATIONS AMONG MOTIVATION/SATISFACTION CONSTRUCTS,
SELF-REPORT CRITERIA, MORALE RATINGS, AND GLOBAL CRITERION RATINGS (PLATOON LEVEL)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	
1. Motivation	--																																	
2. Overall Satisfaction with Army	.63	--																																
3. Satisfaction with Job	.69	.72	--																															
4. Satisfaction with Supervision	.58	.70	.47	--																														
5. Satisfaction with Co-workers	.38	.29	.19	.33	--																													
6. Satisfaction with Pay	.29	.63	.33	.38	.15	--																												
7. Satisfaction with Community	.61	.64	.62	.31	.25	.55	--																											
8. Satisfaction with Communications	.64	.85	.71	.62	.29	.46	.68	--																										
9. Pride in Being Member of Army	.69	.78	.68	.59	.22	.52	.58	.80	--																									
10. Self-perceived Performance	.76	.55	.56	.59	.32	.18	.42	.56	.56	--																								
11. Self-perceived Effectiveness	.77	.61	.65	.49	.31	.35	.59	.64	.65	.70	--																							
12. Own Morale Item	.58	.78	.74	.53	.38	.47	.55	.81	.59	.52	.49	--																						
13. Unit Morale Item	.44	.72	.64	.37	.07	.42	.49	.74	.55	.36	.41	.75	--																					
14. ANOLs Last Month	-.27	-.18	-.08	-.22	-.02	-.34	-.20	-.06	-.29	-.13	-.21	.11	.06	--																				
15. ANOLs In Career	-.34	-.14	-.19	-.18	-.24	-.15	-.27	-.20	-.16	-.29	-.32	-.23	-.11	.40	--																			
16. Article 15s in Last Year	-.24	-.10	.06	-.16	-.12	-.25	-.11	.10	-.12	-.17	-.30	.12	.03	.35	.32	--																		
17. Sick Calls Last Month	-.09	-.13	-.03	-.15	-.37	-.15	-.26	-.23	-.02	-.25	-.23	-.12	-.15	-.05	-.11	.19	--																	
18. Plans to Re-enlist	.64	.77	.70	.48	.12	.41	.46	.69	.73	.55	.57	.56	.63	.21	.01	-.06	-.10	--																
19. Community Relations	.06	.20	.02	-.05	-.03	.20	.69	.04	-.03	-.07	.04	.23	.25	.18	.02	-.13	.13	.16	--															
20. Teamwork and Cooperation	.08	.14	.10	-.03	-.03	.08	.03	.03	-.14	-.05	.17	.19	.23	.21	.08	-.21	-.07	.18	.66	--														
21. Reactions to Peers	.18	.18	.11	.02	.12	.11	.18	.07	.01	.10	.34	.13	.21	.06	-.01	-.45	-.16	.22	.49	.66	--													
22. Superior-Subordinate Relations	.13	.29	.15	.24	.11	.01	.09	.16	.01	.10	.20	.29	.28	.27	.15	-.27	-.09	.18	.57	.65	.47	--												
23. Performance and Effort	.23	.32	.11	.20	.11	.10	.20	.19	.06	.20	.32	.24	.29	.16	-.05	-.43	-.09	.29	.64	.61	.70	.70	--											
24. Bearing, Appearance, etc.	.15	.26	.15	.14	.08	.16	.02	.07	.02	.09	.35	.16	.20	.15	.03	-.42	-.19	.23	.51	.64	.70	.65	.70	--										
25. Pride in Unit, Army and Country	.32	.42	.34	.19	.02	.20	.30	.37	.25	.24	.45	.40	.47	.02	-.04	-.30	-.11	.42	.55	.71	.66	.65	.71	.70	--									
26. Use of Time in Off-duty Hours	.27	.24	.07	.05	.17	.11	.21	.09	.13	.25	.28	.21	.19	-.01	-.12	-.46	-.08	.31	.54	.40	.72	.49	.76	.66	.57	--								
27. Overall Morale	.16	.36	.13	.19	.06	.13	.09	.24	.10	.13	.29	.34	.43	.18	.03	-.32	-.03	.35	.64	.73	.69	.81	.81	.80	.83	.70	--							
28. Unit Effectiveness	.09	.22	.13	.11	.04	.14	.03	.10	-.02	.00	.19	.23	.24	.17	.01	-.33	-.03	.22	.72	.79	.66	.73	.81	.67	.75	.57	.81	--						
29. Racial Disturbances	-.10	-.17	-.06	.13	-.13	-.16	.02	-.03	.03	.13	.15	-.16	-.26	-.13	.05	.16	.00	-.11	-.66	-.62	.43	-.51	-.47	-.60	-.44	-.34	-.57	-.53	--					
30. Dissent	-.02	-.12	-.17	-.22	-.04	.08	-.24	.11	.08	-.02	-.31	-.07	-.09	-.12	-.01	.19	.16	.02	-.21	-.44	-.49	-.52	-.41	-.44	-.46	-.18	-.41	-.41	.09	--				
31. Drug Usage	-.11	-.10	-.04	-.06	-.25	.01	.07	-.03	-.04	.12	-.29	-.03	-.08	-.09	-.14	.29	-.06	-.21	-.19	-.38	-.38	-.45	-.45	-.51	-.39	-.35	-.51	-.39	.34	.36	--			
32. Destruction/Sabotage	.03	-.12	-.07	.17	.04	-.04	-.01	.08	.24	.05	-.18	-.06	-.23	-.15	-.12	.29	.05	-.17	-.42	-.71	-.66	-.53	-.55	-.65	-.55	-.41	-.62	-.52	.51	.50	.48	--		
33. Participation in Drives	.16	.17	.20	-.06	.17	.02	.22	.16	.01	.22	.15	.37	.26	.28	-.09	-.02	-.08	.17	.48	.41	.29	.29	.52	.23	.51	.38	.37	.56	-.27	.02	.05	-.21	--	

Table 5.18

Significant Correlations Between Motivation/Satisfaction
Constructs and Self-Report Criteria (Platoon Level)
(N = 47)

<u>Variables</u>	<u>Correlation</u>	<u>Significance Level</u>
Motivation - Pride in Army	.69	.01
Motivation - Own Morale	.58	.01
Motivation - Unit Morale	.44	.01
Motivation - AWOLs in Career	-.34	.05
Motivation - Plans to Re-enlist	.64	.01
Motivation - Self-Perceived Performance	.76	.01
Motivation - Self-Perceived Effectiveness	.77	.01
Overall Satisfaction with the Army - Pride in the Army	.78	.01
Overall Satisfaction with the Army - Self- Perceived Performance	.55	.01
Overall Satisfaction with the Army - Self- Perceived Effectiveness	.61	.01
Overall Satisfaction with the Army - Own Morale	.78	.01
Overall Satisfaction with the Army - Unit Morale	.72	.01
Overall Satisfaction with the Army - Plans to Re-enlist	.77	.01
Satisfaction with the Job - Pride in Army	.68	.01
Satisfaction with the Job - Own Morale	.74	.01
Satisfaction with the Job - Unit Morale	.64	.01
Satisfaction with the Job - Plans to Re-enlist	.67	.01
Satisfaction with the Job - Self-Perceived Performance	.56	.01
Satisfaction with the Job - Self-Perceived Effectiveness	.65	.01
Satisfaction with Supervision - Pride in Army	.59	.01
Satisfaction with Supervision - Own Morale	.53	.01
Satisfaction with Supervision - Unit Morale	.37	.05
Satisfaction with Supervision - Plans to Re-enlist	.48	.01
Satisfaction with Supervision - Self- Perceived Performance	.59	.01
Satisfaction with Supervision - Self- Perceived Effectiveness	.49	.01
Satisfaction with Pay - Pride in Army	.52	.01
Satisfaction with Pay - Own Morale	.47	.01
Satisfaction with Pay - Unit Morale	.42	.01
Satisfaction with Pay - AWOLs Last Month	-.34	.05
Satisfaction with Pay - Plans to Re-enlist	.41	.01
Satisfaction with Pay - Self-Perceived Effectiveness	.35	.05

In addition, a certain degree of construct validity for the motivation construct can be derived from the highly significant correlations between motivation and self-perceived performance and effectiveness ($r_s = .76$ and $.77$). None of the satisfaction constructs correlates as highly with these two variables. Finally, the four disciplinary self-report criteria (AWOLs Last Month, and in Career, Article 15s Last Year, and Sick Calls) are not related highly to platoon construct scores. Only two of the 20 correlations are significant (motivation and pay satisfaction with AWOLs in Career and Last Month, respectively).

Motivation/satisfaction constructs-global criterion ratings. None of the 20 correlations between variables in these two variable sets is significant beyond the .05 level. These results indicate that the satisfaction and motivation of troops has little to do with the rated effectiveness of platoons or the degree to which these platoons display dissent, use drugs, or engage in destruction of government property.

Morale ratings-motivation/satisfaction constructs. Table 5.19 contains the relationships between morale ratings and motivation/satisfaction constructs which are significant beyond the .05 level. Forty-five possible across variable set correlations are contained in these data. Approximately two significant relationships would be expected by chance. Four of these correlations attain significance suggesting that the general relationship between the constructs and morale ratings is weak. The results also suggest that the relationships which are significant should be interpreted with caution. Keeping this restraint in mind, it appears that Overall Satisfaction with the Army is most highly related to platoon morale, and that Pride in the Unit, Army, etc., is the aspect of morale most closely related to motivation and satisfaction constructs at the platoon level.

Morale ratings-self-report criteria. Twenty-one of 90 relationships are significant from zero at the .05 level or better. Four or five would be expected by chance. Table 5.20 contains these significant relationships. Self-reported own and unit morale along with Article 15s Last Year, Self-perceived Effectiveness and Plans to Re-enlist are most highly related to platoon morale as measured by the new rating scales developed by PDI. The fact that rated morale correlates more substantially with self-reported unit morale than it does with motivation and satisfaction constructs implies some construct validity for these measures of platoon morale. The results suggest that informed raters can differentiate morale at the platoon level from related concepts such as aspects of satisfaction. Also evident from these data is that Pride in Unit, Army, etc., is the morale scale most closely associated with morale as perceived by soldiers in the units. Apparently, men in these platoons tend to define "morale" primarily as pride in one's unit, Army, and country.

