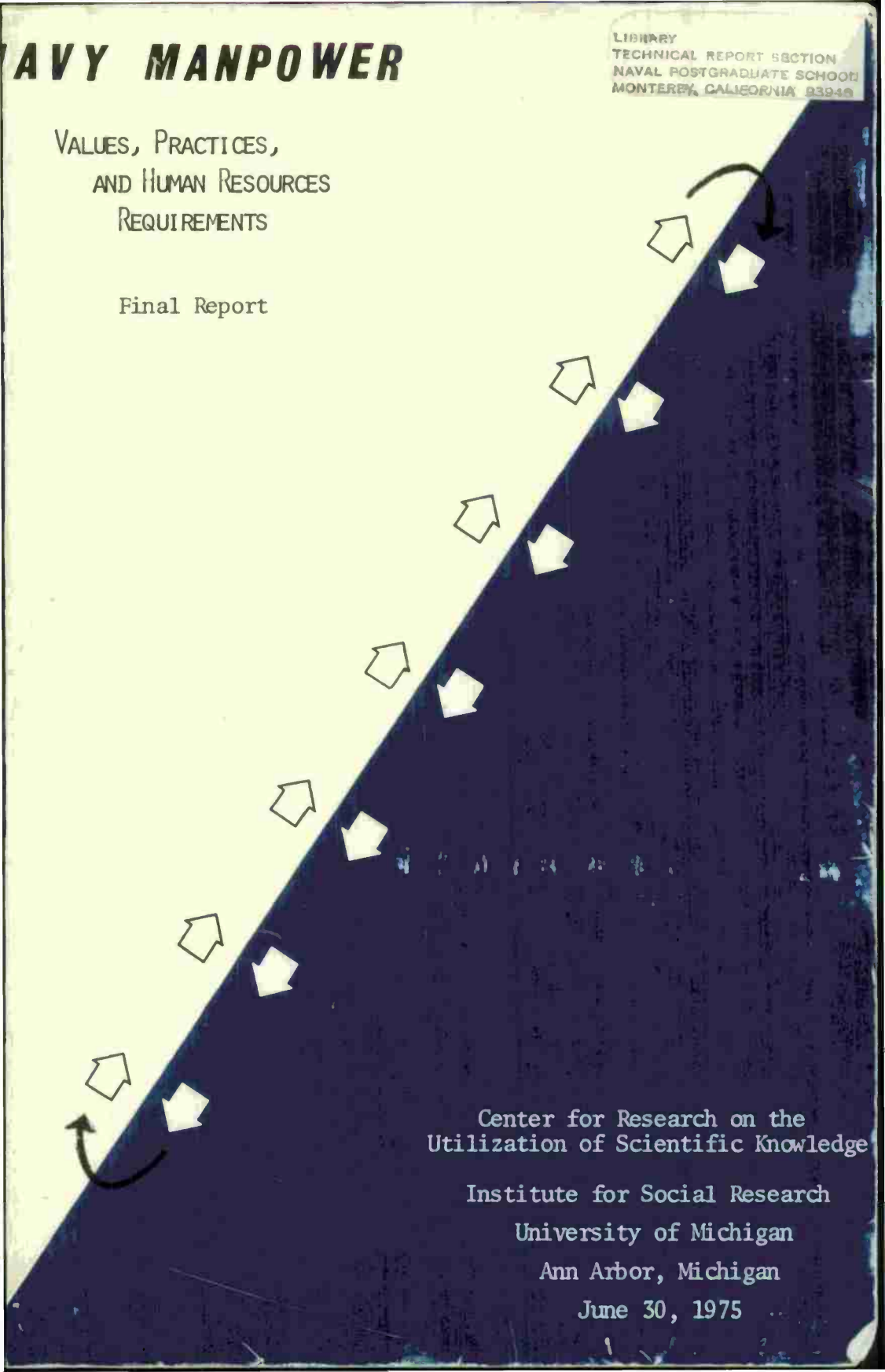


NAVY MANPOWER

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VALUES, PRACTICES,
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Final Report



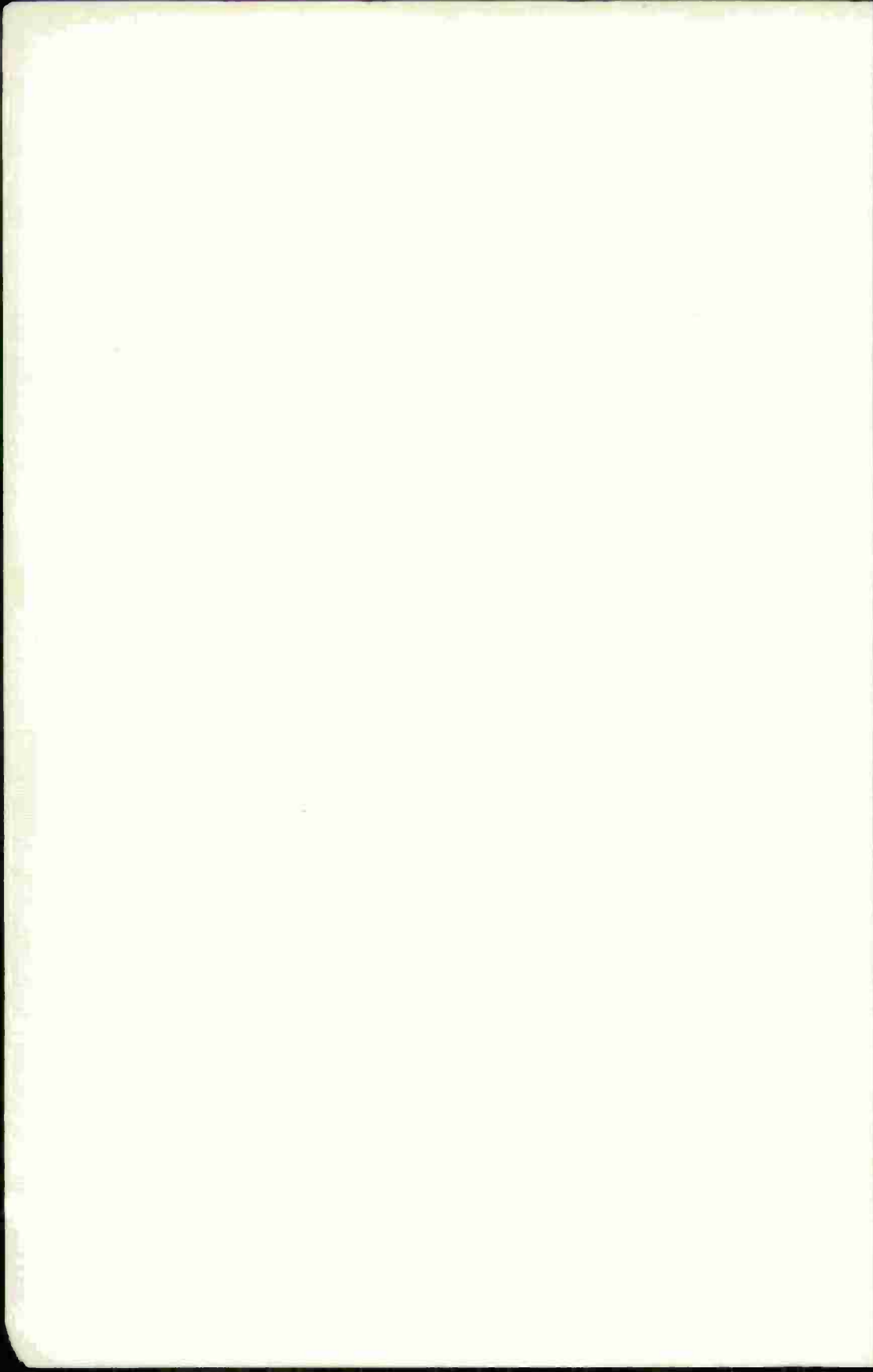
Center for Research on the
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Institute for Social Research

University of Michigan

Ann Arbor, Michigan

June 30, 1975



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technologically sophisticated settings may be erroneous. Finally, a set of compelling, but perplexing, expectation and perception problems are found to underlie race relations and feelings of discrimination among Navy men.

Final Report

NAVY MANPOWER:
VALUES, PRACTICES, AND HUMAN RESOURCES REQUIREMENTS

David G. Bowers

Center for Research on the Utilization of Scientific Knowledge

Institute for Social Research
University of Michigan
Ann Arbor, Michigan

June, 1975

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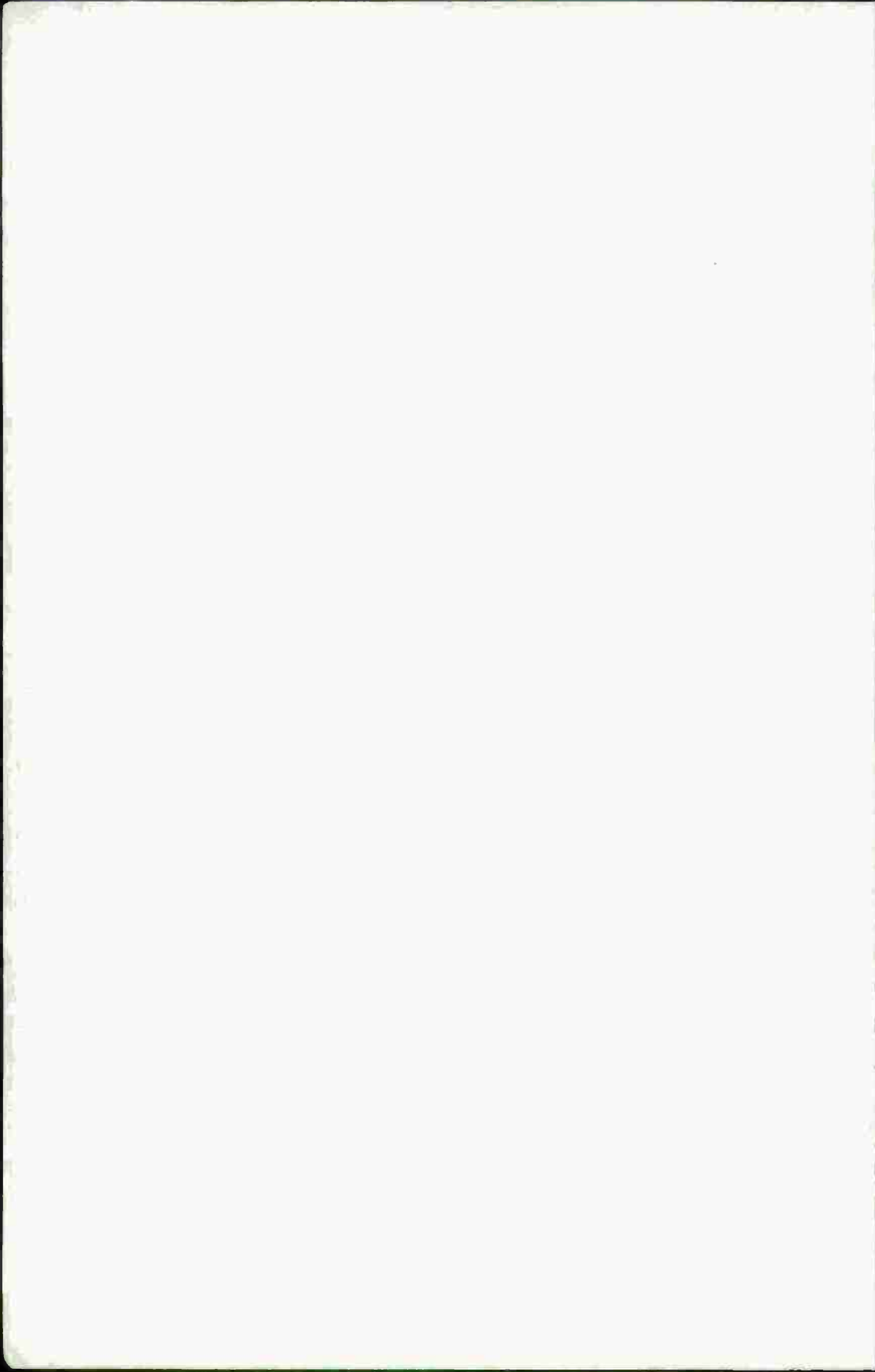


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PREFACE

This is the final report in a series which has been generated by work under contract N00014-67-A0181-0048. As such, it summarizes findings from a study of the implications of possible values changes in society for Navy manpower and management practices. The work reported in the pages which follow reflects the efforts of a large number of persons, many of whom authored one or more of the technical reports in the series. Their labors are gratefully acknowledged.

Parts of this final document appeared in an earlier pre-final technical report, Military Manpower and Modern Values (Bowers and Bachman, 1974). The material concerning national issues perceptions and preferences, summarized in that earlier document, is not treated in the present report, on the grounds that work since January, 1974, has been concerned almost exclusively with problems and issues in the organizational area.

EXECUTIVE SUMMARY

The Navy, unlike the Army, has historically relied entirely upon volunteers. But during the past few decades the draft provided a powerful "incentive" for some to enlist in the Navy. Now, under all-volunteer conditions, the Navy and the other branches of the armed forces must compete in the civilian manpower market. The Navy must attract sufficient numbers of enlistees and reenlistees in order to function effectively, and it must now, more than ever, manage its manpower effectively--not simply because that manpower is more expensive and harder to recruit, but also because the effective and constructive utilization of manpower is in itself a key ingredient for its recruiting and retention.

Approximately two and one-half years ago, we undertook to explore the potential impact upon these facets of Navy effectiveness of changes in values, views, and preferences that may be occurring in American society at large. Much had at that point been written, and observational evidence reinforced the view, that affluence, education, and world events had combined to alter rather significantly the desires and preferences of Americans--particularly the young. If true, such changes would have important implications for the postures and practices of the Navy as an organization.

Accordingly, survey data were collected from two samples of persons: (1) a representative national cross-section of the civilian population, and (2) a sample of Navymen stratified so as to be representative of major Navy entities (ships and shore stations). Questionnaires, identical except for certain personal background measures, were administered to persons in both samples during late 1972 and early 1973. The resulting data concerning values, perceptions and preferences in national and personal work settings

have formed the basis for 28 technical reports submitted from the inception of the project through December 31, 1973.

This present report is intended as an integrative summary of the principal findings concerning Navy work settings. In brief, the findings discussed in the body of this report are:

Work Values and Preferences

- (1) There is little evidence of an organizational "generation gap" concerning preferred characteristics of the job. Young persons appear to attach greatest importance to the rather traditional values of personal independence and material success, a preference which they share with all other civilian, and nearly all Navy, age groups.
- (2) There is similarly little evidence of a gap concerning preferred leadership style. Preferences in this area appear to track actual experience.
- (3) There is a difference among age groups concerning adherence to, or acceptance of, autocratic beliefs. This rises rather sharply with age, despite the fact that both experience with, and preference for, non-autocratic behaviors from others also rises with age. The gap in adherence to autocratic beliefs is largest for young versus older enlisted men. Despite their similarities in other areas, it is nearly as large for older officers versus older enlisted men, the former looking very much like younger officers (and relatively non-autocratic in their beliefs).
- (4) Educational level is related to at least some aspects of what persons want from a job. Greater education is associated with

reduced concern for economic issues, with less concern for serving one's country, and with enhanced concern about having challenging work. Among Navymen, it is also associated with greater concern for personal independence.

- (5) Adherence to autocratic beliefs also declines rather sharply with education, in this instance paralleling preferred and actual leadership practices.
- (6) Region of the country in which one grew up appears to make little or no difference in work values and preferences. However, some difference occurs according to type of community in which one grew up (rural-urban). Those from rural areas are most inclined to accept autocratic beliefs, while those from suburban areas are least likely to do so.
- (7) A rather clear pattern of differences between the sexes in organizational preferences emerges for the civilian sample. Women, in civilian life generally, attach somewhat greater importance than do men to jobs which are cleaner, more clearly directed, less bureaucratic, more "settled," and more secure.

On the other hand, men and women do not differ in the importance which they attach to pay, steadiness of work, and availability of free time. They do not differ in their posture concerning adherence to autocratic beliefs, nor in the importance which they attach to human factors in organizational life. Little difference occurs in the behavior which they desire from their peers, and no difference in the importance which they attach to serving their country.

- (8) Racial differences in values and preferences concerning the work setting appear to be comparatively minor. For the civilian segment, only a few such differences appear, most of them explainable in terms of the effect of discriminatory treatment upon persons' aspirations, that is, the tracking of one's hopes to his experiences.

Among Navymen, differences occur more frequently, but follow no discernible pattern, with one exception: on the critical issues of interpersonal treatment and challenging work, the Navy would appear to have rather successfully removed the effects of discriminatory treatment of minorities at the behavioral level.

- (9) Taken together, the findings concerning race relations practices present a convincing, if perplexing picture. Minorities, and Blacks particularly, do feel discriminated against in the Navy. On many tangible criteria, the effects are real enough. For example, Blacks have slower advancement rates and receive expensive technical training less frequently than do Whites, even after controlling for the effects of age and education. However, relationships to behavioral treatment are more peculiar. Blacks report experiencing, for example, a better organizational climate than do Whites, report more felt discrimination, and, at the same time, evidence a negative relationship between the two (i.e., the better the climate, the less felt discrimination!) Among the difficult, thorny, and even unacceptable conclusions that this suggests

is the possibility that--because of the accumulated historical content in which it occurs--equal treatment will not be perceived to be non-discriminatory.

Organizational Practices

- (10) On the standard array of organizational practices measures included in the survey, the Navy as a whole falls approximately at the lower border of what is termed the "normal" range (40 to 60 percentile points on the national civilian norms). This conceals a rather crucial difference, however. The shore-based units are well within that normal range, whereas the fleet units are distinctly below it. The sole exceptions are the submarines, which resemble the shore units in quality of organizational functioning.
- (11) Most of the more serious fleet problems appear to lie in organizational climate conditions and leadership behaviors, rather than in the intrinsic properties of jobs performed.
- (12) Much of the problem pattern occurs as well in, and perhaps ties critically to, a perceived undue absence of personal independence, in the form of bureaucracy and an unnecessary intrusion into Navymen's personal lives.
- (13) Like the organizational climate and leadership problems, this personal independence shortage is age-related. Until a Navyman reaches 30 years of age, or is in a group whose average age approximates that figure, he does not experience conditions as favorable as those experienced by civilians of almost any age.

- (14) The personal independence shortage is also rank-related. For enlisted men, experienced conditions steadily decline in positiveness from E-1 to E-5, then rise to a peak at E-7.
- (15) It is also unit-level related; conditions improve steadily with the rank of one's supervisor.
- (16) While it seems to be true that more autocratic practices are found in conjunction with sophisticated hardware in the Navy, other findings lead us to be suspicious of any conclusion that such a contingency is desirable. Instead, what appears to occur is that Navy assignment practices, like their civilian hiring and placement counterparts, make the assumption that automated hardware substitutes for human competence. Yet our general array of findings would suggest the dysfunctional consequences of this simple assumption. If our society does through its educational processes what early chapters of this report suggest that it does, then persons are placed in situations representing the poorest possible fit to their values.
- (17) The Navy of the immediate future will consist--probably already does consist--entirely of True Volunteers. While their expectations are nearly as high as those of the Choice Motivated persons, their initial qualifications (in terms of education) are not. They have high needs for personal independence and participative treatment, and their decision to remain or leave the Navy at the end of their term is closely contingent upon the treatment they receive along these lines. They view

the Navy as a personal route to skill, esteem, and position in life and will doubtless weigh as quite negative practices which deal with them otherwise.

These, then, are the principal findings in a number of areas. From these stem, directly and indirectly, a number of possible implications and action steps concerning the work setting that we judge worthy of consideration:

- (1) Recognize more systematically the critical interrelationship of men and technology in the Navy.

The Navy should undertake to study its ships and shore stations as socio-technical (not just technical) systems, and should attempt modifications in line with the resulting findings, perhaps initially on an experimental basis.

- (2) Work to reduce the amount and effects of bureaucracy in Navy life.

Decentralize: return to command the overall responsibility for direction that over the years has been absorbed into central control functions.

Flatten the organizational structure: remove a large proportion of the one-on-one reporting relationships so frequently found in the Navy.

Make more constructive use of "management by objectives."

- (3) Reduce the effects of age (and values) discrepancy among Navymen.

Improve the task leadership and technical competences of junior officers.

Replace senior enlistees with junior officers in roles which involve supervising younger enlisted men.

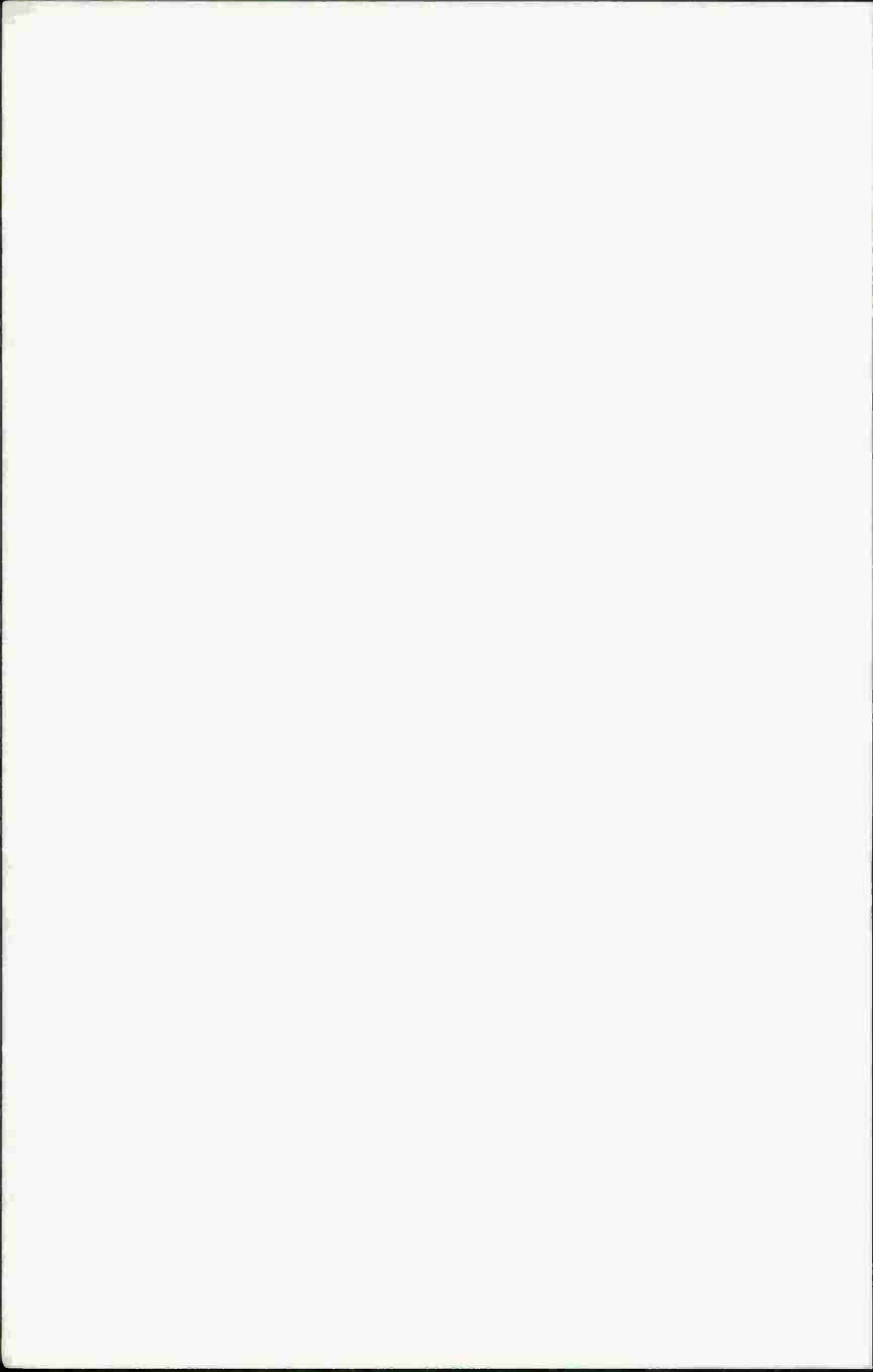
Take age discrepancy into account in the assignment process.

Improve the general leadership competences of Petty Officers other than Chiefs.

- (4) Increase opportunities for independence in Navymen's personal lives.

Review Navy policies and procedures which potentially provide grounds for unnecessary intrusion into the personal lives of Navymen and alter those which do so. Write and issue something akin to a "Navyman's Bill of Rights," which specifies the personal life areas and circumstances in which subordinate commanders may and may not intervene.

Add to the assignment procedures improved mechanisms for taking into account the personal needs and interests of Navymen. While relevant to all, this would appear to be most critical for young officers, whose loss to the service is quite costly.



Chapter 1

Prologue

Both the nation's leaders and its young people pressed during recent years for an end to the method by which much of the nation's defense manpower has been obtained during the last thirty years, the military draft. For all intents and purposes, this has now become fact. In place of a military force staffed partly by conscripts and "draft-motivated" enlistees there has been substituted the system of all-volunteer attraction and recruitment upon which our society has relied during peacetime years throughout most of its history.

These are not the tranquil times of earlier years, however; conditions change, events occur more rapidly, and their repercussions travel further today. In this complex world, the nation must not only be certain that its defense force is adequate in both numbers and competence, but also be assured that this force is wise, responsible, effective, and consonant with those democratic values which are central to our society.

Under an all-volunteer system, the Navy (and other branches of the Armed Forces as well) must compete in the manpower market. Like other types of employment, military service must provide work roles which are satisfying activities in their own right, which are seen as making a positive social contribution, and which provide adequate financial rewards, fringe benefits, and the like.

To the casual observer, as to the social scientist, it appears that conditions which have obtained since the start of World War II may be shifting. Many of the tenets, assumptions, and customary relationships of the last three decades, some forming the basis for military manning and management practices, are undergoing great changes. Affluence has rendered in many ways meaningless a number of the accustomed motivational strategies which were in the past effective. Attitudes toward authority, toward the value of great openness, questioning, and candor all appear to be changing. Not only the military services, but most of the major institutions of our society would seem to be faced with the necessity of closely examining, and perhaps greatly altering, practices based upon old assumptions in these areas.

The research which this report summarizes began with the proposition that changing values, expectations, life styles, and preferences for the quality of organizational life are important and perhaps overriding considerations in relation to the fortunes of an all-volunteer force. It was stated early on that this proposition stems from two sources:

- (1) accumulating data of a formal variety which suggest that in recent years non-economic matters have become increasingly central to an ever-larger number of persons;
- (2) a great number of instances, increasing in frequency, in which dramatic shifts are evidenced in the behavior of persons and organizations on dimensions related to value and quality-of-life issues.

The roots of these societal values, preferences, and expectations lie in many areas, most notably the educational and child-rearing practices which have come into being within the last couple of decades.

The changes which have come over American society in recent decades are familiar themes, perhaps no longer surprising. All of us are familiar with statements concerning the number of scientists presently living, expressed as a proportion of those who ever lived, and similar statistics calculated to press home the point that change has accelerated. If the statistics seem repetitious or the themes overworked, however, it is to a failure of words, not a commonplaceness of the phenomenon, which blame ought justly be laid, for the changes are truly large. In the small space of three generations -- from grandparents to grandchildren, both presently living -- we have moved from being a nation which was two-thirds rural and in which one person in 16 was a high school graduate, with only one in 25 going to college to a nation which is three-fourths urban (and within that, largely suburban: 3 persons in 7 live in areas that are urban but not central-city), in which seven persons in every eight are high school graduates, and in which half go on to college.

Number of years completed is not the only change which has come over education. Amount of time spent in school within any one year has changed as well. In 1900, the typical, enrolled, public school student experienced a school year 99 instruction days long; in 1970

the instructional year was approximately twice that length (179 days in 1968, for example). The annual per-pupil expenditure in 1900 was \$12 nationally; in 1970 it was \$917! Even allowing for depreciation of the dollar, the "real" amount spent per pupil today is many times greater than it was at the turn of the century.

Within the educational experience, changes of a qualitative nature have contributed to the overall impact. Educational experiences at the elementary and secondary levels have become increasingly participative or involvement-oriented. Non-graded classrooms, multi-age grouping, individualized instruction, programmed learning, and a wide variety of other innovative practices have become commonplace in today's schools. In higher education, parietal rules of the sort which most of us personally experienced and accepted, and which were based upon the in loco parentis doctrine, are almost universally a thing of the past. Together with changes at both the Federal and (in some instances) state levels which establish 18 years as the age of majority, these shifts lead young persons of high school age to expect and to prepare for self-governance -- that is, a determining say over most matters affecting their lives -- at an earlier age.

The importance of this for attitudinal change ought not be lost. Today's typical 18-year-old will have spent more than 2100 days in direct exposure to practices which encourage involvement and a questioning and challenging posture on his part. His role models during this period will have been highly educated, well trained teachers. He will find and view himself as an incoming adult member of a society that has become highly educated, sophisticated, urban, and affluent.

Although one may reasonably question the extent to which an affective or emotional change in attitudes has occurred over the years, there appears ample ground for assuming that the informational and behavioral components of attitudes have changed markedly. Today's likes, dislikes and preferences may be little different from those of two generations ago, but they are supported by a much sturdier informational sub-structure, and the behavioral repertoire in which they are seen as potentially finding expression contains a much wider array of alternatives, few of them in the category, "compliance." It may well be, in other words, that values themselves have changed less than have certain other things associated with those values, like willingness to tolerate practices at odds with them, perceived available alternatives, ways of behaving in response to disliked practices, and the like.

Today's 18-year-old will in all likelihood be aware of the large number of alternatives available to him in conjunction with almost every choice he must make (a considerably larger number than were available to his grandfather years ago), and he will be well equipped to engage in the search process to locate alternatives in any unfamiliar situation. In short, whether his values are different or not, the options open to him are far greater in number, and he is better equipped to attain them, than were his grandparents. In the face of this, it seems unreasonable to assume that a relatively short period of boot and technical training can have any appreciable impact upon basic attitudes and preferences.

The world of work toward which he heads is similarly different from that which existed at the turn of the century. In 1900, 29 per cent

of the nation's prime-mover horsepower was provided by draft animals; in 1970 a comparable figure was .00007 per cent! Although this statistic seems simple, perhaps even humorous, a bit of reflection suggests that it indicates the amount of technological advance which has occurred in recent decades. Similarly, whereas ten per cent of the work force in that earlier day were engaged in professional, technical managerial, and official occupations (accountants, architects, chemists, businessmen, clergy, academicians, dentists, physicians, lawyers, judges, elected officials, public administrators, pharmacists, scientists, engineers, etc.), 25 percent of the work force are engaged in such occupations today.

Much, therefore, hinges upon the acceptability and "up-to-date" character of Navy practices, since it seems likely that little by way of socialization (attitude change of Navymen in directions more compatible with customary service practices) can be expected. Unfortunately, the degree of such correspondence seems lower than what might be desired. Whereas alternatives have undergone vast change and expansion since the early years of this century, managerial practices have changed relatively little. Managerially, a greater resemblance exists between the supervisory practices of today and those of a half-century ago than exists between alternatives available to subordinates now and at that earlier time.

Stated otherwise, to the extent that the nation possesses a "cream" of tomorrow's "crop," it is likely to be found among those whose ability and training ultimately aim them toward that 25 per cent work force slice which makes up the country's technical, professional, and managerial personnel. Although the wisdom or desirability may be questioned, it is likely that these opinion leaders will be drawn in

disproportionate numbers (if not largely) from among those who have been advantaged during their developing years by the best of what society has to offer. Exposed while they were growing up to a wide array of stimuli, good schools, and the like, this best-nurtured, best prepared slice of American society clearly will assume responsibility for its policies and operations in the years ahead. Yet, it is this stratum -- the young, better-educated segment of the population -- which is most at odds with prevailing Navy practices. A strange counterpoint is the fact that the Navy would appear to have in recent years drawn a large proportion of its recruits (under pressure of the draft) from precisely this segment.

Among civilians, this young, better-educated segment of the population is more rejecting of autocratic practices, less impressed with opportunity to serve one's country or make the world a better place as drawing cards in job selection, more demanding of challenging jobs, and more insistent upon adequate human-resource leadership practices.

In the Navy as among civilians, those persons who grew up in suburban areas are least authoritarian and, at the same time, least interested in having a job in which they may serve their country. The difference present in the civilian sample -- that those who grew up in the suburbs prefer more challenging jobs -- does not hold true among Navymen: all community-of-origin categories among Navymen closely resemble the suburban-civilian.

Both preferences and practices show substantial age-related effects among Navymen, a phenomenon scarcely observable among civilians. Rather than alternative explanations (e.g., social desirability response bias, socialization, etc.) "selection-out" appears as a major factor, with most of the difficulty occurring among young Navymen. Although rank has some effect independent of age, both officers and enlisted men show rather similar effects, with negative views tied principally to an unfavorable organizational climate. This climate is viewed, by the young especially, as overly bureaucratic, arbitrary, and excessively intrusive into one's personal life. Human resources, their well-being and motivation, are viewed to be treated as subordinate in importance to impersonal rules and hardware.

Preferences for, and experience of, more adequate human resource organizational practices rise with age and rank in the Navy, not because of socialization and change, but primarily because those who experience these conditions remain ("select-in"), whereas those who do not experience them leave ("select-out"). While the comparison thus favors the Navy in the older age brackets, it should be noted that this counts for little if most leave the Navy because of the unfavorable comparison in the younger age brackets.

What of the future? What may be said of the child who was three to five years of age in 1971 -- the potential recruit during the 1980-1985 period? The chances are three out of four that he will have come from an urban-suburban background. The chances are one out of three or one out of four that his parents will have professional or technical occupations (and presumably somewhat higher than that that he will

himself aspire to such an occupation). The chances, furthermore, are three out of four that the head of his family will have at least a high school diploma, and about even that he will himself intend to go on to college. Eleven times more money will have been spent educating him; his teachers will likely have had work beyond a bachelor's degree, and will have employed a variety of new, different, and more participative teaching methods during the 12-year period of his exposure to them. He will have spent one-sixth more time each year in school than his parents, twice as much each year as his early 20th-century grandparents. He will have been exposed to hours of instant communication from television, traveled more, seen more, and tried more activities -- athletic, social, and intellectual -- than his parents did at a comparable age. The chances are quite high that he will never have known any economic situation except comparative affluence, and almost certain that he will not have known real want. He will be, at least at the Federal level, no more than a few months away from a majority -- able to vote, enter into contracts, leave home, drink, and organize his life as he pleases.

Exceptions to any and all of these characteristics will, of course, occur, but this probably represents the "average" or typical 18-year-old of 1982. As such, he appears to be almost a prototype of today's most dissatisfied Navyman. Unless something changes practices or situations, he will in all likelihood never enter the Navy -- nor any other branch of the armed forces. Should he enter, he will in all likelihood leave. In either event, he will carry a posture of indifference or resentment with him to his civilian life and career. And from the most prototypical of all will come the 25 percent who will in the years ahead comprise the judges, physicians, engineers, scientists, legislators, administrators

and businessmen whose influence outweighs their numbers and who formulate the nation's policies and administer its affairs in their most critical aspects.

The research summarized in the pages which follow, therefore, provides a reasonably satisfactory answer to the general issue raised at the outset. It is not that young persons today possess values and preferences that are strikingly different from those of generations immediately preceding. On the contrary, they generally value and hold important the same things cherished by their parents and grandparents. There are, of course, some differences: young persons today are more averse to autocratic direction than their elders, for example, and somewhat less motivated by patriotic concerns. For the most part, however, young persons today attach greatest importance to those same conditions that their predecessors have valued: independence, economic success, and friendly relationships with others. The differences lie less in values than in the number and richness of available alternatives, in the amount of training received in locating and acting upon those alternatives, and in their greater reluctance to react compliantly.

Chapter 2

Values and Preferences in the Work Setting

One purpose of the overall study, of which the present chapter treats but a part, was: to collect data on value and expectation issues, and on the organizational practices to which they are presumably related, from both a civilian national cross-section and from a representative sample of Navymen from both the officer and enlisted ranks. From these data one might then determine (a) whether differences do, in fact, exist across demographic groups, as well as their direction, magnitude, and scope; (b) their likely impact upon that constellation of influences affecting enlistment and the extent to which material incentives affect that impact; and (c) the organizational management implications for the Navy of such differences as are seen to exist. In this present chapter, we examine the first of these questions, the likely existence of values differences.

The logical place to begin is a search for value differences of the kind described, emerging in the American population generally and potentially affecting the necessary manpower practices of the Navy. The responses of all persons in both the civilian and Navy samples to value and preference measures have therefore been stratified by six demographic characteristics which should provide keys to such emerging differences as may exist:

Sex - Although the Navy has in the past been largely a man's world, women have recently come to greater prominence within it and could, with ratification of the equal rights amendment, occupy much larger roles than has previously been true.

Age - Much has been made in recent years of the extent to which values and preferences have changed for today's youth from what existed for earlier generations. Although the vociferous disagreement of at least some youth with prevalent political norms and values has been highly visible, the question remains open as to the degree to which this divergence extends to organizational preferences and values.

Education - Education is a profound socializer of the young.

Greater amounts and higher quality of it provide exposure to ideas and methods wider in array, if not higher in quality, than is otherwise true. With education presumably come greater expectations about role, status, reward, and treatment.

Community of Origin - The decades since the turn of the century have witnessed the mass migration of our population, first from the farm to the city, and later from the city to its suburbs. As the population shifts, so does the manpower pool from which the Navy must draw its recruits. Yet another question concerns the extent to which those who have spent their early years in different types of communities (rural, small town, suburban, urban) differ in what they value and prefer organizationally.

Race - Blacks and other racial minorities have increasingly pressed for their rightful place in our society. As the range and variety of positions and roles which they occupy increase, some question may be raised about the extent to which their organizational values and preferences differ from those of the more customary Whites.

Region of Origin - Somewhat different life styles and degrees of affluence exist in various regions of the country. Although of somewhat less importance, perhaps, than the other demographic characteristics, the region in which one grew up contains at least some potential importance in auguring the Navy's future.

Age-Related Preferences

Three subsets of work-life related values and preferences concern us in the present study: (a) preferred characteristics of the job (as, for example, whether the work is challenging, whether it is clean, etc.); (b) preferences regarding the behavior of one's supervisor and peers (his leadership style and their styles in dealing with one another); and (c) adherence to a set of beliefs which are more or less democratic (as opposed to autocratic).

Our findings would suggest that constancy, rather than difference, is the rule with regard to the first of these, preferred job characteristics. When the 14 job preference measures were rank-ordered for Navymen and compared to a similar rank-ordering for employed civilian men, the two sets of rankings correlated quite highly (.90). Even among age groupings of civilians, the relative rankings were very much the same (average correlation = .90).

As the data in Table 1 indicate, both Navymen and civilians attach the greatest importance to personal independence (controlling one's personal life and avoiding entangling bureaucracy) and to economic success (good pay and fringe benefits). The job characteristics which least concern them are cleanliness, prestige, free time, absence of a "boss," and, perhaps surprisingly, an opportunity to serve one's country.

Table 1
Most and Least Important Features of a Preferred Job

Overall Rank	Civilians	Navymen
Most Imp. 1	Opportunity to Control Personal Life	Opportunity to Control Personal Life
2	Good Pay	Good Pay
3	Friendly People	Avoiding Bureaucracy
4	Good Fringe Benefits	Good Fringe Benefits
5	Avoiding Bureaucracy Mean = 3.58*	Challenging Work Mean = 3.57
10	Opportunity to Serve My Country	Opportunity to Serve My Country
11	No One to Boss Me	Lots of Free Time
12	Clean Job	No One to Boss Me
13	Lots of Free Time	Prestigious Job
Least 14 Imp.	Prestigious Job Mean = 2.52	Clean Job Mean = 2.58

* Importance Scale: 1 = Very Unimportant
2 = Fairly Unimportant
3 = Fairly Important
4 = Very Important

Depending upon one's position and perspective, these findings may be viewed with pleasure or dismay. They seem to indicate, however, that, despite the rhetoric of recent years, the traditional American values of independence and material success are alive and well and likely to remain so for the immediate future.