Table 5.19

Significant Correlations Between Morale Ratings
and Satisfaction/Motivation Criteria (Platoon Level)
(N = 47)

<u>Variables</u>	<u>Correlation</u>	<u>Significance Level</u>
Pride in Unit, Army, etc. - Motivation	.32	.05
Pride in Unit, Army, etc. - Overall Satis- faction with Army	.42	.01
Pride in Unit, Army, etc. - Satisfaction with Job	.34	.05
Overall Morale - Overall Satis- faction with Army	.36	.05

Table 5.20
Significant Correlations Between Morale Ratings and
Self-Report Criteria (Platoon Level)
(N = 47)

<u>Variables</u>	<u>Correlations</u>	<u>Significance Level</u>
Reaction to Adversity - Article 15s Last Year	-.45	.01
Reaction to Adversity - Self-Perceived Effectiveness	.34	.05
Superior-Subordinate Relations - Own Morale	.29	.05
Performance & Effort - Unit Morale	.29	.05
Performance & Effort - Article 15s Last Year	-.43	.01
Performance & Effort - Plans to Re-enlist	.29	.05
Performance & Effort - Self-Perceived Effectiveness	.32	.05
Bearing, Appearance - Article 15s Last Year	-.42	.01
Bearing, Appearance - Self-Perceived Effectiveness	.35	.05
Pride in Unit, Army, etc. - Own Morale	.40	.01
Pride in Unit, Army, etc. - Unit Morale	.47	.01
Pride in Unit, Army, etc. - Article 15s Last Year	-.30	.05
Pride in Unit, Army, etc. - Plans to Re-enlist	.42	.01
Pride in Unit, Army, etc. - Self-Perceived Effectiveness	.45	.01
Use of Time Off Duty - Article 15s Last Year	-.46	.01
Use of Time Off Duty - Plans to Re-enlist	.31	.05
Overall Morale - Own Morale	.34	.05
Overall Morale - Unit Morale	.43	.01
Overall Morale - Article 15s Last Year	-.32	.05
Overall Morale - Plans to Re-enlist	.33	.05
Overall Morale - Self-Perceived Effectiveness	.29	.05

It is also of interest to see the relatively substantial relationship between morale and Article 15s Last Year. Platoons whose men receive fewer Article 15s clearly possess higher morale based on these results.

Morale ratings-global criterion ratings. All but three of the 36 relationships between these two variable sets are significantly different from zero at the .05 level, the vast majority significant beyond the .01 level (see Table 5.21). Since the same persons completed both the morale scales and the global criterion rating forms, relationships between the two domains are undoubtedly inflated by common method variance, or an across method (morale and criterion ratings) halo effect. An estimate of the inflation is provided by examining the correlations between self-report unit morale and the global criteria. The correlations:

Unit Effectiveness	.24
Dissent	.09
Drug Usage	.08
Destruction or Sabotage	.23

Thus, when method variance in common between the two sets of variables is removed, the relationships shrink considerably. Still, of the four global criteria, Unit Effectiveness and Destruction/Sabotage do seem moderately related to the concept of morale. Further, some construct validity evidence can be gained from the fact that the aspect of morale correlated highest with Unit Effectiveness is Performance and Effort. Finally, according to platoon level results, of all morale dimensions, Superior-Subordinate Relations is most closely associated with Dissent, and Bearing, Appearance, and Discipline relate most strongly to Drug Usage.

Summary. To summarize platoon level results, more evidence of construct validity was obtained for the morale rating scales. Significant correlations between morale ratings and self-report troop morale indicated some convergent validity. Also, higher correlations between morale ratings and self-reported Unit morale than between the morale ratings and aspects of self-reported satisfaction and motivation provide some evidence for discriminant validity for PDI's morale ratings scales.

In terms of the correlates of platoon morale, Overall Satisfaction with the Army appears to be relatively highly related to morale. Further, platoon scores on self-reported disciplinary criteria (e.g., AWOLs) were difficult to predict using these data. Only Article 15s Last Year showed any relationship with the motivation, satisfaction, or morale of soldiers. This criterion correlated significantly with several morale rating dimensions. And finally, the reliably measured global criteria

Table 5.21

Significant Correlations Between Morale Ratings
and Global Criterion Ratings (Platoon Level)

<u>Variables</u>	<u>Correlations</u>	<u>Significance Level</u>
Unit Effectiveness - Community Relations	.72	.01
Unit Effectiveness - Teamwork and Cooperation	.79	.01
Unit Effectiveness - Reactions to Adversity	.66	.01
Unit Effectiveness - Superior-Subordinate Relations	.73	.01
Unit Effectiveness - Performance and Effort	.81	.01
Unit Effectiveness - Bearing, Appearance, etc.	.67	.01
Unit Effectiveness - Pride in Unit, Army, and Country	.75	.01
Unit Effectiveness - Use of Time During Off-Duty Hours	.57	.01
Unit Effectiveness - Overall	.81	.01
Dissent - Teamwork and Cooperation	-.44	.01
Dissent - Reactions to Adversity	-.49	.01
Dissent - Superior-Subordinate Relations	-.52	.01
Dissent - Performance and Effort	-.41	.01
Dissent - Bearing, Appearance, etc.	-.44	.01
Dissent - Pride in Unit, Army, and Country	-.46	.01
Dissent - Overall	-.41	.01
Drug Usage - Teamwork and Cooperation	-.38	.01
Drug Usage - Reactions to Adversity	-.38	.01
Drug Usage - Superior-Subordinate Relations	-.45	.01

<u>Variables</u>	<u>Correlations</u>	<u>Significance Level</u>
Drug Usage -		
Performance and Effort	-.45	.01
Drug Usage -		
Bearing, Appearance, etc.	-.51	.01
Drug Usage -		
Pride in Unit, Army, and Country	-.39	.01
Drug Usage -		
Use of Time During Off-Duty Hours	-.35	.05
Drug Usage -		
Overall	-.51	.01
Destruction/Sabotage -		
Community Relations	-.42	.01
Destruction/Sabotage -		
Teamwork and Cooperation	-.71	.01
Destruction/Sabotage -		
Reactions to Adversity	-.66	.01
Destruction/Sabotage -		
Superior-Subordinate Relations	-.53	.01
Destruction/Sabotage -		
Performance and Effort	-.55	.01
Destruction/Sabotage -		
Bearing, Appearance, etc.	-.65	.01
Destruction/Sabotage -		
Pride in Unit, Army, and Country	-.55	.01
Destruction/Sabotage -		
Use of Time During Off-Duty Hours	-.41	.01
Destruction/Sabotage -		
Overall	-.62	.01

(e.g., Unit Effectiveness) were highly related to morale ratings. Although the morale rating-global criterion correlations are inflated by common method variance, morale does seem to be somewhat more highly related at least to Unit Effectiveness and Destruction/Sabotage than are the motivation or satisfaction measures.

Company Level Analysis

In this section, the company level correlations among five different variable sets are discussed. In addition to the four variable sets examined in platoon level analyses, administrative criterion scores were available for companies in the Seventh Army sample. Table 5.22 depicts the complete company level correlation matrix. In addition to the correlational analysis, results of a trend component analysis are reported in this section. The trend analysis provides a more powerful test of the relationships between morale and other variables at the company level.

Motivation/satisfaction constructs-self-report criteria. Of 40 correlations, 20 are significant beyond the .10 level (see Table 5.23). Pride in Army, Plans to Re-enlist, Morale, and Self-perceived Performance and Effectiveness are related significantly to almost every aspect of satisfaction and motivation. Compared with the other constructs, Overall Satisfaction with the Army correlates most highly with Morale and Plans to Re-enlist. Self-perceived Performance and Effectiveness relate most strongly to motivation and job satisfaction. Finally, the two criteria related to unfavorable incidents (Article 15s Last Year and Sick Calls Last Month) are not correlated highly with constructs. Only Satisfaction with Superiors and sick calls correlate significantly ($r = -.48, p < .10$). The low base rate of Article 15s and sick calls reported may account for the generally low relationships between these variables and construct composites.

Motivation/satisfaction constructs-global criterion ratings. Only three of 20 correlations between these two variable sets are significantly different from zero (at the .10 level) while two would be expected by chance. Therefore, the three correlations appearing in Table 5.24 could well be significant due to chance alone. However, Overall Satisfaction with the Army correlates significantly ($p < .05$) with two of the four global criteria; thus, it appears that this construct variable may be meaningfully related to these two unit criteria.

Motivation/satisfaction constructs-administrative criteria. In general, the five motivation/satisfaction constructs are not predictive of administrative criteria. Only four of 70 correlations across variable sets are significantly different from zero at the .10 level, less than would be expected by chance. Awards received by EM is related significantly

TABLE 5.22
INTERRELATIONS AMONG MOTIVATION/SATISFACTION
CONSTRUCTS, FIELD-REPORT CRIMINAL AND MORALE RATINGS, AND THE LEVEL

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44				
1. Motivation	--																																															
2. Overall Satisfaction with Army	.72	--																																														
3. Satisfaction with Job	.73	.75	--																																													
4. Satisfaction with Supervision	.38	.49	.18	--																																												
5. Satisfaction with Pay	.36	.52	.20	.27	--																																											
6. Satisfaction with Community	.64	.62	.75	.17	.03	--																																										
7. Satisfaction with Communications	.67	.89	.74	.61	.34	.73	--																																									
8. Pride in Being Member of Army	.75	.75	.75	.47	.40	.57	.84	--																																								
9. Self-perceived Performance	.64	.37	.56	.27	-.04	.54	.44	.46	--																																							
10. Self-perceived Effectiveness	.72	.59	.76	.23	.03	.81	.63	.62	.65	--																																						
11. Own Morale Item	.60	.87	.75	.32	.38	.61	.63	.73	.40	.40	--																																					
12. Unit Morale Item	.51	.93	.71	.27	.45	.57	.81	.65	.28	.47	.89	--																																				
13. Article 155 In Last Year	-.18	.02	.27	-.20	-.22	.07	.14	-.24	-.05	-.01	.13	.96	--																																			
14. Sick Calls Last Month	.4	.25	-.12	-.48	.12	-.48	.38	-.16	-.51	.34	-.21	.24	.30	--																																		
15. Plans to Re-enlist	.68	.79	.68	.13	.33	.46	.66	.84	.42	.57	.62	.67	.10	-.07	--																																	
16. Community Relations	-.12	.11	.17	-.53	.15	.29	-.03	-.17	-.27	.07	.23	.21	.25	.17	-.05	--																																
17. Teamwork and Cooperation	.01	.23	.16	-.30	.10	.26	.03	-.22	-.10	.20	.23	.26	.02	.02	.14	.76	--																															
18. Reactors to Adversity	.04	.18	.14	-.30	.02	.41	.03	-.23	.05	.34	.16	.46	.17	.15	.17	.61	.69	--																														
19. Superior-Subordinate Relations	-.04	.46	.27	.22	-.10	.18	.40	.16	.18	.26	.41	.52	.14	.13	.25	.46	.43	.36	--																													
20. Performance and Efficiency	.29	.4	.35	.07	-.05	.45	.37	.18	.39	.56	.32	.37	-.08	.29	.42	.33	.60	.66	.71	--																												
21. Bearing, Appearance, etc.	.06	.34	.12	-.13	.17	.10	.07	.01	-.66	.26	.20	.37	-.35	.07	.28	.45	.70	.67	.65	.67	--																											
22. Pride in Unit, Army and Country	.19	.55	.27	-.05	.39	.36	.37	.19	.04	.37	.41	.52	-.03	-.01	.43	.62	.65	.62	.77	.78	--																											
23. Use of Time in Off-duty Hours	.17	.35	.37	-.26	.15	.40	.20	.24	.24	.38	.18	.30	-.01	.43	.42	.47	.62	.52	.70	.74	.74	--																										
24. Overall Morale	.05	.49	.26	.05	.11	.22	.37	.14	.16	.37	.45	.54	-.06	-.13	.35	.45	.65	.64	.86	.79	.88	.75	--																									
25. Unit Effectiveness	-.03	.53	.39	.32	-.03	.33	.58	.32	.10	.26	.58	.67	.33	-.12	.23	.32	.35	.22	.86	.67	.42	.62	.39	.86	--																							
26. Racial Disturbances	-.21	.26	.31	.35	.22	.33	.02	.05	.07	-.42	-.12	.33	.19	-.11	.18	.58	.24	.76	.03	.26	.67	.49	.43	.11	.00	--																						
27. Dissent	.08	-.06	-.02	.01	-.17	.23	.08	.23	.02	.31	.15	.15	.39	.18	.08	.31	.61	.86	.20	.35	.61	.42	.47	.40	.02	.69	--																					
28. On-duty Usage	-.01	.25	-.11	-.25	-.05	-.08	.19	-.07	.19	.26	.00	.25	.25	-.08	.25	.11	.32	.47	.36	.49	.47	.25	.34	.42	.29	.26	.43	--																				
29. Destructive/Sabotage	-.06	-.11	-.19	.37	.18	.00	.15	.23	.08	.16	.04	.16	-.05	.31	.18	.38	.78	.68	.04	.15	.44	.24	.69	.18	.05	.73	.49	.32	--																			
30. Participation in Drives	.34	.56	.24	.38	.46	.23	.46	.42	.21	.27	.55	.59	.23	.23	.18	.32	.35	.18	.43	.58	.53	.71	.37	.71	.58	.21	.06	.01	.64	--																		
31. Narcotics/Drug Abuse	-.02	.10	-.11	-.01	.07	.27	.16	.12	.31	.20	.08	.04	.90	.15	.15	.42	.22	.16	.11	.36	.23	.35	.24	.21	.35	.10	.04	.32	.21	.27	--																	
32. Aggravated Assault	.26	.34	.41	.10	.28	-.06	.08	.21	.29	.15	.14	.35	.15	.40	.45	.01	.02	.02	.09	.04	.29	.13	.10	.01	.03	.50	.60	.48	.38	.11	.17	--																
33. AHR Accidents	-.23	-.25	-.22	.02	.12	.33	-.08	.20	.31	.29	-.07	.18	.02	.40	.35	.11	.40	.53	.27	.36	.30	.23	.24	.22	.07	.35	.45	.07	.27	.24	.29	.08	--															
34. Total Serious Incidents	.06	.08	-.05	.04	.39	.42	-.07	.10	.00	.24	.01	.17	-.07	.18	.66	.40	.31	.38	.23	.16	.18	.29	.31	.31	.28	.03	.16	.09	.34	.20	.72	.41	.16	--														
35. AHRs	.00	.05	.02	.11	-.27	.35	.15	-.22	.10	.01	.11	.06	.30	.34	.17	.07	.07	.03	.15	.18	.39	.17	.34	.16	.05	-.03	.60	.32	.11	.18	.66	.28	.40	.24	--													
36. Article 155	.30	.19	.42	.27	.18	.10	.22	.16	.30	.06	.27	.10	.37	.08	.18	.26	.25	.33	.10	.23	.42	.49	.39	.36	.06	.23	.38	.55	.02	.40	.18	.03	.22	.06	.35	--												
37. Awards Received by Enls	.26	.56	.55	.05	.25	.32	.54	.47	.19	.38	.59	.58	.25	.03	.53	.21	.24	.16	.39	.41	.9	.41	.28	.48	.46	-.18	.05	.38	.31	.53	.10	.37	.22	.26	.24	.08	--											
38. Congressional Inquiries	-.32	.44	.18	-.10	-.43	-.16	-.24	-.01	.14	.25	-.12	-.28	-.01	.03	.51	.24	.55	.51	.18	.35	.40	.50	.15	.25	.04	.40	.37	.40	.48	-.03	.60	.31	.56	.02	.65	.59	--											
39. Sick Calls	-.11	.03	.04	-.06	.13	-.05	.09	.02	-.05	.32	.24	.21	.11	.05	.17	.01	.23	.26	.19	.25	.12	.15	.02	.43	.07	.09	.31	.64	.01	.30	.25	.21	.42	--														
40. Re-enlistments	-.34	.13	.12	-.27	.18	.02	.10	.07	.29	.35	.66	.30	.39	.28	.18	.45	.36	.39	.37	.27	.54	.38	.51	.52	.17	.25	.46	.28	.12	.18	.21	.11	.03	.23	.37	.67	.24	.33	--									
41. Total Battalion Inspections	.31	.95	.06	-.36	.00	.22	-.08	.05	.04	.8	.45	.30	.38	.04	.34	.12	.00	.09	.28	.69	.18	.69	.44	.12	.68	.19	.27	.01	.11	.14	.19	.47	.11	.55	.19	.63	.16	.17	.42	.14	--							
42. 1973 Total Inspections	-.23	.17	-.16	-.22	-.13	-.02	.24	-.64	-.42	-.07	.26	.24	.29	.19	.22	.13	.16	.07	.26	.49	.66	.28	.63	.50	.55	-.69	.27	.70	.15	.45	.17	.37	.24	.14	.32	.49	.07	.27	.44	--								
43. 1974 Total Inspections	.21	.17	.32	-.39	-.38	.44	.13	.11	-.05	.27	.16	.22	-.07	.10	.16	.30	.43	.40	.11	.15	.30	.06	.23	.19	.19	.42	-.07	.22	.45	.02	.16	.10	.69	.21	.55	.12	.12	.17	.47	--								
44. All Inspections Totalled	.17	.21	.44	-.57	.34	.55	.18	.19	-.09	.34	.51	.32	.16	.13	.22	.50	.40	.37	.12	.16	.50	.27	.35	.25	.34	.56	.01	.69	.32	.64	.35	.35	.02	.17	.56	.39	.1											

Table 5.23

Significant Correlations Between Motivation/Satisfaction
Constructs and Self Report Criteria (Company Level)
(N = 16)

<u>Variables</u>	<u>Correlations</u>	<u>Significance Level</u>
Motivation - Pride in Army	.75	.01
Motivation - Own Morale	.60	.05
Motivation - Unit Morale	.51	.05
Motivation - Plans to Re-enlist	.68	.01
Motivation - Self-Perceived Performance	.64	.01
Motivation - Self-Perceived Effectiveness	.73	.01
Overall Satisfaction with the Army - Pride in Army	.75	.01
Overall Satisfaction with Army - Own Morale	.87	.01
Overall Satisfaction with Army - Unit Morale	.93	.01
Overall Satisfaction with Army - Plans to Re-enlist	.79	.01
Overall Satisfaction with Army - Self-Perceived Effectiveness	.57	.05
Satisfaction with the Job - Pride in Army	.75	.01
Satisfaction with the Job - Own Morale	.75	.01
Satisfaction with the Job - Unit Morale	.71	.01
Satisfaction with the Job - Plans to Re-enlist	.68	.01
Satisfaction with the Job - Self-Perceived Performance	.56	.05
Satisfaction with the Job - Self-Perceived Effectiveness	.78	.01
Satisfaction with Superiors - Pride in Army	.47	.10
Satisfaction with Superiors - Sick Calls Last Month	-.48	.10
Satisfaction with Pay - Unit Morale	.45	.10

Table 5.24

Significant Correlations Between Motivation/Satisfaction
Constructs and Global Criterion Ratings (Company Level)
(N = 15)

<u>Variables</u>	<u>Correlations</u>	<u>Significance Level</u>
Overall Satisfaction with the Army - Unit Effectiveness	.53	.05
Overall Satisfaction with the Army - Participation in Drives	.56	.05
Satisfaction with Pay - Participation in Drives	.46	.10

to Overall Satisfaction with the Army and with Job Satisfaction. Congressional Inquiries is predicted somewhat successfully by Overall Satisfaction with the Army and Pay Satisfaction (see Table 5.25). Still, the extremely small number of significant correlations suggests that these results may reflect only relationships significant by chance.

Morale ratings-motivation/satisfaction constructs. Of 45 correlations between these two variable sets only five are significant at the .10 level or better, about the number expected by chance alone. Table 5.26 shows that four of the five significant relationships involve the construct Overall Satisfaction with the Army. Thus, it appears that the overall affect troops in companies hold for the Army is moderately related to the morale of those company sized units. Other satisfaction and motivation constructs seem virtually unrelated to the morale construct at the company level based on these data.

Morale ratings-self-report criteria. Only six of the 54 correlations between morale ratings and self-report criteria are significantly different from zero at the .10 level or better. This is approximately the proportion to be expected by chance. However, the good conceptual sense made by the significant correlations argue for interpreting them seriously. Again, convergent validity for the morale rating scales can be derived from these data. Table 5.27 shows significant correlations between morale ratings and morale as measured by soldiers' estimates of the morale their unit displays. That two very different measures of the morale construct correlate significantly is very encouraging. It is also of interest to note that soldiers' Plans to Re-enlist is somewhat successfully predicted using morale ratings. Pride in the Unit, etc., and Use of Off-Duty Time are related significantly to Plans to Re-enlist.