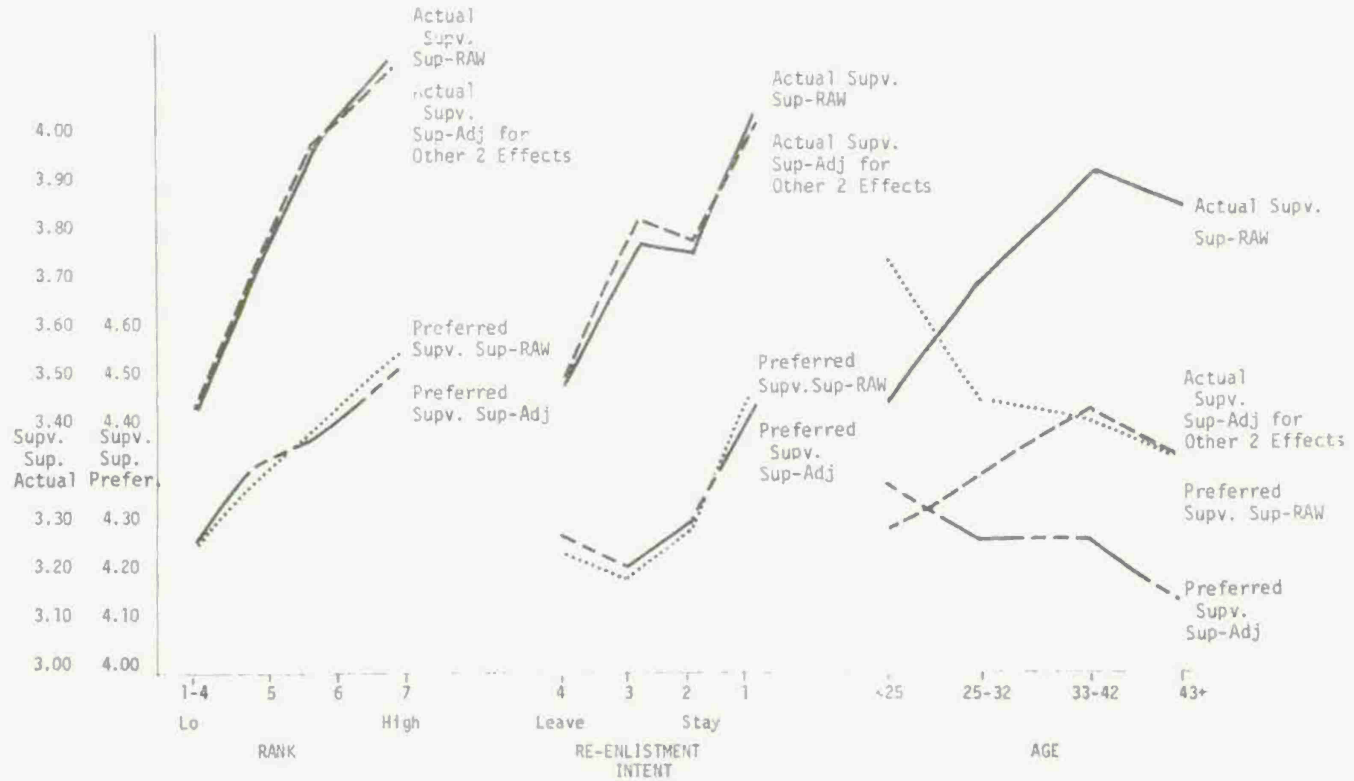
Our findings do, however, indicate one set of differences that is particularly striking. Navy men 43 years of age and older, whether enlisted men or officers, present rank-ordered profiles on these preferred job characteristics which are unlike those of (a) young enlisted men, (b) young officers (who closely resemble young enlisted men), or civilians their own age. These dissimilarities occur largely because of the importance attached to opportunity to control one's personal life (which older Navy men do not value as highly as do others) and service to one's country and challenging work (which older Navy men value more highly than do others).

In the area of leadership preferences a rise-with-age appeared in the Navy data which does not appear, or appears only slightly, among civilians. These rises in leadership preferences with age appear to reflect the masking effects of rank and self-selection. Figure 1, which shows one of the measures (Supervisory Support) in relation to background variables (Rank, Re-enlistment Intention, and Age), is illustrative of a general pattern of findings:

- (1) Controlling for other variables has little effect on differences by Rank.
- (2) Controlling for other variables has little effect on self-selection (measured in this instance by Reenlistment Intention).
- (3) Controlling for other variables removes the effect of Age.
- (4) Effects are stronger for Actual than for Preferred leadership.

Figure 1

Preferred and Actual Supervisory Support, by Rank, Reenlistment Intent, and Age



Although any discussion of cause-and-effect relationships is somewhat speculative for findings derived, as are these, from data collected at a single point in time, the most parsimonious explanation for these results would begin with the behavior actually experienced and move from that to preferences. In descriptive terms, Navymen in any age category report to supervisors whose behavior encompasses a fairly broad range, from quite good to very poor. The average behavior experienced rises in positiveness with age, partly because of rank (higher rank persons are supervised by persons of even higher rank who are, on the average, themselves better supervisors) and partly because of self-selection (specialties, career choices, and assignment practices result in some situational constancy across the period of service, and those who experience comparatively poor situations leave the service). That such effects are more apparent for actual than for preferred leadership characteristics adds weight to the argument that persons quite naturally are influenced in the setting of their aspirations by their actual experiences.

The third major area--autocratic versus democratic beliefs--will be treated only briefly at this point. In general, there would appear to be a trend toward more autocratic beliefs with age; however, this seems to be intertwined with the effects of educational level. For this reason, further treatment of this topic will be deferred to a subsequent section of the chapter.

Preferences Related to Educational Level

The findings in relation to education display both consistencies (among job characteristic preferences) and differences (for leadership preferences) when Navymen and employed civilian men are compared.

For both Navymen and civilians, greater education is associated with reduced concern about economic issues, less importance attached to service to one's country and enhanced concern about having challenging work. (See Fig. 2) Among Navymen, greater education is also associated with more importance being attached to personal independence. Stated thus generally, a number of interesting, though minor, differences are perhaps concealed:

- (1) In the economic area concern about fringe benefits declines with education for enlisted men, for officers, and for civilians. However, whereas the importance of pay declines with education for enlisted Navymen, the importance of steady work (without layoffs) declines for employed civilians. Neither measure declines for officers.
- (2) Much of the steeper rise with education of preference for challenging work among civilians is attributable to the lower end of the education scale (those with a high school education or less), a feature present only slightly in the enlisted Navymen curve, and not present at all for officers.

Turning to leadership style preferences, nearly all of the statistically significant difference among educational categories of Navymen, apparent when the combined sample was considered, disappears when enlisted men and officers are considered separately. It thus appears to reflect the combined effects of (a) difference between these two categories of personnel and (b) the different distributions of these two groups across educational categories. (See Figure 3)

Among civilians, however, a definite rise in preferred leadership with education occurs in a form considerably steeper than that for enlisted Navymen. For civilians, as for Navymen, the data rather clearly suggest that leadership preferences are set in some relationship to actual experiences. Although levels of actual and preferred leadership differ, the two curves are in each case similar in shape.

Figure 2

Importance of Challenging Work by Educational Level, for
Enlisted Navymen, Employed Civilian Men, and Officers

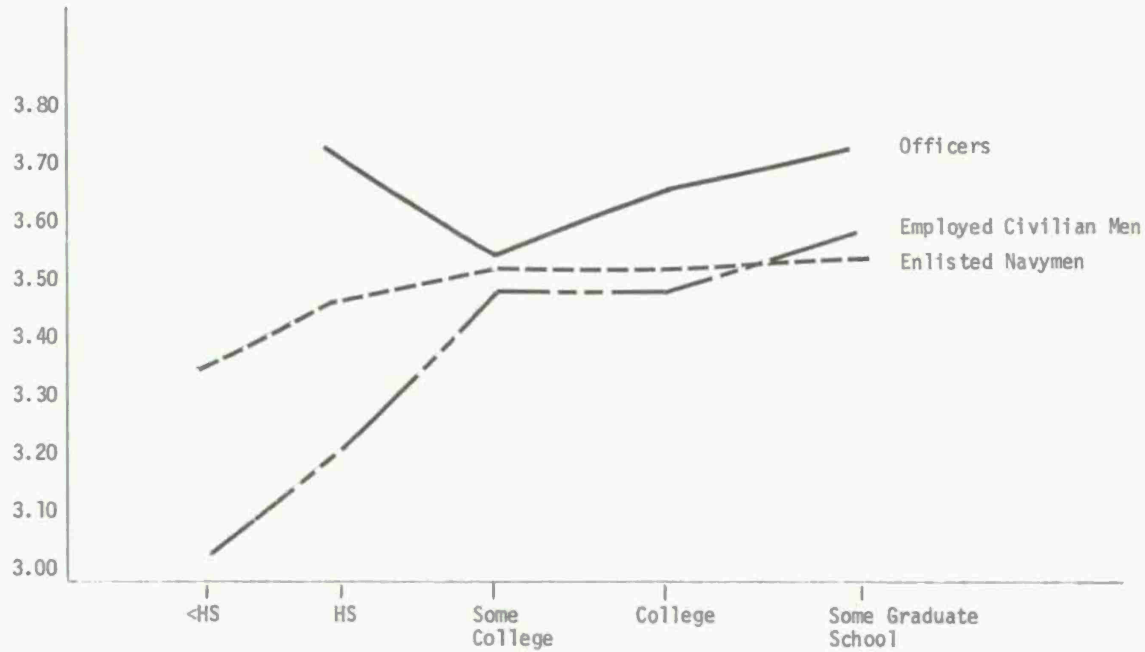
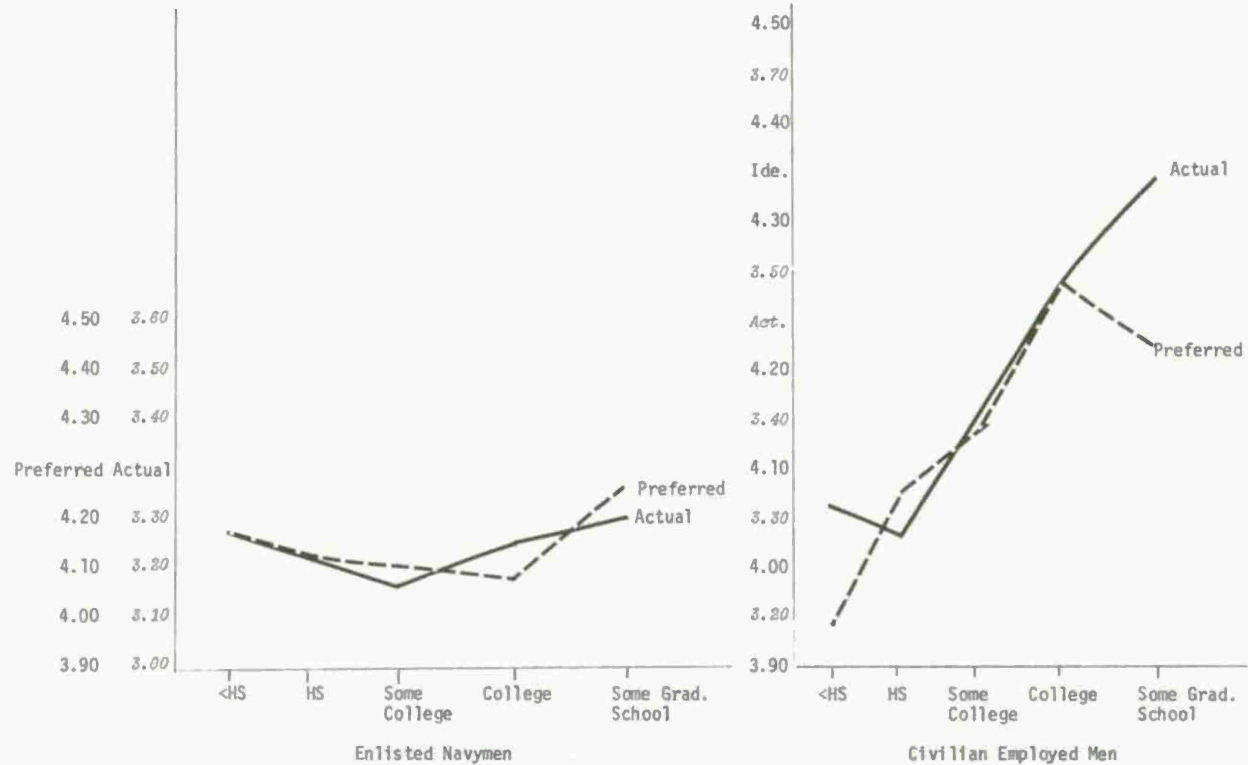


Figure 3

Mean Preferred and Actual Leadership of Enlisted Navymen and Employed Civilian Men



Age, Education and Autocratic versus Democratic Beliefs

An objective discussion of the issue indicated in this side-heading is difficult, largely because carefully chosen words or terms seem rapidly to disappear into a sea of unfortunate connotations. Thus, in organizational life, "autocratic" rapidly becomes "authoritarian" and brings to mind sadistic regimes from the history books. In an administrative context, "democratic" similarly transitions to "one man, one vote," and from there to notions of disorder and absence of direction.

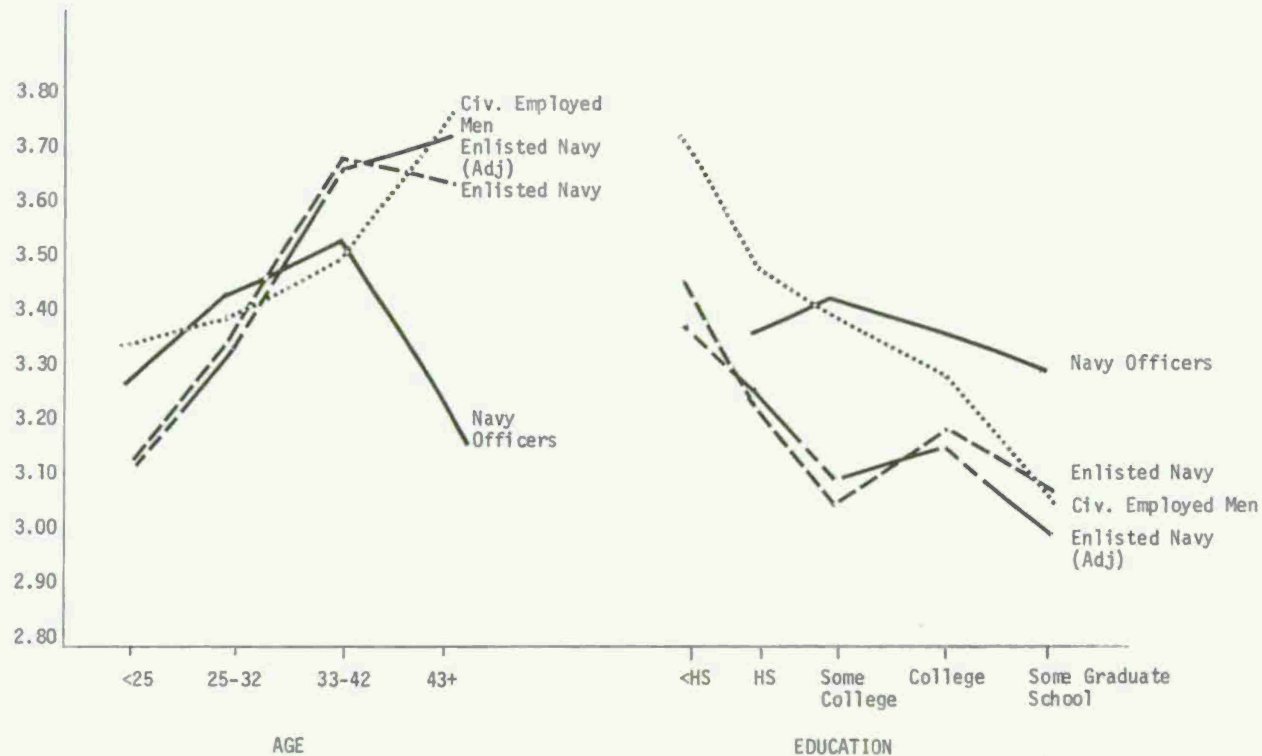
Despite this semantic difficulty, there is a dimension of behavior or practice, coordinate with a set of beliefs similarly arranged. Toward one direction these behaviors and beliefs become increasingly reliant upon formal authority, more insistent upon artificial distinctions of status and position, more distrustful of the motives and capabilities of others. Toward the opposite direction behaviors and their allied beliefs become less status conscious, more trustful, and more concerned about persuasive competence, from whatever source.

Although many terms might be applied to these directionally opposite styles, perhaps "domineering" and "cooperative" are most descriptive. In the present study, the general finding is that belief in autocratic (domineering) supervisory practices (a) rises with age, and (b) declines with education. Figure 4 illustrates this quite clearly, along with certain qualifications:

- (1) The curve by age for Navy officers looks remarkably similar to a comparable curve for civilians, rising until age 42; for the highest age category, however, the two curves reflect distinctly different values. Older Navy officers are among the least autocratic of groups.

Figure 4

Adherence to Autocratic Management Beliefs



- (2) In this fact, older Navy officers seem to resemble young Navy officers, who are distinctly less autocratic than their civilian counterparts.
- (3) Controlling the enlisted age curve for the effects of rank, self-selection, and education has little effect. Perhaps the greatest gap among plotted points is that between the youngest enlisted men (mostly first-termers) and the older enlisted men who for the most part supervise them.
- (4) Controlling the enlisted education curve for the effects of age, rank, and self-selection has similarly little effect. In general, the decline with increasing education remains.

Preferences Related to Region and Community of Origin

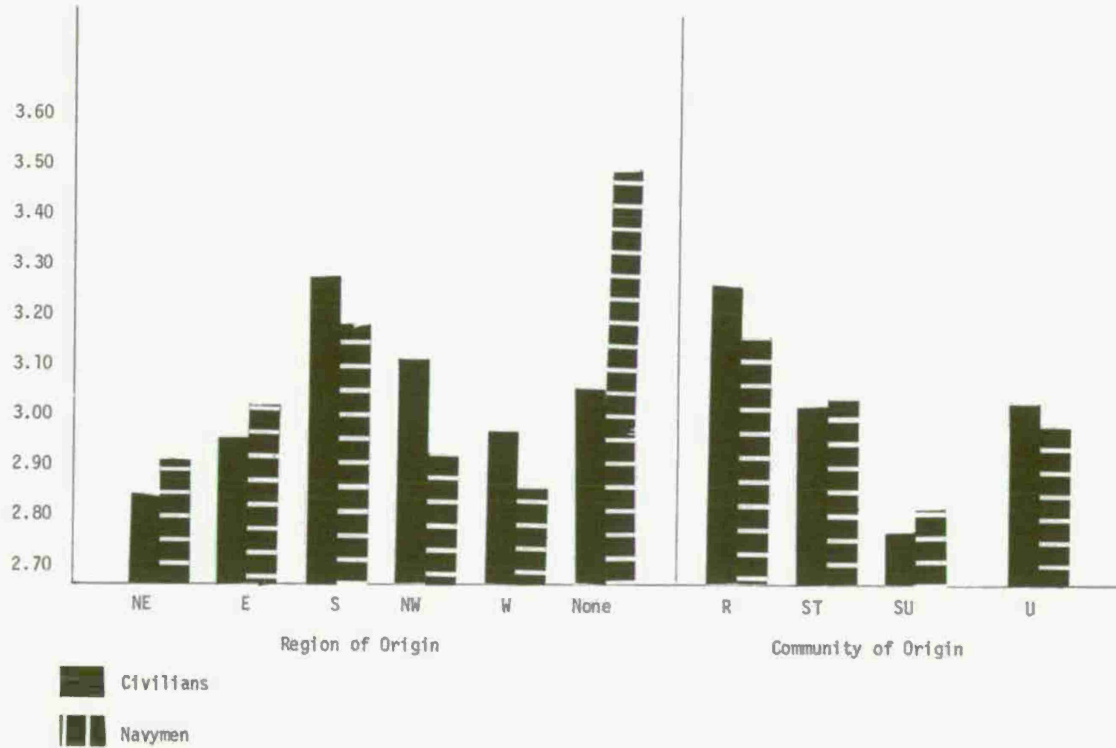
In general, region of the country and type of community in which one grew up appear to bear little relationship to one's preferences concerning the work setting. No differences, for civilians or Navymen, occur among leadership style preferences. Among preferred job characteristics, perhaps the most important difference is that displayed graphically in Figure 5, which shows the importance attached to an opportunity to serve one's country. In combined form and ignoring the small category of Navymen who grew up in no identifiable region of the country, one might expect a combined scale to range from suburban New England (lowest) to the rural South (highest). For all groups, however, mean responses center about the category "Fairly Important;" no group sees this as clearly lacking in importance.

Preferences Related to Sex

Among civilians, men and women do not differ in the importance which they attach to pay, steadiness of work, and availability of free time. They do not differ in autocratic versus democratic beliefs, nor in the importance which they attach to human factors in organizational life.

Figure 5

Importance Attached to an Opportunity to Serve One's Country,
by Region and Community of Origin



Little difference occurs in the behavior which they desire from their peers, and no difference in the importance which they attach to serving their country. On two issues--the importance attached to challenging work and to having a prestigious job--an initial difference is removed when the comparison is restricted to employed women and men.

A number of differences remain, however. Women have a somewhat greater preference for a clean job, for working with friendly people, for a job that does not involve extensive transfers from one location to another, and for a situation in which the supervisor provides somewhat more task guidance.

None of these differences attain statistical significance between Navymen and women, nor in most instances are they even suggested by the data.

Preferences Related to Race

For civilians, similarity among racial groups in preferences, rather than difference, is more often found.

No real difference is apparent, for example, in importance attached to serving one's country, to making the world a better place, nor to pay, fringe benefits, and steady employment. Opportunity to control one's personal life, to stay in one place or move about, as well as the desire for supportive behavior from supervisor and co-workers, are preferred to essentially the same degree by both Blacks and Whites.

At least five of the value differences which do attain statistical significance among racial categories seem capable of being explained in terms of adaptation to conditions actually experienced on these same dimensions.

Figures 6 and 7, which present data for Navymen and for employed civilians, show by the similarity in shape of the actual and preferred curves the closeness with which preference replicates (at a higher level) experience.

Figure 8 presents similar data for two other issues for which racial differences occur in both the Navy and civilian samples. In these instances, the importance curves do not appear to replicate actual experience. Perhaps nothing more need be made of them than the rather obvious point that, regardless of current experience, non-whites are much more concerned than whites that they not end up with dirty, low-status jobs.

Racial differences which appear, even at the outset, in the civilian sample in relation to leadership preferences largely disappear in the Navy sample. This occurs because Black Navymen express preferences quite close to those expressed by Whites, whether civilian or Navy. Racial differences remain on certain job preference measures: Whites attach more importance than do Blacks to having challenging jobs, whereas Blacks are more concerned than Whites about having "clean," prestigious jobs.

Conclusions: What the Data Tell Us About Values and Preferences

The chapter began with the proposition that differential, or changing, experiences in American life may have created conditions in which values and preferences regarding the work setting have been substantially altered. An integration of what has been covered, posed in question and answer form, would contain the following:

Figure 6

Mean Actual and Preferred Leadership by Race

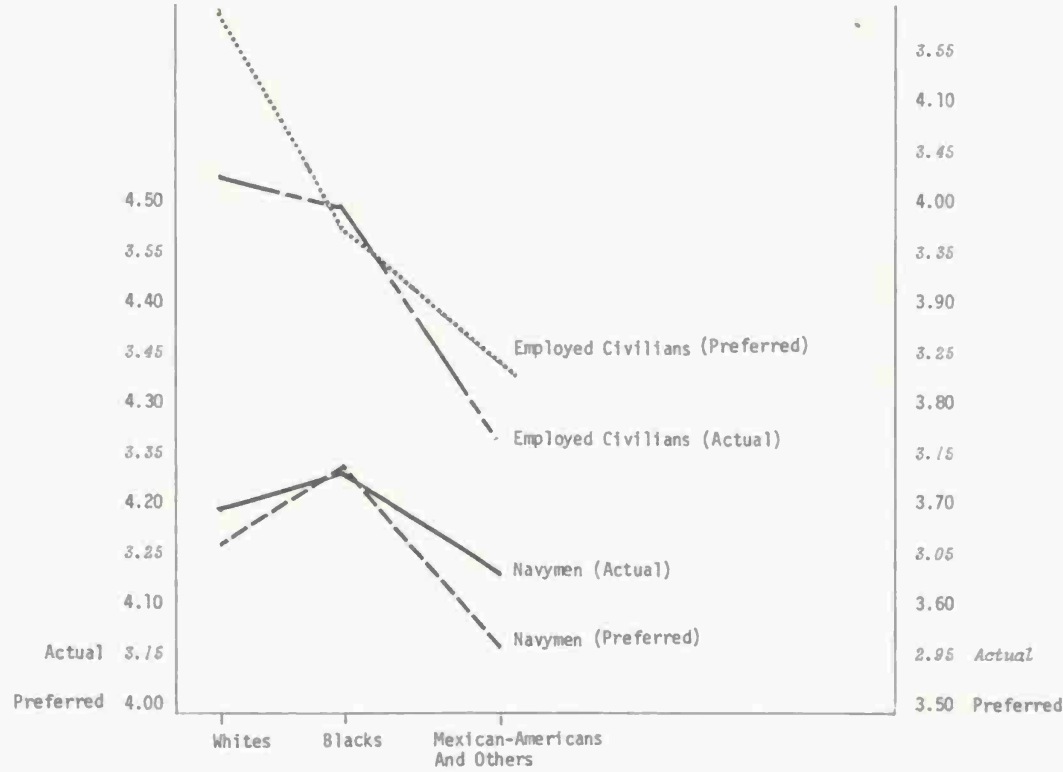


Figure 7

Actual and Preferred Job Challenge by Race

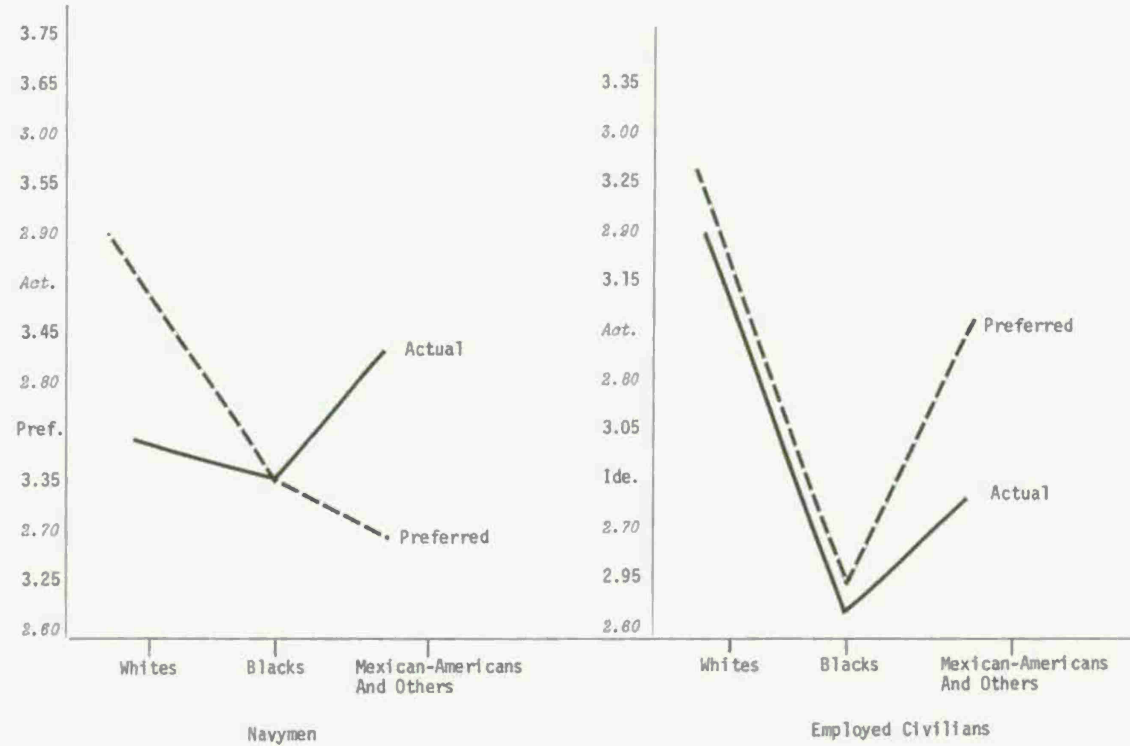
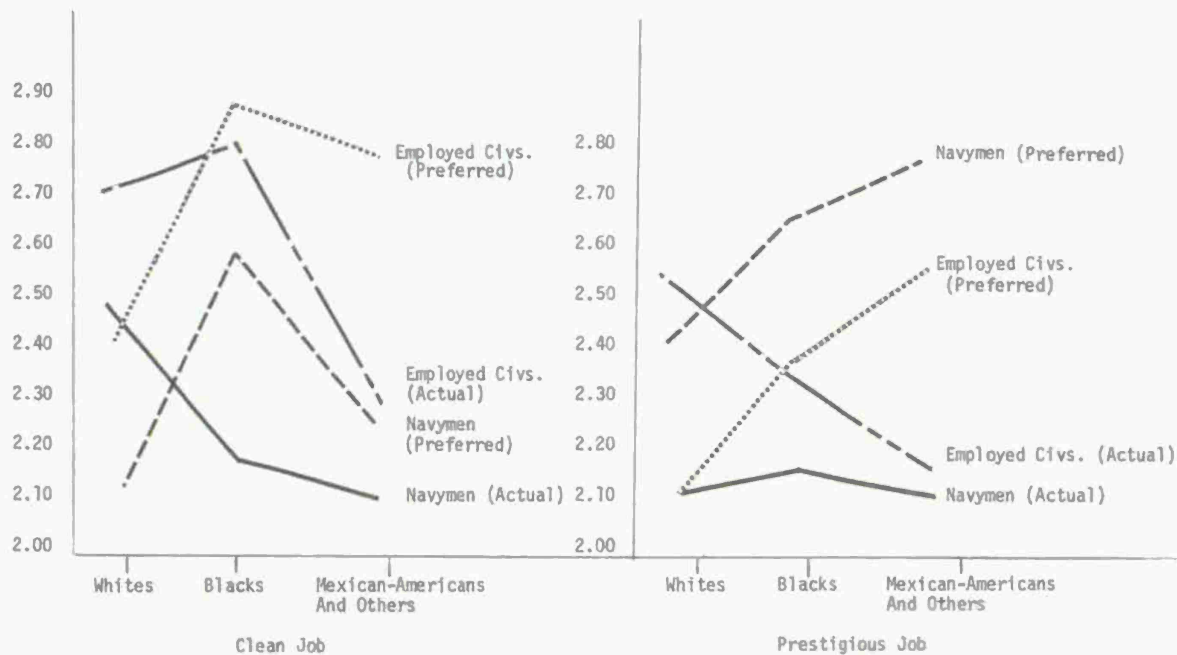


Figure 8

Experiences and Preferences Concerning Two Job Characteristics, by Race



- (1) Is there an organizational "generation gap;" that is, do young persons today value and prefer something different from what those more senior prefer?

For preferred characteristics of the job, the answer must decidedly be "no." Young persons appear to attach greatest importance to the rather traditional values of personal independence and material success, a preference which they share with all other civilian, and nearly all Navy, age groups. In this connection, it is worth noting that serving one's country ranks in importance down among a number of seemingly socially unflattering characteristics, such as not having to get one's hands dirty, or having a great deal of free time. Different from all other groups, Navy and civilian, are Navymen 43 years of age and older (enlisted as well as officers), for whom service to one's country is more important, personal independence less important.

The response must also be "no" concerning preferred leadership styles (desired behavior from supervisor and peers). Preferences in this area appear to track actual experience (at a somewhat higher level), an actual experience which is partly situational and fortuitous, partly a function of rank.

The answer is "yes," however, in terms of adherence to, or acceptance of autocratic beliefs. This rises rather sharply with age, despite the fact that both

experience with, and preference for, non-autocratic behaviors from others rises with age. The gap in adherence to autocratic beliefs is largest for young versus older enlisted men. Despite their similarities in other areas, it is nearly as large for older officers versus older enlisted men, the former looking very much like younger officers.

- (2) Is educational level related to preferences and expectations?

The answer must be "yes," in relation to some aspects of what people want from a job. Greater education is associated with reduced concern for economic issues, with less concern for serving one's country, and with enhanced concern about having challenging work. Among Navymen, it is also associated with the attachment of greater importance to personal independence.

The answer is also "yes" in terms of adherence to autocratic beliefs. This declines rather sharply with education, in this instance paralleling preferred and actual leadership practices.

The answer seems to be "no" in relation to preferred leadership practices. As with comparisons by age, rises with educational level appear largely to reflect the "tracking" of actual experience.

- (3) Does the region of the country and type of community (rural-urban) in which one grew up affect one's values and preferences regarding the work setting?

Region of the country seems to make little or no difference. The only difference of noticeable size is the somewhat greater importance attached to serving one's country felt by those who grew up in the South.

This same issue distinguishes among community-of-origin categories. Those who grew up in rural areas attach greatest importance to serving one's country, whereas those who grew up in the suburbs attach least importance to it.

Some difference among community categories is also found in relation to adherence to autocratic beliefs. Those from rural areas are most inclined to accept such beliefs, while those from suburban areas are least likely to do so.

(4) Do women differ from men in their values and preferences concerning characteristics of the work setting?

A rather clear pattern of differences between the sexes in organizational preferences emerges for the civilian sample. Women, in civilian life generally, attach somewhat greater importance than do men to jobs which are cleaner, more clearly directed, less bureaucratic, more "settled," and more secure.

On the other hand, men and women do not differ in the importance which they attach to pay, steadiness of work, and availability of free time. They do not differ in their posture concerning adherence to autocratic beliefs, nor in

the importance which they attach to human factors in organizational life. Little difference occurs in the behavior which they desire from their peers, and no difference in the importance which they attach to serving their country.

- (5) Are there racial differences in values and preferences concerning the work setting?

The answer appears to be that such differences are comparatively minor. For the civilian segment, only a few such differences appear, most of them explainable in terms of the effect of discriminatory treatment upon persons' aspirations, that is, the tracking of one's hopes to his experiences.

Among Navymen, differences occur more frequently, but follow no discernible pattern, with one exception: on the critical issues of interpersonal treatment and challenging work, the Navy would appear to have rather successfully removed the effects of discriminatory treatment of minorities at the behavioral level.

Chapter 3

The Navy as a Functioning Organization

The Survey of Organizations questionnaire, from which much of the organizationally relevant material in the present study is derived, is routinely used by the Institute's Organizational Development Research Program for purposes of diagnosing the current state of functioning of those organizations with which it undertakes development field experiments (Taylor & Bowers, 1972). The wealth of information already available from industrial settings concerning the constructs measured by the instrument, reliabilities, validity, and norms were among the original reasons for relying upon it in this present effort. Accordingly, it seems appropriate to provide a diagnostic summary of the Navy as a whole and of certain of its component units, as similar in form as possible to what would be provided for any organization in the civilian world attempting in similar form to assess its present and future positions.

The purpose of any survey-based organizational diagnosis is to attempt, by sifting and analyzing tabulated data, to arrive at an understanding of the manner in which the various functional parts of the organization fit together, work, and contribute to its strengths and problems. The process is analogous to the taking and examining of a series of photographs of the same object, location, or activity, from somewhat different perspectives and at somewhat different points in time. By considering the differences which emerge, insights are obtained about the course of movement of the organization as a social system through the events that determine its present and future success. The purpose is no different in the present instance. In simple form, it may be stated as a series of questions:

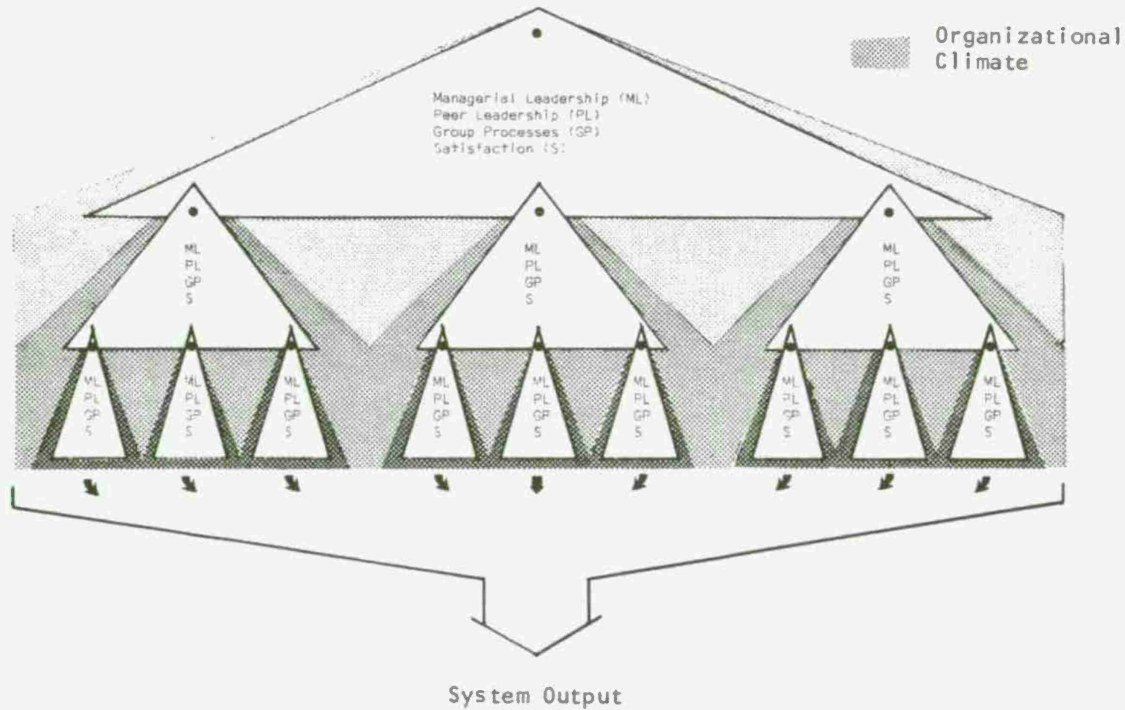
- (1) When examined on that constellation of characteristics which previous research has shown to be associated with effectiveness, how does the Navy compare with norms appropriate to those civilian organizations with which it must compete for manpower and talent in the years immediately ahead?
- (2) In what ways do its component parts (ships versus shore stations, various ship types) differ from one another and from the overall picture which summary data provide?
- (3) What assumptions concerning the reasons for observed strengths and problem areas may be deduced from the data thus analyzed.

The Survey of Organizations questionnaire has as its focus several social-psychological factors critical to effective organizational functioning. In order to better understand the diagnostic materials which follow, it seems useful at this point to describe these factors and the manner by which they affect organizational functioning.

Figure 9 shows an organization as our research has indicated it to be. There are many things that an organization like the Navy is not: it is not simply an array of positions, not just an assortment of tasks, not just the physical assets--ships, buildings, and equipment. It includes all of these things, of course, but an organization is very basically a structure made up of work groups, indicated in Figure 9 by triangles. The triangles are shown as overlapping because, at every level about the very bottom, and below the very top, most persons are members of at least two groups simultaneously; they are subordinates in the group above and superiors in the group below. This dual membership serves the purpose of linkage, of knitting the organization together.