Morale ratings-global criterion ratings. In general, the morale scales correlate highly with global criteria at the company level. Table 5.28 contains 16 relationships significant at the .10 level or better (of 36 possible). Many of the correlations are beyond the .01 level. As in the platoon level analysis, considerable method variance is held in common between these two variable sets. The same raters who evaluated the morale of units also provided the global criterion ratings. Thus, the magnitude of these correlations is undoubtedly somewhat inflated due to this common method variance. Perhaps a more reasonable estimate of the true relationship between company morale and these criteria is offered by the correlations between the global criteria and self-report unit morale from the questionnaire.

Unit Morale-Unit Effectiveness	.67, $p < .01$
Unit Morale-Racial Disturbances	-.33
Unit Morale-Destruction/Sabotage	-.16
Unit Morale-Participation in Drives	.59, $p < .05$

Table 5.25

Significant Correlations Between Motivation/Satisfaction
Constructs and Administrative Criteria (Company Level)
(N = 16)

<u>Variables</u>	<u>Correlations</u>	<u>Significance Level</u>
Overall Satisfaction with the Army - EM Awards	.56	.05
Overall Satisfaction with the Army - Congressional Inquiries	-.44	.10
Satisfaction with the Job - EM Awards	.55	.05
Satisfaction with Pay - Congressional Inquiries	.43	.10

Table 5.25
 Significant Correlations Between Morale Ratings and
 Motivation/Satisfaction Constructs (Company Level)
 (N = 16)

<u>Variables</u>	<u>Correlations</u>	<u>Significance Level</u>
Overall Satisfaction with the Army - Superior-Subordinate Relations	.46	.10
Overall Satisfaction with the Army - Performance and Effort	.44	.10
Overall Satisfaction with the Army - Pride in Unit, Army, etc.	.55	.05
Overall Satisfaction with the Army - Overall Morale	.49	.10
Community Relations - Satisfaction with Superiors	-.53	.05

Table 5.27
 Significant Correlations Between Morale Ratings and
 Self-Report Criteria (Company Level)
 (N = 16)

<u>Variables</u>	<u>Correlations</u>	<u>Significance Level</u>
Superior-Subordinate Relations - Unit Morale	.52	.05
Pride in Unit, Army, etc. - Unit Morale	.52	.05
Pride in Unit, Army, etc. - Plans to Re-enlist	.44	.10
Use of Time Off-Duty - Plans to Re-enlist	.43	.10
Overall Morale - Own Morale	.45	.10
Overall Morale - Unit Morale	.54	.05

Table 5.28

Significant Correlations Between Morale Ratings and
Global Criterion Ratings (Company Level)
(N = 15)

<u>Variables</u>	<u>Correlation</u>	<u>Significance Level</u>
Community Relations - Racial Disturbances	-.58	.05
Teamwork and Cooperation - Racial Disturbances	-.72	.01
Teamwork and Cooperation - Destruction/Sabotage	-.78	.01
Reaction to Adversity - Racial Disturbances	-.76	.01
Reaction to Adversity - Destruction/Sabotage	-.68	.01
Superior-Subordinate Relations - Unit Effectiveness	.86	.01
Performance and Effort - Unit Effectiveness	.67	.01
Performance and Effort - Participation in Drives	.58	.05
Bearing, Appearance - Racial Disturbances	-.67	.01
Bearing, Appearance - Destruction/Sabotage	-.44	.10
Bearing, Appearance - Participation in Drives	.53	.05
Pride in Unit, Army, etc. - Unit Effectiveness	.62	.05
Pride in Unit, Army, etc. - Racial Disturbances	-.49	.10
Pride in Unit, Army, etc. - Participation in Drives	.71	.01
Overall Morale - Unit Effectiveness	.86	.01
Overall Morale - Participation in Drives	.71	.01

The results demonstrate that the relationship between the two domains remains substantial, particularly with respect to Unit Effectiveness and Participation in Drives.

Morale ratings-administrative criteria. Of the 126 correlations between Morale and administration criteria, 16 are significant--only a slightly greater than chance result. However, since all relationships in Table 5.29 are in intuitively sensible directions, there probably is a weak relationship between morale and the administrative criteria. More specifically, Re-enlistments and Congressional Inquiries are related substantially to various aspects of morale as rated using the morale scales. Also, EM Awards is predictable using Overall Morale. The latter result is substantiated by examining the relationships between Self-reported unit morale and EM Awards. That correlation is .68 ($p < .01$). Thus, morale does seem to be related significantly to three administrative criteria using these company level data.

It should be noted that an unknown amount of error is present in administrative criterion indices. Possible sources of error were discussed earlier. This error, along with imperfect reliability for morale ratings serves to attenuate relationships between these two variable sets. Therefore, inferences about the true relationship between morale and these administrative criteria should be made with caution.

Trend Component analysis results. To accomplish the trend component analyses, the 16 companies in our Seventh Army sample were first rank ordered by their overall morale rating. The trend analysis for each "dependent" variable was then used to assess the relationship between morale and each of these variables.

The trend analyses largely support correlational results obtained at the company level. Table 5.30 shows the significance levels of F tests computed for linear and quadratic hypotheses. The significant linear results ($p < .05$) occurred for the following variables: Overall Satisfaction with the Army, Job Satisfaction, Satisfaction with Community and with Communications, Own and Unit Morale, and Plans to Re-enlist. Besides these linear relationships, trend analysis results pointed out a number of curvilinear relationships between company morale and other variables. Inspection of the cell means sheds light on the reason for the seven significant ($p < .05$) quadratic relationships. The company rated highest in Morale stands comparatively low on measures of Overall Satisfaction with the Army, Satisfaction with the Job, Superiors, and Communications, Pride in the Army, and Own and Unit Morale. Most of the relationships between rated morale and these seven variables are reasonably monotonic when the company rated most highly in morale is eliminated. It may be that rather than a true curvilinear relationship between morale and these variables, the company rated highest in morale was actually overrated.

Table 5.29

Significant Correlations Between Morale Ratings
and Administrative Criteria (Company Level)
(Ns = 14-16)

<u>Variables</u>	<u>Correlation</u>	<u>Significance Level</u>
Community Relations - Re-enlistments	.45	.10
Community Relations - All Inspections	.50	.10
Teamwork and Cooperation - Congressional Inquiries	-.55	.05
Reaction to Adversity - AMV Accidents	-.53	.05
Reaction to Adversity - Congressional Inquiries	-.51	.05
Performance and Effort - Total Serious Incidents	-.48	.10
Performance and Effort - Sick Calls	-.56	.05
Pride in Unit, Army, etc. - Article 15s	-.49	.10
Pride in Unit, Army, etc. - Congressional Inquiries	-.50	.05
Pride in Unit, Army, etc. - Re-enlistments	.54	.05
Overall Morale - EM Awards	.48	.10
Overall Morale - Re-enlistments	.51	.10

Table 5.30

Trend Component Analysis Results of Relationships Between
Company Level Morale and Selected Variables

<u>Variable</u>	<u>p Value</u> <u>Linear Hypothesis</u>	<u>p Value</u> <u>Quadratic Hypothesis</u>
Motivation	.84	.69
Overall Satisfaction with Army	.0007	.05
Satisfaction with Job	.05	.003
Satisfaction with Supervisor	.65	.0003
Satisfaction with Co-workers	.23	.37
Satisfaction with Pay	.66	.12
Self-Perceived Performance	.44	.15
Self-Perceived Effectiveness	.18	.44
Satisfaction with Community	.05	.20
Satisfaction with Communications	.005	.001
Pride in Army	.35	.009
Own Morale	.004	.01
Unit Morale	.00000009	.00006
Article 15s - Career	.12	.65
Plans to Re-enlist	.03	.88
Article 15s Last Year	.73	.73
Sick Calls Last Month	.56	.12

In sum, Seventh Army company level results suggest that morale can be measured separately from the closely related (conceptually) constructs within the satisfaction and motivation domains. Correlations between rated Morale and Self-reported Unit Morale are higher than correlations between the morale ratings and self-reports of satisfaction and motivation. In these data, Overall Satisfaction with the Army is almost as highly related to morale ratings as is self-report unit morale. This finding suggests that soldiers' overall affect toward the Army is very close to the concept which Army leaders think about when evaluating a unit's morale.

Global criterion ratings were readily "predicted" by morale ratings, though common method variance between the two sets of ratings undoubtedly inflated relationships between rated morale and these criteria. Still, Unit Effectiveness and Participation in Drives are related more strongly to self-reported unit morale than to any satisfaction or motivation construct except Overall Satisfaction with the Army. Thus, morale and this aspect of satisfaction seem most highly correlated with company level global criteria. In terms of objective administrative criteria, Re-enlistments, Congressional Inquiries, and EM Awards are related to various aspects of morale. Relationships between satisfaction/motivation constructs and these criteria are very weak in general. The only exception is Overall Satisfaction with the Army which relates significantly to EM Awards and Congressional Inquiries.

CHAPTER VI
NATIONAL GUARD DATA ANALYSIS

Sample

Subsequent to research accomplished in Korea and Germany, two separate studies were conducted in the Minnesota National Guard. First, the interrater reliability of the morale rating scales was assessed from ratings of 25 companies provided by officers familiar with one or more of these companies. The rating forms were mailed to officers at the battalion and company levels. These officers completed the ratings and returned them by mail. Second, 126 soldiers from three batteries in the Minneapolis area completed a questionnaire almost identical¹ to the one administered to soldiers in the regular Army. The purpose of the second study was to compare the structure of the motivation/satisfaction domain in the National Guard with the structure derived from our regular Army data analyses.

The sample of companies for the first study was selected by a senior officer in the Headquarters of the 47th Infantry Division, Minnesota National Guard. He ensured that different types of companies (e.g., Armor, Signal, and Engineering) and different locations (e.g., metropolitan and rural areas) were represented in the sample of 25. This officer also rated each company's morale high, medium, or low based on the knowledge of these companies he and others at the Division level possessed (hereafter referred to as Division level ratings). In addition, four ratings of each company using our morale scales were obtained. Battalion Commanders and their Executive officers provided morale ratings for the two to five companies under them, and company commanders and their executive officers provided estimates of their own company's morale. A total of 48 completed ratings from the battalion level and 44 from the company level were gathered during this phase of the project.

For the questionnaire phase, three Minneapolis artillery units were selected according to their reputation for possessing a certain degree of morale. One battery in the sample was thought to have high morale, another average morale, and the third low morale. Within each of these batteries, the questionnaire booklet was administered to all soldiers E-4 and below (plus Spec. 5s) present during a regular drill period. The number of National Guard soldiers participating was 37, 39, and 50 for the three batteries tested. Also, morale ratings for each of the three batteries were obtained from officers knowledgeable about these batteries' morale.