Figure 9

Organizational Processes



Within each group several kinds of things occur. First, there is Managerial Leadership--behavior on the part of the supervisor which serves organizationally constructive ends. Second, and partly as a result of what the supervisor does, there is what we term Peer Leadership--behavior by one subordinate toward another which multiplies (for good or for ill) what the supervisor does. Third, there are group processes, those emergent properties which characterize the group as a group, whether it works together well or poorly. Finally, there is output from the group, in the form of individual outcomes (e.g., satisfaction, health) and organizational outcomes (e.g., efficiency, effectiveness).

Each of these factors has been the focus of scientific investigations and can thus be described in greater detail. Figure 10 provides a simple diagram indicating that managerial leadership as described herein refers to the behavior of a superior toward subordinates within a work group. Research has indicated that these behaviors can be described in terms of four categories.

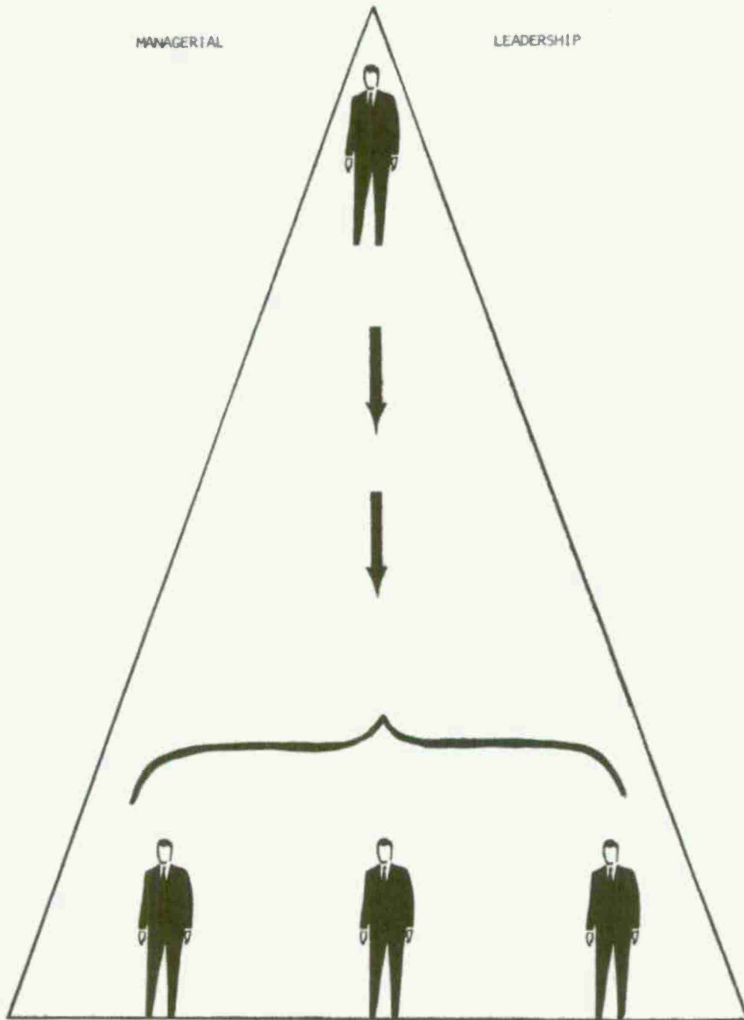
Support - behavior toward his subordinates which lets them know
that they are worthwhile persons doing useful work.

Interaction Facilitation - team building, behavior which encourages
subordinates to develop close, cooperative working
relationships with one another.

Goal Emphasis - behavior which stimulates a contagious enthusiasm
for doing a good job (not pressure).

Work Facilitation - behavior which removes roadblocks to doing a
good job.

Figure 10



In a similar vein, peer leadership behavior (illustrated in Figure 11) can be described by these categories:

Support - behavior by subordinates toward one another which enhances their mutual feeling of being worthwhile persons doing useful work.

Interaction Facilitation - behavior by subordinates toward one another which encourages the development of close, cooperative working relationships.

Goal Emphasis - behavior by subordinates toward one another which stimulates a mutually contagious enthusiasm for doing a good job.

Work Facilitation - behavior which is mutually helpful; helping each other remove roadblocks to doing a good job.

These managerial and peer leadership behaviors occur within the context of a group which, in turn, is part of a larger organization. Each group exists in an environment made up of conditions created by other groups, particularly those above it in the organization. This is illustrated in Figure 12. The focal group links through its supervisor, to the group above. The higher group produces an "output" which takes the form of behavior, procedures, decisions, objectives, and the like which impinge upon the focal group in the form of a set of conditions, for better or worse, within which it must exist. These effects are indicated by the smaller arrows. The larger arrows indicate that the focal group's environment is also the product of groups other than that immediately above--perhaps from the very top of the organization. This environment or set of conditions is called organizational climate. Our research reveals that it consists of the following elements:

Figure 11

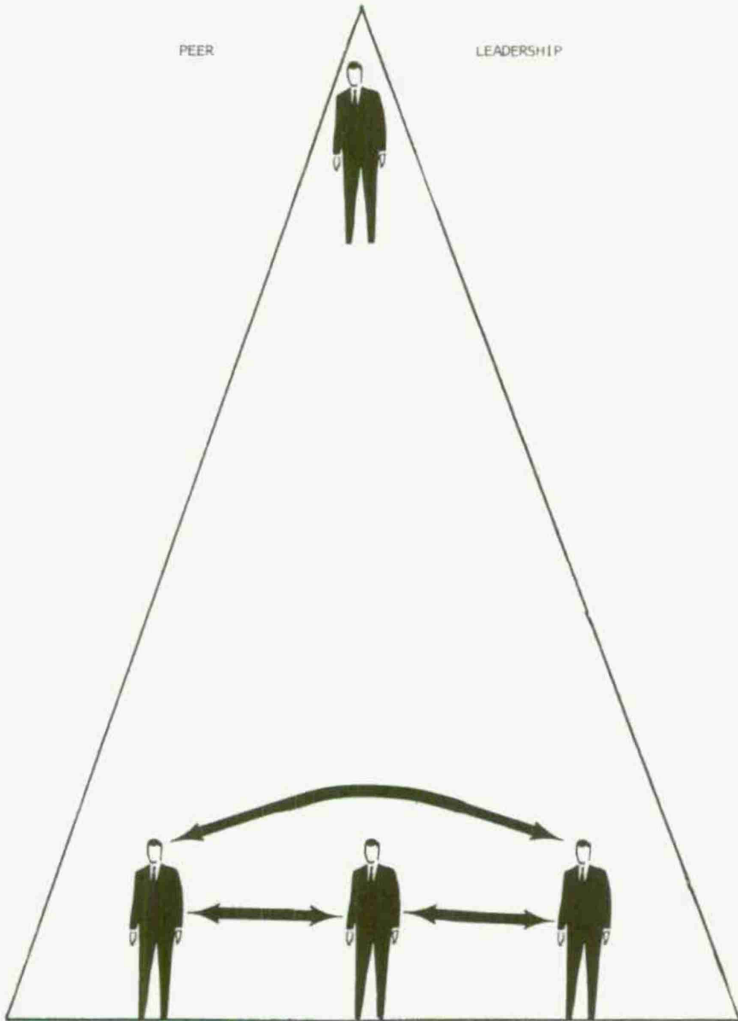
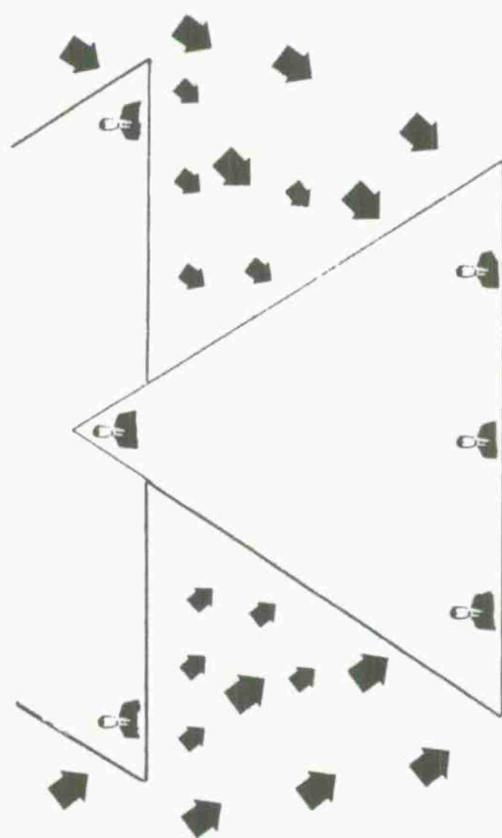


Figure 12



Organizational

Climate

Human Resources Primacy - whether the climate is one which, by its postures and practices, says that people--their talents, skills, and motivation--are considered to be one of the organization's most important assets.

Decision-making Practices - how decisions are made in the organization: whether they're made effectively, at the right levels, and based upon all of the available information.

Communication Flow - whether information flows effectively upward, downward, and laterally in the organization.

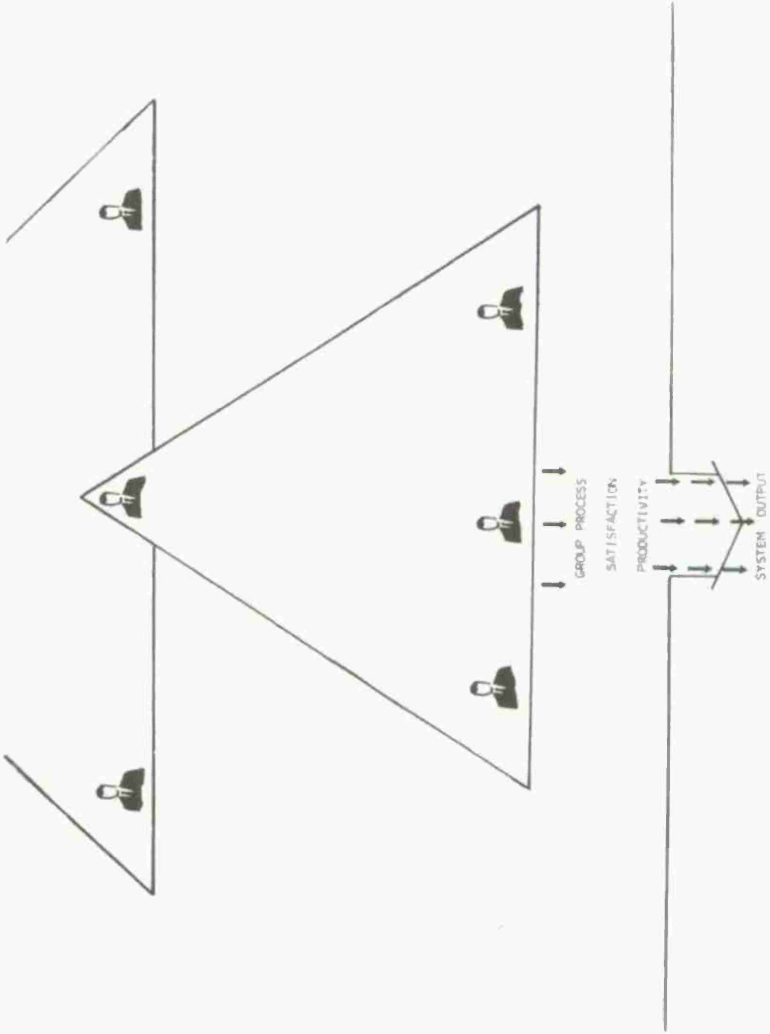
Motivational Conditions - whether conditions and relationships in the environment are generally encouraging or discouraging of effective work.

Technological Readiness - whether the equipment and resources are up to date, efficient, and well maintained.

Lower-Level Influence - the influence which lowest-level supervisors and non-supervisory personnel feel they have on what goes on.

As a result of these conditions--climate, managerial leadership and peer leadership--the organization functions in various ways. As Figure 13 illustrates, individual and organizational outcomes result from these conditions. If conditions are positive, the groups function well--they coordinate their efforts, they are flexible, adaptable, etc.--members are satisfied with various aspects of their work lives, and are productive. Negative conditions result in groups which function poorly, contain dissatisfied members and have poor outputs. The performance of the total organization may be thought of in terms of a summary or composite of the functioning of all groups.

Figure 13



All of these social-psychological factors are measured by the Survey of Organizations questionnaire. The diagnostic summary which follows is based upon data gathered with an expanded version of this instrument in late 1972 and early 1973 from Navy personnel from 20 ships and 18 shore stations. The questionnaire and data gathering methods are described in the general methods report of the series (Michaelsen, 1973).

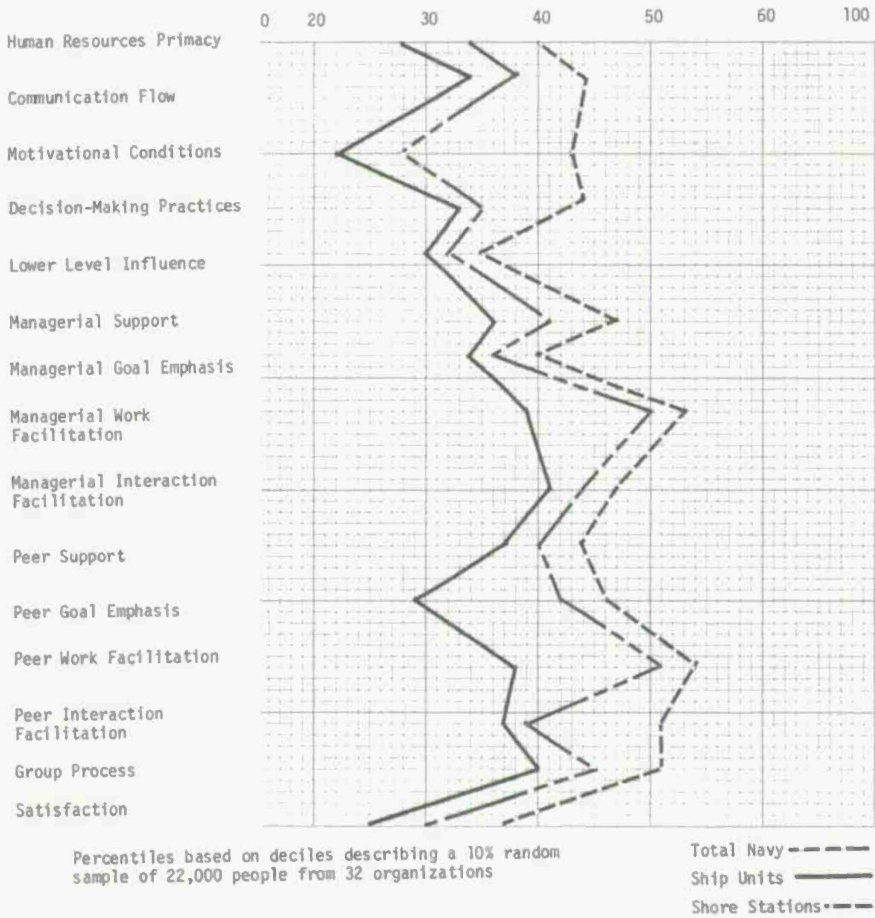
The Navy: Ship and Shore

Figure 14 presents in graphic form for the total Navy sample and for its ship and shore components those measures which constitute the critical indices of the Survey of Organizations. As the figure indicates, the measures are presented in the form of profiles of percentile scores calculated against the total Survey of Organizations normative array. In form they show at what percentile point on this national array of respondents the mean Navy respondent score falls.*

Judging what constitutes being "normal," better than average, or relatively low is at best an arbitrary, subjective process. In the present instance we shall establish at the outset the convention of considering that space between the 40 and 60 percentile marks as the boundaries of the normal or "typical" range, with those measures below that range considered potential problem areas, those above it indications of organizational vitality and strength.

*The S.O.O. national array, rather than the civilian cross-section from the present study are used for charting and percentile purposes because of the much larger number of cases contained in the former (more than 20,000). Analyses indicate that the civilian cross-section sub-sample of industrial employees (considered to be the best comparison base in the present instance from that overall cross-section) is not appreciably different from the S.O.O. national array. The mean index value of the two civilian comparison bases is different by only .07 of one scale point, and the profile of indices intercorrelated (rank-order coefficient) .93.

Figure 14
Percentile Profile for Ship, Shore, and Total Navy
Major S.O.O. Indices



As the charted data indicate, on the standard indices of the S.O.O. the Navy in toto falls within the normal range on all but the following measures:

- All measures of organizational climate, but especially Motivational Conditions (for which the Navy respondent is lower than nearly three-fourths of the civilian industrial respondents); Lower Level Influence (for which he is lower than approximately two-thirds of the civilian respondents); and Human Resources Primacy (lower than two-thirds of the civilian respondents).
- Managerial Goal Emphasis.
- Satisfaction.

Further scrutiny of the items making up these indices indicate that the lowest item scores occur on Satisfaction with the Organization (20th percentile), Conditions Encourage Hard Work (23rd percentile), and Satisfaction with the Job (25th percentile). Taken together, they suggest that the conditions of organizational climate which impinge directly or indirectly upon the performance of one's Navy job are seen in a distinctly negative light.

Additional items, not contained in the Survey of Organizations standard item list, but included within the present questionnaire for other purposes, provide additional insights concerning what it is that Navy respondents do and do not mean when they describe "conditions" as discouraging and jobs as less than satisfying. The data suggest that there is no appreciable difference between Navymen and civilians in industrial organizations on the following:

- Whether there is or is not someone to boss them in their work.
- Whether their job provides a chance to learn new skills.
- How hard they're required to work.
- How clean their jobs are.
- Whether their job provides a chance to get ahead.
- How much responsibility they must assume.
- How much free time the job permits.
- Whether their job is one in which they can help make the world a better place.

To this must be added that array of characteristics upon which Navy-men describe their jobs as distinctly different from those of civilians.

- As one might expect, more civilians feel negatively about their prospects for steady employment than do Navymen.
- More Navymen feel that, although their jobs require that they learn new skills, those jobs do not permit them to use the skills and abilities which they have and gain, and do not view their jobs as particularly prestigious.
- Although more Navymen than civilians describe their fringe benefits in favorable terms, many more Navymen than civilians view their pay in negative terms.
- Although more Navymen feel that their jobs offer them a chance to serve their country, an even larger proportion feel that it doesn't allow them to stay in one place (even though, by and large, they are no more attracted to moving about than is the typical civilian), and provides them an insufficient opportunity to control their personal lives.

- Navymen, in far greater proportions than civilians, feel enmeshed in a large bureaucracy, one in which they are endlessly referred from person to person when they need help, must go through a great deal of "red tape" to get things done, and are hemmed in by longstanding rules and regulations which no one seems able to explain.

The picture changes somewhat as one moves from a consideration of the total Navy sample to a comparison of two of its major functional subunits, the fleet and the shore establishment. Figure 14, which contained total Navy sample data, also presents line-graph profiles of the data from ship and shore-based respondents. Using the 40 and 60 percentile points once more as demarcating a roughly "normal" range, distinct differences appear:

- While the shore establishment is, on all measures except Lower Level Influence, within the normal range, the fleet is, with two exceptions, below the 40th percentile on all measures.
- The differences between ship and shore are most pronounced on Motivational conditions (an organizational climate measure), with ship respondents reporting levels worse than three-fourths of the national industrial array, whereas shore respondents fall near the median.
- On certain other measures ships fall at low percentile points also, with somewhat smaller differences from shore only because the latter are themselves somewhat low:
 - All other measures of organizational climate.
 - The general satisfaction index.

Once more, an examination of the job preference and description characteristics is revealing. As one might expect from the material

already examined, a higher proportion of shipboard than shore-based Navy men see themselves as:

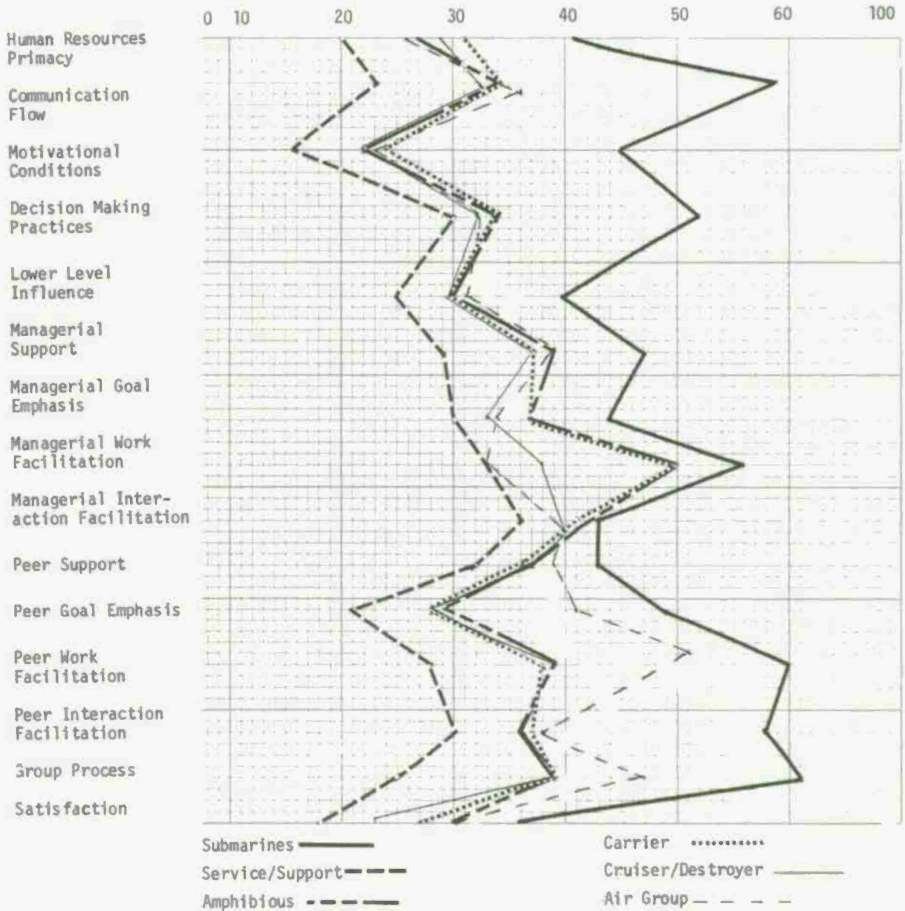
- "Bossed" in their work.
- Lacking a chance to learn new skills or use those they have.
- Asked to assume a great deal of responsibility.
- Having relatively dirty, non-prestigious jobs.
- Having less free time, and less chance to control their personal lives.
- More hamstrung by bureaucracy.
- Having less chance to serve their country, or to help make the world a better place.
- (Not surprisingly) having less chance to stay in one place.
- More poorly paid and having less adequate fringe benefits.

Analysis by Ship Type

The rather substantial, and negative, deviation of the shipboard sub-sample from both the shore-based subsample and the national industrial array suggests that further breaks, by ship type, ought be examined. Accordingly, Figure 15 presents a line-graph display of profiles on the standard Survey of Organizations indices for six types of shipboard respondents: Submarines, Service & Support Vessels, Amphibious Vessels, Carriers, Cruisers & Destroyers, and Air Groups. As these data indicate, submarine units are clearly highest (very much like shore units, and approximately at the median of the national array), whereas service and support vessels are lowest (closer to the 25th percentile). The differences are most pronounced upon Communication Flow and Motivational Conditions (both measures of organizational climate), all peer leadership variables other than peer Support, and Group Process.

Figure 15
Percentile Profile for Ship Unit Types
Major S.O.O. Indices

Percentiles based on deciles describing
a 10% random sample of 22,000 people
from 32 business organizations



Considering paired actual and preferred job characteristics for the six ship unit types, when ship versus shore discrepancy percentages on the actual items are rank-order (Rho) correlated with similar discrepancy percentages for the highest (submarines) versus lowest (service/support vessels), a negative coefficient results! ($P = .42$, $p = .05$). What this suggests is that what is associated, in the job characteristics realm, with the higher scores of submarines is not the same as that associated with the differences between shipboard and shore Navy men. Indeed, on many of those previously cited important job characteristics, submariners are no different from those aboard service and support vessels. What is associated, as the ship-type profile stated, are a number of organizational practice characteristics, particularly organizational climate, peer leadership, and group processes.

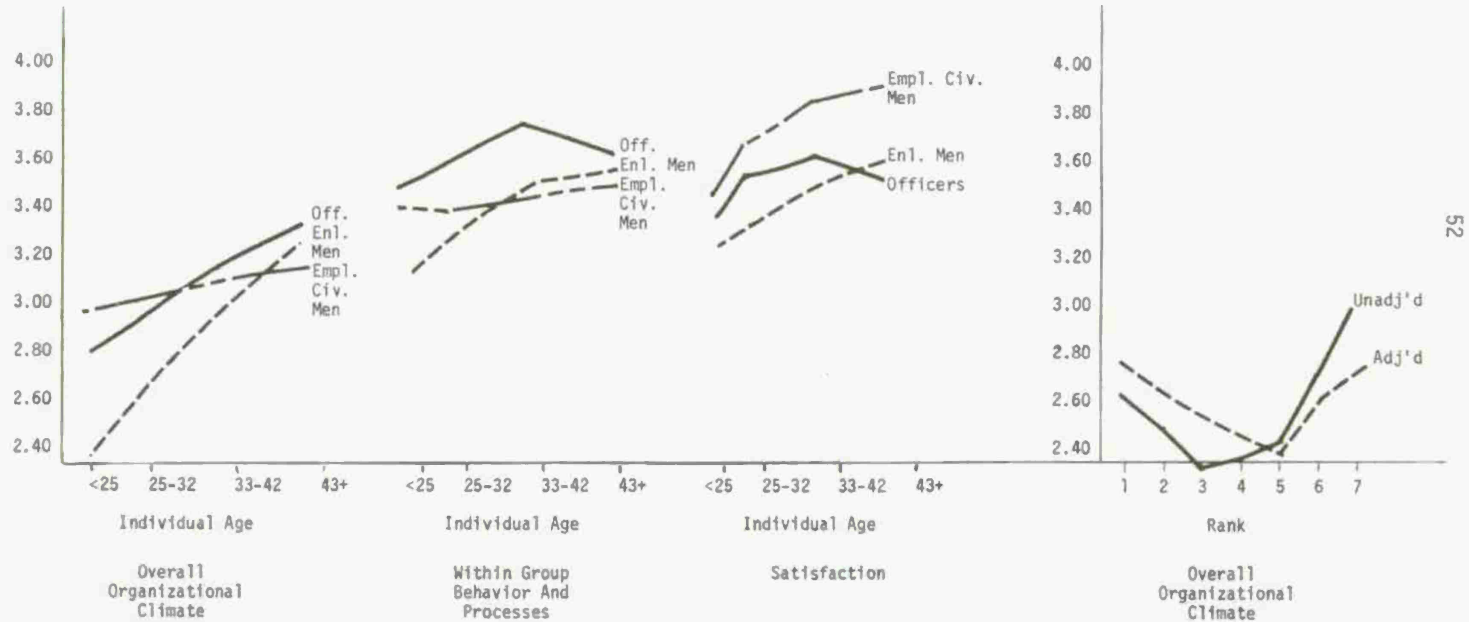
The Effects of Age and Unit Level

In the preceding chapter, evidence was presented which indicated that, for Navy men, (unlike civilians) preferences in the work setting rose or improved with age. At that point it was also noted in passing that these age effects seemed even more pronounced for experienced practices than for preferences and that rank appeared to have effects independent of those associated with age. More careful scrutiny reveals that this is, indeed, the case and suggests that the level of one's unit in the organizational hierarchy, rather than one's own rank, appears to be the more urgent consideration.

Figure 16 presents in graphic form overall statistics for variables in three domains: within-group behaviors and processes, satisfaction, and organizational climate, the latter broken by both age and individual rank.

Figure 16

Experienced Organizational Practices by Age & Rank



These data indicate that there is, for organizational climate and within group behaviors and processes, a rise in quality of experience with age that (a) is steeper for enlisted Navymen than for officers, and (b) scarcely exists for civilians. Satisfaction displays similarly steep rises with age for all three groups, however.

The earlier finding, that personal rank relates significantly to experienced practices independently of such considerations as age, is confirmed in the data presented in the figure. The interpretation offered as potentially plausible--that part of the rise with age reflects a steady rise in positiveness with rank--is not confirmed, however. The present chart illustrates that the effect of rank, both raw and adjusted to remove the effects of education and self-selection as well as age, is curvilinear, first declining and then rising.

Another report in the series represented in this summary volume looked at some of these same effects from an organizational, rather than an individual, viewpoint. The distinction perhaps deserves clarification. One may visualize a social situation in which common practice is to treat the views of older persons with deference, but to disregard or depreciate the views of the young. In such an instance, age would be respected wherever it is found. Similarly, an individual's rank might determine the treatment he receives, more or less regardless of the social setting. In both cases, the effects would be individual in nature, since they originate as a response to characteristics of the individual himself.

Distinctly different from this, however, is a situation in which age or rank are associated with organizational differences. In the latter instance, an individual might be himself young or lower in rank, yet a member of a group which is, on the average, older and headed by a person

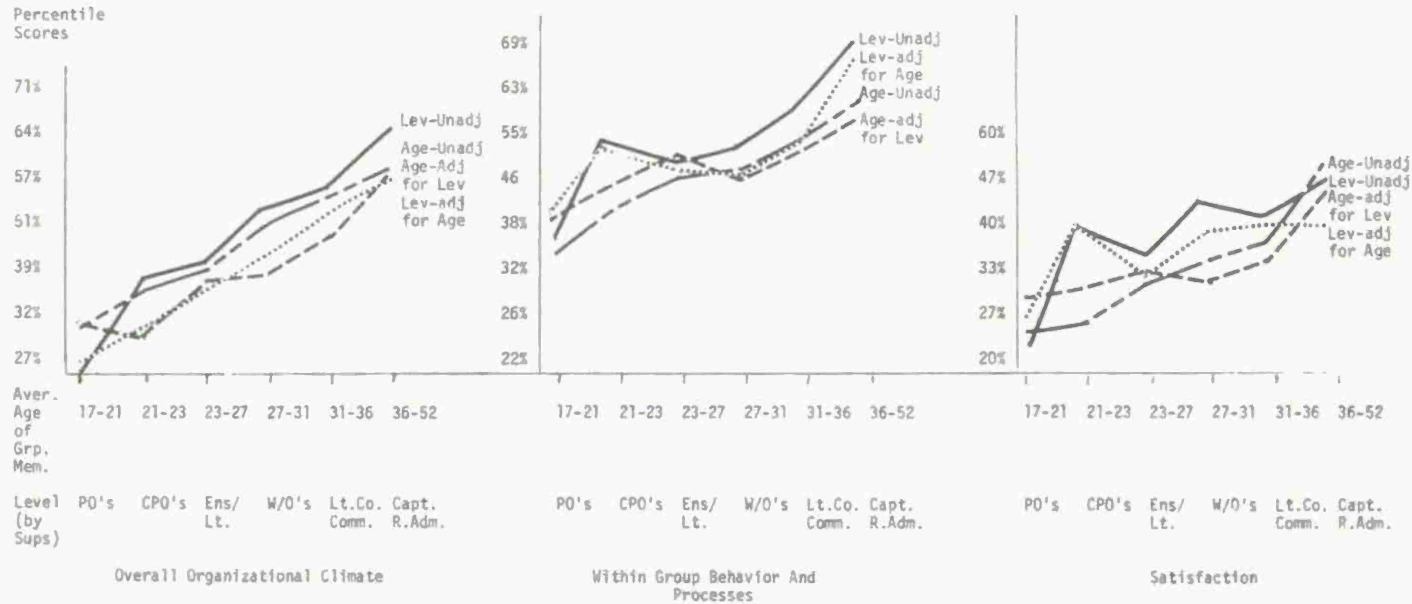
whose rank indicates that the unit which he heads is well up in the structure. The treatment which the young person receives in this latter situation might well be different from that received by a person of the same age in a younger, lower status group.

Figure 17 presents data similar to those presented in relation to individual age and rank. In the present instance, however, average age of the group and supervisor's rank provide the basis for an analysis of group means upon clustered variables. Here we see that experienced practices for whole groups rise in positiveness with average age of group members in much the same fashion as was true for individuals. Little change in these curves occurs when one adjusts for the effect of unit level (defined in terms of the supervisor's rank). Unlike individual rank, group level does seem to be associated with a relatively linear rise in the quality of experienced organizational practices, a rise which is only moderately reduced by controlling for average age.

These findings would appear to justify the conclusion that a Navyman's experience is at least in part a function of (a) his own age, (b) the average age or seniority of the persons in the group to which he belongs, and (c) his group's level or status in the organization. Combining these characteristics, one may surmise that an older person, in a group whose average age is similarly older, and supervised by a person of higher rank, will experience by far the best organizational conditions. At the opposite extreme, the most unfavorable conditions will be experienced by young Navymen in lower echelon groups, whose members are, like themselves, young.

Figure 17

Experienced Organizational Practices
by Average Age of Group Members and Unit Level



Age and the Ship-Shore Differences

We return now to a previously cited finding, that shore-based units appear to be organizationally better than fleet units. The obvious question is whether age differences between ship and shore Navymen may explain these observed practices differences.

Table 2 presents percentage distributions of age for shore, ship, and submarine respondents.* The data provide some reasonable ground for confirming an age hypothesis: the percentage of persons in our shipboard subsample 24 years of age and younger is twice as large as the percentage in the shore-based subsample! Furthermore, the percentage of submariners in this same category falls between the ship and shore percentages, but closer to shore than to ship.

These statistics suggest that, if the measures for Navy ship and shore units were controlled to remove the effects of age, the observed differences would largely disappear. This was, in fact, done, using the Multiple Classification Analysis program (Andrews, Morgan & Sonquist, 1967).

The results (not presented) show that the ship-shore difference is reduced approximately by half by controlling for age differences in the two subpopulations. On the majority of variables, ship-shore differences remain, but of much lower magnitude.

Personal Independence: Bureaucracy and One's Personal Life

One issue stands out with such clarion importance that its relation to age has been isolated in this section for separate treatment.

* Although exact data on age distribution have not been received, informal telephone inquiries confirm at least the general representativeness of our shore and ship age percentages.

Table 2

Age Percentage for Shore, Ship
and Submarine Navy Respondents

Unit	24 years and younger	25-32	33-42	43 years and older
Shore	34	31	27	7
Ship	68	17	13	1
Submarine	47	35	17	2

Stated most generally, it is personal freedom and independence, the ability to live the personal aspects of one's life reasonably free from external and bureaucratic constraints. Two measures were used in this study to tap the experience and importance of these characteristics: (a) a three-item index of the extent to which one is able to avoid endless referrals, red tape, and unexplainable rules (a high score therefore represents high independence), and (b) a single-item measure of opportunity to control one's personal life.

Both the actual experience and importance of these characteristics are presented in Figures 18 and 19 for all Navymen, Navy Officers, and employed civilian men. The findings are clear and compelling: although Navymen and civilians attach approximately the same levels of importance to these qualities, only civilians experience what could be termed an acceptable or satisfactory degree of them. Young Navymen, furthermore, whether officer or enlisted report an importance-experience gap of very large proportions.

Somewhat similar effects occur with respect to educational level. Actual experience and importance ratings for the Avoiding Bureaucracy index are presented in Figure 20 for enlisted Navymen, officers, and employed civilian men. Several facts are apparent from these data. First, the actual experience curve, like the importance curves, for civilians are flat and comparatively high, indicating that little difference in bureaucratic encounters is associated with educational level. Second, the Navy actual experience curves, for officers as well as enlisted men, are negatively sloped. In other words, despite more nearly common levels of aversion to bureaucracy, better educated Navymen report more frequent endless referrals, more occurrence of red tape, and a greater

Figure 18

Bureaucratic Encounters:
Importance and Experience of Avoiding Bureaucracy by Age

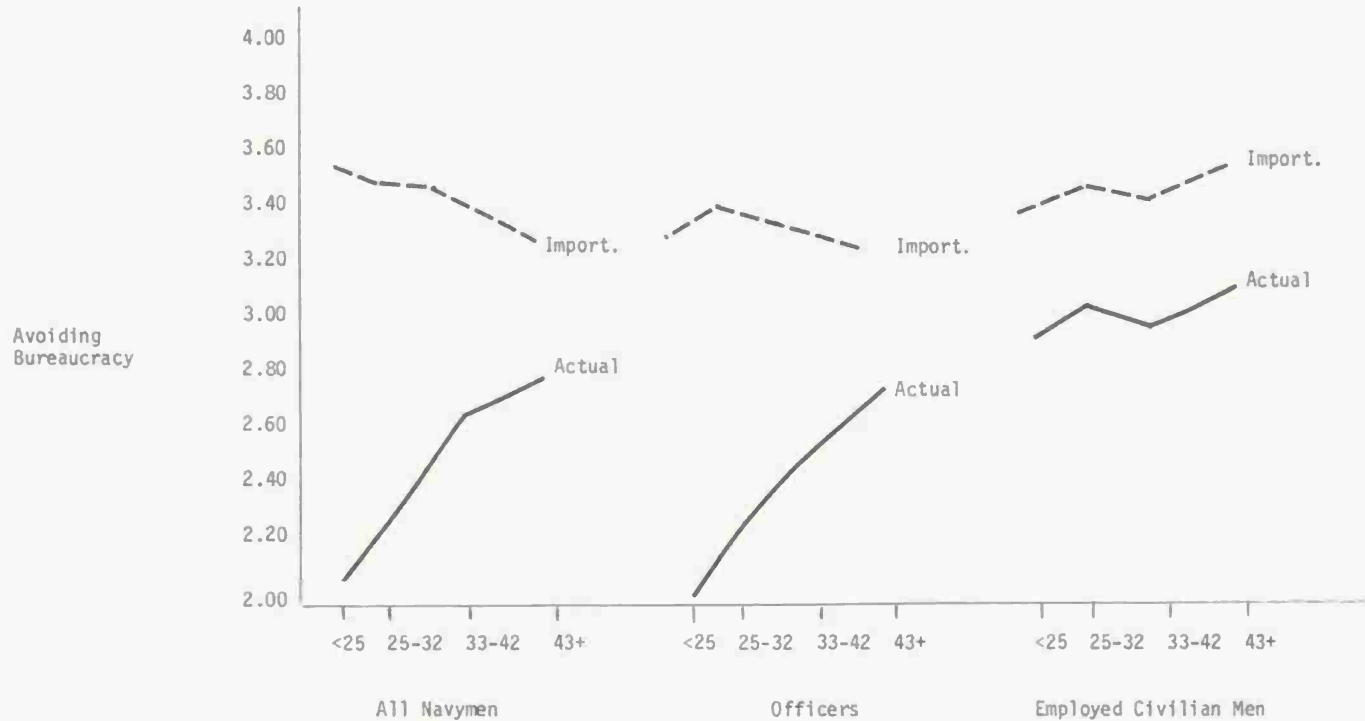


Figure 19

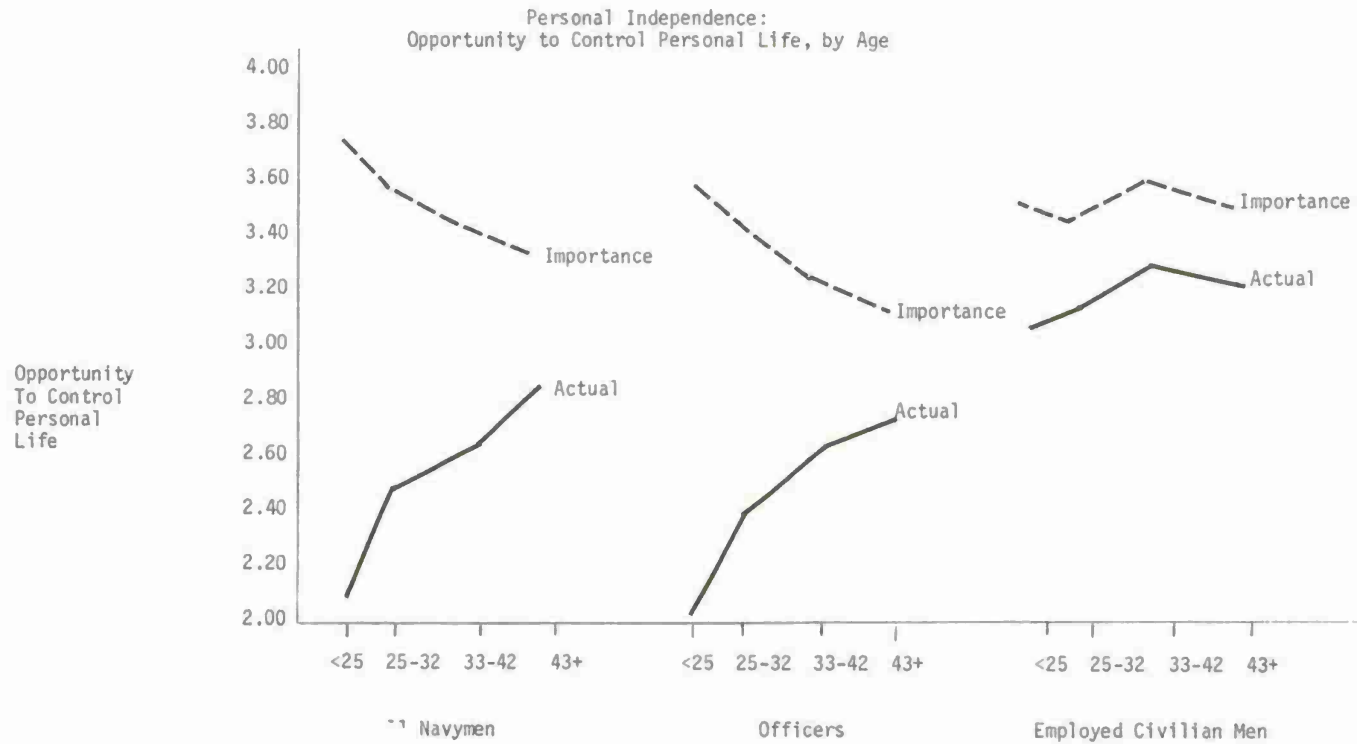
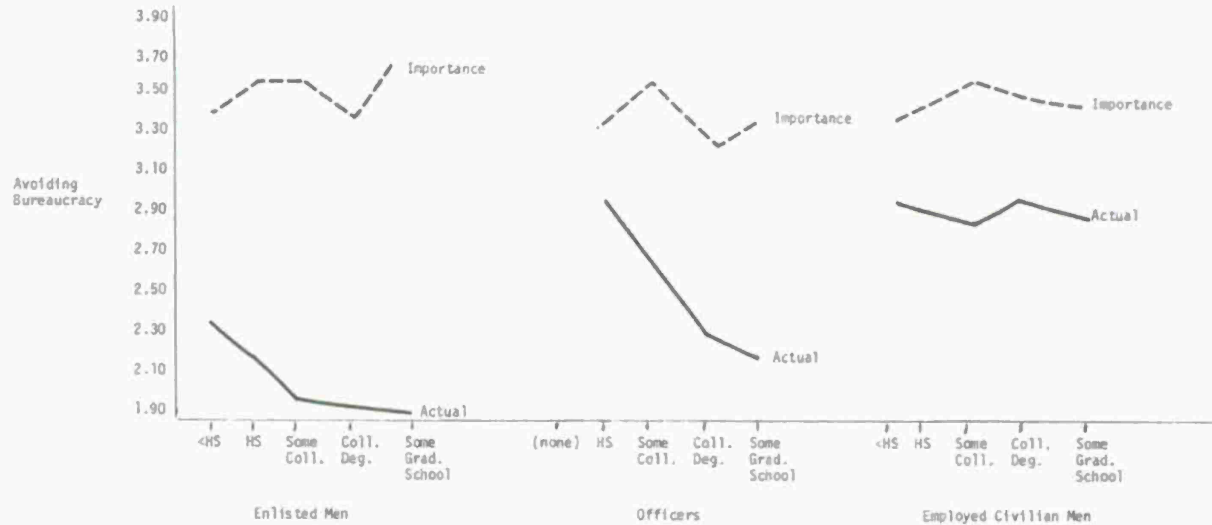


Figure 20

Bureaucratic Encounters:
Importance and Experience of Avoiding Bureaucracy, by Educational Level



incidence of rules or regulations which no one seems able to explain than is reported by less well educated persons. Perhaps the former are more sensitive to such issues, or perhaps more complex assignments bring them more often into contact (and conflict) with the bureaucracy. The fact remains that they feel more hamstrung in their work than do the less well educated.

Finally, the other "independence" measure--opportunity to control one's personal life--displays for officers a similar, rather strange, pattern (See Figure 21). The importance attached to being able to control one's personal life rises only slightly with education, a finding in no way surprising. Yet where most societies or social orders provide their technical-educational elites with more, not less, personal freedom, the reverse appears to be true among Navy officers. That the situation is decidedly different from aspirations and experience by comparable groups in the civilian world is indicated by curves presented for employed civilian men.

A Diagnostic Overview

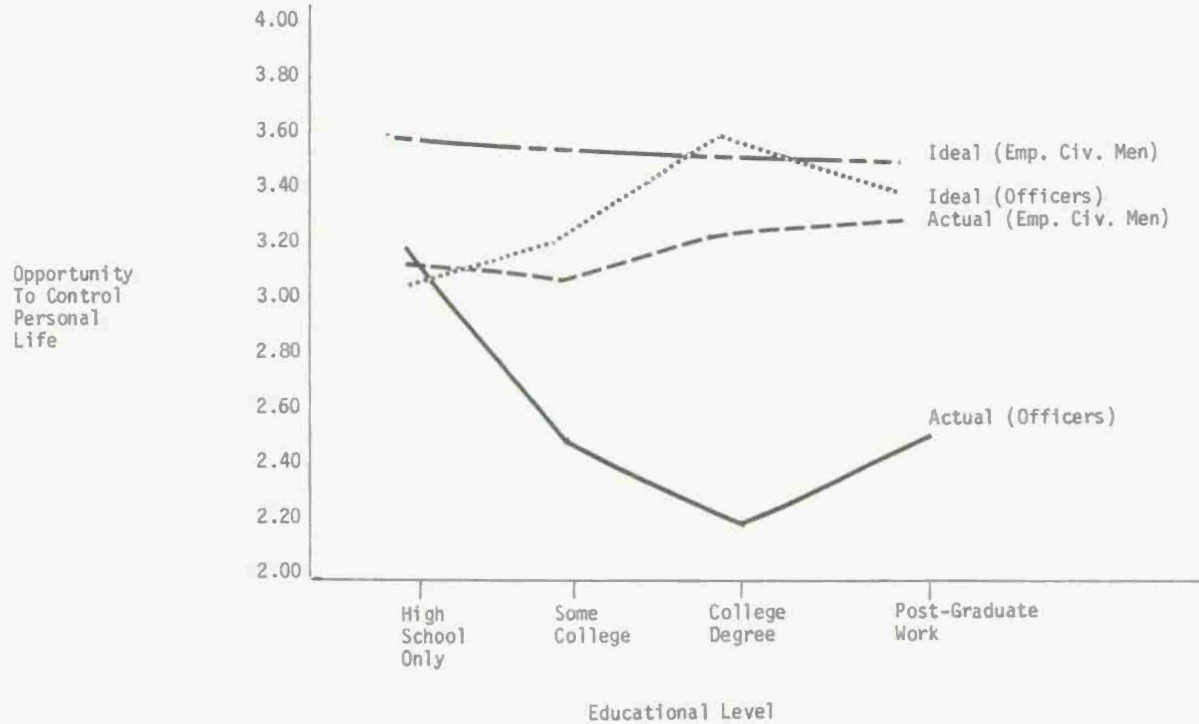
We turn now to two questions of some material significance to the Navy as a viable organization:

- (1) Is the pattern which difference in Navy conditions and practices assumes one which is consistent with the set of principles upon which the Survey of Organizations is based?
- (2) What form do these differences in conditions and practices within the Navy take?

The first of these questions may be stated much more simply in the following form: does the model of organizational management upon which our measures are based hold for the Navy? That general model takes the form

Figure 21

Personal Independence:
Opportunity to Control Personal Life, by Educational Level

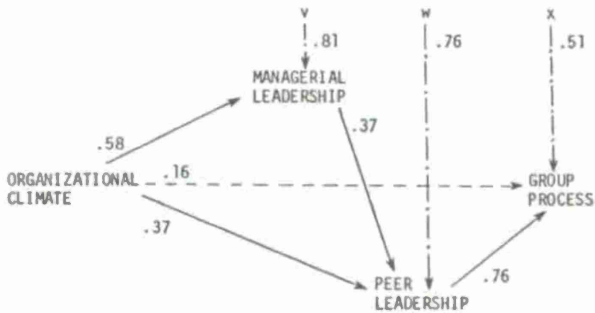
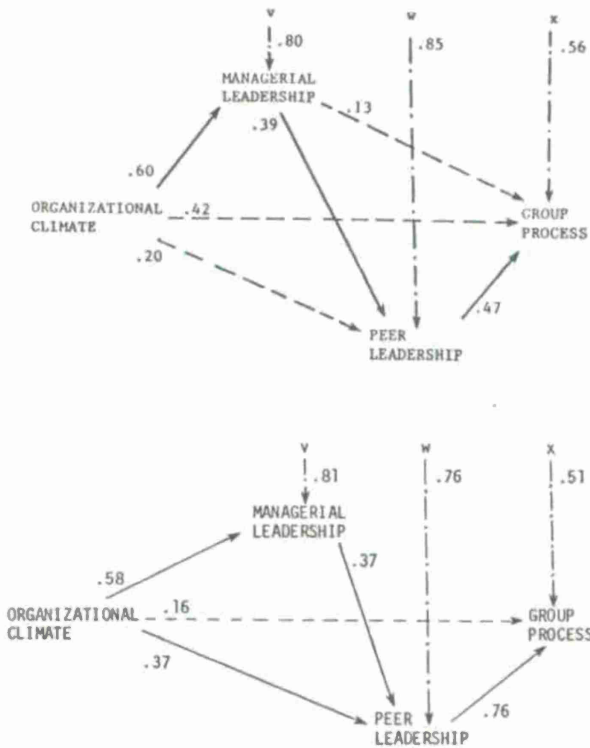
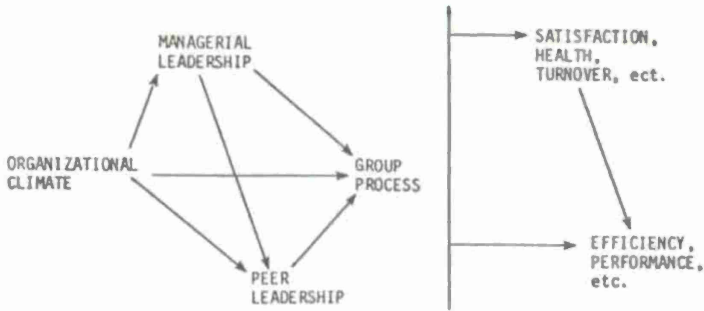


diagrammed in the top segment of Figure 22 and is based upon the writings of Likert (1961, 1967), expanded and tested by Likert and Bowers (1969, 1973), Bowers and Franklin (1973). "As the model suggests, organizational climate is the primary independent variable. Climate, along with individual differences--i.e., knowledge, skills values--are major determinants of managerial leadership behaviors which, together with organizational climate, shape peer leadership behaviors. These variables, in turn, determine group process. The final variables in this chain are individual outcomes--i.e., satisfaction, health--and organizational outcomes" i.e., efficiency, performance, etc. (Franklin, p. 19).

Although this general model is itself the product of research evidence, it has recently been subjected to a major test of the strengths and patterns of its major causal linkages employing a civilian data set from the national array of the Survey of Organizations. (Franklin, 1973). The analysis procedures were basically those of multiple regression employing a path analysis strategy. (Land, 1969). The results of this test are shown in the second segment of Figure 22. They indicate that the model was, indeed, verified.

A similar analysis was conducted with Navy data to determine, as has been indicated, the goodness of fit of these principles to Navy organizational life. The results of that test are presented in the third segment of the same Figure 22. They indicate an overall applicability, with certain specific differences. Specifically, the pattern emerging from the Navy data suggests an equal influence of both organizational climate and managerial leadership upon peer leadership, with the latter the major factor affecting group process.

Figure 22



———— Best Predictor
 - - - - - Secondary Predictor
 - · - · - Residual ($\sqrt{1-R^2}$)

Although Organizational Climate alone has less direct effect over Group Process, it does have a greater effect upon Peer Leadership, which in turn affects Group Process directly. These data indicate that, even more than in civilian organizations, Peer Leadership behaviors appear to be of utmost importance to organizational functioning within the Navy.

Feeling reasonably confident from these studies that the general body of principles and measures upon which we have drawn are appropriate to an analysis of Navy functioning, we may profitably consider conditions and changes in those conditions across hierarchical levels of the Navy. The data are presented in percentile score form in Table 3. As a footnote indicates, each level has been compared to Survey of Organizations civilian norms appropriate to that level. Thus, groups headed by Captains and Rear Admirals are compared to top management norms, those headed by Lt. Commanders, Commanders, and Warrant Officers to upper middle management norms, those headed by Lieutenants, Ensigns, and Chief Petty Officers to lower middle management norms, and those headed by Petty Officers to non-supervisory blue collar norms.

The data indicate that a problem exists with Human Resources Primacy, a measure of organizational climate, at all levels. This measure, which indicates the extent to which human concerns are felt to be reflected in policies, practices, and conditions of the organization, falls consistently in the 20-40 percentile range, even at top levels. There is also a Motivational Conditions problem, which appears as such in the table only from the Warrant Officer level downward. The three items which comprise this index display somewhat different patterns, however. One item "To what extent are there things about working here (people, policies, or conditions) that encourage you to work hard?" falls in the

Table 3

Mean Percentile* Scores for Groups at Various Hierarchical Levels

Measures	Percentile Scores for Levels: Groups Headed by					
	Capt's & R/Adms	Lt Comm's & Comm's	Warrant Officers	Ens's & Lt's	Chief P.O.'s	Petty Officers
<u>Organizational Climate</u>						
Human Res's Primacy	20	37	35	28	28	35
Motivational Conditions	42	43	37	35	30	24
Decision-Mk Practices	53	47	51	45	40	42
Communication Flow	43	47	47	51	52	51
Lower-Level Influence	47	38	38	45	43	28
<u>Managerial Leadership</u>						
Support	65	53	37	50	49	45
Goal Emphasis	43	47	38	39	42	42
Work Facil.	63	56	56	39	49	48
Interaction Facil.	50	48	47	46	49	50
<u>Peer Leadership</u>						
Support	68	62	43	45	43	47
Goal Emphasis	81	61	45	47	45	37
Work Facil.	70	63	57	54	56	36
Interaction Facil.	65	57	56	52	53	43
<u>Group Processes</u>						
	78	62	57	53	53	42
<u>Satisfaction</u>						
	33	37	33	33	36	26

* Each level is compared to norms appropriate to that level.

22-36 percentile range for all levels. The index as a whole remains at the "non-problem" level for the two uppermost levels because the other two items (kinds of motives to which appeal is made, and the motivational effects of disagreements) remain firmly within the normal range. The index becomes a problem when, in the middle management levels, these items also change.

Coincidental with the change in motivational climate is an understandable change in task-related supervisory behavior. Warrant Officers are seen as facilitating the work, but not emphasizing goals, whereas Lieutenants and Ensigns are seen as doing neither exceedingly well. The reasons for this condition certainly include the climate conditions already cited, but may also reflect what is indicated in a question about the supervisor's technical competence. (See Table 4)

Outcomes of Practices and Conditions

Finally, our attention appropriately turns to a consideration of the results of the practices and conditions just discussed. As the previously cited model suggests, satisfaction is one such outcome. Table 3 included, together with measures of organizational functioning, percentile satisfaction scores for groups at each of the hierarchical levels. These data indicate that satisfaction parallels the problems observed in the human and motivational aspects of organizational climate.

Further evidence is presented in Table 5, which shows the separate percentile scores for satisfaction items. These data indicate that every level clearly is comparatively dissatisfied with the unit as such (Ship or Shore station) and with their jobs. Every level except the very top (and perhaps those groups supervised by Chief Petty Officers) are

Table 4
Perceived Technical Competence of Supervisors
at Various Hierarchical Levels
(Percentile Scores*)

Supervisor's Rank	Percentile Score
Rear Admirals & Captains	53
Commanders & Lt. Commanders	48
Warrant Officers	41
Ensigns & Lieutenants	28
Chief Petty Officers	48
Petty Officers	43

* Each level is compared to norms appropriate to that level.

Table 5
Percentile* Scores for Satisfaction Items

Level (Groups Headed by)	Percentile Scores for Satisfaction with						
	Unit (Ship or Shore Station)	Job	Work Group	Progress To Date	Future Progress	Supv.	Pay
R/Adm's & Captains	15	19	61	27	38	48	42
Lt. Comm's & Comm's	21	34	39	46	39	38	50
Warrant Officers	28	35	28	47	49	32	44
Ens's & Lieutenants	17	27	32	47	42	32	39
Chief Petty Officers	19	29	40	48	43	41	39
Petty Officers	19	23	24	41	37	36	41

* Each level is compared to norms appropriate to that level.

clearly dissatisfied with both their supervisors and their peers. However, for the most part only the very top is clearly dissatisfied with personal progress, and only the lower middle levels are dissatisfied with pay.

The questionnaire used in the present study contained an item which asked Navy men to indicate their reenlistment intention. In an effort to study the effect upon retention of the conditions and practices described in this chapter, a three-step analysis was undertaken:

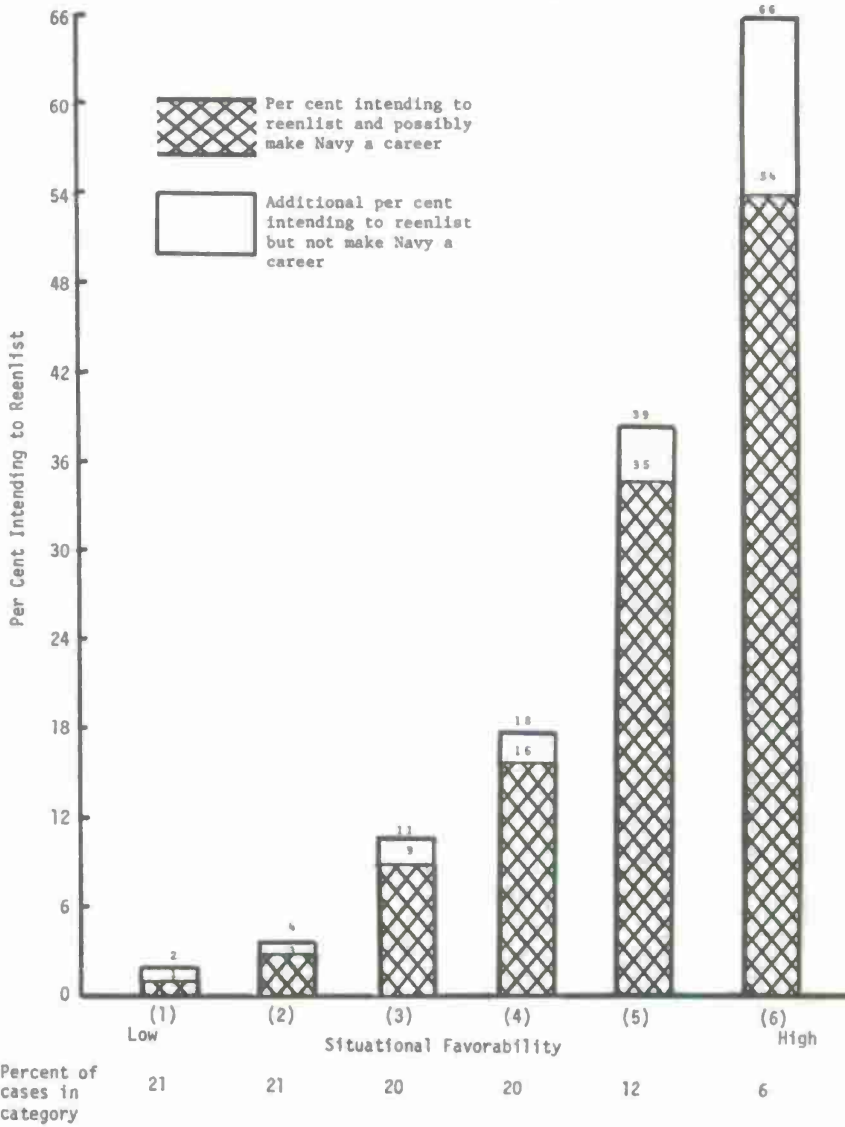
- (1) Validate the Reenlistment Intention item against actual retention rate for first-termers aboard ships in the sample. (The result is a directionally-appropriate correlation of .76.)
- (2) Conduct an elaborate, cross-validated multiple regression analysis to identify the best predictors of Reenlistment Intention.
- (3) Rate each person according to situational favorability, defined in terms of those best predictors, and then calculate percentages intending to reenlist.

In an effort to take account of both group and individual level affects in combination, first-term enlisted men were assigned coded scores based upon median splits for the five appropriate predictor measures. For those two measures whose effects were visible at the group level (Opportunity to Control Personal Life and Friendly People) individual first-term Navy men were assigned scores of zero if the groups to which they belong have mean scores which fell at, or below, the median of the distribution of group scores on the measures. They were assigned a score of 1 if their group reflected a mean that fell above the median of group scores

on the variable. Thus, at the group level, individuals could accumulate scores ranging from 0 to 2. A similar procedure was followed for the three individual level measures. Individuals were arrayed in order of score; the median score was identified; and individuals at or below the median on any of the three variables were assigned a score of zero. Those above the median were assigned a score of 1. For variables identified as best predictors at the individual level, therefore, an individual member of the sample could accumulate a score ranging from 0 to 3. Combining scores for the group and individual level predictors produced an array of scores from 0 to 5; for data processing convenience, a constant of 1 was added to each such score, producing categories from 1 through 6, which represent lowest to highest situational favorability on the five measures combined. There was then obtained a frequency and percentage spread for these six categories of Navymen on the reenlistment intention measure.

A graphic comparison of the six situational favorability categories on percentage intending to reenlist is presented as Figure 23. The results are dramatic indeed. Combining response categories 1 and 2 on the reenlistment intention measure (those who say that their intention is to reenlist and make the Navy a career, plus those who say they intend to reenlist and possibly make the Navy a career) we find that for category 6, the most situationally favorable, over 54 per cent say that they intend to reenlist. Adding those from response category 3--persons who intend to reenlist but not make the Navy a career--produces results which are even more surprising. In the least favorable category no more than two per cent state an intention to reenlist, whereas 98 per cent in this low category state their intention to return to civilian life. The importance of

Figure 23
PER CENT INTENDING TO REENLIST BY SITUATIONAL FAVORABILITY CATEGORY
(First-Term Enlisted Men Only)



situational favorability, assessed in these terms, is perhaps reinforced by the rather steady progression of percentages intending to reenlist as one moves from least to most situationally favorable categories, rising to a high of 66 per cent in the most favorable category.

During the course of the study, criterion data on retention rate and certain health measures were made available for the ships represented in the sample. The results of correlating the conditions and practices measures from the survey with ship-wide performance statistics of the kind indicated are presented in Table 6. These findings tend to confirm what has been suggested by the analyses presented in this section of the chapter, that the conditions described diagnostically in these pages bear significant relationships to valued outcomes of the Navy.

Conclusions: What the Data Say About the Navy as a Functioning Organization

1. The measures of organizational practices included in the survey represent, not a shotgun array of issues, but a well-researched set of management principles. Appropriately structured, they form a picture or model of how an organization functions effectively. The data show that this model is reasonably valid for the Navy, as for civilian organizations, since:
 - (a) the various measures relate to each other as they should; and
 - (b) the measures relate well to organizational criteria, especially retention rate.
2. Although the Navy as a whole falls approximately at the lower border of what is termed the "normal" range (40 to 60 percentile points on the national civilian norms), this conceals a rather

TABLE 6
RELATIONSHIP OF SURVEY INDICES
TO MEDICAL CRITERIA FOR SELECTED SHIPS

Survey Index	Medical Criterion/Period					
	Sick Bay Visits		Lab Tests		Pharmacy Units Dispensed	
	Fiscal 1972	First Quarter Fiscal 1973	Fiscal 1972	First Quarter Fiscal 1973	Fiscal 1972	First Quarter Fiscal 1973
Human Resources Primacy	-.10	-.02	-.18	-.19	-.14	-.14
Communication Flow	-.29	-.26	-.08	-.40	-.23	-.16
Motivational Conditions	-.37	-.30	-.13	-.21	-.26	-.22
Decision Making Practices	-.14	-.24	-.08	-.22	-.10	-.12
Lower Level Influence	-.27	-.54*	-.14	-.59*	-.38	-.39
Satisfaction	-.31	-.26	.01	-.25	-.07	.02
Group Process	-.27	-.17	-.10	-.42	-.46*	-.37
Supervisory Support	-.03	.10	.15	-.03	.04	.04
Supervisory Goal Emphasis	.01	-.04	.32	.16	.04	-.06
Supervisory Work Facilitation	-.20	-.09	.36	.07	-.03	-.07
Supervisory Interaction Facilitation	-.24	.10	.16	.08	.05	.08
Peer Support	-.15	.10	-.16	-.35	-.29	-.08
Peer Goal Emphasis	-.36	-.33	-.07	-.49*	-.35	-.38
Peer Work Facilitation	-.44	-.32	-.05	-.52*	-.53*	-.45*
Peer Interaction Facilitation	-.38	-.23	-.08	-.42	-.51*	-.48*
Supervisory Needs	.25	.20	-.08	-.07	-.11	-.18

*p is less than .05

crucial difference. The shore-based units are well within that normal range, whereas the fleet units are distinctly below it. The sole exceptions are the submarines, which resemble the shore units in quality or organizational functioning.

3. Most of the more serious fleet problems appear to lie in organizational climate conditions and leadership behaviors, rather than in the intrinsic properties of jobs performed. Thus,
 - (a) Human Resources Primacy--a measure of organizational climate which indicates the extent to which human concerns are felt to be reflected in policies, practices, and conditions of the organization--falls consistently in the 20-40 percentile range, even at top levels.
 - (b) Motivational Conditions--an organizational climate measure indicative of the extent to which policies, practices, and conditions encourage the doing of an effective job--fall in the 20-40 percentile range for all levels except those representing more senior officers.
 - (c) Task-related supervision is similarly a problem at all levels except those representing more senior officers.
 - (d) Satisfaction is comparatively low for all echelons with regard to the organization itself, the job, one's supervisor and one's peers. On the other hand, only the very top is clearly comparatively dissatisfied with personal progress, and only the lower-middle levels are comparatively dissatisfied with pay.

(e) No differences occur between Navymen and civilians on such job-structural characteristics as:

- (1) the chance to learn new skills (although Navymen do feel comparatively short-changed in the opportunity to use skills once learned).
- (2) how hard one must work;
- (3) the responsibility assumed;
- (4) the chance to get ahead;
- (5) the cleanness or dirtiness of the job;
- (6) the amount of free time permitted.

4. Much of the problem pattern occurs as well in, and perhaps ties critically to, a perceived undue absence of personal independence, in the form of bureaucracy and an unnecessary intrusion into Navymen's personal lives.

5. Like the organizational climate and leadership problems, this personal independence shortage is:

- (a) age-related--the favorability of practices experienced by Navymen rises with both personal age and the average age of the group to which one belongs. Until a Navyman reaches 30 years of age, or is in a group whose average age approximates that figure, he does not experience conditions as favorable as those experienced by civilians of almost any age.
- (b) rank-related--for enlisted men, experienced conditions steadily decline from E-1 to E-5, then rise to a peak at E-7.
- (c) unit-level related--experienced conditions improve steadily with the rank of one's supervisor.

Chapter 4

Social Issues and Navy Life

As individuals, Navy men live and work in social settings, each experiencing a configuration of influences unique to his particular place and time, yet in important ways similar to the configurations experienced by others. Imagine, if you will, such an individual, assigned to a billet aboard a particular ship or shore station. Part of what he experiences reflects organizational practices and processes--the behaviors of relevant persons aboard ship and their emergent effects, coming from a variety of locations and levels, but all experienced in the course of the face-to-face contacts which occur inside the work group. Yet another part is institutional, reflecting the policies, statements, and implemented procedures of the Navy itself or of its major commands as they implement Navywide policy. A third part is societal and reflects the tides and currents of American society more generally. Each of these three sources--organizational, institutional and societal--contributes its portion to the world experienced by our hypothetical Navy man.

It is to the last-named of these--societal issues and their impact upon Navy life--that this present chapter turns. In so doing it seems useful to acknowledge at the outset that no clear line of demarcation may be drawn between organizational, institutional, and societal effects. Not only are they experienced and felt by persons who are, after all, unitary entities, but their effects are in truth intertwined. Race relations, for example, appears as a crucial consideration in face-to-face interaction in the basic work group. Efforts at tolerance and understanding may or may not go on, and racist remarks or treatment of persons by persons may or may not occur.

At the institutional level, policies may have racist effects (intended or not), or they may move toward ameliorating the differences of the past. But it is at the societal level that the race problem has its origins. It is in American society, its history, and its accumulated experience that racial discrimination and conflict have their roots.

Similar routes could be traced for any of a number of problems in contemporary American life. Several have loomed large in the set of studies which this report summarizes, however. The military draft and the complex web of motivations which it has induced, for example, represent a societal issue which formed one of the basic reasons for undertaking the study in the first place. Technological sophistication is another such issue. Since the Navy is a high-technology organization, existing in a circumstance in which hardware sophistication has inordinate importance, that too has been a pertinent topic for exploration. Together with race relations, these areas comprise a crucial portion of the motivational force-field experienced by the individual Navyman. At issue, of course, is whether, in the course of the working of these forces, the individual Navyman experiences the necessary consonance of his needs with those of the Navy. Accordingly, we will look first at draft motivation, examine secondly certain correlates of technology, then turn to race relations, and finally to goal integration, the match of individual with organizational "needs," experienced by Navymen.

Draft Motivation

In an early report in the series, there were presented certain basic statistics concerning three conceivable categories of draft motivation (Drexler, 1973).

True Volunteers - Those individuals who enlisted under no felt threat of conscription. (This was measured in the present study by a "No" response to question D17:

"Would you have been drafted had you not enlisted?")

Choice Motivated - Those individuals who, under threat of being drafted, chose the Navy in preference to service in other branches. (This was measured by a "Yes" response to question D17, plus an "Extremely Important," "Important," or "Somewhat Important" response on question D29:

"How important (was this) in your decision to join the Navy: wanted to fulfill my military obligation at a time and in the service of my choice rather than being drafted.")

Draft Avoidant - Those individuals who would have been drafted but for whom it was not important to be in the service of their choice rather than being drafted. (This was measured by a "Yes" response to question D17, plus a "Not very important" or "of no importance" response on question D29.

For Navymen included in the study's sample (obtained in late 1972 and early 1973), these three categories occur with the following frequency: True Volunteers 34 per cent, Choice Motivated 44 per cent, and Draft Avoidant 21 per cent. Several findings reinforce our faith in the validity of these measures. One of these is the relationship between the categories on selective service lottery number, presented in Table 7 (Drexler, 1973).

Table 7

PERCENTAGES OF RESPONDENTS IN VARIOUS
DRAFT MOTIVATION AND LOTTERY NUMBER CATEGORIES

Lottery Number	Draft Avoidant	Choice Motivated	True Volunteers
1-50	51.9	39.5	8.5
51-100	14.8	30.2	6.6
101-150	13.0	14.8	6.6
151-200	9.3	11.7	9.4
201-365	11.1	3.7	68.8

Still another is the result for the youngest age groups: 49 per cent of the respondents under 22 years of age were true volunteers, and a further slicing of the sample showed that of respondents under 19, 76 per cent were true volunteers.

With these facts in mind, we may examine the results of comparisons among these three groups. There are a number of issues that appear to be unrelated to draft motivation:

- Race (among U.S. nationals)
- Type of community in which the Navyman grew up (Rural-Urban)
- The leadership style which he prefers to experience from his supervisor and peers
- Belief in more autocratic or more democratic management values
- Preferred level of job challenge

On all of these, and for the most part on region of the U.S. in which he grew up, there are no statistically significant differences. True Volunteer, Choice Motivated, and Draft Avoidant Navyman look very much alike.

However, on a number of other measures differences do emerge. Taken together, they permit us to sketch each of the three groups in the following way:

True Volunteer

In general the least well educated of the three, he attaches the greatest importance to the upgrading possibilities of Navy service (in the form of certain "classical" reasons for enlistment, such as job and educational opportunity, security, travel, and adventure). He values personal independence almost as much as does the Choice Motivated.

He has experienced the fastest promotion rate of the three, but is only intermediate in positiveness about his service experience to date.

Choice Motivated

Best educated of the three, he attaches least importance to the classical reasons for having enlisted. He attaches greatest importance to personal independence. He has experienced a promotion rate close to that of the True Volunteer, but is least positive about his service experience to date.

Draft Avoidant

Intermediate in education, he also attaches intermediate importance to classical reasons for having enlisted. Of the three types, he attaches least importance to personal independence, has experienced the slowest promotion rate and yet is the most positive concerning his service experience to date.

Thus three quite different portraits are painted. The True Volunteer would appear to enter with some educational disadvantage, but with a view of his service in the Navy as a route to a better life situation. Still, his expectations are sufficiently high, and he is sufficiently independent-minded, that Navy practices leave him only moderately positive about his experience to date. Among first-term enlisted men, however, he is the most likely to reenlist, a likelihood whose size depends upon how well he is treated organizationally.

The Choice Motivated Navyman seems by temperament, view, and orientation to be quite different. He is, after all, in the Navy largely because he preferred it to another branch, not because he was enthusiastic about military service. He is well educated, has been promoted relatively rapidly, but is not particularly impressed with his military service. The overall probability that he will reenlist is lower than for True Volunteers, but it increases with favorable, more participative treatment.

The Draft Avoidant Navyman is in many ways the most anomalous of the three. Although his experience has been less positive, his reaction to it is the most favorable of the three. Clearly, this is in part because his expectations were lowest. Apparently, for reasons that are not totally clear, a number of such persons enlisted in the Navy during the period between the close of the Korean War and start of the Vietnam War and have remained. Perhaps somewhat lacking in initiative, they seem likely to reenlist from inertia, if nothing else.

Among first-term enlisted men, however, the satisfaction of minimal expectations seems for these Draft Avoidants to be associated with little likelihood of reenlistment. They have clocked in their time; it was not as bad as they expected; it also does not coincide with their lifetime plans and perhaps not with their ideological posture. They will largely leave. In fact, when these persons are further subsetting by presence or absence of critical skills, the

reenlistment percentage varies only from 5 to 11 per cent, whereas for Choice Motivated and True Volunteers, similarly subsetting, it varies from 11 per cent to 40 per cent.

In summary, what may be said concerning the motivational consequences and coordinate effects of the end of the draft? For the Navy, nearly two-thirds of its enlisted manpower at the time of the data collection were other than True Volunteers. Some were in the Navy for what may be termed purely "reactive" reasons--they were threatened with being drafted and presumably saw the Navy as a comparatively "safe" place. Others were somewhat better educated and more "proactive" in their stance: also threatened with conscription, they elected to enlist in the Navy in order to complete the military service requirement at the time of their choice, as well as in their preferred service. Neither type seems likely to enter the Navy in any numbers in the foreseeable future. In the case of Draft Avoidants, this is perhaps fortunate for the Navy, since neither of this category's two subcomponents seems highly desirable. As our sample and findings reflect, the Navy at the time of this data collection contained some number of enlisted men who had entered as Draft Avoidants during the comparatively tranquil years between the Korean and Vietnam wars. To have been unable to generate a plausible reason for avoiding military service in an era when excuses were relatively easy to come by suggests at the least a lack of imagination, if not a lack of initiative. That, once in, they have simply stayed, in unusual proportions, seems to confirm the suggestion.

The other segment consists of first-term Draft Avoidants of the Vietnam era. Their motives seem more potentially hostile than apathetic, and it seems likely that they are ideologically rather antagonistic to military service. Having joined the Navy in the belief that it would help save their skins, they will leave at the first available opportunity.

The other category--Choice Motivated--represent a more serious loss for the Navy. They appear to have been better educated and more able. Unlike the Draft Avoidant, they appear to have been willing to weigh their experiences and treatment in arriving at a conclusion of whether to stay or go at the end of their enlistment. However, their expectations were high, and the experience less so, with the result that those who were in the Navy will likely leave. Since the draft was a major factor in their enlistment in the first place, it seems unlikely that substantial numbers of them will enlist in the future.

The Navy of the immediate future will consist--probably already does consist--entirely of True Volunteers. While their expectations are nearly as high as those of the Choice Motivated persons, their initial qualifications (in terms of education) are not. They have high needs for personal independence and participative treatment, and their decision to remain or leave the Navy at the end of their term is closely contingent upon the treatment they receive along these lines. They view the Navy as a personal route to skill, esteem, and position in life and will doubtless weigh as quite negative practices which deal with them otherwise.

Technological Sophistication and Management Styles

A persistent and widely discussed theme in recent years has been the connection, if any, between technological sophistication (automation) and organizational management practices. So-called "Detroit" automation has produced the assembly line and with it the charge in recent years that technological sophistication is de-humanizing. The charge, of course, is not new. In the early years of the nineteenth century, the Luddites expressed their reaction to industrialization in the English textile industry by destroying the hated machines. In similar fashion the term "sabotage," in fact, originated in the French railway strike of 1910, in which workers cut the wooden "shoes" (sabots) which held rails to sleepers.

On the other hand, it seems undeniable that more advanced technology has been the required forerunner of material progress. Only by the use of sophisticated equipment has mankind been able to do more--produce more and better goods and services--for the same investment of effort. As a result, technological progress has continued unabated, objections, demonstrations, and disruptions notwithstanding.

With all of this, however, there has arisen a much-debated question concerning appropriate management styles. Stated more simply, it takes the form, "Is there a connection between technology and the kinds of management practices that are conducive to effectiveness?" Two answers have been formulated on a priori bases: One answer holds that the effect of advanced technology has been to reduce the human skill requirement, thus making operators more nearly interchangeable hands. Since the human skill requirement is simple and more readily satisfied and the hardware

more complex, it follows that the management system must be more directive, more autocratic (to keep relatively unskilled persons doing what engineered, sophisticated hardware requires them to do).

The opposite has also been postulated. Because hardware is more complicated, keeping it running productively requires the pooling of a wider array of experiences, behaviors, and skills. This pooling is unlikely to occur unless the persons who possess them feel some involvement in, and commitment to, the operation and experience a situation which permits them to do so. Therefore, it is argued, coping with advanced technology requires a more, not a less, participative management stance.

The empirical evidence has not been without its contradictions, ambiguities, and outright voids. On the one hand, there is the evidence amassed by large organizational management research efforts, such as that integrated and reported by Likert (1961, 1967). In general, technology has not been an explicit variable in such studies; rather, the evidence that participative practices are best rests upon the fact that they have been found to be more or less universally appropriate, in situations which encompass a wide array of technologically different hardware configurations.