¹ Twenty-five items clearly irrelevant to the National Guard were removed from the questionnaire booklet (e.g., "If you work hard you will be stationed in some other part of the world.").

Field Test of Morale Rating Scales

Table 6.1 contains the interrater agreement results obtained using all participating raters. The reliability indices are again intraclass correlation coefficients. Also depicted are means, standard deviations, and the 2-rater Spearman-Brown corrected reliability to facilitate making comparisons in level of reliability across different data sets.

Tables 6.2 and 6.3 display mean, standard deviation, and reliability results obtained using company level and battalion level ratings separately. The data in these three tables demonstrate that better agreement in evaluating morale was present within rater level. That is, the raters at company level agreed relatively closely about the level of morale exhibited by companies in the sample (median 2-rater reliability = .81), and battalion level officers could agree quite closely among themselves about the level of morale in companies (median 2-rater reliability = .57). However, the across level interrater agreement was not so high (median 2-rater reliability = .36). Apparently, the different perspectives from which raters view companies' activities affected their perceptions of companies' morale. Of course, it is also possible that some of the ratings were not made independently. Although the instructions given to the raters specifically urged them to provide independent morale ratings, the potential existed for Company Commanders and their XO's or Battalion Commanders and their XO's to confer more about the ratings before completing them. Or, perhaps more likely, there are stereotypes about companies' morale which develop separately within each of the organizational levels--i.e., company level officers have their commonly held beliefs about the morale of units with which they are familiar, and battalion level officers have their own stereotypes of the same units' morale.

Focusing on the reliabilities generated by including all raters in the analysis (Table 6.3), four of the eight scales possess reliabilities greater than .50, with one reliability coefficient reaching .70. Still, the relatively low interrater agreement possessed by the other four scales is disappointing. Although reliability in this setting was superior overall to the level of reliability obtained at platoon level Korea or company level Germany, these interrater agreement results suggest that there exist some problems in reliably evaluating the morale of units in the National Guard.

In terms of mean morale ratings, National Guard evaluations tend to be somewhat higher (about 1/2 scale point) than those gathered in the regular Army. It is also interesting to note that company level raters in general provided higher ratings than did raters at the battalion level. Although it is impossible to know the true level of morale for these companies and, therefore, also impossible to pinpoint the exact degree of leniency error present in ratings, the mean rating (approximately 6.8) suggests that officers tended to use the upper portions of the scales but that no severe leniency effect is present in the ratings.

Table 6.1

Means, Standard Deviations, and Interrater Reliability
of Morale Ratings (Company Level Ratings Only)

	<u>N</u>	<u>K</u>	<u>Mean</u>	<u>S.D.</u>	<u>Reliability</u>	<u>2-rater Reliability</u>
Community Relations	24	1.79	7.60	.91	.81	.83
Teamwork and Cooperation on the Job	24	1.79	7.29	.93	.77	.79
Reactions to Adversity	24	1.79	6.29	1.23	.75	.77
Superior-Subordinate Relations	24	1.79	7.29	1.26	.83	.85
Performance and Effort on the Job	24	1.79	7.15	.86	.23	.25
Bearing, Appearance, Marching, and Military Courtesy	24	1.79	6.15	1.23	.83	.84
Pride in Unit, Army, and Country	24	1.79	6.92	1.32	.78	.80
Use of Time During Off-Duty Hours	24	1.79	6.92	.94	.79	.81
Overall Morale*	21	1.76	7.10	.93	.89	.90

*In this table and elsewhere in Chapter 6, Overall Morale refers to a global rating of each unit's morale made after the rater completed his evaluations using the behaviorally anchored morale scales.

Table 6.2

Means, Standard Deviations, and Interrater Reliability
of Morale Ratings (Battalion Level Ratings Only)

<u>Dimension</u>	<u>N</u>	<u>K</u>	<u>Mean</u>	<u>S.D.</u>	<u>Reliability</u>	<u>2-rater Reliability</u>
Community Relations	25	1.92	7.32	1.49	.88	.89
Teamwork and Cooperation on the Job	25	1.92	7.06	1.19	.37	.38
Reactions to Adversity	25	1.92	6.20	1.29	.52	.54
Superior-Subordinate Relations	25	1.92	6.84	1.45	.54	.55
Performance and Effort on the Job	25	1.92	6.66	1.07	.36	.37
Bearing, Appearance, Marching, and Military Courtesy	25	1.92	5.80	1.08	.15	.16
Pride in Unit, Army, and Country	25	1.92	7.16	1.07	.08	.09
Use of Time During Off-Duty Hours	25	1.92	6.92	1.42	.86	.86
Overall Morale	22	1.91	6.64	1.36	.82	.83

Table 6.3

Means, Standard Deviations, and Interrater Reliability
of Morale Ratings (All Raters)

<u>Dimension</u>	<u>N</u>	<u>K</u>	<u>Mean</u>	<u>S.D.</u>	<u>Reliability</u>	<u>2-rater Reliability</u>
Community Relations	25	3.64	7.37	1.02	.70	.57
Teamwork and Cooperation on the Job	25	3.64	7.15	.76	.39	.26
Reactions to Adversity	25	3.64	6.22	.82	.29	.19
Superior-Subordinate Relations	25	3.64	7.01	1.09	.55	.40
Performance and Effort on the Job	25	3.64	6.84	.74	.42	.28
Bearing, Appearance, Marching, and Military Courtesy	25	3.64	5.94	.89	.50	.36
Pride in Unit, Army, and Country	25	3.64	7.02	.97	.54	.40
Use of Time During Off-Duty Hours	25	3.64	6.87	.75	.24	.15
Overall Morale	25	3.15	6.83	1.07	.71	.61

Standard deviations of the ratings obtained in the National Guard are generally lower than those obtained in the regular Army. Raters did not discriminate as well among different levels of morale for National Guard companies as for regular Army units in Korea and Germany. Again, it is possible that the true morale of these National Guard units was more homogeneous, but a more likely explanation for relatively low standard deviations is that raters succumbed somewhat to the restriction of range error.

Table 6.4 displays the intercorrelations among morale scales and the Division level estimate of each company's overall morale. The median intercorrelation among the eight behaviorally anchored morale scales is .62.

Since the magnitude of the relationships among scales is greater than the reliability of most scales, it appears that considerable halo is present in the ratings. This result is compatible with results obtained in the regular Army. Apparently, many raters have difficulty assigning morale ratings which reflect substantial variance across the various scales for individual companies. Table 6.4 also indicates that significant, though modest, relationships exist between high level (Division) estimates of company morale and ratings of morale using our scales.

In summary, reliability for our scales used to evaluate morale in National Guard units was adequate for some dimensions but unacceptably low for others. One problem seemed to involve disagreement across rater level (i.e., battalion and company level). Company level raters and battalion level raters could agree among themselves within level, but agreement in the morale ratings was lower across level. Mean morale ratings were somewhat higher and standard deviations larger for these data compared with regular Army results. And, finally, morale ratings appeared affected by the halo error to a considerable extent.

Questionnaire Data Analysis

Within this analysis, clues are sought about the structure of the motivation/satisfaction domain in the National Guard. The questionnaire booklet used in AADCOM-Germany (except for ARI instruments and certain changes described in the footnote on page 222) was administered to 126 soldiers in three separate batteries within the Minnesota National Guard. As with the AADCOM (Germany) data analysis, 46 motivation, satisfaction, and self-report morale variables were then intercorrelated and the correlation matrix was subjected to a factor analysis. The factors extracted were then rotated using the varimax criterion to facilitate interpretation. Several solutions were attempted (2-6 factors). The most readily interpretable was a six-factor solution. Table 6.5 displays the loadings of each variable on the six-varimax rotated factors. Unfortunately, a number of the factors are difficult to label. Below is an attempt to name the six factors along with the percent of variance accounted for by each factor:

Table 6.4

Intercorrelations Among Morale Scales and
the Division Level Morale Rating

<u>Variable</u>	1	2	3	4	5	6	7	8	9	10
1. Community Relations										
2. Teamwork and Cooperation on the Job	55									
3. Reactions to Adversity	48	70								
4. Superior-Subordinate Relations	75	54	57							
5. Performance and Effort on the Job	41	76	69	50						
6. Bearing, Appearance, Marching, and Military Courtesy	31	42	44	63	62					
7. Pride in Unit, Army, and Country	55	72	80	69	73	61				
8. Use of Time During Off-Duty Hours	61	51	44	71	65	75	64			
9. Overall Morale	64	65	63	70	77	71	75	86		
10. Division Morale Rating	43	18	13	30	32	41	28	50	43	

Table 6.5

Results of Varimax Rotation Applied to Factor Analysis
of Questionnaire Data for National Guard (46 variables)