Those studies in which technology has been an explicit variable have generally suffered from potential flaws that make their conclusions questionable. In some such studies, no effort has been undertaken to relate practices to effectiveness (performance). Instead, effectiveness has been assumed to be implicit in the fact that organizations continue to exist, and the differences examined tend to be those of management styles among different technologies. In other studies, effectiveness has been examined, but the subjective judgments of the organization's own managers about what does and does not constitute "effectiveness" have been taken at face value.

However, it is a fairly well known proposition that autocratic managements adopt short-run gain strategies. It is also reasonably well recognized that such strategies can be extremely costly in the longer run (Likert & Seashore 1973, Likert & Bowers, 1969, 1973). Finally, hardware-intense operations are less person-dependent in the short run and can endure more autocratic abuses before they suffer damage. Thus any finding that "autocratic behavior goes along with effectiveness" in mass-production operations is immediately suspect as a rather sizeable self-fulfilling prophecy.

Some recent evidence is less suspect, however. Taylor, in a series of studies, found a direct, positive relationship between sophistication of technology and participativeness of management practices, that is, the more sophisticated the technology, the more participative were the management practices employed (1971). In this instance, technology was defined as "the principles and techniques used to bring about change toward desired ends in the raw materials processed by a job or work group." Its degree of sophistication was measured by means of three aspects: (a) the constancy or predictability of raw materials, (b) the extent to which the equipment employed was automatically operated and controlled versus manually operated and controlled, and (c) the amount and speed of feedback evaluating output. Obviously this approach and its measures focused upon the degree of automation of the hardware used in the creation of the product or service.

In the present study, it was felt early on that, in an era of increasingly sophisticated weapons systems, the issue of the necessary companionate management practices ought to be examined. Accordingly, measures were built into the questionnaire instrument, and the issue examined.

In brief, Taylor's findings failed to replicate in a Navy setting. If anything, the reverse was true--a tendency for more participative practices to be found in less technologically sophisticated settings (Drexler, 1973).

While it seems to be true that more autocratic practices go with sophisticated hardware in the Navy, and it may be true that such a contingency is optimal, other findings lead us to be quite suspicious. Particularly, the relationship between educational level and technological sophistication for both Navymen and civilians, causes some such uneasiness (See Table 8).

What this seems to indicate is that Navy assignment practices, like their civilian hiring and placement counterparts, have placed better educated persons in less technologically sophisticated jobs and more poorly educated persons in more technologically sophisticated jobs. In part, this may be thought to reflect a supervisory-non-supervisory distinction (a contaminant not present in the study by Taylor, who restricted his sample to non-supervisory persons).

Evidence, however, indicates that this distinction does not explain the relationships to educational level, at least among Navymen. Instead, it would appear that, as concerns technology measured in these terms, Navy managers make much the same assumption as their civilian counterparts--that automated hardware substitutes for human competence.

Yet, if our society does through its educational processes what earlier chapters of this report suggest that it does, and if, as Taylor suggests, there is an inherent, positive connection between sophisticated technology and participative practices, then the present findings represent

Table 8

Technological Sophistication of the Job
and Educational Level of Respondent,
for Navymen and Civilians*

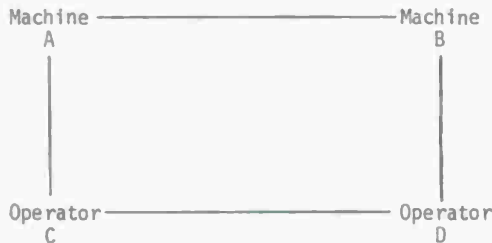
Educational Category	Column Percentages			
	Low Tech Soph		High Tech Soph	
	Navy	Civilian	Navy	Civilian
High School Graduate and Below	40	35	66	85
Some College and Above	60	65	34	15

*Adapted from Drexler, 1973

a dysfunctional consequence of this mistaken assumption. In terms of the values toward which they have been socialized by their educational experience, persons are placed in situations representing the poorest possible fit!

Perhaps this happens because more hardware-oriented managers overlook the interface between social and technical systems. Figure 24 illustrates the problem.

Figure 24
Man and Machine Connections



Designers of technical systems typically restrict their attention to the relationship of one technical component (i.e., Machine A) to another (e.g., Machine B). In so doing, they recognize the existence of operators, but leave the specification of their requisite characteristics to human factors persons who typically focus upon abilities, aptitudes, and task (that is, man-machine) issues.

The man-man (i.e., social system) problems are usually overlooked in this process. The highly likely outcome that more complicated hardware may require simpler task behaviors, but far more complex human interactions, seems to be largely ignored.

In an independent study, not funded by nor part of the present investigation, but drawing in part upon this same data set, Beam pushed the question in a somewhat different direction (1975). Briefly, he devised an independent measure of technological sophistication (based upon judgments of the amounts of two characteristics involved in Navy ratings--physical activity and information processing). In combination, these two attributes yielded an internally consistent interval scale of technology.

Beam then used the present study's survey data to examine the degree to which an appropriate management style was a technology-contingent issue. He found that, at least in the Navy, appropriate management is not contingent. Instead, a style consistent with participative practices seems to be almost universally preferred and rather consistently related to measures of satisfaction and perceived effectiveness.

Thus, in certain ways the whole issue of contingency in the relation between hardware and human resource management would appear to require considerable reformulation. Perhaps it is not so much an issue of whether different styles produce maximum effectiveness under different technologies, but rather whether different technologies permit managements to "get away" with more autocratic practices for a longer time frame before incurring disaster.

At least for the Navy, the conclusion would appear to be fairly clear. Autocratic behavior--a management style which prefers directiveness to adequate conservation of human resources--will drive large numbers of the most valuable persons out of the service. Even while they remain, the accumulated evidence (referenced in earlier chapters) suggests that their

performance will be poorer. In any event, there appears to be little evidence to persuade an open-minded reader that sophisticated technology presses toward other than participative practices.

Motivational Correlates of Race Relations

Few issues are more important than race relations to the question of the Navy's fortunes in an all-volunteer condition, and certainly few have drawn greater concern. Dramatic incidents of racial conflict have drawn the attention of persons around the nation. Programs of racial awareness training have been mounted, as have efforts to treat the effects at institutional levels.

At base, however, the issue is one of the existence of discrimination, and the question takes the form, "Do Navymen experience and receive treatment that is differentially favorable by race?" Officials sensitive to criticism on this hot social issue and perhaps overly preoccupied with structural conditions may be quick to conclude that discrimination does not exist because it cannot (i.e., because it has been eliminated from policies, assignment strategies, and the like).

Yet, outlawing a practice does not remove it, and behaviors, together with the conditions which emerge from them, have a way of persisting despite such edicts, and structural changes. For this reason the question remains, for the Navy as for any other organization in American life, a cogent one.

In the present research a number of questions were built into the basic instrument which permitted the examination of racial effects, felt discrimination, and the like. Specifically, the following questions

seemed, in combination with the general array of measures of preferences and practices, to be central to an examination of race relations issues:

Q. A 111 To what extent do you feel in any way discriminated against in your job because of your race or national origin?

Q. A 115 What race is your immediate supervisor?

Q. A 116 What race are the majority of the members of your work group?

Q. A 117 What other race (if any) is most heavily represented in your work group?

Q. C 8 To what extent do you think there is any discrimination against black people who are in the armed services?

Two major reports in the series dealt with questions of this type. The first, by Parker, dealt with work group composition as a potential moderator of the relationship between practices and felt discrimination (1974).

The second, by Pecorella, examined the extent to which institutional factors (versus local, face-to-face ones) seem to account for real and felt discrimination (1975).

Perhaps an appropriate place to begin is the perception of discrimination that is felt to exist. Table 9 adopted from Pecorella's report, addresses this question.

First, it would appear that Blacks and Others feel a somewhat greater degree of racial discrimination than do Whites. On the five-point scale employed for this question (A 111), Blacks and Others report feeling discrimination "to some extent," whereas Whites report very little such feeling.

Table 9
Perceptions of Discrimination by Race

Question	Whites		Blacks		Others		F-ratio
	Mean	S.D.	Mean	S.D.	Mean	S.D.	
A 111 Discrimination Against Self	1.34	.84	2.62	1.27	2.31	1.38	182.86*
C 8 Discrimination Against Blacks	2.17	1.11	3.68	1.06	2.72	1.27	127.51*

*
 $p < .01$

Second, when all three groups are asked whether Blacks, specifically, are discriminated against, all agree that they are. (In this connection, it is interesting to note that Blacks perhaps over-report levels of discrimination, Whites under-report them, but Others report a level quite close to the level that Blacks report about themselves.) The fact that Whites tend to concur in the judgment of differential levels of discrimination reinforces our reasons for believing it to be true.

Having established that different levels of discrimination are felt by Blacks and Whites, with Blacks clearly feeling the greater amount, our attention quite naturally turns to the form or source of such discrimination. Several sets of conditions seem likely candidates: leadership practices experienced in the face-to-face work group, organizational climate conditions which stem from higher-level policies and practices, opportunities that are provided, and material benefits that are distributed.

Each of the two studies examined two or more of these sets of possible causes, yet come to somewhat different conclusions. Consider the following:

- Parker included all Navy respondents, compared racial groupings, and found almost no differences in leadership practices or organizational climate conditions.
- Pecorella limited the comparisons to enlisted personnel (i.e., excluded officers) and found that, although leadership practices remain similar for racial groups, organizational climate measures present patterns of (if anything) reverse discrimination (See Table 10).
- Pecorella similarly examined perceived opportunities by race and found that Blacks felt they had greater opportunities than did Whites.

Table 10

DIFFERENCES IN ORGANIZATIONAL PRACTICES BY RACE

	Whites(W)		Blacks(B)		Others(O)		F-ratio	Significant, Comparisons
	Mean	S.D.	Mean	S.D.	Mean	S.D.		
Human Resources Primacy	2.74	.87	2.72	.96	2.94	.84	3.92**	Wvs.O**; Bvs.O*
Communication Flow	2.88	.80	2.77	.92	2.77	.80	2.51	
Motivational Conditions	2.74	.93	2.90	1.08	3.03	.87	8.34**	Wvs.B*; Wvs.O**
Decision-Making Practices	2.47	.81	2.62	.87	2.79	.83	12.47**	Wvs.B*; Wvs.O**
Lower-Level Influence	2.00	.80	2.14	1.06	2.48	1.02	24.80**	Wvs.B*; Wvs.O**; Bvs.O**
Supervisory Leadership Factor	3.33	.96	3.48	.99	3.28	.91	1.86	None
Peer Leadership Factor	3.11	.83	3.21	.93	3.15	.79	1.02	None
Group Process	3.45	.78	3.45	.85	3.40	.73	.28	None

Average N=1710

Average N=140

Average N=162

* $p < .05$ ** $p < .01$ ¹Significance levels for contrasts were obtained using the Scheffee standard for post-hoc comparisons.

The significant pairwise comparisons indicate that Whites see fewer opportunities for advancement available to military personnel, feel they would receive fairer treatment as civilians than as Navy men, and see a lower likelihood that unjust treatment by a superior will be set right than do members of the other two racial groups. (p. 26)

- Pecorella found, on the other hand, "objective" data to indicate that minority groups are, in fact, discriminated against:
 - 14.2% of the Whites were regular officers, while only 1.4% of the Blacks and 1.8% of the Others had achieved this status.
 - 26.9% of the Whites had E1-E3 ratings, versus 47.5% of the Blacks and 38.3% of the Others.
 - 36% of the Whites had advanced slowly through the ranks, versus 59% of the Blacks and 64% of the Others.
 - 34% of the Whites had been given expensive technical training versus 13% of the Blacks and 17% of the Others.
 - These differences remained significant, even after controlling for Age and Education.
- Pecorella found that organizational climate and perceived opportunities were negatively related to felt racial discrimination for both Blacks and Whites.
- Parker found that racial composition of the work group (one's own race and majority/minority position within the group, plus the race of one's supervisor) was a critical moderator variable of the relationship between experienced practices and felt racial discrimination.

- Pecorella found that felt personal discrimination seems to be closely tied to one's immediate work environment (particularly to advancement opportunities and friendly relations with one's peers).

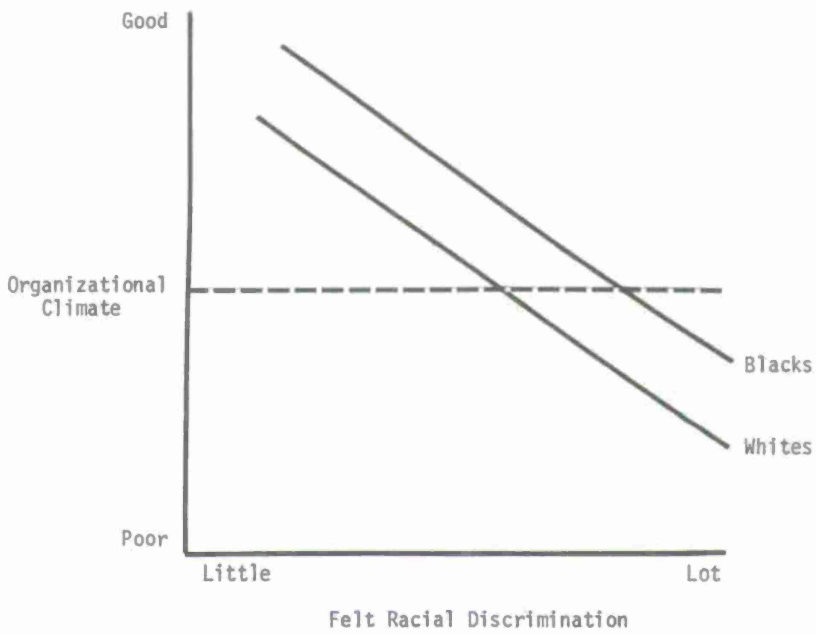
Taken together, these findings present a convincing, if perplexing, picture. Minorities, and Blacks particularly, do feel discriminated against in the Navy. Although the average Black perceives that Blacks in general experience more discrimination than he himself does (an illogical situation), the effects are real enough. On many tangible criteria, Blacks attain lower return rates than do Whites, even after age and education are controlled.

There is therefore a heavy "local" effect in felt racial discrimination against oneself in the Navy. Much of the perception that one is discriminated against stems from job characteristics (for example, from the very real perception that Blacks are not promoted as rapidly) and from relationships with one's co-workers. Perhaps the meaning of Parker's findings concerning group composition is clearer in this context. When one's position is that of being in the majority race in the group, and/or when one's supervisor is of the same race as oneself, racial slurs decrease in frequency, and one's apprehension declines as personal security increases.

At a more institutional level, the different levels of conditions and discrimination, but similar relationships between these two sets of variables, may produce a situation similar to that depicted hypothetically in Figure 25.

Figure 25

Organizational Climate and
Felt Racial Discrimination
(Hypothetical)



The difference in absolute levels, together with a similar slope of relationship may simply indicate greater sensitivity to this issue and its consequences on the part of Blacks than of Whites. It need not mean that either is necessarily "misreading" the situation, but that, to attain the same level of non-discriminatory experience, institutional conditions must be somewhat different.

The perplexing part is the obvious possibility that race relations in organizations like the Navy is an adaptive and relative process, that behaviors, practices, and conditions must be altered to fit their recipients. Note that, in Figure 25, reaching an identical level of felt discrimination would require quite different levels of organizational climate excellence for the two races. Stated most baldly, it suggests the difficult, thorny, and even unlivable conclusion that equal treatment is, because of the accumulated historical context in which it occurs, not non-discriminatory! Rather, for equal perceptions of non-discrimination to occur, certain racial groups may have to be treated better than others. On the other hand, the perception of non-discrimination may be chosen as an inadequate criterion, too subject to historical "lag."

Goal Integration and Socialization Processes

In the end, the critical issue is the extent to which motivation is felt by the typical Navyman in a situation which permits him to make a positive contribution. In a report several years ago, Barrett conceptualized this as a problem of goal integration (1970). The following lengthy quote describes what is involved:

We define an organizational objective as any state of affairs (including both static and dynamic states) which contributes to the creation of an organization's primary outputs or to the fulfillment of its purposes or functions. An individual goal is any state of affairs (dynamic or static) which

contributes to the fulfillment of an individual's needs, motives or desires. Organization members spontaneously commit themselves to the pursuit of individual goals. They do not necessarily commit themselves spontaneously to the pursuit of organizational objectives. An important problem for organization theorists and administrators, therefore, is to conceive mechanisms through which goals and objectives can be integrated, so that the same actions on the part of an organization member can lead to the attainment of both his personal goals and the organization's objectives. Organizations or sub-units whose members find it easy to attain both personal goals and organizational objectives through the activities they engage in as members of the organization may be said to have a high degree of goal integration.

Figure 26 presents these concepts schematically.

Going further, Barrett conceptualized three mechanisms which organizations commonly use to attain desired levels of goal integration:

Exchange - a conditional reward mechanism, in which the organization offers the individual incentives presumed to be related to his personal goals (about which they care little), in return for his devoting part of his time and energy to the achievement of their objectives (in which he has presumably no interest).

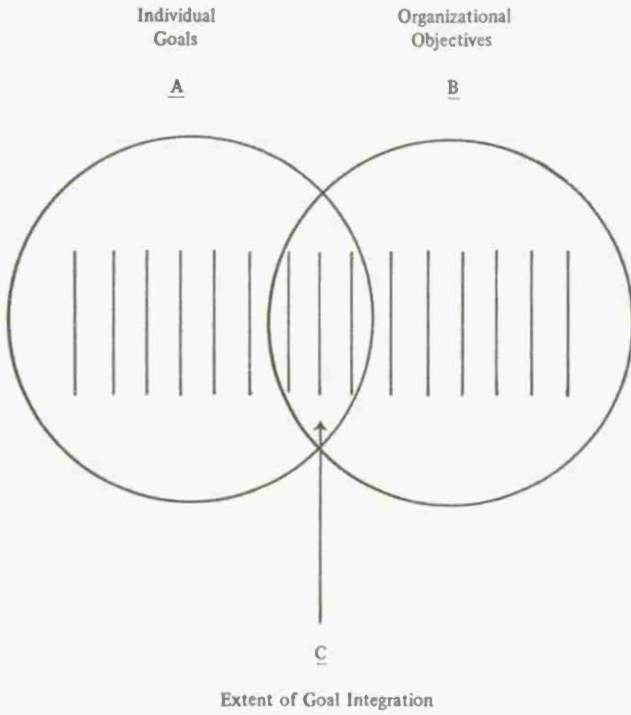
Accommodation - a mechanism by which individual goals are taken into account in determining organizational objectives or designing procedures for attaining them.

Socialization - a mechanism by which individual goals are influenced, modified, or altered to make them more congruent with organizational objectives.

Since much of what constitutes basic and advanced training in a Navy setting assumes at least some amount of socialization, and since goal

Figure 26

GOAL INTEGRATION



integration has shown itself in previous research to be a useful concept, these measures were both included and analyzed. The findings, to be summarized here, are contained in detail in two reports by Drexler (1973, 1974).

The data show a number of things. First, it is apparent that civilians experience, in general, significantly greater degrees of goal integration than do Navymen (See Table 11).

Second, significant differences in the level of goal integration were found among demographic strata for both Navymen and civilians for age, education, race, and socio-economic level. Additional differences were found among Navymen for critical skills (defined in terms of training expense), promotion rate, region of origin, time in present work group, reenlistment intention, draft motivation and enlisted/officer status. These findings are presented in Table 12, and the more interesting ones depicted graphically in Figures 27 through 30. In addition Table 13 presents means and standard deviations for other interesting comparisons.

Regarding comparisons across age, there appears to be little evidence that, among Navymen, socialization is an effective mechanism for attaining goal integration. This conclusion seems inescapable when one considers the components of the goal integration index separately (See Figure 31).

Instead, it would appear that there is an inherent tendency--for civilians and Navymen alike--for goal integration to rise somewhat with age. Above 30 years of age, Navy and civilian curves are very similar. Under 30 years of age, however, the Navy does a relatively poor job, and members (in this case young Navymen) experience quite low levels of goal integration.

Table 11

Average Levels of Goal Integration
for the Total Navy and Civilian Work Force Samples

	Navy	Civilian
$\bar{X}$	2.236	2.921
S.D.	1.146	1.195
N	2458	868

$t=14.84, p < .001$

Table 12

TEST OF THE RELATIONSHIPS BETWEEN GOAL INTEGRATION
AND DEMOGRAPHIC CHARACTERISTICS FOR NAVY AND CIVILIAN SAMPLES

	NAVY				CIVILIAN			
	F Ratio	df	Sig.	Eta	F Ratio	df	Sig.	Eta
Age	19.20	16/243	.01	.335	1.75	16/843	.05	.066
Sex	1.45	1/2456	NS	.024	0.00	1/866	NS	.000
Education of Respondent	2.64	4/2455	.05	.065	5.08	4/831	.01	.155
Race	10.73	2/2439	.01	.093	7.36	2/848	.01	.131
Socio-Economic Level	12.18	4/2454	.01	.140	21.72	4/831	.01	.308
Community where grew up	2.43	3/2455	NS	.054	0.73	3/846	NS	.051
Region of country where grew up	7.11	5/2444	.01	.120	1.90	5/838	NS	.106
Time at present ship or station	1.84	5/2459	NS	.061	1.28	5/799	NS	.089
Time in present work group	2.72	5/2457	.05	.074	0.57	5/793	NS	.060
Plans after enlistment	102.65	4/2376	.01	.384	---	---	--	---
Draft Motivation	18.84	2/1497	.01	.160	---	---	--	---
Critical Skills	8.00	2/1854	.01	.090	---	---	--	---
Promotion Rate	18.83	2/1497	.01	.157	---	---	--	---

Figure 27

Relationship of Goal Integration to Age

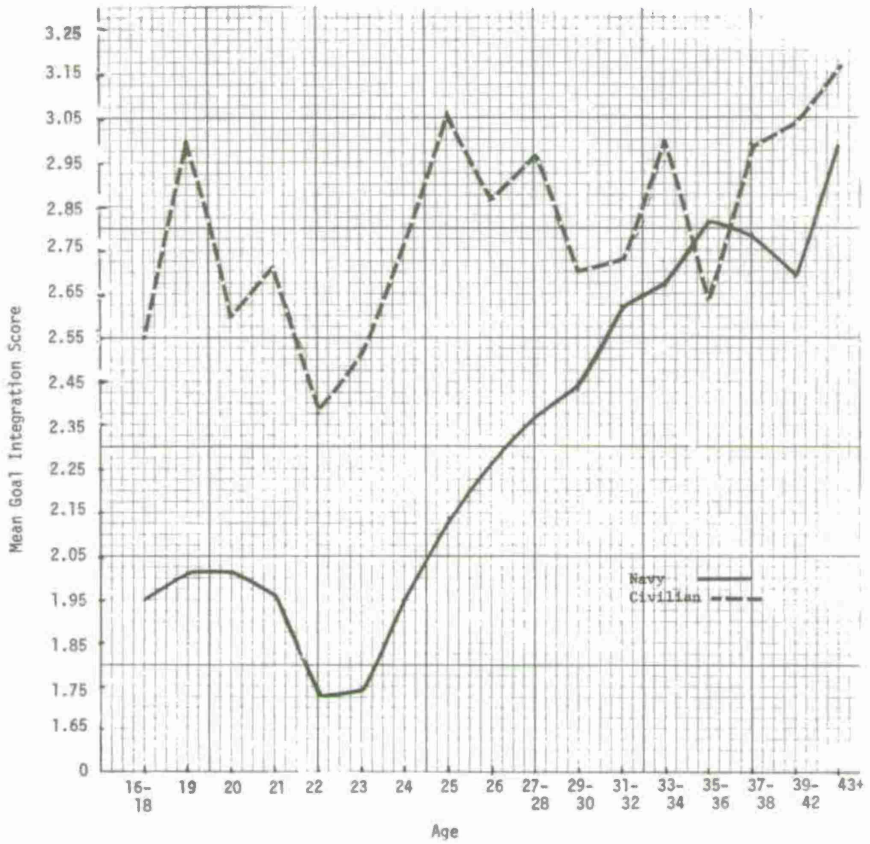


Figure 28

Relationship of Goal Integration to Education

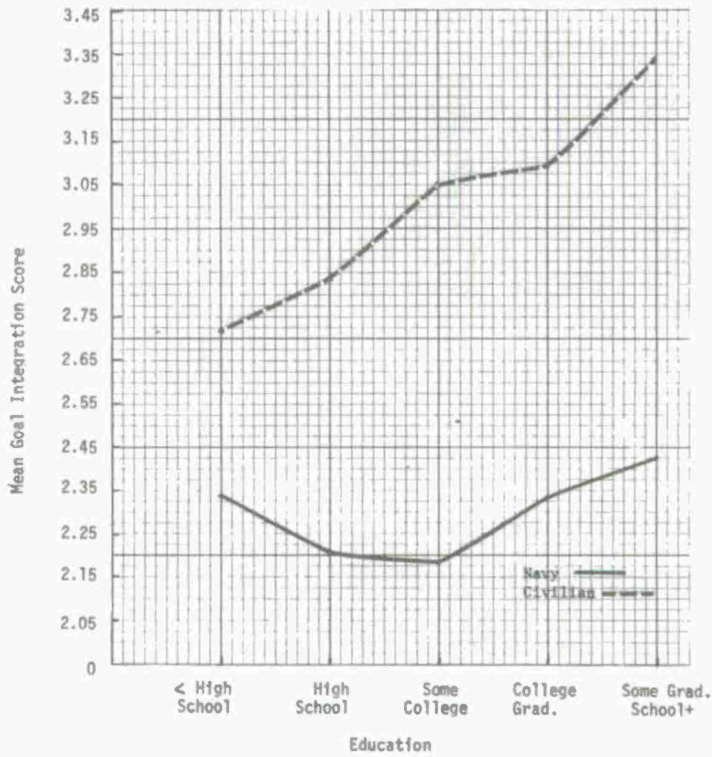
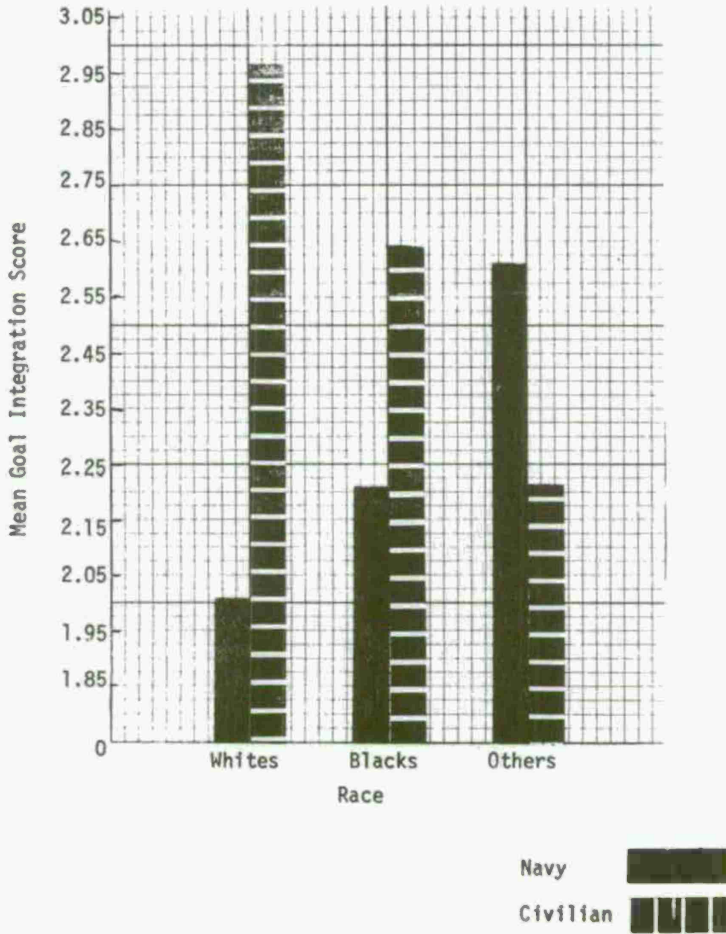
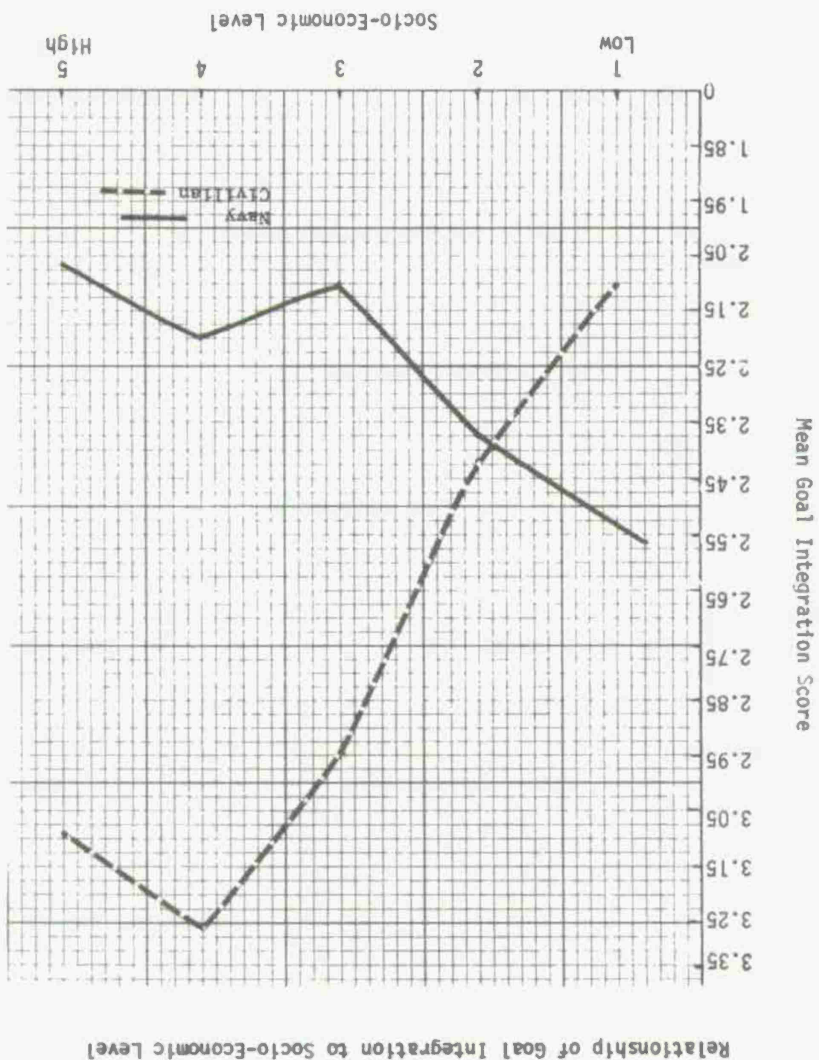


Figure 29

Relationship of Goal Integration to Race





Relationship of Goal Integration to Socio-Economic Level

Figure 30

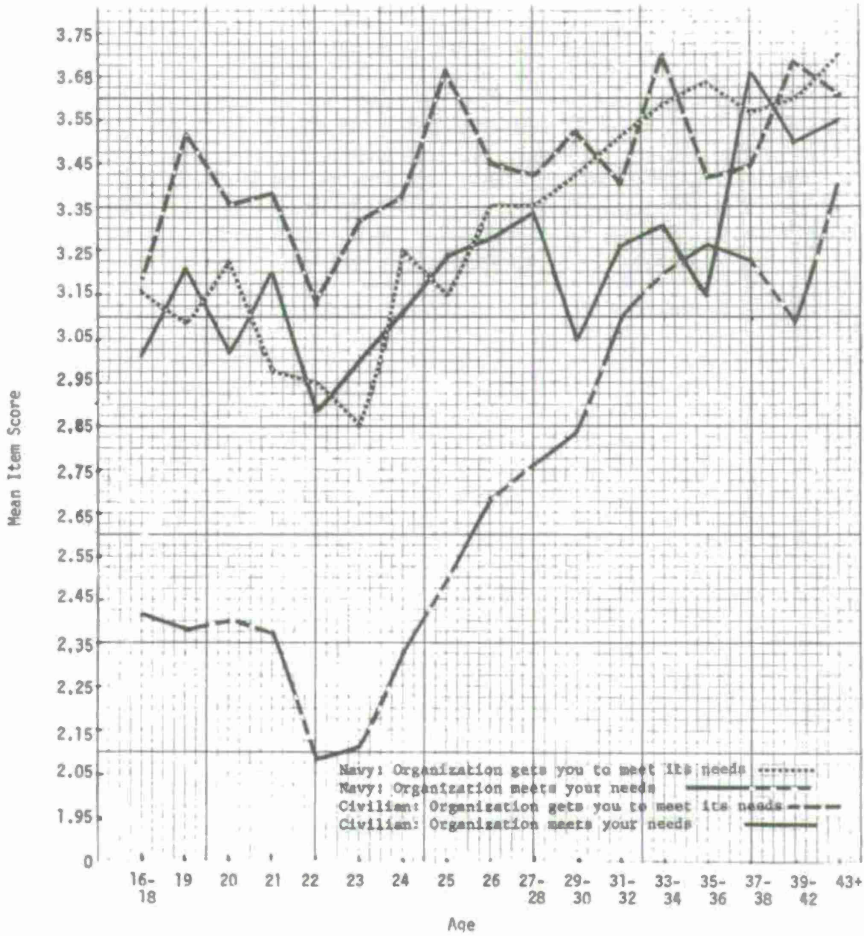
Table 13

Goal Integration Means and Standard Deviations
for Various Demographic Strata

Demographic Measure	Strata					
	Low		Middle		High	
	Mean	S.D.	Mean	S.D.	Mean	S.D.
Critical Skills	2.35	1.16	2.12	1.34	2.14	1.10
Promotion Rate	2.10	1.16	2.42	1.15	2.00	1.05
	(Choice Motivated)		(Draft Avoidant)		(True Volunteers)	
Draft Motivation	2.12	1.15	2.31	1.13	2.26	1.11

Figure 31

Relationship of Goal Integration Items to Age



Many explanatory routes for these findings seem blocked. For example, it might be argued that economic pressures, recruiting practices, and, perhaps, unfortunate advertising have led to the induction of the "wrong" segment of youth--a segment whose attitudes mesh poorly with the Navy's. While some small portion of truth may accrue to this argument, it seems highly unlikely that effects of the kind required could have occurred. Not merely some mismatch, but an induction of the most ill-suited in enormous numbers would be required to obtain the disparate civilian-Navy values which in fact result.

Yet another reason for feeling socialization to form an unpromising mechanism is apparent. Age alone predicts organizational values and preferences better than does the socializing behavior of supervisor and peers, and age does not appear to serve as a moderator variable in the latter relationship.

. In short, the conclusion seems well nigh inescapable that the Navy treats its young personnel in a relatively non-productive (and autocratic) manner, either because its supervisory personnel at that level lack skills in a more participative alternative, because of value constraints on the part of those supervisors, situational constraints, or all three. .

The findings concerning the relationship of education, race, socio-economic level, and certain other demographic characteristics to goal integration present an intriguing pattern. Education has a positive, linear relationship to goal integration for civilians, a curvilinear relationship (poorly and well-educated Navymen have higher amounts of good integration than do intermediate) for Navymen. Whites experience the least goal integration, Others the most, with Blacks in the middle among Navymen, whereas the

ordering is the reverse for civilians. Goal integration rises with socio-economic level for civilians, declines for Navymen.

Although evidence is presented in the present array of findings concerning overlap among demographic measures, it appears that greater degrees of goal integration are experienced by two Navy groups:

- very well educated Whites in higher level positions
- poorly educated persons from lower socio-economic levels and minorities

Perhaps the former of these have "escaped from steerage," whereas the latter judge their experiences in the Navy as not as bad as those which they would obtain in civilian life.

This view is in part confirmed by other findings:

- Navy respondents with inexpensively trained skills had higher degrees of goal integration than did those in middle and more expensive skill categories.
- Warrant officers had higher goal integration than did enlisted men.

Combined with the finding that those with average promotion rates had higher degrees of goal integration than did those with low rates (denied advancement) or those with high rates (exceptionally able, talented, and high expectations), it confirms the view that lower levels of goal integration are experienced in the Navy by many of those young, bright, able, enlisted persons whom the Navy aspires to retain.

Chapter 5

Forecasting Requirements and Implementation Outcomes for Organizational Effectiveness*

Organizational data have two potential uses:

- at the system (whole Navy or major command) level, by the system's top managers, as input to policy-making;
- at the local level (the basic work group or unit), by members, supervisors, and consultants, as input to the organizational development process.

Each use implies an action step or a set of such steps: policies are made, or organizational development intervention activities are selected. Yet action steps must be carefully selected on the basis of existing conditions and problems, compared to desired outcomes. In policy-making, the selection process requires careful scrutiny of data carefully analyzed and interpreted at macro levels. For the local, or organizational development, usage, the problem becomes one of meeting several sets of potentially conflicting criteria:

- (1) The information must be comprehensive and detailed,
yet
- (2) The information must be capable of being digested
and utilized by a wide array of persons with
varying degrees of expertise.
- (3) The process which, using the information, leads to
a choice of action steps must be carefully done,
yet
- (4) That same process must be done comparatively rapidly.

*This chapter is based upon a report by Bowers & Hausser, 1974.

It is this local, organizational development usage issue that the present chapter explores. In form, the problem is one of testing the feasibility of developing an instrumented prescriptive capability for organizational development activities in the Navy.

The evidence thus far reported suggests that the Navy faces a number of complex problems, many of them intimately connected with the way in which it functions as an organization. These problems concern:

- the climate of policies, practices and conditions in the human resources area;
- the leadership practices which prevail among supervisors at nearly all levels;
- the behavior of subordinates in both task and inter-personal areas;
- the processes displayed by groups, including such things as their flexibility to meet new and varied demands; as well as their ability to act quickly and effectively in carrying out required missions;
- the degree of satisfaction and its effects upon retention and operational capability.

Considered, not as forest, but as a mass of separate trees, the problems seem insurmountable. There are simply too many persons, positions, situations, and variables to make the whole sensible in a way that permits action. We are therefore confronted with a need to reduce the data to manageable proportions, that is, to convey the information in its richness, but without distracting clutter.

Summarizing the conclusions from a mass of findings is a task that a combination of analytic and statistical skills can handle with reasonable promise of success. For the larger manpower study which we have conducted, this has already been done and has been augmented to produce a pre-final report (Bowers & Bachman, 1974).

As the immediately preceding statements imply, some of the possible action steps are those capable of consideration at the "whole Navy" level. Thus the utilization of findings in that context assumes the form of providing information to the Navy's policy makers. It is systemic level information, provided to the system's top managers.

As such, it is different in scope from information whose action implications are local (and therefore widespread, though different from unit to unit). It is, for example, one thing to establish or modify a policy concerning human resources management in the Navy, but quite another matter to provide information useful to the development of those resources in any specific group. The latter is (together with some elements of the former for intermediate level commanders) much more the task of organizational development. Doing this and doing it well requires data of a different degree of condensation.

The measures of organizational practices contained within the survey instrument used in the larger study derive from the Survey of Organizations questionnaire constructed by the Organizational Development Research Program for use as a diagnostic device in civilian sector development studies. From its use, there has accumulated a body of standard data surrounding development efforts of the type viewed by the present study as potentially helpful at the local level of the Navy.

Together, these two bodies of data--one from the Navy, the other surrounding civilian application efforts--provide in their measurement comparability a rather unique joint resource. Used appropriately, they provide a potential for examining possible action steps of an organizational development-intervention type. Stated otherwise, we may use the civilian data to obtain estimates of the likely impact of similar intervention strategies in Navy groups of similar form and functioning.

There is both a logical rationale and some fair amount of evidence to sustain the premise that intervention steps must be carefully chosen to match the characteristics and practices of the group whose development is at issue. Campbell and Dunnette (1968), for example, have reviewed the literature on sensitivity training and extract a number of potential reasons for its less than impressive success in applied situations. Kaplan, Tausky and Bolaria (1969) have similarly suggested certain reasons why job enrichment may not be the universal remedy sometimes suggested. Bowers, Franklin and Pecorella (1973) have provided a taxonomy clearly oriented around differential application of interventions, and Bowers (1973) has provided evidence of the differential effects in 23 organizations of employing different organizational treatments.

It is to the task of establishing a connection between the characteristics of the work group and the effects of intervention activities undertaken with it that this present report turns. Stated very simply, the strategy involves:

- (1) Determining whether there are a relatively few "pure" types of groups present in the civilian data bank;
- (2) Determining (from the Navy survey) the extent to which these pure types exist in the Navy as well; and

- (3) Examining the effect of different development treatments upon the pure types thus identified.

Statement of the Problem

Organizational development efforts generally can be considered to encompass two main phases: diagnosis and treatment. Each of these phases can involve a range of units of analysis, from individual organization members to the entire organizational system. Over the past few decades, research has shown that the work group, that is, all those persons in an organization who report to the same supervisor, is a useful and productive unit for analysis in both diagnosis and the prescription of treatments.

These two basic elements of OD can be seen to vary along another dimension, namely the degree to which each uses a 'clinical' approach, one that is subjective and unique to each organization and practitioner, rather than an 'instrumented' approach, one that is objective and is applied in standard fashion to all organizations (Bowers, 1970). Aside from issues regarding the reliability or validity of clinical versus instrumented OD, efforts involving large numbers of work groups in large systems could clearly benefit economically from instrumentation wherever it can be achieved.

The systematic development of an instrumented prescriptive capability in OD has two fundamental requirements. The first of these is the creation of a typology of work groups. The second requirement is some knowledge of the effects of treatments on different types of work groups. This report will describe the work done thus far to meet both these requirements.

A typology of work groups would be needed as an aid in organizing and systematizing the procedures required for effective prescription. These procedures basically become a decision-making process where one must choose

from a wide variety of available treatments or interventions. This choice must be based on judgments about the status and relationships among many preconditions that may exist. If it can be determined that those relationships are not random but have recognizable patterns that are common across work groups, then the analysis procedures involved in the treatment choice can themselves be systematized. Any reliable patterns of preconditions for treatment choice could be organized into a typology of work groups. As an aid to prescription, further information would have to be analyzed and incorporated regarding the effects of various treatments on different work group types.

In summary then, a typology is needed so that, given a particular work group, one can match its 'type' with treatments which have been effective for that type.

One approach which can be taken in developing such a typology would be to examine data from a wide range of work groups and group together or 'cluster' as examples of a 'type' those groups which are similar on dimensions that can be used to characterize work groups. After the typology is created, one can take any work group which is described in the same terms as were used to create the clusters and determine which 'type' it most closely resembles. If the dimensions used to develop the typology can be shown to have predictive properties, one could make predictions about any subsequent group thus typed.

To meet the second requirement of an instrumented prescripitor, that is, knowledge of the effects of treatments, one needs to examine changes in work group characteristics over time given certain interventions. Again, to integrate such knowledge with the typology, one approach would be to investigate the effects of different treatments

on different work group types. Then, prescription would become a process of identifying a particular work group's 'type' and choosing a treatment which has been shown to be effective for that type.

Sites, Samples and Data Collection

The data used to develop the typology and ascertain treatment effects were drawn from two larger banks of data. The first of these, which we will call the main civilian sample, consisted of data collected from 2319 work groups at 23 different sites. Work activities at these sites ranged among sales, fabrication, continuous process, and assembly operations. The industries represented included automotive, insurance, oil, and chemical. At each site, data were available for work groups at each of the hierarchical levels at that site. A work group's level is determined by its supervisor's position in the organization.

The data themselves consisted of responses to a standardized survey, the Survey of Organizations (S00), which is a machine-scored paper-and-pencil questionnaire designed for use in studies of organizations.* It includes 105 generally descriptive items focused on various aspects of the work setting. Six items ask about individual demographic characteristics. At all sites in this main civilian sample, the S00 was administered at least twice to a sample of work groups for that site.

Most of the questions in the S00 are answered by response to a five-point extent scale. Unless otherwise specified, response alternatives for questions using this scale are: (1) "to a very little extent,"

*A description of the complete instrument together with statistical information regarding the validity and reliability of its component elements is provided by Taylor and Bowers (1972) in the questionnaire manual.

(2) "to a little extent," (3) "to some extent," (4) "to a great extent," and (5) "to a very great extent."

In most cases the individual questions are grouped into multiple-item indices. An individual's score on such an index is the sum of his response values for the items in the index divided by the number of items in the index. Beyond this, the analysis procedures employed in the present study required work group level scores, obtained by finding the sum of the item or index scores for all of the individuals in a work group and then dividing the total by the number of members in the group. Work group membership is determined by having individuals identify their supervisor through the use of a supervisor identification number.

The analyses for this study used the 16 critical indices of the S00 for these data. These indices fall into five major categories:

(1) Organizational Climate, (2) Supervisory Leadership, (3) Peer Leadership, (4) Group Process, and (5) Satisfaction. Brief descriptions of these categories and indices are presented below:

Organizational Climate

Decision Making Practices -- the manner in which decisions are made in the system: whether they are made effectively, made at the right level, and based upon all of the available information.

Communication Flow -- the extent to which information flows freely in all directions (upward, downward, and laterally) through the organization.

Motivational Conditions -- the extent to which conditions (people, policies, and procedures) in the organization encourage or discourage effective work.

Human Resources Primacy -- the extent to which the climate, as reflected in the organization's practices, is one which asserts that people are among the organization's most important assets.

Lower Level Influence -- the extent to which non-supervisory personnel and first-line supervisors influence the course of events in their work areas.

Technological Readiness -- the extent to which the equipment and resources are up to date, efficient, and well maintained.

Supervisory Leadership

Supervisory Support -- the behavior of a supervisor toward a subordinate which serves to increase the subordinates' feeling of personal worth.

Supervisory Work Facilitation -- behavior on the part of supervisors which removes obstacles which hinder successful task completion, or positively, which provides the means necessary for successful performance.

Supervisory Goal Emphasis -- behavior which generates enthusiasm (not pressure) for achieving excellent performance levels.

Supervisory Team Building -- behavior which encourages subordinates to develop mutually satisfying interpersonal relationships.

Peer Leadership

Peer Support -- behavior of subordinates, directed toward one another, which enhances each member's feeling of personal worth.

Peer Work Facilitation -- behavior which removes roadblocks to doing a good job.

Peer Goal Emphasis -- behavior on the part of subordinates which stimulates enthusiasm for doing a good job.

Peer Team Building -- behavior of subordinates toward one another which encourages the development of close, cooperative working relationships.

Group Process -- the processes and functioning of the work group as a group, e.g., adaptability, coordination, and the like.

Satisfaction - a measure of general satisfaction made up of items tapping satisfaction with pay, with the supervisor, with co-workers (peers), with the organization, with advancement opportunities, and with the job itself.

The second large data bank, which we will call the main Navy sample, consisted of data collected in the course of the present project from 435 work groups at 38 different Navy sites. As has been indicated, the data themselves were responses to a standardized survey constructed for the Navy. A large portion of the survey drew heavily from the S00 and fifteen of the indices listed above were available for the Navy sample. Technological Readiness was the only index not available.

The analyses involved in this development of a typology of work groups used three subsamples of these larger data banks. Two random samples of work groups from the main civilian sample were chosen, containing 174 and 184 work groups, respectively. A work group was eligible for inclusion if data for all 16 indices were available. The random subsample of the main Navy sample consisted of 200 work groups; data for all 15 indices were required.

The analyses undertaken to examine treatment effects used ten subsamples of the main civilian sample. A subsample consisted of work groups in the larger sample which had undergone a specific, identifiable treatment. Consequently, most subsamples consisted of work groups from a single site where it is known that a treatment was used. Some subsamples included work groups from more than one site, but it is known

that the treatment at both sites took the same form. For each treatments, two subsamples were chosen in order to take into account site-specific differences in treatment and to test for site-specific effects of treatment. The treatments represented consisted of Task Process Consultation, Interpersonal Process Consultation, Survey Feedback, Data Handback, and Laboratory Training.* Table 14 presents the number of work groups in each of the ten treatment-specific subsamples. A work group was eligible for inclusion in the subsample if data were available for all 16 indices. For later analyses regarding specific treatment effects, a work group was included if data were available for all 16 indices on a first and second administration of the S00.

Analysis Procedures

The development of a typology of work groups requires a technique known as 'profile analysis,' through which one arrives at a grouping of persons or, in this case, a clustering of work groups. The term 'profile' comes from the practice of plotting test scores in terms of a graph or profile. In this case, a work group's profile consists of its scores on the S00 indices listed above.

There are three basic kinds of information in the profile of scores for any work group: level, dispersion, and shape. Level is defined by the mean score of the work group over the indices in the profile; dispersion relates to how widely scores in a profile diverge from the average; and shape of a profile concerns its 'ups and downs.' Even though two work groups have the same level and dispersion, their

*The specific treatments are described in Appendix A.

Table 14

Ten Civilian Subsamples Used To Determine Treatment Effects

	Site	Treatment	Number of Work Groups in Sample
Primary Site*	1	Survey Feedback	122
	2	Interpersonal Process Consultation	197
	3	Laboratory Training	154
	4	Task Process Consultation	47
	5	Data Handback	61
Secondary Site*	6	Survey Feedback	166
	7	Interpersonal Process Consultation	104
	8	Laboratory Training	138
	9	Task Process Consultation	51
	10	Data Handback	100

*A "primary" site is the site selected as the clearest example in the data bank of the particular treatment used. "Secondary" sites are those which constitute the next clearest example of the treatment, in our judgment.

high and low points might be quite different. The shape is defined by the rank order of scores for each work group (Nunnally, 1967).

In determining appropriate methods for clustering profiles, one of the crucial considerations is the measure of profile similarity that is used by a particular method to identify 'like' profiles. Many of the more familiar clustering routines which are used to scale variables rather than persons or groups use the correlation coefficient as the basic measure of similarity. Some of these routines use an additional index of similarity, called a coefficient of collinearity, which measures the similarity between the correlation patterns of two persons or groups. For rather complicated statistical reasons, using that index of similarity has consequences which make its associated clustering routines unsuitable for the profile analyses needed to create the typology which is of interest here. Such routines are sensitive to the shape of a profile but are not sensitive to its level or dispersion.

One measure of profile similarity which does take shape, level and dispersion into account is the distance measure, D. If one considers a person or group as a point in a multidimensional space in which each dimension represents a variable or index, then the distance between two points or persons or groups can be computed using the generalized Pythagorean theorem. The distances among persons or groups can then be examined to determine which cluster together in that multidimensional space.

There is a clustering technique, called Hierarchical Grouping, which uses this distance measure as a measure of profile similarity. Computer software is available for this technique in a program called

HGROUP (Veldman, 1967). This program begins by considering each original object, in this case, work group, of those to be clustered, as a "cluster." These N clusters are then reduced in number by a series of step-decisions until all N objects have been classified into one or the other of two clusters. At each step the number of clusters is reduced by one by combining some pair of clusters. The particular pair which will be combined at any step is decided by examining all the available combinations and choosing the one which minimally increases the total within-clusters variance. It is this latter minimizing function which utilizes the distance notion. The total within-clusters variance is a measure of the 'closeness' of the points in already decided-on clusters in multivariate space. A substantial increase in this variance, which HGROUP labels an error term, indicates that the previous number of clusters is probably optimal for the original set of objects or work groups. The program provides an identification of those groups contained in each cluster so that further analyses can be conducted on within-cluster phenomena.

The HGROUP program was applied to the three random samples from the civilian and Navy data. Table 15 shows the number of clusters indicated by HGROUP for each random sample, the error term associated with that number of clusters, the error term associated with the next fewer clusters [average previous increase in error = .20], and the number of pattern clusters, that is, those clusters containing at least five work groups.

Table 15

HGROUP Results for Three Random Samples

Sample	Number of Work Groups	Number of Clusters (N)	Error at N Clusters	Error at N+1 Clusters	Number of Pattern Clusters
Civilian #1	174	20	5.992	7.810	14
Civilian #2	184	15	9.318	11.456	11
Navy	200	20	11.367	13.022	14

Using the memberships of pattern clusters, average index scores were obtained for each of the pattern clusters. These index scores were then plotted and the resulting profile patterns analyzed for similarities and differences. It is these patterns that could be said to represent group types. The multiple random samples were used to determine if any patterns or types were replicated across samples or generalizable to the Navy sample.

Determining the effects of different treatments involves a two-stage analysis. Each treatment sample must be examined for the presence of group types like those indicated by the earlier analysis. Next, the effects of the treatment must be ascertained by examining changes in the profiles associated with the types.

To accomplish this, HGROUP was applied to each of the ten subsamples described earlier. The same process of determining the optimal number of clusters and plotting the average index scores for pattern clusters was used as before. These pattern profiles were then examined for similarity to the patterns identified in the development of the typology of work groups. Table 16 contains the results of HGROUP for these ten subsamples.

The effects of treatments were assessed by looking at changes in profile for each pattern cluster identified by HGROUP. In order to obtain reliable differences, average index scores from the original and a second administration of the S00 were obtained for those member groups in each cluster for which data from all indices from both survey administrations were available. These two sets of index scores were plotted for each pattern cluster for each site and were referred to as 'change score profiles.'

Table 16

HGROUP Results for Ten Treatment Subsamples

Site	Number of Work Groups In Sample	Number of Clusters (N)	Error at N Clusters	Error at N+1 Clusters	Number of Pattern Clusters
1	122	11	7.027	8.222	9
2	197	17	8.197	9.072	11
3	153	20	7.075	8.321	11
4	47	9	3.899	5.009	6
5	61	8	4.277	5.407	5
6	166	22	6.215	7.353	13
7	104	8	8.684	10.141	8
8	138	8	7.473	8.769	7
9	51	8	4.753	5.844	4
10	100	7	6.813	7.879	6

The measurement error associated with the kind of change scores under consideration here makes any available estimate of change score reliability extremely attractive. Fortunately, the use of multiple-item index scores allows one to use an "internal consistency reliability" model for making such an estimate. A reliable change score was computed for each index for each cluster for each site using the procedures outlined below.

First, a reliability coefficient (r_{gg}) for each index change score for each site was computed. This required obtaining the following descriptive statistics for each index for each site: the correlation coefficient between scores on the first and second administrations, the standard deviations of index scores for both waves of data, and the alpha coefficients (α) for both waves. This latter coefficient is a measure of internal consistency reliability for the index and is obtained from the standard deviations and inter-item correlations of the items in the index:

$$\alpha = \frac{k}{k-1} \left(1 - \frac{\sum (s_k)^2}{\sum (s_k)^2 - 2(\sum r_{ij} s_i s_j)} \right)$$

where k = number of items in the index

s_k = standard deviation of an item

r_{ij} = inter-item correlation coefficient.

The index change score reliability coefficient was then obtained by:

$$r_{gg} = \frac{\alpha_x s_x^2 + \alpha_y s_y^2 - 2r_{xy} s_x s_y}{s_x^2 + s_y^2 - 2r_{xy} s_x s_y}$$

where α_x = alpha coefficient for the index on wave 1

α_y = alpha coefficient for the index on wave 2

s_x = standard deviation of the index on wave 1

s_y = standard deviation of the index on wave 2

r_{xy} = correlation coefficient between wave 1 and wave 2 index scores.

After obtaining r_{gg} for each index for each site, a "true change score"

(G) was computed for each index for each cluster for each site, with:

$$G = r_{gg}(W1 - W2)$$

where W1 = index score on wave 1

W2 = index score on wave 2.

A 'true' wave 2 score (W2') was computed by adding G to W1. Then W2' was plotted for each index, cluster and site.

Thus, for each pattern cluster for each treatment site, the following scores were plotted: the wave 1 index score for all member groups in the HGROUP cluster, the wave 1 index score for those groups for which wave 2 data were available, the unadjusted wave 2 index score for those groups, and the 'true' wave 2 index score for those groups. Existence of group types and the effects of different treatments on those different types were then analyzed.

Results

As the preceding section has indicated, the procedures employed are complex and the data sets relatively large. In brief, the results flow from six steps involved in the analysis:

- (1) A sample of civilian industrial work groups were drawn from the Survey of Organizations data bank and their index scores submitted to the HGROUP program.
- (2) A second (replication) sample of civilian groups were drawn from the same data bank and their index scores similarly analyzed.
- (3) The groups present in the Navy (AVN) file were in like fashion submitted to the HGROUP program.
- (4) Wave 1 to Wave 2 change score data for the civilian samples were compared for the profile types identified in the first step.
- (5) Groups in organizations which received distinct organizational development treatments (survey feedback, laboratory training, etc.) were submitted to HGROUP, profile groups were identified, and change scores calculated.
- (6) The change scores so calculated were "regressed," to determine and remove chance effects.

For clarity of presentation, the results will be presented in two separate sections: (1) a profile description section, corresponding to the first three steps listed above, and (2) a change score analytic section, corresponding to steps 4-6.

Emerging Profiles for Civilian and Navy Groups

When the three data sets (Civilian Sample #1, Civilian Sample #2, AVN Sample) are considered jointly, a total of 17 distinct profiles emerge. Table 17 presents summary data concerning the occurrence of these profiles in all three samples. Figures 32 through 48 present the profiles themselves.

Several observations may be made concerning the data in the table:

- (1) Only seven per cent of the groups are unclassifiable by our criteria.
- (2) 61 per cent of the groups display profiles which appear in all three samples.
- (3) 75 per cent of the groups display profiles which occur in the Navy and at least one of the two civilian samples.
- (4) Only six per cent of the groups are in Navy-unique profiles, and only 12 per cent are in civilian-unique profiles.

The list of such observations could be quite long, and it seems unnecessary to state them specifically at this point. Together they serve to underscore what appears to be an undeniable fact: the "pure types" of groups which exist are relatively few in number, and they exist with minor exceptions in the Navy as well as in civilian organizations.

Qualitatively, there are certain clusters of profiles which merit some description:

I-Profiles - Eight of the 17 patterns constitute what might be entitled "I-Profiles," that is, they are straight-line

Table 17
The 17 Profile Types: Description and Numbers of Groups by
Civilian and Navy Samples

Profile Number	Pattern*	Percentile Level	Number of Groups			Percent of Total Groups
			Civilian Sample #1	Civilian Sample #2	Navy Sample	
1	I	80-85	8	8	7	4
2	I	70	14	21	7	8
3	I	60-65	23	31	13	12
4	I	50	15	28	15	10
5	I	45	23	17	--	7
6	I	40	11	--	--	2
7	I	30-35	16	21	25	11
8	I	25	--	6	12	3
9	J	60	16	--	10	5
10	J	50	6	--	7	2
11	J	40	5	14	23	8
12	J	40	7	--	16	4
13	J	55-60	6	10	9	4
14	J	50	6	11	--	3
15	J	25	5	11	8	4
16	J	25	--	--	16	3
17	J	25	--	--	15	3
Subtotal			161	178	183	93
Misc.			13	6	17	7
TOTAL			174	184	200	100

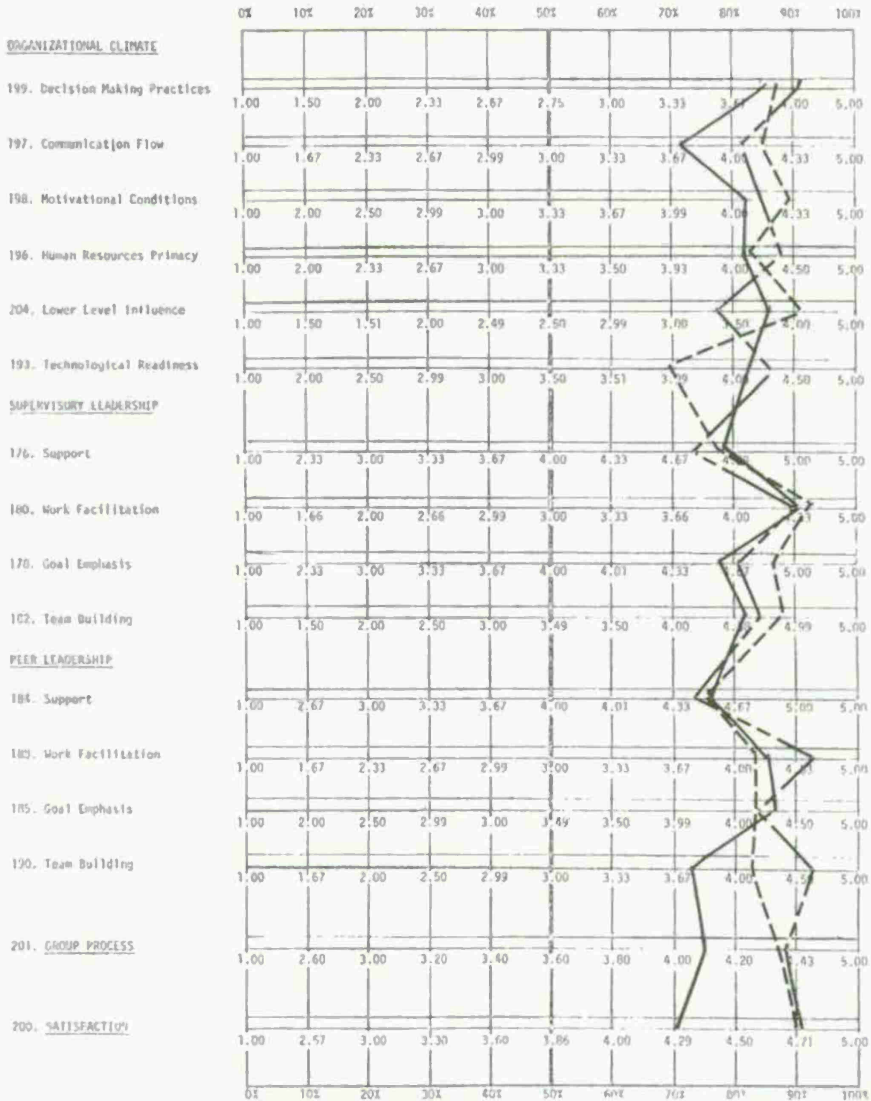
*The symbols serve as shorthand reminders of the shape of the profile. All profiles are plotted in the order (top to bottom) in which they occur in our conceptual scheme: Organizational Climate Indices, Supervisory Leadership Indices, Peer (Subordinate) Behavior Indices, and the Group Process and Satisfaction Indices. For presentation purposes, in the current instance attention is given to the first three categories. Thus "I" indicates a straight line profile; "J" indicates a profile in which Peer Behavior is inordinately low; "P" indicates a profile in which Supervisory Leadership is inordinately high; "r" indicates a profile in which Organizational Climate is inordinately high compared to other categories, etc.

Civilian First Sample ---
 Civilian Second Sample ---
 Navy Sample —

Figure 32
 MAJOR INDICES

PROFILE #1

Percentile Profile for Combined Groups

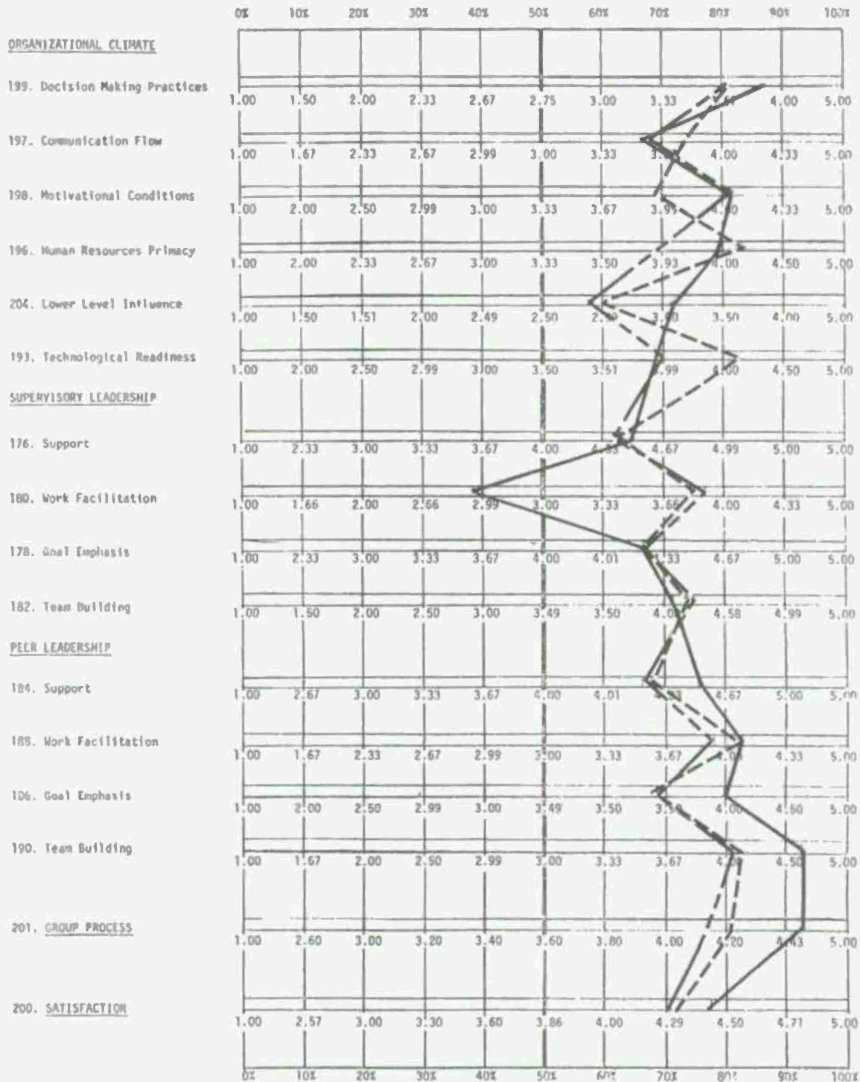


Civilian First Sample - - - -
 Civilian Second Sample - - - -
 Navy Sample - - - -

Figure 33
 MAJOR INDICES

PROFILE #2

Percentile Profile for Combined Groups



Civilian First Sample ---
 Civilian Second Sample - - - -
 Navy Sample _____

Figure 34
MAJOR INDICES

PROFILE #3

Percentile Profile for Combined Groups

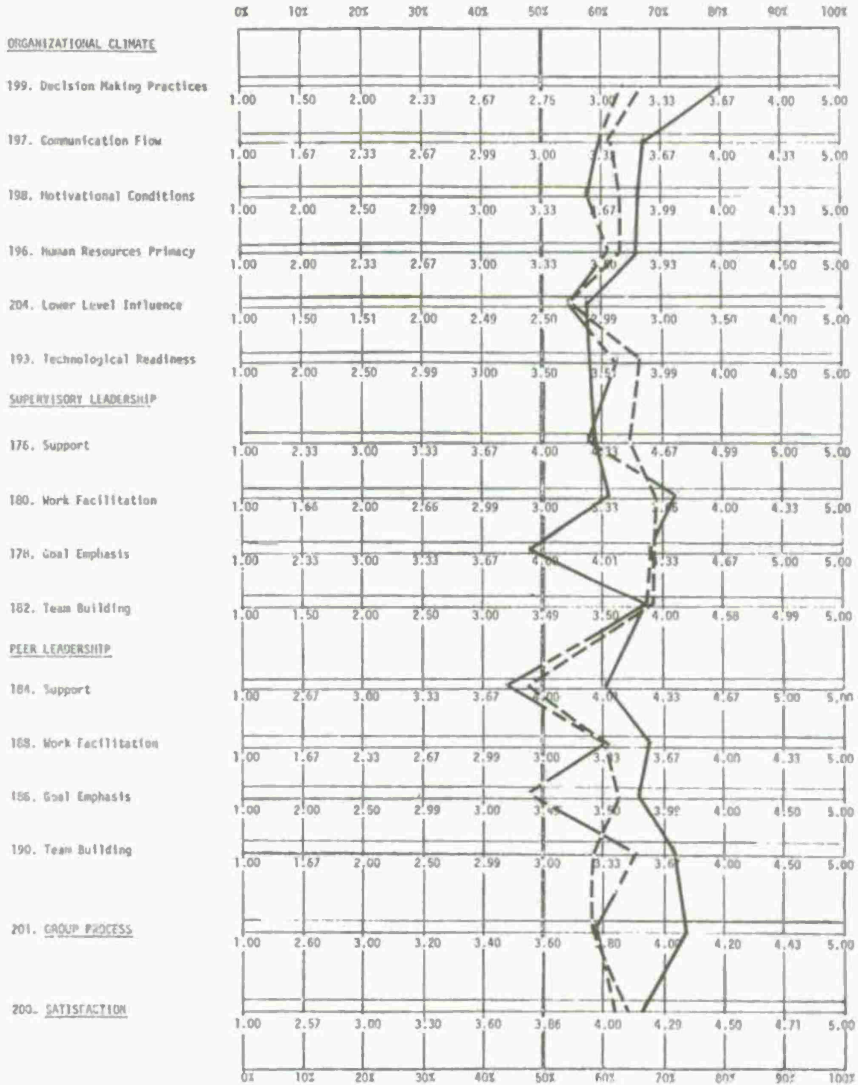


Figure 35
MAJOR INDICES

Civilian First Sample -----
Civilian Second Sample
Navy Sample —————

PROFILE #4

Percentile Profile for Combined Groups

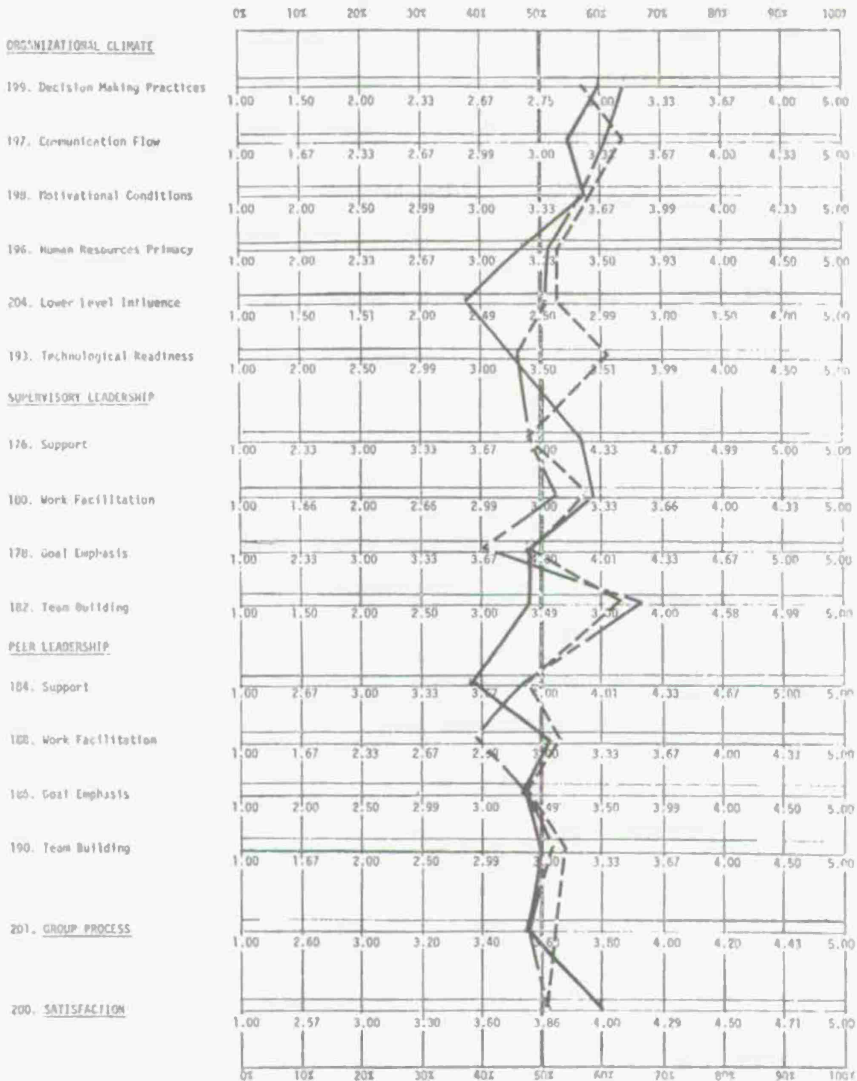


Figure 36
MAJOR INDICES

Civilian First Sample - - - - -
Civilian Second Sample - - - - -

PROFILE #5

Percentile Profile for Combined Groups

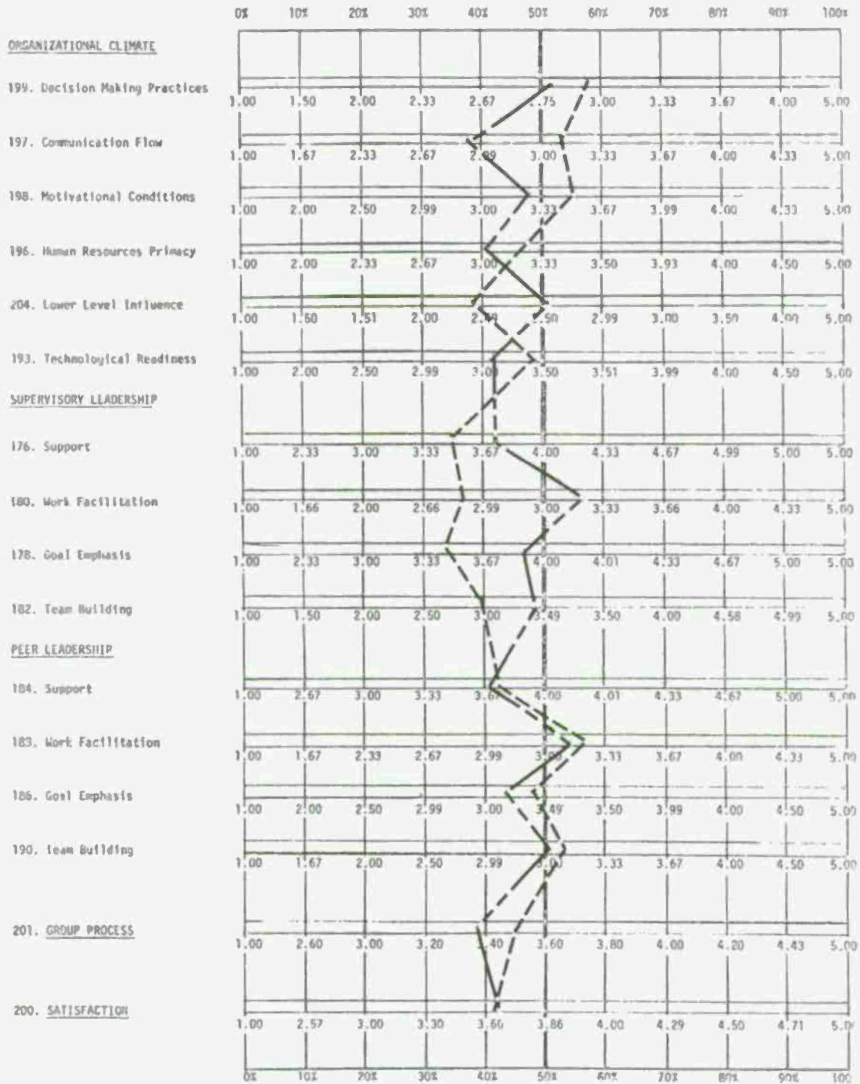


Figure 37
PLANT INDICES

Civilian First Sample - - - - -

PROFILE # 6

Percentile Profile for Combined Groups

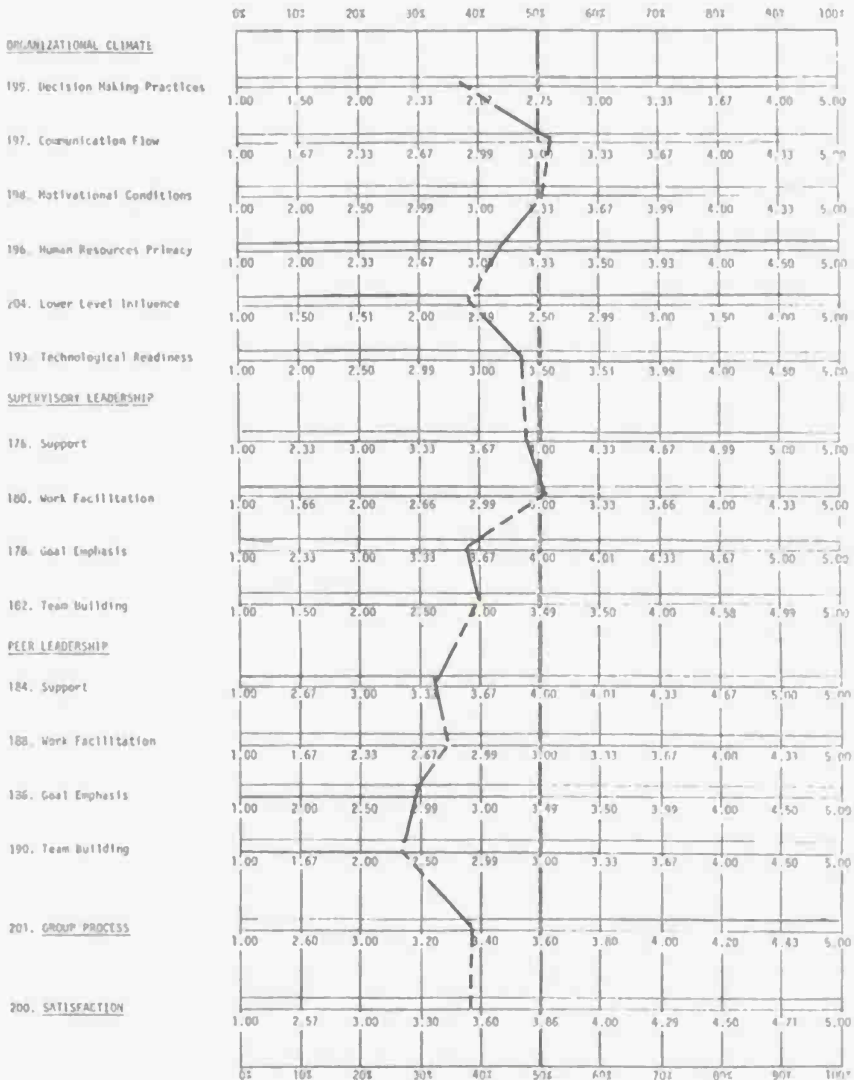


Figure 38

MAJOR INDICES

Civilian First Sample - - - - -
 Civilian Second Sample - - - - -
 Navy Sample _____