<u>Variables</u>	<u>Factors</u>					
	I	II	III	IV	V	VI
Valence	-.09	-.15	-.86	-.02	.00	-.07
Expectancy	-.44	.05	-.46	-.27	.24	-.56
Valence x Expectancy	-.37	-.04	-.73	-.15	.15	-.39
Patchen	-.64	.18	-.34	-.11	-.07	-.18
MSQ Total Satisfaction	-.66	-.17	.02	-.13	-.02	-.55
MSQ Intrinsic Satisfaction	-.70	-.14	.02	-.07	-.03	-.41
MSQ Extrinsic Satisfaction	-.49	-.13	.04	-.24	-.06	-.69
Brayfield-Rothe Satisfaction	-.78	-.02	-.09	-.12	-.06	-.41
Prior Expectancy About Army Life	-.56	-.14	-.13	-.32	.00	-.55
S.O.O. Supervisory Support	-.24	-.26	-.15	-.01	.08	-.76
S.O.O. Supervisory Goal Emphasis	-.17	-.29	-.09	-.04	.54	-.46
S.O.O. Peer Support	-.11	-.78	-.11	.14	.17	-.14
S.O.O. Peer Goal Emphasis	-.38	-.49	-.05	.12	.12	-.13
S.O.O. Overall Satisfaction	-.43	.15	-.16	-.41	-.44	-.59
Cureton Job Satisfaction	.79	.11	.03	.10	-.04	.36
Cureton Community	.54	.15	-.02	.29	-.12	.10
Cureton Army as a Whole	.69	-.02	.29	.41	.05	.39
Cureton Communications	.54	-.09	.15	.37	-.33	.49
Cureton Item No. 18 (AADCOM Item No. 9)	.35	.20	.12	.42	-.13	.34
Cureton Item No. 29 (AADCOM Item No. 15)	.42	.11	.00	.23	-.13	.31
Cureton Item No. 33 (AADCOM Item No. 17)	.46	.25	.28	.20	.14	.18
Cureton Item No. 51 (AADCOM Item No. 32)	.68	-.14	.32	.37	-.01	.18
Cureton Item No. 58 (AADCOM Item No. 37)	.12	-.40	-.06	.07	-.12	-.01
Cureton Item No. 70 (AADCOM Item No. 43)	-.50	-.11	-.08	-.47	-.12	-.30
JDI Work	-.07	-.15	-.15	-.13	.01	-.41
JDI Supervision	-.43	-.25	-.02	-.16	.03	-.69
JDI Pay	-.08	.07	-.11	-.14	.05	-.08
JDI Promotions	-.26	.21	-.16	-.25	.01	-.57
JDI Co-workers	-.17	-.73	.06	-.11	.07	-.04
Sears Supervision	-.34	-.13	-.15	-.12	-.07	-.68
Sears Kind of Work	-.66	-.03	-.31	.01	-.06	-.33
Sears Co-workers	-.31	-.42	-.32	.00	.07	-.23
Sears Financial Rewards	-.30	.08	-.12	-.65	.01	-.01
Self-Rating of Effort	-.65	.10	-.35	-.04	.02	-.15
Self-Rating of Performance	-.53	-.13	-.26	.30	-.22	.03
Worthwhile to Try Hard (Self-Report)	-.65	.02	-.31	-.38	.07	-.19
Self-Rating of Effectiveness	-.19	-.06	-.61	-.11	-.23	-.01
Own Morale	-.56	-.09	-.22	-.48	-.12	-.22
Unit Morale	-.27	-.21	.12	-.45	-.03	-.34
S.O.O. Item No. 1 (Satisfaction with Co-workers)	.19	-.69	.03	-.23	-.17	-.08
S.O.O. Item No. 2 (Satisfaction with Supervisor)	-.16	-.05	-.10	-.09	-.15	-.80
S.O.O. Item No. 3 (Satisfaction with Job)	-.65	-.13	-.04	-.11	-.23	-.43
S.O.O. Item No. 4 (Satisfaction with Army)	-.58	.14	-.16	-.38	-.09	-.27
S.O.O. Item No. 5 (Satisfaction with Pay)	.04	-.05	.04	-.68	-.26	-.21
S.O.O. Item No. 6 (Satisfaction with Progress)	-.25	-.09	-.21	-.16	-.67	-.37
S.O.O. Item No. 7 (Satisfaction with Getting Ahead in the Army)	-.43	-.01	-.23	-.25	-.37	-.52

- I Job Satisfaction; Overall Satisfaction with the Army, Motivation and Performance; Satisfaction with Community and Communications (22 percent)
 - II Satisfaction with Co-workers (6 percent)
 - III Motivation and Effectiveness; Valence-Expectancy Specific (7 percent)
 - IV Satisfaction with Pay (9 percent)
 - V Satisfaction with Progress and with Supervisory Goal Emphasis (4 percent)
 - VI Satisfaction with Supervisors and Promotions (16 percent)
- (Total variance accounted for = 64 percent)

Clearly the factor structure is not as "clean" as the structures obtained both in Seventh and Eighth Army samples. The first factor cuts across a number of the factors which emerged individually in regular Army factor analyses. Variables measuring motivation, overall satisfaction with Army, and satisfaction with supervisors fail to "break out" separately in this solution. It seems likely that the structure of the satisfaction and motivation domains is considerably different in the National Guard compared with the structure of these domains in the regular Army. Of course, it is also possible that the small sample of units caused these results to deviate from regular Army factor analysis results.

Investigating the Relationships Between Unit Morale Ratings and Questionnaire Booklet Variables

Efforts to determine the relationship between unit morale and variables representing the motivation/satisfaction domain in the National Guard are discussed in this section. Also reported are efforts to investigate relationships between morale and self-report criteria. Morale ratings were obtained for the three batteries in our sample using the behavior-based format described in an earlier section of this report. Then, 14 trend component analyses were used in which the independent variable was unit morale in each case, and the dependent variables were derived from the motivation/satisfaction domain and self-report criteria contained in the questionnaire booklet. That is, each trend analysis tested for group differences on one of the 14 dependent variables where the "groups" were batteries standing either high, medium, or low in morale based on the morale ratings obtained using our scales.

Linear effects were tested essentially by comparing group means of the high and low morale batteries (equivalent to a "t" test). Quadratic effects were tested by comparing the means of the batteries high and low in morale with the mean of the battery possessing an intermediate level of morale. Although the number of units entering into the trend component analyses is extremely small, it was hoped some indication of the manner in which unit morale related to other variables at the company/battery level in the National Guard could be derived.

Since the factor analysis of motivation/satisfaction variables yielded few psychologically meaningful factors, only constructs which were relatively well represented in the factor analysis were selected as dependent variables for the trend component analyses. Therefore, Satisfaction with Pay, Co-workers, and Supervisors were formed using variables identical to the ones used in developing regular Army constructs. For continuity with Seventh and Eighth Army analyses, three additional variables were selected to represent respectively the Motivation, Job Satisfaction, and Overall Satisfaction constructs. In addition, a number of self-report criteria were included as dependent variables in this analysis.

Before performing the trend component analyses, it was necessary to confirm, using our rating scales, the morale levels of the three batteries participating in this portion of the study. A senior officer at battalion level familiar with all three batteries provided evaluations of the three batteries, and battery commanders provided morale ratings of their own batteries. In addition, the executive officers of two of the batteries provided ratings for their own batteries only. The results in Table 6.6 provide an independent confirmation of the rank order of batteries (in morale) estimated by a senior officer at Division level. Battery 1 is consistently rated higher in morale than Battery 2, which is in turn consistently rated more highly than Battery 3. Thus, an estimate of the linear effect in each trend component analysis was formed by comparing the mean dependent variable score for Batteries 1 and 3. A quadratic effect was estimated by comparing mean scores for Batteries 1 and 3 taken together against the mean dependent variable score for Battery 2.

Results of the trend component analyses appear in Table 6.7. Only one linear comparison is significant at the .05 level or better. Soldiers in Battery 1 rated their unit's morale significantly higher than did Battery 3's soldiers, which corresponds to the way raters evaluated these units' morale using our morale scales. This result provides a certain degree of convergent validity for the morale scales in terms of their use in the National Guard. However, results within the quadratic effects column of Table 6.7 detract from this positive finding. Three variables, including Unit Morale, possess a significant curvilinear relationship with the morale ratings. Inspection of the group means reveals that in terms of Unit Morale and Satisfaction with Co-workers, Battery 1 does stand highest of the three, but that Battery 2 stands considerably below Battery 3 on these two variables. For the Satisfaction with Supervisors dependent variable, the rank order is 3-1-2 (high to low) with respect to the means for Batteries 1, 2, and 3 on this construct.

Table 6.6

Mean Morale Ratings for the Three Batteries
Whose Soldiers Completed the Questionnaire Booklet
(1 = low, 9 = high)

	<u>Mean Overall Morale Rating</u>		<u>Mean Rating Across Eight Morale Dimensions</u>	
	Battalion Level	Company Level	Battalion Level	Company Level
1	8.0	6.5	7.6	6.7
2	7.0	6.0	7.5	5.9
3	5.0	5.0	4.9	4.9

Table 6.7

Trend Component Analysis Results Describing
Relationships Between Unit Morale and Selected Variables

<u>Variable</u>	<u>p Value Linear Hypothesis</u>	<u>p Value Quadratic Hypothesis</u>
Satisfaction with Co-workers	.26	.03
Valence x Expectancy (Motivation)	.99	.09
Satisfaction with Pay	.34	.68
Satisfaction with Supervisors	.28	.0002
Brayfield-Rothe (Job Satisfaction)	.10	.12
Army as a Whole--Cureton (Overall Satisfaction)	.20	.11
Own Morale	.32	.20
Unit Morale	.05	.0006
Pride in the Army	.71	.59
Self-perceived Performance	.35	.59
Self-perceived Effectiveness	.15	.83
AWOLs Last Year	.43	.79
Article 15s Last Year	.51	.20
Plans to Re-enlist	.92	.38

Unfortunately, the small number of batteries in this analysis precludes a stable estimate of the relationships between rated morale and the 14 selected variables. If a single battery's morale is rated invalidly, the results of the trend component analyses are affected drastically. It may be, for example, that officer raters within this portion of the study overestimated the morale of Battery 2. This "error" would account for the highly significant quadratic effect for the Unit Morale variable. At any rate, these analyses provide few clues about the correlates of morale ratings at the company/battery level in the National Guard. Because the results indicate little evidence of convergent validity for the morale ratings (of these three batteries), it is difficult to assess the relationships between these unit morale ratings and other variables at the battery level. That is, since we cannot be assured, given these results, that the morale ratings are accurately tapping battery morale within these three units, assessing the relationship between these ratings and other variables becomes quite risky.

More research is needed to obtain a stable estimate of the structure of motivation, morale, and various facets of satisfaction in the National Guard. Before rejecting variables used successfully to measure these constructs in the regular Army, or before eliminating from consideration other variables potentially useful for describing these domains in the National Guard, we suggest that a larger number of National Guard soldiers and units serve as a sample in a correlational study similar to the one conducted in Germany. This study would provide more conclusive information about the relationships among motivation, morale, and satisfaction in the National Guard and would identify variables most relevant for measuring constructs shown to be meaningful within these domains.

CHAPTER VII

SUMMARY OF RESULTS AND RECOMMENDATIONS TO THE ARMY

The Measurement of Motivation, Satisfaction, and Morale in the United States Army: Construct Validation

Efforts to construct validate a number of motivation and satisfaction measures within the framework of a structure which emerged from the literature review and subsequent data analyses are discussed first in this section. Then the "status" of the unit morale rating scales is described and evidence for their construct validity is examined.

At the outset of the study, the literature review suggested facets of satisfaction and motivation potentially meaningful for describing a soldier's standing within these domains. As a result, researchers selected a number of instruments containing scales and items conceptually related to the appropriate satisfaction and motivation domains. A number of scales were developed for this purpose, as well. Then, a questionnaire was constructed containing the selected and developed instruments along with a number of self-report criterion items (such as AWOLs, Article 15s), and a variety of demographic questions. The questionnaire was pretested in Korea--using Eighth Army troops--and a revised questionnaire was prepared for the main administration in the Eighth Army, Korea.