PROFILE #7

Percentile Profile for Combined Groups

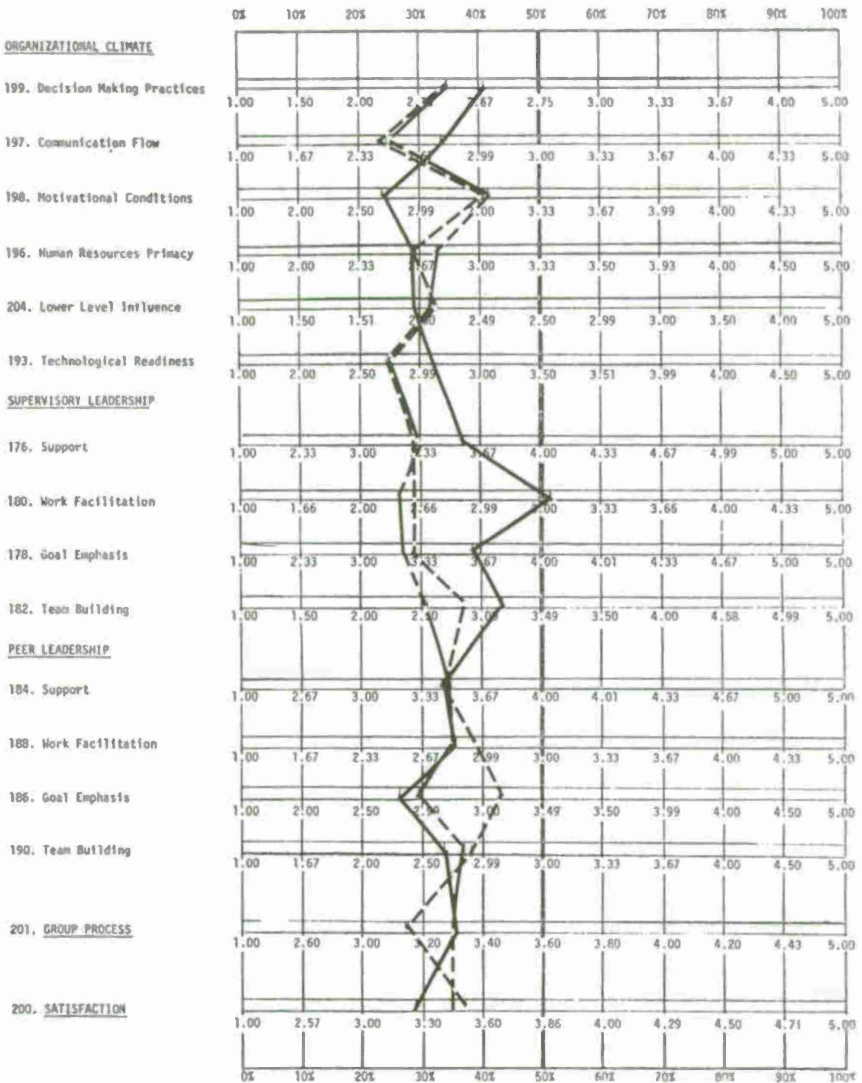


Figure 39
MAJOR INDICES

Civilian Second Sample -----
Navy Sample _____

PROFILE # 8
Percentile Profile for Combined Groups

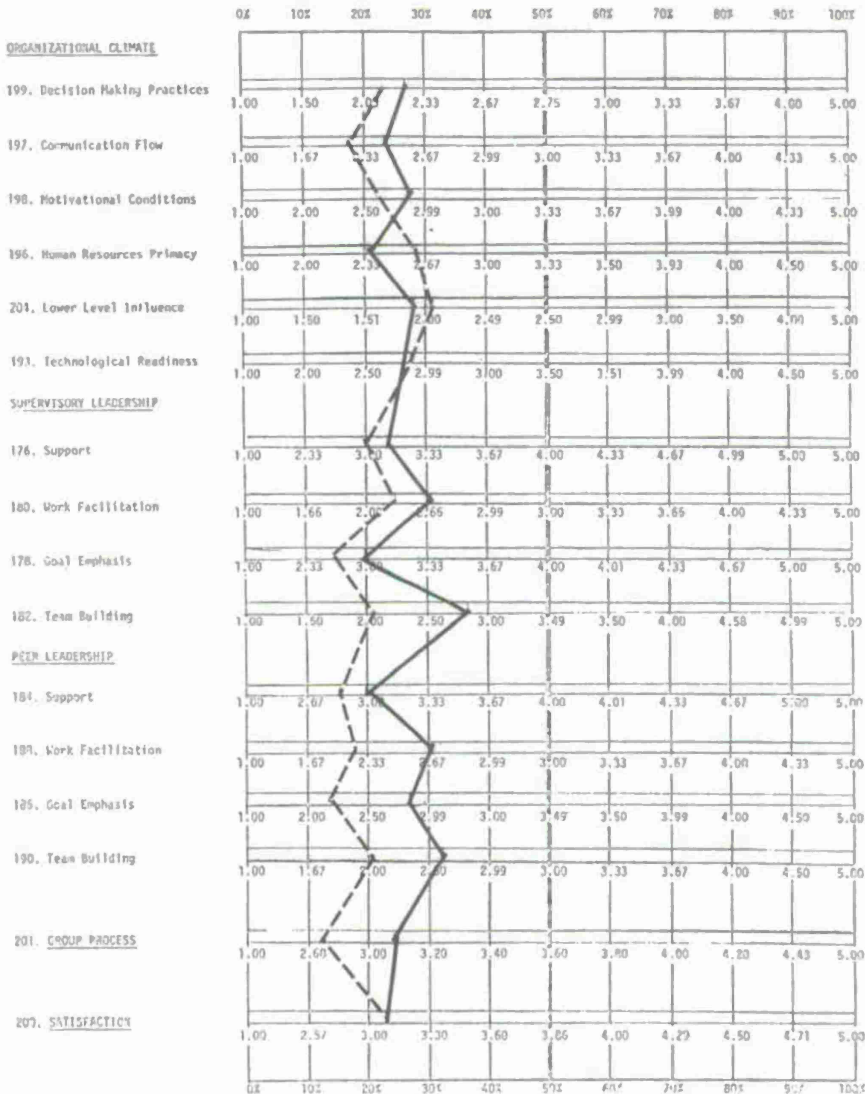


Figure 40
MAJOR INDICES

Civilian First Sample - - - - -
Navy Sample - - - - -

PROFILE #9

Percentile Profile for Combined Groups

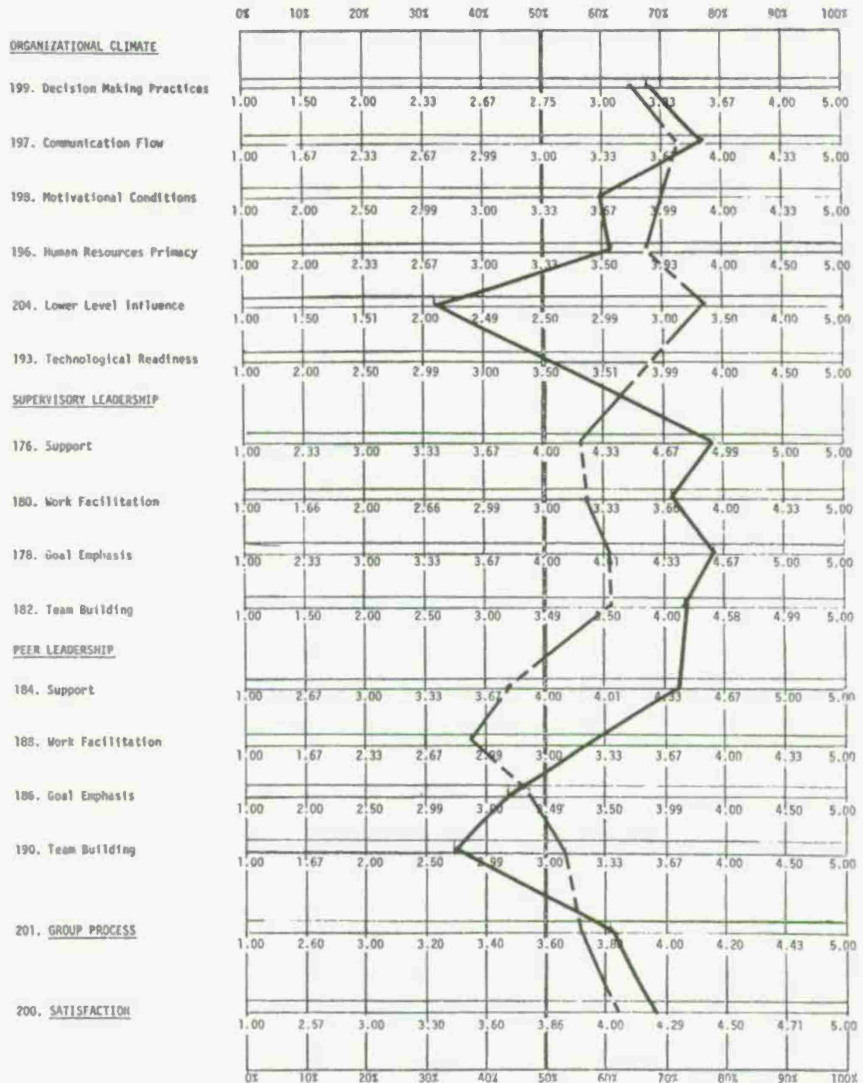


Figure 41
MAJOR INDICES

Civilian First Sample -----
Navy Sample _____

PROFILE #10

Percentile Profile for Combined Groups

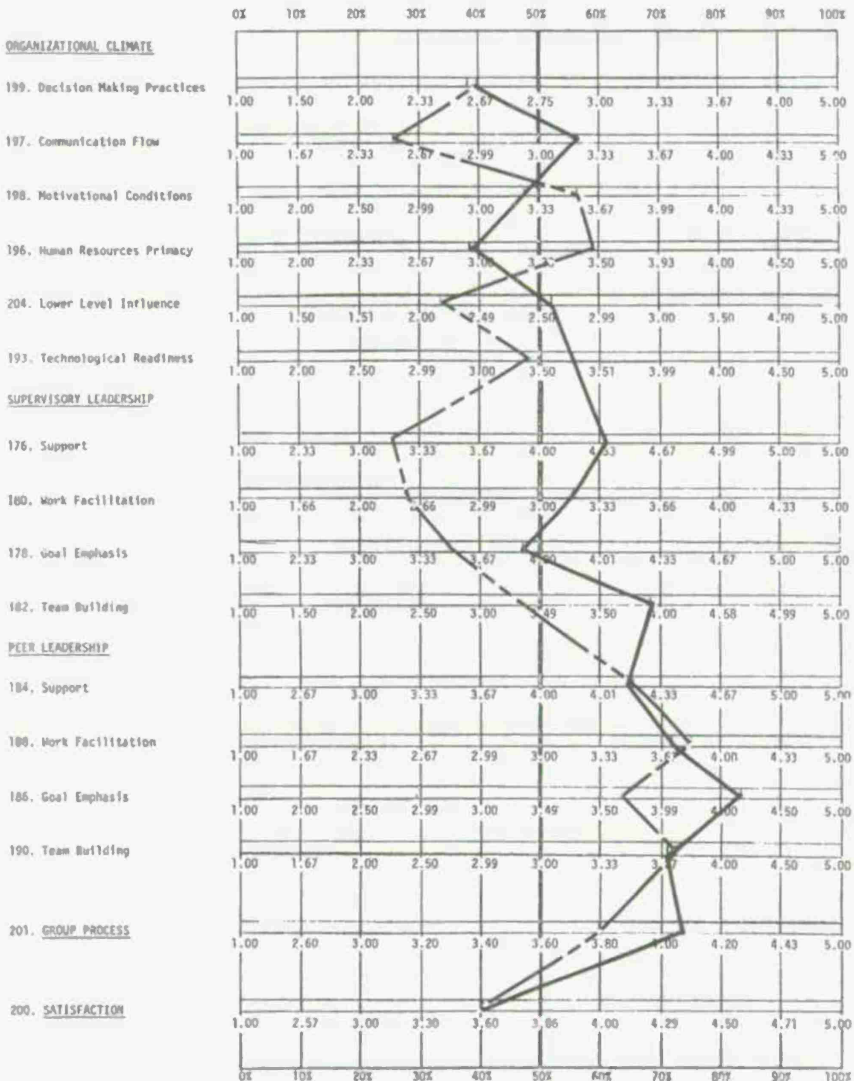


Figure 42
MAJOR INDICES

Civilian First Sample -----
 Civilian Second Sample -----
 Navy Sample _____

PROFILE #11

Percentile Profile for Combined Groups

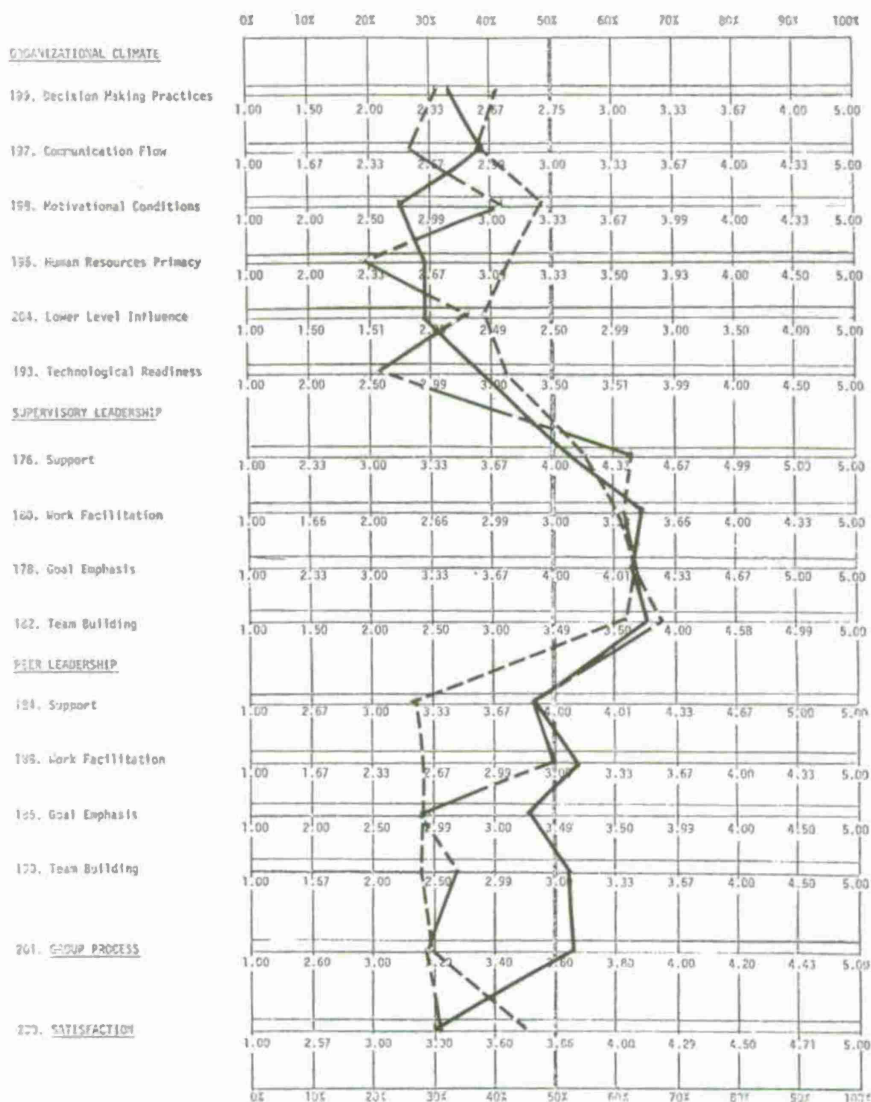


Figure 43

MAJOR INDICES

Civilian First Sample -----
 Navy Sample -----

PROFILE #12

Percentile Profile for Combined Groups

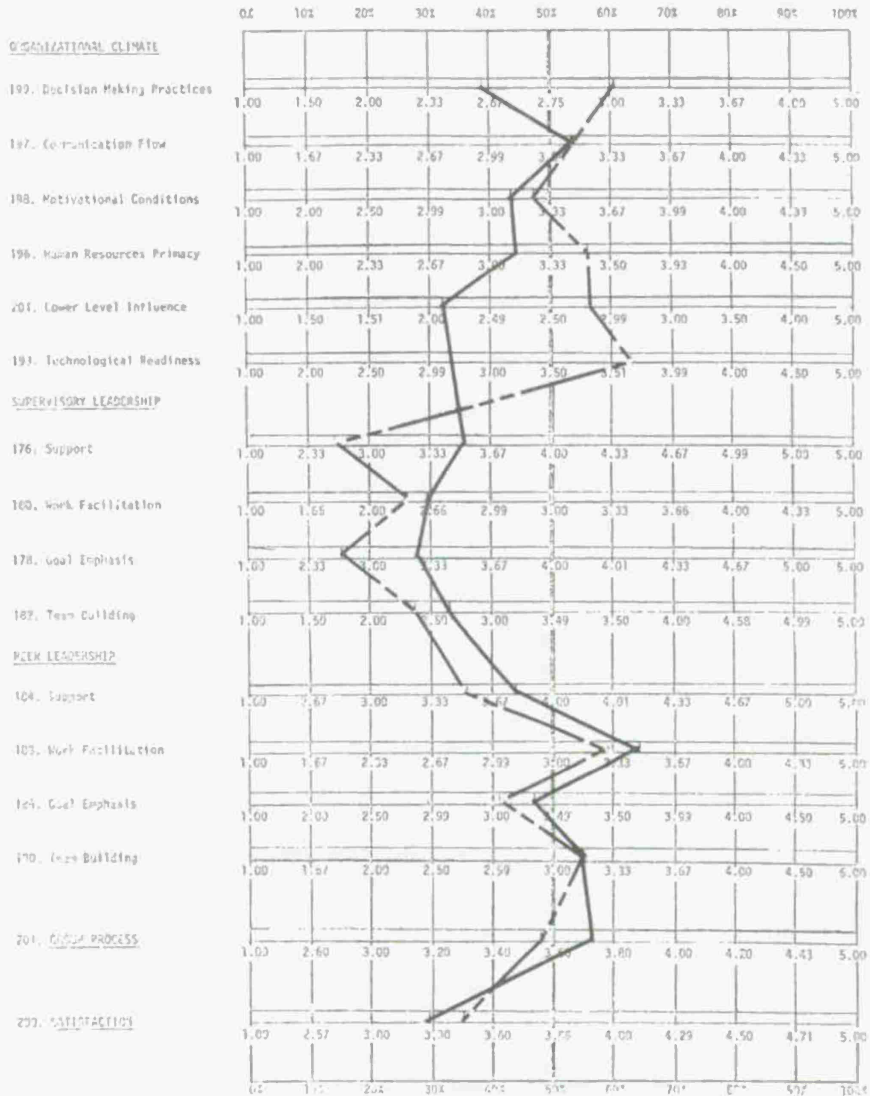


Figure 44
MAJOR INDICES

Civilian First Sample -----
Civilian Second Sample - - - - -
Navy Sample _____

PROFILE #13

Percentile Profile for Combined Groups

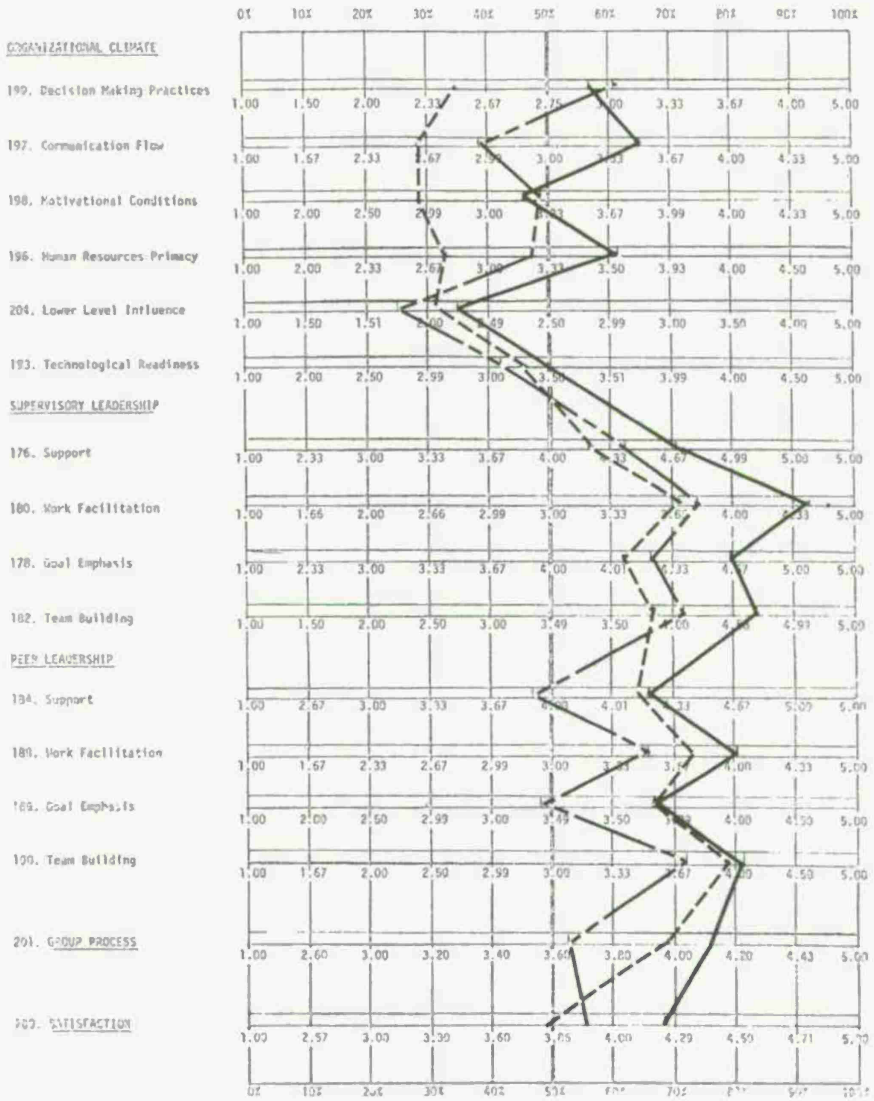


Figure 45

MAJOR INDICES

Civilian First Sample - - - - -
 Civilian Second Sample - - - - -

PROFILE #14

Percentile Profile for Combined Groups

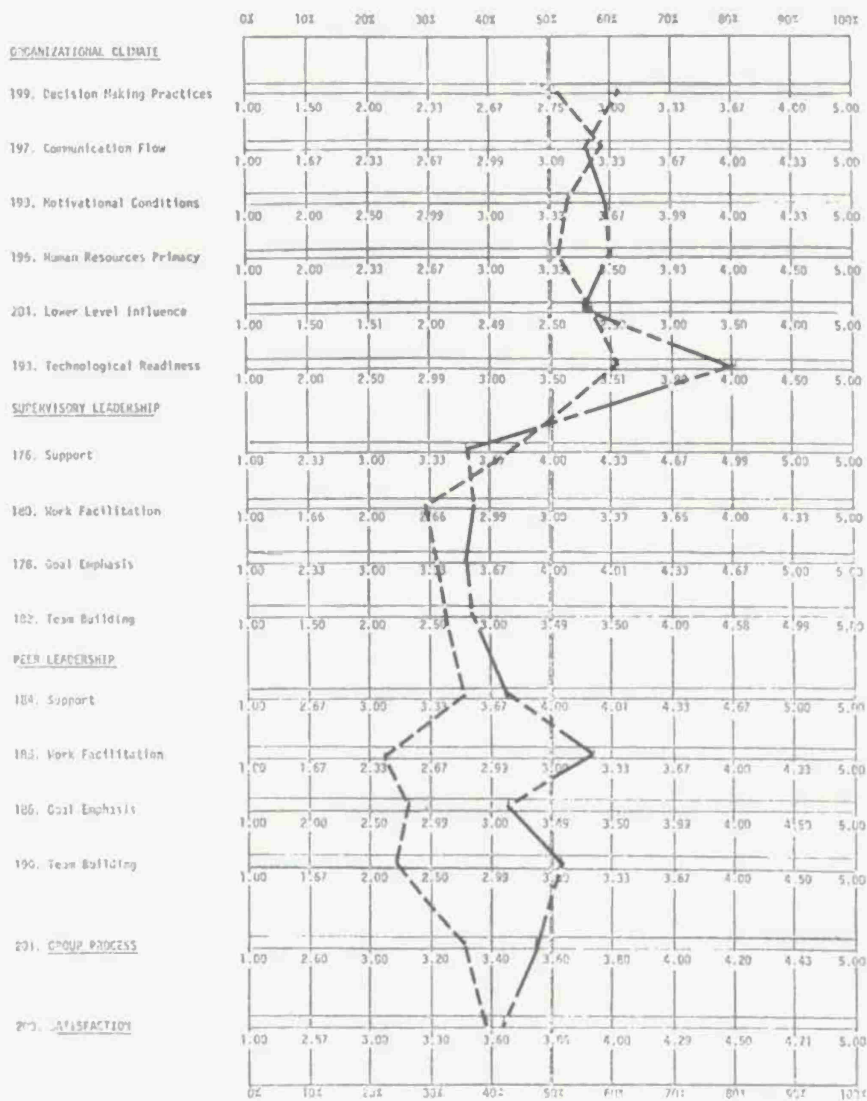


Figure 46
MAJOR INDICES

Civilian First Sample - - - - -
Civilian Second Sample - - - - -
Navy Sample - - - - -

PROFILE #15

Percentile Profile for Combined Groups

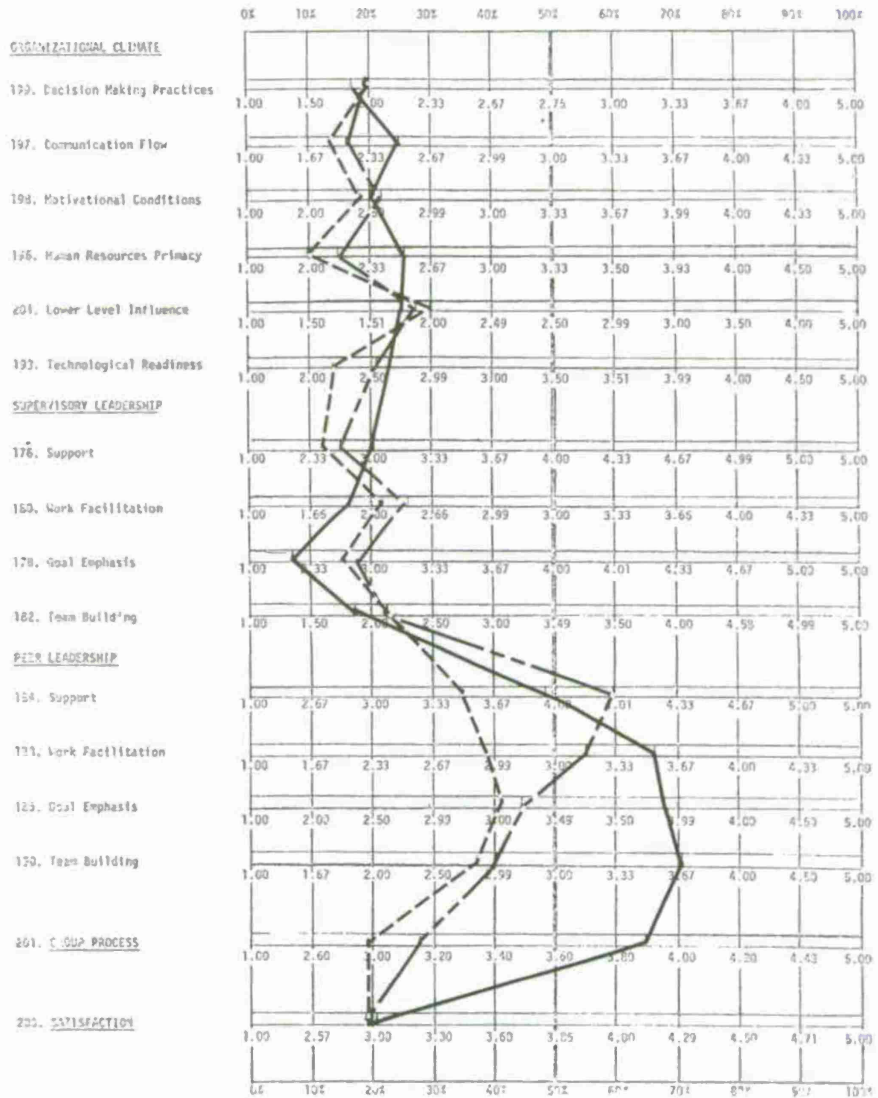


Figure 47
MAJOR INDICES

Navy Sample ———

PROFILE #16

Percentile Profile for Combined Groups

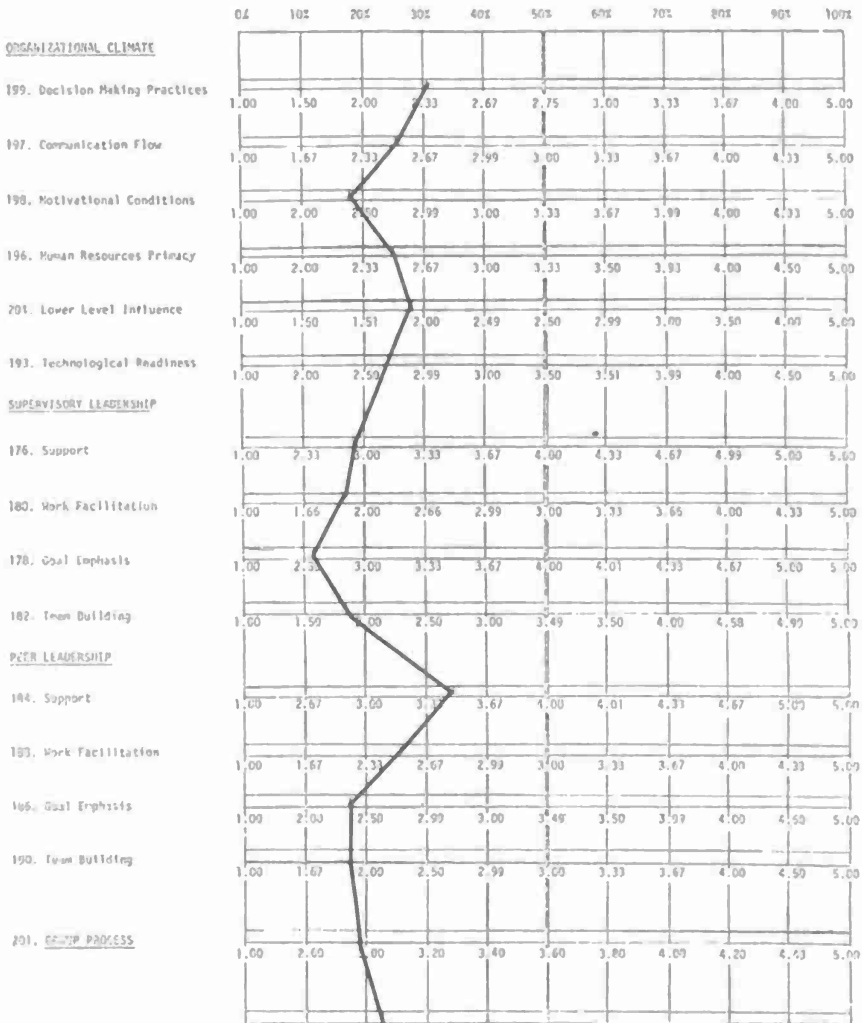
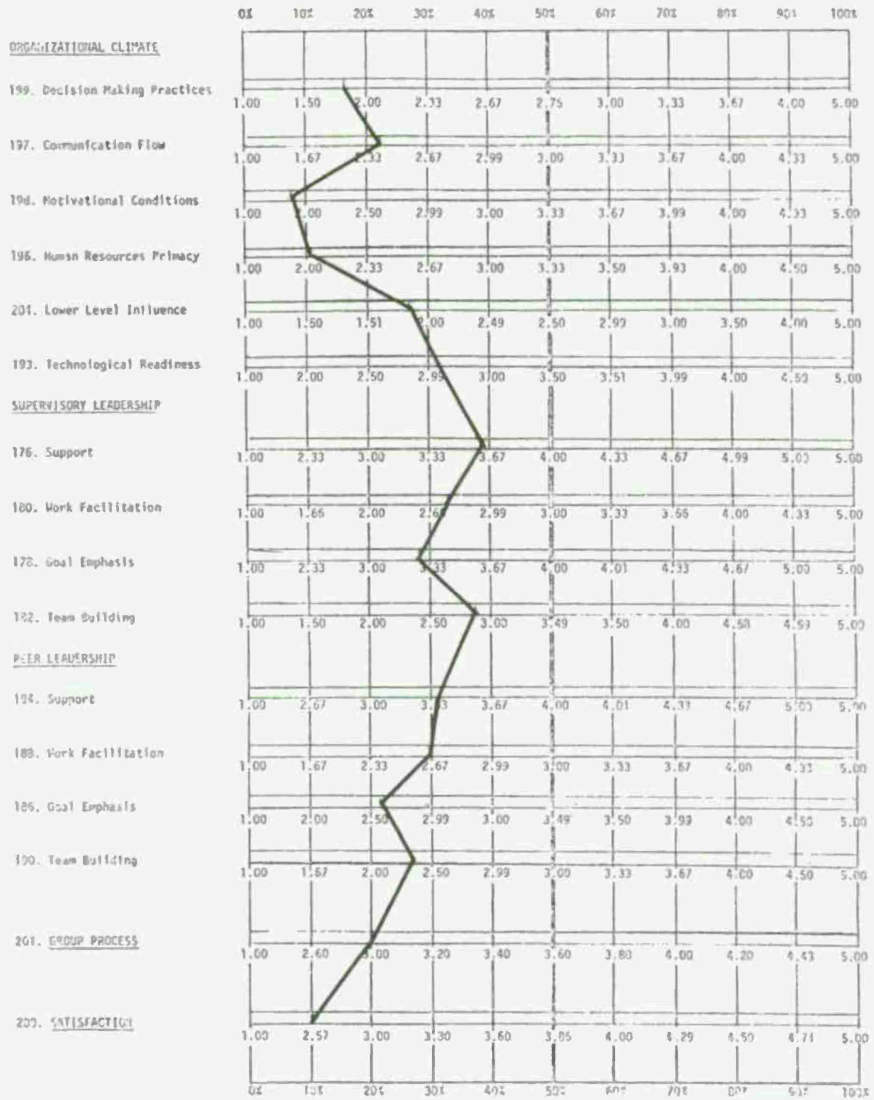


Figure 48
MAJOR INDICES

Navy Sample ———

PROFILE #17

Percentile Profile for Combined Groups



profiles at various general percentile points. The highest is a straight-line profile at the 85-percentile point; the lowest is a straight-line profile at the 25-percentile point. Slightly more than half of the groups appear to display profiles of this type (profiles 1-8).

The non-I groups present a series of interesting patterns. There are basically four different configurations or their reflections:

Organizational Climate-Divergent Profiles - Two profiles (#13, 14)

represent instances in which the organizational climate indices are markedly different from all within-group behaviors and processes. One of these (#13) has as its form what might humorously be termed the "flower in the dump." The group itself appears to function remarkably well: within-group behaviors and processes fall around the 60-percentile mark. The climate within which it lives is relatively poor, however, (around the 40-percentile point).

Its mirror reflection (#14) might be called the "weed in the garden": organizational climate is quite good, but within-group behaviors and processes are relatively poor.

Supervisory Behavior-Divergent Profiles - Four profiles (#11, 12,

16, 17) represent instances in which the behavior of the group's supervisor is different from organizational climate and all other behaviors and processes. Two of these profiles are mirror images at the 40-percentile point; a similar set of two profiles falls at the 25-percentile mark. Within each

set exists one which might be termed the "knight," because the supervisor's behavior is high relative to all other things (#11, 17) and another which might be termed the "knave" for the reverse reasons (#12, 16).

Peer Behavior-Divergent Profiles - Three profiles (#9, 10, 15)

represent instances in which the behavior of subordinates toward one another is different from Organizational Climate and Supervisory Leadership. At the very lowest level, perhaps in some ways the lowest of the entire array, is a pattern (#15) in which Organizational Climate, Supervisory Leadership and Satisfaction fall at the 25 percentile point, while Peer Behavior in general falls at the 50-percentile point and Peer Support specifically falls at the 60-percentile mark. Clearly, this represents a "self-protection" cluster where subordinates are interpersonally banding together for their mutual protection from a harsh system. This is remarkably consistent with a view often expressed but until now really not well demonstrated empirically--that, under extremely harsh conditions, one will find a counter-dependent cohesiveness which contributes little or nothing to the organization.

The remaining two in this cluster fall at somewhat higher levels and might be called the "collection" and the "starved group." Like the "self-protection" pattern, the "starved group" has better Peer Behaviors than other characteristics. The "collection," on the other hand, is a disarrayed, conflict group of subordinates.

Responses to Intervention: An Analysis of Changes Over Time

As a first step, the second-wave data for groups in the profile clusters identified in the two civilian samples were compared to the first-wave results already presented.* The general question addressed was whether groups with the various initial profiles responded differentially to organizational development intervention.

The results are presented in Appendix B. Stated succinctly, they appear to depict rather conclusively one of measurement's most inconclusive phenomena: regression toward the mean. This effect centers around the fact that all measurements contain some amount of error. If, for example, repeated measurements of the same characteristics are taken from the same respondents over a period of time, and if no systematic events have intruded in the meantime, the obtained measures will differ only as a function of the errors that they contain. However, the further in one direction or the other on the scale that a respondent is on the first occasion, the less likely it is that random error will keep him there on the subsequent occasion. Thus, if regression toward the mean is influential in any instance, we would expect those starting low to "improve," while those who started high would "deteriorate." Those in the middle ground would likely show little change, on the average.

This is precisely what seems to be the case in the present instance. High profiles appear to decline; low profiles appear to improve; medium-level profiles display little or no change. The reasons are not

*No change analysis could be undertaken with the Navy data because those results were obtained from a single-occasion data collection.

difficult to identify. Earlier, published analyses of organizational change, which employed these and analogous data sets from the civilian bank, demonstrated that (a) intervention strategies were quite different in their effects--some were productive of constructive change, while others were quite non-productive, and that (b) those strategies were determined on an organization-by-organization basis (Bowers, 1973).

An examination of the two civilian samples of groups showed that they were, in fact, drawn from the wide array of organizations involved; that is, there was no consistency of treatment within profile categories. With the exception of groups from those sites which received intervention strategies which the earlier research had indicated were generally productive (a distinct minority), most of the groups in the present analysis received interventions of little or no consequence (again, according to the earlier research).

Thus we have here, for the most part, evidence of what happens when measurement waves surround ineffective, misguided, or non-existent organizational development efforts. Quite naturally, and not at all surprisingly, what happens is little if anything. The measurements instead reflect merely regression effects.

Interesting and instructive as it is, this is not a fair test of the issue of the relationship between treatment and initial conditions, since the effect of group selection has been to immerse effective change agency in a sea of ineffective intervention.

As a second step, therefore, we selected whole organizational data sets, in organizations with known interventions, and submitted them separately through the procedure thus far used, that is, the

HGROUP program, followed by inter-wave comparisons for the emerging profiles. We then employed a recognized procedure for adjusting the change scores to remove regression effects.

Once more the reader is spared the immediate chore of digesting profiles and tables of values. These are presented in Appendix C. The findings are instead summarized for present purposes in Tables 18, 19 and 20. Table 18 contains the numbers of groups and the numbers of indices (of the 16 critical indices from the Survey of Organizations) which displayed positive, negative, and zero change, for each of five intervention strategies, each used in a single, "primary" site. Table 19 contains similar data for the five "secondary" sites. Finally, Table 20 presents for the combined sets a change effectiveness index, consisting of the ratio of the number of indices with positive changes to the number with zero or negative changes, together with the percentages of measures which changed negatively. Together, these latter two measures indicate (a) the relative positiveness of change, and (b) the absolute amount of negative change.