The questionnaire booklet was administered to 466 EM in 104 platoons and 16 companies within the Eighth Army. Variables from the questionnaire representing various aspects of satisfaction and motivation were subjected to a factor analysis using Eighth Army data. The six-factor varimax-rotated solution suggested five psychologically meaningful factors:

- I General Satisfaction and Satisfaction with Extrinsic Considerations such as Communications, Promotions, Pay, and the Community
- II Satisfaction with Co-workers
- III Motivation, Performance, and Effectiveness
- IV Satisfaction with the Job
- V Satisfaction with Supervisors

Except for the absence of a pay satisfaction factor, this result largely confirmed an a priori identification of separate constructs potentially measurable within the motivation/satisfaction domain. At this point, PDI elected to work temporarily with a six-construct framework based primarily on the factor analysis results, but including satisfaction with pay because of its conceptual importance.

Using a number of criteria, scales and items from the questionnaire were screened for inclusion in unit weighted composite construct variables. Criteria for selection included conceptual appropriateness, factor loadings on the factor analysis just discussed, high correlations with other variables conceptually related to the same construct, and low correlations with variables conceptually related to other constructs. Using these and other criteria, 22 questionnaire variables were selected to represent the six constructs. A multiconstruct-multimethod matrix developed using these 22 variables was formed to assess the convergent and discriminant validity attained in measuring the six separate motivation and satisfaction construct measures.

Substantially the same questionnaire was administered to 614 soldiers in the Seventh Army in Germany. Results largely confirmed Eighth Army findings. A factor analysis of the variables measuring the satisfaction, motivation, and morale domains contained a structure very similar to the one formed using Eighth Army data. A six factor-varimax rotated solution provided the following factors:

- I General Satisfaction; Overall Satisfaction with the Army;
Satisfaction with Community and Communications; Morale
- II Motivation, Performance and Effort
- III Satisfaction with Supervisors
- IV Satisfaction with the Job
- V Satisfaction with Co-workers
- VI Satisfaction with Pay

Except for the addition of pay satisfaction as a separate factor, the results here were virtually identical to the Eighth Army factor solution.

The next step in analyzing Seventh Army questionnaire data was to place in a multiconstruct-multimethod matrix the 22 variables used in Korea to represent the six motivation/satisfaction constructs. This step provided a test of the consistency across sample of the construct composites' convergent and discriminant validity. That multiconstruct-multimethod matrix provided evidence for the generality of such a six-construct framework. Results using Seventh Army data were very similar to the results obtained using Eighth Army data. Thus, convergent and discriminant validity were obtained in a separate sample for the six-construct system developed from Korea data.

A final step in selecting variables to represent the constructs was to examine Seventh Army questionnaire results using the same criteria used earlier with the Korea sample for variable selection. Nineteen variables stood favorably on criteria applied both to Seventh and to Eighth Army (Korea) data. These 19 variables were almost identical to the 22 variable set (three were dropped, one moved to a different construct) selected using Eighth Army results. Thus, the final set of 19 variables provide our best estimate of the measures most likely to represent adequately the six-construct domain in the regular Army. Overall, it appears that the 19-variable/six-construct structure provides a consistent, conceptually meaningful and empirically valid framework to represent the motivation and satisfaction domains of U. S. Army troops.

Another major research thrust within this project was to develop and field test a measure of unit morale. To accomplish this goal, PDI researchers used the Behavior Observation Scale methodology to gather from National Guard and Eighth Army junior enlisted men, NCOs, and officers behavioral examples of units exhibiting various levels of morale. Behaviorally anchored rating scales were then developed based on the content of behavior examples gathered. These scales were administered to officers and NCOs in the Eighth Army to assess the scales' operational effectiveness for reliably and validly measuring the morale of company and platoon-sized units. The morale scales were revised somewhat based on input from soldiers in the Seventh Army and then used to evaluate the morale of Seventh Army platoons and companies. These experimental field ratings in Korea and Germany allowed for an assessment of the scales' operational performance on a number of criteria.

First, since more than one rater generally evaluated the morale of each unit, the scales' interrater reliability could be estimated. Results from Eighth Army data suggested that the interobserver reliability for company ratings was adequate (median $R_1 = .82$). Platoon level reliability was lower (average R_1 approximately .40). Seventh Army results were more promising with respect to interrater agreement at platoon level, but company level morale ratings provided lower reliabilities than those obtained in Korea (median R_1 s .56 and .45, respectively). Thus, reliability results were mixed. Company level-Korea and platoon level-Germany interobserver reliability seemed adequate, but interrater agreement in the other two settings was marginal.

Examining the intercorrelations among morale scales yielded clues about how different the various aspects of morale really may be in the Army. Although conceptually each of the eight dimensions can be clearly differentiated from other dimensions, empirically the interrelationships among scales was high. High intercorrelations among dimensions imply either that raters are succumbing to the halo error or that the various aspects of morale represented in the scales are, in fact, highly correlated. At any rate, little evidence is present in these data supporting the contention that we measured separately and uniquely a number of different facets of morale. Therefore, much of the subsequent construct validation of the morale scales was focused on the measurement of overall morale as a construct.

The main thrust of the construct validation effort was to investigate the convergent and discriminant validity of the morale ratings. The strategy was to assess convergent validity by investigating the correlations between unit morale ratings and soldiers' evaluations of their unit's morale, and to assess discriminant validity by comparing the magnitude of those correlations with the magnitude of correlations between rated morale and other variables in related domains. Table 7.1 summarizes the relevant data.

Both at platoon and company level, in Korea and in Germany, at least moderate convergent validity is present. Three of the four correlations between overall morale (ratings) and soldiers' self-reported unit morale are significant at the .05 level or better. The relatively low (.24) relationship between these variables in the Eighth Army platoon level analysis may be due to the sampling problems occurring for platoons in Korea or may reflect the comparatively low reliability ($R_1=.49$) obtained for those morale ratings. Still, these results suggest at least some convergent validity derived from two very different methods of estimating unit morale.

An idea of the morale scales' discriminant validity can be obtained by examining the comparative magnitude of correlations in the first row of Table 7.1 with the magnitude of correlations appearing in rows 2-7. Correlations between morale ratings and self-reported unit morale are always greater than correlations between morale ratings and motivation/satisfaction variables. This result is especially impressive because aspects of satisfaction and motivation seem conceptually very similar to morale as a construct. Consequently, these results suggest that unit morale can be measured as a construct separate from satisfaction or motivation.

The Nature of Morale

To assess the nature of unit morale, correlates of rated and self-reported morale will be discussed. Tables 7.2 and 7.3 summarize the highest correlations between unit morale and variables measuring motivation/satisfaction constructs and various criteria used in the study. In terms of the relationships with motivation/satisfaction constructs, Overall Satisfaction with the Army and Satisfaction with Communications appear to be the most consistently high correlates of unit morale. Although unit morale is measured uniquely as a construct in these data, Overall Satisfaction with the Army and Satisfaction with Communications probably most nearly describe the nature of platoon or company morale in terms of constructs more commonly measured.

Table 7.1
Convergent and Discriminant Validity Evidence
For Unit Morale Ratings

	Eighth Army (Korea)		Seventh Army (Germany)	
	Platoon Level (N = 56)	Company Level (N = 14)	Platoon Level (N = 47)	Company Level (N = 16)
Correlation between overall morale (ratings) and self- report unit morale	.24*	.71***	.13***	.54***
Correlations between overall morale (ratings) and:				
Motivation	.04	.12	.16	.05
Overall satisfaction with Army	.04	.54*	.36***	.49*
Satisfaction with the job	.08	.04	.19	.24
Satisfaction with supervision	.10	.42	.19	.05
Satisfaction with co-worker	.14	.35	.00	-.35
Satisfaction with pay	.00	.19	.13	.11

* p < .10

** p < .05

*** p < .01

Table 7.2
Highest Correlates of Unit Morale Among Motivation/Satisfaction
Variables Used in Platoon and Company Level Analysis

	Overall Satisfaction with Army	Satisfaction with Communications	Satisfaction with Supervisors	Satisfaction with Job
Platoons Korea				
Unit Morale Ratings*	.04	.15	.10	.08
Unit Morale Self-report	.33	.42	.26	.18
Companies Korea				
Unit Morale Ratings	.54	.57	.42	.04
Unit Morale Self-report	.74	.77	.64	.34
Platoons Germany				
Unit Morale Ratings	.36	.24	.13	.13
Unit Morale Self-report	.72	.74	.37	.64
Companies Germany				
Unit Morale Ratings	.49	.37	.05	.24
Unit Morale Self-report	.93	.81	.37	.31

*For Eighth Army (Korea) ratings, these are the sum of ratings on individual dimensions; for Seventh Army (Germany) ratings, these are ratings on "overall morale" made after completing ratings on individual dimensions.

Table 7.3

Highest Correlates of Unit Morale
Among Criterion Variables

	Plans to Reenlist	Unit Effec- tiveness	Pride in Army	Self-perceived Effectiveness	EM Awards	VD Rating
Platoons Korea						
Unit Morale Ratings*	.14	.18	.04	.09	--	-.41
Unit Morale Self-report	.34	-.07	.37	.27	--	-.12
Companies Korea						
Unit Morale Ratings	.44	--	.39	.49	--	--
Unit Morale Self-report	.73	--	.68	.64	--	--
Platoons Germany						
Unit Morale Ratings	.33	.81	.10	.29	--	--
Unit Morale Self-report	.63	.24	.59	.41	--	--
Companies Germany						
Unit Morale Ratings	.35	.86	.14	.31	.48	--
Unit Morale Self-report	.67	.67	.65	.47	.68	--

*For Eighth Army (Korea) ratings, these are the sum of ratings on individual dimensions; for Seventh Army (Germany) ratings, these are ratings on "overall morale" made after completing ratings on individual dimensions.

Clues about what troops think of as "morale" can be derived from examining the correlations between self-report unit morale provided by the troops and the various aspects of morale as measured by using the morale rating scales. Unfortunately, no clear, consistent pattern emerges. In Korea, Bearing and Appearance, Reaction to Adversity, and Superior-Subordinate Relations relate most highly to self-report unit morale at platoon level while Teamwork and Cooperation and Reaction to Adversity related best at the company level. In Germany, Pride in Unit, Army, etc. is the highest correlate by far at the platoon level, and this aspect of morale shared that distinction with Superior-Subordinate Relations at the company level.

In terms of criteria relating substantially to morale, generally different criteria relate significantly to morale depending on the sample. Taking the effect of common method variance into account, Plans to Re-enlist, Pride in the Army and Self-perceived Effectiveness relate most consistently with unit morale in Korea. In Germany, Unit Effectiveness, Participation in Drives, and Plans to Re-enlist most consistently correlate with unit morale. Also, EM Awards relates well to company level morale measured both by self-report and by ratings. Since this variable was measured only in Germany at company levels, it must be regarded as potentially a consistently high correlate of unit morale.

Overall, however, the relationship between unit morale and criterion measures is not strong. Of course, the low correlations may reflect inadequate criterion measures. For example, agreement between administrative and self-report criteria indexing the same variable (e.g., AWOLs or Article 15s) was moderate at best suggesting that one or both sets of criteria were measured poorly. Therefore, no firm conclusions can be reached presently about the relationship between unit morale and various criteria.

Attempts to Measure Motivation, Satisfaction, and Morale in the National Guard

To recap results using National Guard data, first the reliability of the morale rating scales for evaluating company level morale was found to be adequate for half of the dimensions, but disappointingly low for the other half of the dimensions. The level of interrater reliability was somewhat higher than the reliability obtained at platoon level-Korea or company level-Germany. Reliability of ratings from the company level and ratings from the battalion level assessed within level was considerably higher, suggesting that raters from the same level saw the morale of units under them much more similarly than did raters from different organizational levels. No particular problems were noted with respect to the leniency or restriction of range errors, but the ratings appeared to reflect a severe halo bias based on the magnitude of dimension intercorrelations compared with the reliabilities for each dimension.

In addition, the structure of the motivation/satisfaction domain in the National Guard appears different than that found in the regular Army based on data gathered in these three batteries (126 soldiers) in the Minnesota National Guard. A factor analysis of motivation/satisfaction questionnaire variables yielded a solution only vaguely similar to solutions generated from Seventh and Eighth Army data.

Finally, a series of trend component analyses was performed to assess the convergent validity of the morale rating scales and to provide clues about relationships between unit morale and other variables at the company/battery level in the National Guard. A small degree of convergent validity was derived from a significant ($p < .05$) linear effect discovered for the dependent variable, self-report unit morale where rated unit morale was the independent variable within the trend component analysis. However, the highly significant quadratic effect for the self-report unit morale variable cast a shadow on that evidence for convergent validity. Doubt about the validity of the morale ratings for these three batteries, along with problems associated with the small number of units, made it difficult to obtain dependable information about the relationship between unit morale ratings and motivation/satisfaction and self-report criterion variables from the questionnaire booklet.

It was suggested that further research be conducted to provide more information on the structure of motivation, morale, and satisfaction in the National Guard. A correlational study similar to the one conducted in Germany should result in a reasonable framework for the motivation, morale, and satisfaction domains and should enable researchers to select variables to represent relevant constructs describing these domains. Then the relationship among these constructs and between these constructs and important criteria can be studied more in depth.

Recommendations to the Army

The above summary of results from our studies of morale, motivation, and satisfaction among Army enlisted personnel may seem somewhat sparse in view of the extensive analyses we carried out. However, the analyses do converge meaningfully on certain sets of consistent findings bearing on the future use of these inventories and rating scales for auditing morale, satisfaction, and motivation of Army troops. Here are our recommendations for steps to be taken in implementing uses of these measures in the Army:

1. Modify the format of the morale rating scales. The dimensions of morale discovered from the workshops held in Korea, Germany, and with National Guard units were shown to be conceptually independent of each other. Both officers and enlisted personnel showed good agreement in classifying behavioral episodes into the conceptually distinct areas of:

- . Community Relations
- . Teamwork and Cooperation
- . Reactions to Adversity
- . Superior-Subordinate Relations
- . Performance and Effort
- . Bearing, Appearance and Military Discipline
- . Pride in Unit, Army, and Country
- . Use of Off-Duty Time

Yet, the ratings on scales developed to evaluate unit morale in the above eight areas showed disappointingly high intercorrelations in all settings and at both platoon and company levels.

We believe the scales required an excessive amount of reading time and that the great specificity of incidents used to define scale points may have made it difficult for raters to discern and utilize the underlying unidimensionality of the scales.

Scales using the same morale dimensions, the same generalized definitions, but with defining statements shortened and stated more generally (but still behaviorally) should be developed. We believe that this simplified format will yield ratings showing higher interrater agreements and lower interdimensional correlation. These Army Unit Morale Rating Scales should then be made available for operational use in the Army as suggested in recommendation 4 below.

2. Use the behavioral content of the morale rating scales to develop improved self-report measures of morale. As we have noted in previous pages, the behavioral episodes generated by our workshop participants provide a rich pool of information for describing what actually happens in units with different levels of morale across the various facets. The information should be used to develop and pretest more sophisticated self-report observation scales describing what a soldier sees happening in his or her own unit. We recommend that each of the eight facets of morale be measured with a scale consisting of five to seven behavioral statements chosen to conform to properties of a Guttman scale. These Soldier Unit Morale Report Scales should then be made available for operational use in the Army as suggested in recommendation 4 below.
3. Standardize thirteen inventories for use in measuring Army satisfaction and motivation. The most clear-cut finding in our research was the distinct definition of the six satisfaction and motivation constructs shown in Tables 4.21 (page 129) and 5.15 (page 194). We recommend that the nineteen measures making up those constructs be reduced further to thirteen and

that these be incorporated into a single inventory, The Army Opinion Inventory, to be made available for operational use in the Army as suggested in recommendation 4 below.

We recommend that the following thirteen measures be retained for use in the Army Opinion Inventory.

<u>Measure</u>	<u>Construct</u>
1. Valence-Expectancy	Motivation
2. Self-Rating of Effort	Motivation
3. Prior Expectancy	Overall Satisfaction with the Army
4. Satisfaction--Army as a Whole (Cureton)	Overall Satisfaction with the Army
5. Brayfield-Rothe	Satisfaction with the Job
6. JDI--Work	Satisfaction with the Job
7. Sears--Kind of Work	Satisfaction with the Job
8. S.O.O. Supervisory Support	Satisfaction with Supervision
9. JDI Supervision	Satisfaction with Supervision
10. S.O.O. Peer Support	Satisfaction with Co-workers
11. JDI Co-workers	Satisfaction with Co-workers
12. JDI--Pay	Satisfaction with Pay
13. S.O.O. Item Satisfaction with Pay	Satisfaction with Pay

The above recommendations are made in the interest of conserving administration time and inventory length. If these factors are not controlling, we would still recommend using all nineteen measures shown in Table 5.14 (page 193).

4. Establish a formal audit procedure to evaluate Army motivation, morale and satisfaction on a continuing basis. The three instruments mentioned in recommendations 1, 2, and 3 (Army Unit Morale Rating Scales, Soldier Unit Morale Report Scales, Army Opinion Inventory) should be used in a continuing audit of Army personnel and Army units throughout the world. Our research showed clearly that our morale rating scales in concert with self-reported unit morale produce a clearly differentiated construct of morale in contrast with conceptually rather similar constructs of satisfaction and motivation.

We expect that the simplified and improved scales flowing from our recommendations 1 and 2 will produce this morale construct in an even more fully differentiated manner.

The use of these morale, motivation, and satisfaction instruments, administered systematically and periodically to Army units, will provide a data bank of diagnostic¹ information for comparison with all sorts of other administrative indicators of both individual and unit effectiveness. This diagnostic usefulness will be especially potent for results gleaned from the Unit Morale Rating Scales and the Unit Morale Report Scales because they possess content not only diagnostic but also prescriptive. The prescriptive implications of areas of weakness on the morale scales will, of course, be greatly enhanced by results from the Army Opinion Inventory as the longitudinal data base makes possible an increasing number of analyses yielding causal implications.

- 4a. Use intraclass correlation as a statistical search technique. An important methodological contribution of our studies was our use of intraclass correlation as a method of evaluating the relative magnitudes of different sources of morale, satisfaction, and motivation variance. Decisions about where to focus ameliorative actions in the case of "low" scores on such measures can be greatly aided by determining the relative homogeneity within particular units of the scores being reported. For example, if variance of Pride in Unit as a facet of morale is much greater within units than between units, the "problem" is clearly more likely to reside within individuals than at the level of organizational practices or policies. Different corrective steps would be undertaken under such circumstances than if the "problem" were shown to reside more definitely at the level of unit analysis. Intraclass correlational analyses should, therefore, be carried out (as illustrated by our analyses at platoon and company levels in Korea and Germany) at various levels of unit size in order to pinpoint quite explicitly where initial corrective action may most efficiently be focused.
5. Use the morale measures and the opinion inventory to study civilian job versus Army job orientations among National Guardsmen. These standard ways of measuring work unit morale dimensions and constructs of motivation and satisfaction provide powerful tools for studying relative levels of morale, satisfaction, and motivation shown by

¹See subrecommendation 4a for a methodological recommendation crucial to the use of this information for diagnostic purposes.

Guardsmen in their Army and civilian work units and work settings. Some modifications will need to be made to adapt the instruments for use in describing responses to civilian jobs, but the changes need not be extensive nor are they difficult.

Comparisons between perceptions of National Guard jobs and civilian jobs should be made according to different types of Army jobs, different types of civilian jobs (e.g., professional vs. skilled vs. unskilled, etc.), personal characteristics of Guardsmen (age, education, race, etc.) and patterns of practice and policies descriptive of the Guard work units and civilian employing firms. Results of comparisons of these kinds should provide information relevant to recruiting practices and organization development and orientation activities for National Guard units.

Moreover, the results will also provide useful implications related to the aspects of civilian industry most likely to be competitive with Army career opportunities and decisions made by Army personnel related to such opportunities.

The above recommendations flow directly from the methodological studies carried out during our stages of developing and/or pinpointing scales and inventories for measuring constructs of morale, satisfaction, and motivation in the Army. In a sense, our research effort can be viewed as a kind of large scale "purification" or adaptation of both existing and new measuring instruments for Army use. We feel confident now in recommending, that with some additional simplifying changes, a subset of these instruments is now ready for Army-wide operational use. We believe their use in the ways we have recommended will prove invaluable over the years ahead in providing more complete understanding of both correlates and causal linkages among these measures and between them and other behavioral and administrative outcomes of interest to the Army.

SUPPLEMENTARY

INFORMATION

Errata

AD-A078 444

Appendices will be published as a separate
document later per ARI.

23 July 1982