These data suggest that there were indeed differential results by profile type of emphasizing one or another of the strategies examined. Not all types seem amenable to these treatments, nor do the treatments seem equally (if differentially) effective. Subject to a number of very important cautions to be mentioned shortly, the findings appear to suggest the following guidelines:

- (1) Do not use any of these strategies with extremely high (e.g., I-85 type) groups.
- (2) The only instance in which simply handing back tabulated survey data (Data Handback) seems warranted is that of a

Table 18
Changes in Primary Treatment Sites

Profile Number	Pattern*	Percentile Level	Survey Feedback Site	Interpersonal Process Consultation Site	Laboratory Training Site	Task Process Consultation	Data Handback
			No. Indices Change/Direction	No. Indices Change/Direction	No. Indices Change/Direction	No. Indices Change/Direction	No. Indices Change/Direction
			No. Gps. + 0 -	No. Gps. + 0 -	No. Gps. + 0 -	No. Gps. + 0 -	No. Gps. + 0 -
1	I	80-85	- - - -	- - - -	- - - -	- - - -	3 0 1 15
2	I	70	14 3 13 0	17 0 14 2	- - - -	4 2 14 0	- - - -
3	I	60-65	- - - -	25 2 14 0	9 1 14 1	12 0 16 0	13 0 6 10
4	I	50	12 2 14 0	13 0 14 2	12 - - -	- - - -	10 4 11 1
5	I	45	- - - -	9 7 9 0	- - - -	- - - -	- - - -
6	I	40	10 16 0 0	5 10 6 0	13 1 12 3	8 0 15 1	- - - -
7	I	30-35	14 16 0 0	- - - -	20 1 15 0	- - - -	- - - -
8	I	25	8 16 0 0	6 16 0 0	- - - -	- - - -	- - - -
9	I	60	10 16 0 0	- - - -	- - - -	6 0 12 4	9 0 9 7
10	I	50	- - - -	- - - -	- - - -	- - - -	- - - -
11	I	40	14 11 5 0	- - - -	- - - -	- - - -	- - - -
12	I	40	14 8 7 1	4 4 12 0	3 0 5 11	- - - -	- - - -
13	I	55-60	5 1 13 2	- - - -	6 1 11 4	- - - -	- - - -
14	I	50	- - - -	16 3 13 0	- - - -	4 0 12 4	5 6 9 1
15	I	25	- - - -	6 10 6 0	11 5 11 0	- - - -	- - - -
16	I	25	- - - -	- - - -	- - - -	- - - -	- - - -
17	I	25	- - - -	- - - -	4 1 13 2	- - - -	- - - -

*The symbols serve as shorthand reminders of the shape of the profile. All profiles are plotted in the order (top to bottom) in which they occur in our conceptual scheme: Organizational climate indices, Supervisory Leadership indices, Peer (Subordinate) Behavior indices, and the Group Process and Satisfaction indices. For presentation purposes, in the current instance attention is focused upon the first three categories. Thus "I" indicates a straight line profile; "d" indicates a profile in which Peer Behavior is inordinately low; "p" indicates a profile in which Supervisory Leadership is inordinately high; "r" indicates a profile in which Organizational Climate is inordinately high compared to other categories, etc.

Table 19
Changes In Secondary Treatment Sites

Profile Number	Percentile Level	Survey Feedback Site	Interpersonal Process Consultation Site	Laboratory Training Site	Task Process Consultation	Data Handbook
		No. Gps.	No. Indices Change/Direction	No. Indices Change/Direction	No. Indices Change/Direction	No. Indices Change/Direction
1	80-85	-	-	3	1	4
2	70	2	4	1	6	11
3	60-65	3	11	25	0	0
4	50	3	7	-	11	-
5	45	-	-	-	5	3
6	40	5	-	23	4	1
7	30-35	1	-	-	-	-
8	25	-	6	7	-	3
9	60	-	12	9	-	1
10	50	-	4	-	-	13
11	40	-	10	-	-	2
12	40	1	-	13	-	-
13	58-60	5	2	4	5	9
14	50	-	9	11	1	-
15	25	-	-	26	4	-
16	25	-	-	1	11	-
17	25	-	-	-	-	-

The symbols serve as shorthand reminders of the shape of the profile. All profiles are charted in the order (top to bottom) in which they occur in our conceptual scheme. Organizational Climate, Peer (Supervisory) Leadership Indices, Peer (Subordinate) Behavior Indices, and Supervisory Leadership Indices. For preliminary purposes, in the current instance attention is focused upon the last three categories. This "1" indicates a straight line profile; "2" indicates a profile in which Peer Beha (or is inordinately low; 3 indicates a profile in which Supervisory Leadership is inordinately high; 4 indicates a profile in which Organizational Climate is inordinately high compared to other categories, etc.

Table 20

Effectiveness* and Amount of Change in 16 Survey of Organizations Indices,
for Combined Primary and Secondary Organizational Sites, by Intervention Strategy*

Profile Number	Intervention Strategy					
	Survey Feedback +/(0&-) neg	Interpersonal Process Consultation +/(0&-) neg	Laboratory Training +/(0&-) neg	Task Process Consultation +/(0&-) neg	Data Handback +/(0&-) neg	
1	- -	- -	.07 50	- -	.00 47	
2	.60 0	.00 22	- -	.07 16	.00 0	
3	.33 0	.07 3	.10 25	.00 0	.00 62	
4	.45 0	.00 25	.07 7	.33 6	.18 3	
5	- -	.78 0	- -	- -	- -	
6	1.67 0	1.67 0	.78 0	.00 6	.07 12	
7	.88 3	.33 0	.07 19	- -	- -	
8	16.00 0	16.00 0	.07 0	- -	- -	
9	16.00 0	.60 0	- -	.00 25	.00 44	
10	- -	- -	- -	- -	.07 12	
11	2.20 0	- -	.14 12	- -	- -	
12	.68 31	.23 16	.14 38	.45 3	.45 12	
13	.07 12	- -	.07 25	- -	- -	
14	- -	.23 0	.07 19	.14 16	.60 6	
15	- -	1.67 0	.45 0	- -	- -	
16	- -	- -	- -	- -	- -	
17	- -	- -	.07 12	- -	- -	

* As an arbitrary convention, effectiveness ratios involving zero in one of the two terms have been set as follows: $16/0 = 16.00$; $0/x = .00$.

** These strategies are described in Appendix C as they were in the previously cited article (Bowers, 1973).

group at the 50 percentile level which is functioning poorly within a relatively good organizational climate.

- (3) Use some form of Process Consultation for extremely low groups (25 percentile level).
- (4) Use Survey Feedback for intermediate range groups (30-70 percentile).
- (5) Do not use Laboratory Training at all, especially with very high groups.

As was mentioned above, these conclusions must be considered to be highly tentative. The reasons for doing so are several in number and deserve brief elaboration. First, the numbers of cells or categories into which groups are placed rapidly reduces even this mass of data to relatively small numbers of cases in each instance. Second, many groups drop out of this particular analysis because of the absence of second-wave data (largely the result of samples instead of census coverage, and of reassignments which abolished some groups). Third, not all strategies were employed with all profile types, and it would likely alter the results had this occurred. Fourth, the array of strategies is absolutely limited; others should be considered. Fifth, those strategies which are considered are dependent in their outcomes upon the skills and particular practices of the consultants who implemented them. Other consultants might have been differently effective. Finally, many judgments have gone into the interpretation of these findings, and these judgments may in some instances be faulty.

Despite these disclaimers, the data are worthy of careful, cautious consideration. To our knowledge, they represent a more systematic treatment of a larger array of information concerning organizational development's prescription problem than has heretofore been amassed.

Discussion and Amplification

Several factors, of the many that remain unexplored in this report, pose potentially serious problems for the findings just reported. It is possible, for example, that the "types" identified in the analysis represent nothing more than characterizations of different organizations (i.e., that all I-85 profile groups come from one organization, all I-40 profile groups from another, etc.).

To check this possibility, we retrieved the group identifications and examined the clusters for composition. Table 21 presents the number of organizations represented in each profile cluster for each type, together with the highest percentage of groups in each type coming (for each sample) from any single organization. These data show that only among the non-I profiles (Nos. 9-15) is there any initial cause for concern. Further examination and results (not presented in the table) alleviate that concern, however, on the following grounds:

- The non-I profiles are less common than the I-profiles, accounting for 28 per cent of the civilian groups sampled. It is therefore highly likely that these profiles will be dominated by the larger data sets (organizations with large numbers of groups), and this is in fact what happens.
- The percentages of groups in the larger data sets are almost identical for the I and non-I profile subsets.
- Many of the same large data sets occur with inordinate frequency in several of the non-I types that are the cause of potential concern.

Table 21
Concentration of Profile Types
by Organization

Profile Number	First Civilian Sample		Second Civilian Sample	
	No. Org's Represented	Highest % Any One Org.	No. Org's Represented	Highest % Any One Org.
1	4	37	5	25
2	7	36	6	29
3	10	30	11	23
4	7	33	10	22
5	7	35	8	41
6	6	36	-	--
7	6	37	5	38
8	-	--	4	33
9	7	31	-	--
10	3	67	-	--
11	3	60	7	29
12	4	43	-	--
13	2	83	3	60
14	4	50	5	27
15	3	60	4	45
16	-	--	-	--
17	-	--	-	--

We seem reasonably justified in concluding that the inter-profile differences do not, in any substantial degree, reflect merely differences among organizations.

Yet another issue is whether the profile types represent merely hierarchical differences (e.g., that I-85 types are top management groups, etc.). To examine this, we once more retrieved group identifications for the two civilian samples and sorted them by the levels corresponding to our national norms:

Level 4 = Top Management Groups

Level 3 = Middle Management Groups

Level 2 = Groups of First-line Supervisors

Level 1 = Blue-collar non-supervisory groups

Level 0 = White-collar non-supervisory groups

Table 22 presents the percentages of groups within each profile type falling at each of the hierarchical levels. Table 23 presents similar data, percentagized this time by hierarchical level. What these data seem to indicate is that hierarchical level does, indeed, make a difference, but not the sort of spurious difference that might have been expected from plotting profiles on combined-norm profile sheets (that is, that groups might array themselves down the percentile scale by hierarchy simply because they have been compared to a common set of normative data). More specifically, these results suggest that:

- High - I profiles are most frequently found among groups made up of first-line supervisors.
- "Starved" groups are most frequently found among groups made up of first-line and second-line supervisors.

Table 22
 Percentage of Groups Within Each
 Hierarchical Level, by Profile Type
 (Both Civilian Samples Combined)

Profile Number	Hierarchical Level				
	White-Collar NS 0	Blue-Collar NS 1	First-Line Supv's 2	Middle Mgt 3	Top Mgt 4
1	19	25	38	12	6
2	8	8	57	8	17
3	13	17	50	13	7
4	30	12	26	23	9
5	8	40	18	32	2
6	18	18	45	9	9
7	3	35	38	24	0
8	33	17	50	0	0
9	56	6	12	6	19
10	0	17	50	33	0
11	32	16	42	10	0
12	14	57	0	28	0
13	0	69	25	6	0
14	47	24	12	12	6
15	6	69	12	12	0
16	--	--	--	--	--
17	--	--	--	--	--
Total	17	26	34	17	6

Table 23
 Percentage of Groups Within Each
 Profile Type, by Hierarchical Level

Profile Number	Hierarchical Level				
	White-Collar NS 0	Blue-Collar NS 1	First-Line Supv's 2	Middle Mgt 3	Top Mgt 4
1	6	4	5	4	5
2	6	3	18	5	28
3	12	10	24	12	19
4	22	6	10	18	19
5	6	18	6	23	5
6	3	2	4	2	5
7	2	15	12	16	0
8	3	1	3	0	0
9	15	1	2	2	14
10	0	1	3	4	0
11	10	3	7	4	0
12	2	4	0	4	0
13	0	12	4	2	0
14	14	4	2	4	5
15	2	12	2	4	0
16	--	--	--	--	--
17	--	--	--	--	--

- "Collections" are most frequently found among clerical- NS and Top Management groups.
- "Self-protection" groups are most frequently found among blue-collar- NS groups.
- "Weed in garden" groups are most frequently found among non-supervisory groups, especially white-collar.
- "Flower in dump" groups are most frequently found among blue-collar-NS groups.
- "Knights" are most often found among white-collar-NS and first-line supervisory groups.
- "Knaves" are most frequently found among blue-collar-NS groups.

Many other such tests might have been conducted, were there time and resources. Profile types might conceivably differ by average age, educational level, and the like. Nevertheless, the findings are reassuring. They suggest that the main results of the study go some measure toward supporting with evidence what was in an earlier report termed the Principle of Congruence:

For constructive change to occur, there must exist an appropriate correspondence of the treatment (action, intervention) with the internal structural and functional conditions of the entity for which change is intended. Since by definition these internal conditions pre-exist, this means that treatments must be selected, designed, and varied to fit the properties of the client entity.
(Bowers, Franklin & Pecorella. 1973)

Implications for Decisions Concerning Intervention Strategy

Whether consultant or manager, the individual faced with making a choice of intervention strategies faces a task not unlike that conceptualized by decision theorists and visually depicted in Table 24. Considering first the various functional conditions that might exist in any particular client group (arbitrarily shown as three in number for

Table 24

Intervention Strategy Choice
as a Decision-Theory Problem

States of Nature (Diagnosed Functional Conditions)				
		N_1	N_2	N_3
Strategies (Intervention Activities)	S_1	Payoff: $S_1 N_1$	Payoff: $S_1 N_2$	Payoff: $S_1 N_3$
	S_2	Payoff: $S_2 N_1$	Payoff: $S_2 N_2$	Payoff: $S_2 N_3$
	S_3	Payoff: $S_3 N_1$	Payoff: $S_3 N_2$	Payoff: $S_3 N_3$

illustrative purposes), the decision-maker may find himself operating under any one of three possible conditions:

- Certainty - he knows beyond any doubt that the condition is a particular one (e.g., N_1); its probability is +1.00.
- Risk - he knows the probabilities attached to each of the conditions, and each lies between .00 and 1.00.
- Uncertainty - he does not even know the probabilities.

In the real world of organizational development, certainty is only remotely possible. Our discussion, therefore, must necessarily revolve around risk versus uncertainty.

Risk--which assumes that one knows both the probabilities of functional conditions' occurring and the payoff values in the cells--leads to a fairly straightforward procedure. That intervention strategy is selected whose expected value is greatest, where expected value equals the sum of the probabilities x payoffs, i.e.,

$$EV_{S_1} = (\text{Payoff } N_1S_1) (p^{N1}) + (\text{Payoff } N_2S_1) (p^{N2}) \\ + (\text{Payoff } N_3S_1) (p^{N3})$$

Under uncertainty, however, the probabilities are unknown, and the personal style of the decision-maker becomes important. He may be optimistic, and therefore select the intervention with the highest maximum payoff (a "maximax" approach). On the other hand, he may be pessimistic and fearful and for these reasons elect to maximize the smallest payoff possible (a "maximin" approach). As a third possibility, he may choose to minimize regret, that is, he may want to minimize the

difference between the best possible payoff and the payoff actually received (a "minimax" approach).

Let us illustrate both the Risk and Uncertainty alternatives with an hypothetical example. Table 25 presents such a hypothetical matrix, with three possible functional conditions (N_1 , N_2 , N_3) and three intervention strategies (Survey Feedback, Process Consultation, and Job Enrichment). Under conditions of Risk, in which the probabilities (given at the head of each column) would be known, the choice would be based upon expected value:

$$EV_{SF} = \$100,000 (.50) + \$100,000 (.25) + \$50,000 (.25) = \$87,500$$

$$EV_{PC} = 0 (.50) + \$150,000 (.25) + \$100,000 (.25) = \$62,500$$

$$EV_{JE} = 0 (.50) + \$50,000 (.25) + \$200,000 (.25) = \$62,500$$

Clearly, the first strategy (Survey Feedback) would be selected.

Under uncertainty, however, the process would be different; it would depend upon the decision-maker's personal style:

Optimist (Maximax) - looks for the highest possible payoff

JE- \$200,000

PC- \$150,000

SF- \$100,000

Pessimist (Maximin) - looks for the strategy with the highest lowest payoff

SF- \$50,000

PC- 0

JE- 0

Table 25
Hypothetical OD Decision Matrix

Interventions	Functional Conditions		
	N 1 P = .50	N 2 P = .25	N 3 P = .25
Survey Feedback (SF)	\$100,000	\$100,000	\$ 50,000
Process Consultation (PC)	0	\$150,000	\$100,000
Job Enrichment (JE)	0	\$ 50,000	\$200,000

Regret Minimizer (Minimax) - tries to minimize the difference between what he might have gotten and what he might minimally get.

SF- \$100,000 - \$50,000 = \$50,000

PC- \$150,000 - 0 = \$150,000

JE- \$200,000 - 0 = \$200,000

Thus, if he were an optimist, he would select Job Enrichment; if a pessimist, he would choose Survey Feedback, a choice he would also make if he elected to minimize regret.

What has been said thus far assumes that, in all instances, the payoff values are known, and that the decision-maker has as his only consideration the well-being of the unit whose fortunes are being decided. As such, it reflects a situation somewhat at odds with that which prevails in the organizational development world. For one thing, payoff values are inadequately known in most instances. For another, consultants (who often either select intervention strategies directly or are quite influential in their being selected by others) ordinarily are in considerable degree "external" to their client units.

In this light, consider the more typical situation, that of an external consultant who is skilled in one (or at most a small number) of intervention strategies. His rewards, both material and psychological, depend upon his continuing to practice his particular strong suit. He is often quite convinced of its general utility. If experienced, he is likely also to be congenial and persuasive. As long as the condition is one of uncertainty and an absence of objective information about comparative payoffs, his world is reasonably secure. The payoffs are treated in subjective terms, with client members more susceptible to

being influenced to "appreciate" whatever transpires. As long as the functional conditions have unknown probabilities of occurrence, the decision-maker can operate (or be influenced to operate) on the basis of personal style, rather than evidence.

The situation is made-to-order for mischief, both purposeful and unintended. The honest consultant who has mastered a single technique and been persuaded by its advocates that it is almost universally applicable has little motivation to consider other cells of the matrix and strong unconscious reasons for fearing and rejecting their consideration. Needless to say, those few persons who are charlatans have more obvious reasons for wishing uncertainty to prevail and objective payoffs to remain unknown.

These observations may serve to explain, at least in part, the resistance often encountered among practitioners to rigorous differential diagnosis (which, if successful, moves the situation toward risk and away from uncertainty) and to research and evaluation (which, among other things, helps to establish objective payoff values).

Despite its shortcomings and inadequacies, this present report, we believe, moves toward making known the marginal and cell values of the organizational development decision matrix. It tentatively identifies at least some distinguishable states of nature (types of groups), together with some indication of the frequency of their occurrence. By examining changes which have resulted from particular intervention strategies applied to those types, it begins the process of establishing comparative payoff values. No claim can be made that more than a beginning has been accomplished. More evaluation of a wider array of interventions with larger numbers of groups is certainly necessary. However, a first step has been taken.

Chapter 6

Summary and Implications

The research summarized in the chapters of this volume began with the question of whether shifts in values and preferences in society at large make necessary corresponding changes in Navy management practices. At this, the conclusion of the effort, the answer emerging from the findings is many-faceted, but clear and consistent. Although in many aspects and for some personnel and units Navy practices are excellent, in the treatment of its younger, lower-rank personnel its practices are inadequate to the task of retaining and motivating them. The pressures of an economic recession may blunt the effects temporarily, but in the long run they remain to pose serious difficulties. Because the newly-trained Navyman customarily goes immediately to sea, the effects just described have a greater impact upon the Fleet than upon Shore units.

The problem is not primarily one of job content, that is, of the kind of work involved. No difference occurs between civilians and Navy men, for example, on how hard the work is perceived to be, how dirty the jobs are, advancement opportunities, the amount of free time, the responsibility assumed, or the chance to learn new skills. Only small differences exist in the extent to which civilian and Navy jobs are perceived to be challenging.

Instead, concerns are most strongly voiced by respondents of all ages in relation to three issues: personal independence, economic success, and autocratic versus democratic treatment. Young persons, in the Navy and outside it, attach greatest importance (among a number of characteristics) to personal independence (in the form of an absence of bureaucracy and a presence of an opportunity to control one's personal life), and to economic success (pay and benefits). In similar fashion, adherence to

autocratic beliefs declines among the young and better educated segments of the American population, whether Navy or civilian.

Yet it is young Navymen who experience the least favorable practices. Until a Navyman reaches 30 years of age, or is in a group whose average age approximates that figure, he does not experience conditions as favorable as those experienced by civilians of almost any age. He feels he has too little opportunity to control his personal life, encounters far too much bureaucracy, and experiences an organizational climate that is--by comparison to civilian life--in many aspects quite negative.

In these values and preferences, the young enlisted Navyman is not alone. Instead, his views closely resemble those of young officers and, oddly enough, in certain important ways those of older officers. However, the gap in values is in fact largest between young and older enlistees.

Nor can much comfort be taken from an examination of preferences by different draft motivation categories. Draft motivation is unrelated to preferred leadership style, adherence to autocratic beliefs, or preferred level of job challenge. True volunteers--who by now comprise all of the entering recruits--have high needs for personal independence and participative treatment. They view the Navy as a personal route to skill, esteem, and position in life. They will doubtless weigh as quite negative practices which deal with them otherwise.

While much of the ideological conflict which may have been present in recent years will disappear with the exit of the Draft Avoidants, it was precisely for this group that organizational practices bore little relationship to retention. Those who remain, including especially the True Volunteers, are those whose reenlistment decision is maximally affected by the participative character of experienced practices.

Although the True Volunteer begins his service with a slight educational disadvantage, he has relatively high expectations about what Navy service will do for him regarding a better life situation.

The costs of negative treatment are not limited to the consequences just described. Race relations also suffer to the extent that practices are negative. Both Blacks and Whites feel that discrimination accompanies a negative organizational climate, with sensitivities understandably higher for Blacks.

Reasonable persons would presumably agree that the nation's defense force must be adequate in numbers and competence and effective in the performance of its missions, both actual and potential. To add, to these, criteria of consonance with the growing values of our democratic society requires evidence to the effect that practices congruent with these values enhance manning, competence, and mission effectiveness. Contrariwise, "two community" proposals--that military organizations like the Navy may be highly directive in an age when society is becoming more participative--rely for validity upon evidence that manpower may be obtained and utilized effectively under those contrary conditions.

A "two community" alternative finds literally no support in the findings generated by this study. Persons leave the Navy at the first available opportunity when practices stray away from the participative and toward the autocratic, and to the extent that they do so. Although relationships to criteria of effectiveness of Navy units remain to be explored more fully, those which have been analyzed in the course of the present and allied studies show little evidence to sustain an autocratic alternative. Instead, it would appear that a Navy unit which more carefully conserves and involves its human resources very likely performs better.

In short, those same participative practices which have been found to be positively correlated with effectiveness in the civilian world appear to be related to it in the Navy world as well.

Action Implications: Organizing for Effective Manpower Utilization

I. Recognizing the Relationship of Social and Technical Systems in the Navy

The finding: There is a philosophy-of-management problem which permeates the Navy. It shows up in a rather pervasive (top-to-bottom) perception of the organizational climate as negative in its view of human resources and in motivational conditions.

Perhaps the issue can be illustrated by contrasting two polar opposites. The Navy is not, nor can it be, an organization in which personnel are all-important and hardware ancillary. Weapons systems change, perhaps more in response to the weapons systems changes of other nations than in relation to changes in mission. Such changes have important repercussions for the human beings who use and man them.

Similarly, the Navy is not, nor can it be, simply a large storehouse of equipment which unfortunately requires people to move it about and maintain it. Yet the expression, often heard in Navy circles, that "the hardware drives the system" seems to indicate that something of this nature is in fact assumed.

There is a body of empirical knowledge upon which the Navy might profitably draw. Various generated, in the U.S. and elsewhere, it carries the label "socio-technical systems fit," and is represented by the work of Davis, Trist, Chermans, and others. As an action implication:

- A. The Navy should undertake to study its ships and shore stations as socio-technical (not just technical) system, and should attempt modifications in line with the resulting findings, perhaps initially on an experimental basis.

II. Coping with Bureaucracy

The finding: Although Navymen and civilians attach approximately the same levels of importance to the ability to live one's life reasonably free from bureaucratic constraints, only civilians experience what could be termed an acceptable or satisfactory degree of it. Young Navymen, furthermore, whether officer or enlisted, report an importance-experience gap of very large proportion.

Over the years, the Navy has no doubt attempted with considerable effort to cope with the burgeoning requirements of a complex society. Since the demands placed upon it tend to be centrally felt, the mechanisms for compliance tend to have been centrally exercised, in the form of bureaucratic control mechanisms. While, for the common sailor, much has been removed from the domain of arbitrary personal treatment, its place has apparently been taken by arbitrary impersonal treatment. Rules and regulations, complex and in some instances confusing, have been uttered, extended, revised, and qualified, seemingly to the point that superiors often are unable to explain either their nature or their rationale. Navymen therefore feel hamstrung--unable to exhibit other than inaction in response to the problems and inquiries of other Navymen. A number of possible action steps might be considered:

- A. Decentralize: return to command the overall responsibility for direction that over the years has been absorbed into central staff control functions.

Several aspects of this must be considered, if arbitrary impersonal treatment is not simply to revert to arbitrary personal treatment.

- (1) The human resource aspects of management must be brought, for lower-rank, younger Navymen, to a level of competence and custom similar to that which obtains in the civilian world for persons in analogous positions and more nearly like that which is presently found among more senior Navymen. The Navy's Human Goals effort has made a start in this direction, particularly in its organizational development aspects. This effort, and others like it, should be supported, extended, and strengthened.
- (2) The ability to solve problems for a Navyman should accompany any assigned responsibility to do so. Changes in approval procedures and policies might, for example, be considered. Although one customarily thinks of delegated approval authority as encompassing the authority to disapprove as well as to approve, bureaucratic organizations often in practice separate these two. This assumes the form of, in fact, delegating the right to disapprove, but requiring that approvals be granted only by higher echelons. The result is similar in form to the response of many Navymen to one of the items in our survey's bureaucracy index: they are referred endlessly from person to person when in need of help.

In at least one instance, a constructive solution to this problem is proposed in the form of delegating the authority to deny a request to a level no lower than the authority to approve (Siepert & Likert, 1973).

Perhaps for those aspects of Navy life which most closely touch the person, his well-being, and his independence, something of this order might be attempted.

- B. Flatten the organizational structure: remove a large proportion of the one-on-one reporting relationships so frequently found in the Navy.

The Navy, not unlike many other large organizations, appears to be too "tall." Too many instances occur in which one person supervises only one, or perhaps two, subordinates. While, particularly at more senior levels, the felt need to share a staggering work load with a principal assistant is very real, the need to do so perhaps often originates in the assuming upward of too many tasks. Thus, one man watches a second who in turn watches a third who actually performs the task. "Multiple-layered surveillance" of this type is truly essential in those instances in which the ultimate performer has been assigned a task for which he is not competent, and in those instances in which he has been compelled to perform a task toward which he feels neither commitment nor motivation. However, a competent, motivated, committed subordinate needs no such surveillance; he need only know the objective, the conditions, and the timetable. Perhaps much of the perception of bureaucracy might be alleviated by enlarging the responsibilities of lower echelons and--in the process--eliminating whole tiers of largely superfluous, intermediate supervision. This might alleviate as well a problem reported by a number of

more junior Navymen: that, while they have ample opportunity to learn new skills, they often lack opportunity to use the skills they so acquire.

C. Make more constructive use of "management by objectives."

In many instances, civilian organizations, and large government agencies as well, have sought in recent years to make their operations more rational and motivating by a system of joint goal-setting known as, "management by objectives." While many such efforts have attained less than the outcomes promised--probably because they have inadvertently become a superficial process of top-down assignment of targets, a number of organizations report having benefitted from a carefully conceived, mutually involving process of this type. Such an effort might substantially help the Navy, particularly as it serves to complement the other possible action steps just described (decentralization and flattening the structure).

III. Reducing the Effects of Age (and Values) Discrepancy

The finding: Belief in autocratic (domineering) supervisory practices rises with age. Perhaps the greatest gap is that between the youngest enlisted men (mostly first-termers) and the older enlisted men who for the most part supervise them.

The Navy is an organization that employs (compared to civilian organizations) very young adults in disproportionately large numbers. On certain of the values issues, older enlisted men--who provide much of the supervision of these young men--appear to be distinctly incongruent

from the views, interests, needs, and perspectives of their younger subordinates. Yet young officers, by way of contrast, appear to be quite compatible with young enlisted men. Although in many instances these young officers are seen as lacking the necessary technical competence, were they to have it and directly supervise the young enlisted, the situation might be considerably better. Several alternative action steps might be considered:

- A. Improve the task leadership and technical competences of junior officers.
- B. Replace senior enlisted with junior officers in roles which involve supervising younger enlisted men.

Admittedly, the proposal is a drastic one. Yet the situation of the junior officer has long been troublesome (e.g., the young Ensign "supervising" the grizzled Chief), and to this now must be added the potential for real conflict between young enlisted men and those same older enlisted.

- C. Take age discrepancy into account in the assignment process.

Perhaps, as an alternative, the age discrepancy between a supervisor and his potential subordinates ought be taken formally into account (and reduced) in the assignment process. While this might be complicated and cumbersome, it might be more acceptable than the preceding action step.

- D. Improve the general leadership competences of Petty Officers other than Chiefs.

IV. Increasing Opportunities for Independence in One's Personal Life

The finding: As in the case of bureaucracy, although Navymen and civilians attach approximately the same levels of importance to personal freedom and independence (the ability to live the personal aspects of one's life reasonably free from external constraints), only civilians experience what could be termed an acceptable or satisfactory degree of them. The importance-experience gap, furthermore, attains very large proportions for young Navymen.

Many conditions undoubtedly contribute to this perception by young Navymen that they lack the desired latitude in controlling their personal lives. Only some of these conditions may be directly handled; others may not, or may be handled only indirectly. An instance of the latter may be habitability aboard ship. Only as ways are found to automate or eliminate functions and their currently required billets may some of the congestion be eliminated. Only then may a greater degree of privacy, personal space, and security of possessions be possible.

Others are more amenable to immediate action, however. Dress and hair restrictions may well represent a case in point. Where safety or operating effectiveness require certain practices which may be viewed by inexperienced personnel as intrusive, effort should of course be expended in explaining the reasons for the restrictions. However, in many instances the restrictions may be purely arbitrary, representing the personal aversions of senior personnel or influential civilians in the area. While the effect of the restrictions may be personally pleasing to the initiator, they apparently do the Navy unnecessary harm by contributing to low retention rates (and therefore higher costs).

Dress and hair restrictions are but examples (and not necessarily the most appropriate ones). Other intrusions undoubtedly occur into the personal lives of Navymen. The following are possible action steps that might be considered:

- A. Review Navy policies and procedures which potentially provide grounds for unnecessary intrusion into the personal lives of Navymen and alter those which do so.
- B. Write and issue something akin to a "Navyman's Bill of Rights," which specifies the personal life areas and circumstances in which subordinate commanders may and may not intervene.
- C. Add to the assignment procedures improved mechanisms for taking into account the personal needs and interests of Navymen. While relevant to all, this would appear to be most critical for young officers, whose loss to the service is quite costly.

Appendix A

Descriptions of Organizational Development Treatments*

* Excerpted from Bowers, D.G. Development Techniques and Organizational Change: An Overview of Results from the Michigan Inter-Company Longitudinal Study. Technical Report to the Office of Naval Research, 1971.

Appendix A

Survey Feedback - No authoritative volume has as yet been written about this development technique, although a number of article-length references exist.*

As a result of this absence of detailed publication, the writer is aware, from direct and indirect encounters with others in the field, that many persons mistakenly believe that survey feedback consists of a rather superficial handing back of tabulated numbers and percentages, but little else. On the contrary, where employed with skill and experience, it becomes a sophisticated tool, using the data as a springboard to development.

In the sites which we shall classify as having received Survey Feedback as a change treatment, this, and only this, formed the principal substance of the intervention. Data were tabulated for each and every group engaged in the project, as well as for each combination of groups which represented an area of responsibility in the organizational pyramid.

A tabulation containing data from the responses of his own immediate subordinates,

*For an excellent summary, the reader is referred to Katz, D. and Kahn, R. The social psychology of organizations. New York: John Wiley & Sons, Inc., 1966, pp. 416-425.

together with documents describing the measures, their basis and meaning, and suggestions concerning their interpretation and use, was returned to each supervisor and manager. A resource person usually counseled privately with the supervisor-recipient about the contents of the package and then arranged with him a time when that supervisor might meet with his subordinates to discuss the findings and their implications. The resource person ordinarily agreed to attend that meeting, to provide help to the participants both in the technical aspects of the tabulations and in the process aspects of the discussion.

Procedures by which the feedback process progresses through an organization typically vary from site to site, and did so within the sites which received this treatment. In certain instances, a "waterfall" pattern was adhered to, in which the process is substantially completed at superordinate levels before moving to subordinate groups. In other instances feedback was more or less simultaneous to all groups and echelons.

Time and space do not permit a lengthy discussion of the various forms which feedback may take. It should be stated, however, that an effective survey feedback operation sees the organization's groups move, by a discussion process, from the tabulated perceptions through a cataloging of their implications to commitment

to solutions to the problems which the discussion has identified and defined.

This technique has long been associated with organizational development and change work conducted by persons from the Institute for Social Research.

Interpersonal Process Consultation - This treatment bears a very close resemblance to what Schein has termed "Process Consultation." The change agent most closely identified with this treatment attaches great importance to developing within the client groups themselves a capacity for forming and implementing their own change program. Considerable importance is attached to the change agent's establishing himself from the outset as a trustworthy, helpful adjunct to the group's own process. A great deal of effort and emphasis is placed upon his catalyzing a process of surfacing data in areas customarily not plumbed in work organizations (attitudes, feelings, individual needs, reasons for conflict, informal processes, etc.). In behavioral specifics, the change agent employs the posing of questions to group members, process-analysis periods, feedback of observations or feelings, agenda-setting, review, and appropriateness-testing procedures, and occasional conceptual inputs on interpersonal topics. Work is occasionally undertaken with members singly, but more often in natural work groupings. An assumption

seems generally to be made that human, rather than technical, processes have primacy for organizational effectiveness.

Laboratory Training

- As practiced within the projects comprising the main civilian sample, this intervention technique more nearly approximated the interpersonal relations lab than it did the intrapsychic or personal growth session. A "family group" design was followed almost exclusively, with the entire lab lasting from three days to two weeks, depending upon circumstances and organizational schedule requirements. Sessions were ordinarily conducted at a motel or resort away from the usual work place. Experiential exercises (e.g., the NASA Game or "Moon Problem," the Ten-dollar Exercise, the Tower-building Problem) were interspersed with unstructured discussion time. A number of terms were, during the years of the study, used by those conducting the training to describe it. Initially it was referred to as "T-Group Training;" in later years it was termed "Team Development Training" or simply "Team Training." The content, however, remained relatively constant in kind, if not in exact substance. Those change agents who conducted the training were not novices to it; on the contrary, they had had many years of experience in conducting it and were judged by those familiar with their work to be competent.

Task Process
Consultation

- This treatment was oriented very closely about task objectives and the specific interpersonal processes associated with them. The change agent who adhered to this pattern typically begins by analyzing a client unit's work-task situation privately, following extensive interviews, in terms of their objectives, their potential resources, and the organizational forces blocking their progress. He consults privately at frequent intervals with the supervisor, both to establish rapport and to obtain that supervisor's commitment to objectives and desired future courses of action. He sets the stage for client group discussions by introducing select bits of data, or by having another person do so. He encourages group discussion, serves as a process observer, but also uses role playing, some substantive inputs at timely points, as well as non-directive counseling techniques, to guide the discussion toward commitment toward desired courses of action.

Data Handback

- Not truly a change treatment, this forms instead a control or comparison condition. In certain sites no real survey feedback work was conducted. Data were tabulated and returned in envelopes to the appropriate supervisors, but no effort was made to encourage group problem-solving discussions concerning those data. Nor did any other treatment occur in these sites.

Appendix B

Mean Index Scores on Two Waves of Data
for Profiles Identified in Two Civilian Random Samples

Appendix C

Regressed Change Scores by Profile, Treatment and Site Class

CLUSTER: CHANGE SCORE:

Profile # 1

N = 5

W1 =

N = 3

W1 =

W2 =

W3 =

W4 =

W5 =

W6 =

W7 =

W8 =

W9 =

W10 =

W11 =

W12 =

W13 =

W14 =

W15 =

W16 =

W17 =

W18 =

W19 =

W20 =

W21 =

W22 =

W23 =

W24 =

W25 =

W26 =

W27 =

W28 =

W29 =

W30 =

W31 =

W32 =

W33 =

W34 =

W35 =

W36 =

W37 =

W38 =

W39 =

W40 =

W41 =

W42 =

W43 =

W44 =

W45 =

W46 =

W47 =

W48 =

W49 =

W50 =

W51 =

W52 =

W53 =

W54 =

W55 =

W56 =

W57 =

W58 =

W59 =

W60 =

W61 =

W62 =

W63 =

W64 =

W65 =

W66 =

W67 =

W68 =

W69 =

W70 =

W71 =

W72 =

W73 =

W74 =

W75 =

W76 =

W77 =

MAJOR INDICES

TREATMENT: Data Handback

SITE CLASS: Primary

Percentile Profile for Combined Groups

ORGANIZATIONAL CLIMATE

199. Decision Making Practices

197. Communication Flow

198. Motivational Conditions

196. Human Resources Privacy

204. Lower Level Influence

193. Technological Readiness

SUPERVISOR/ LEADERSHIP

176. Support

180. Work Facilitation

178. Goal Emphasis

182. Team Building

PEER LEADERSHIP

184. Support

188. Work Facilitation

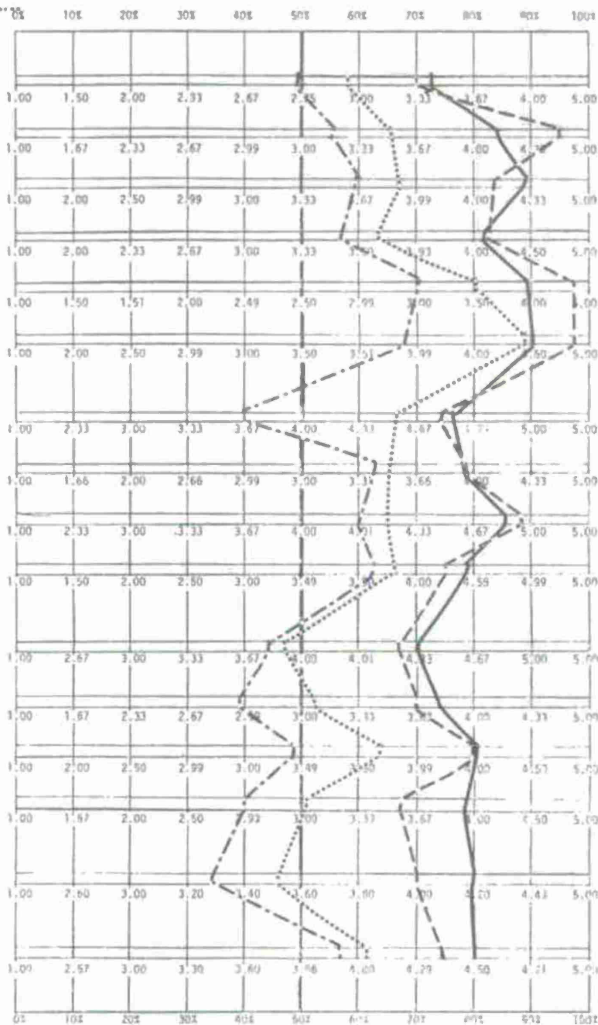
185. Goal Emphasis

190. Team Building

GROUP PROCESS

201. Group Process

200. Satisfaction



CLUSTER:
Profile #3

CHANGE SCORE:

N = 13

W1 = - - - - -

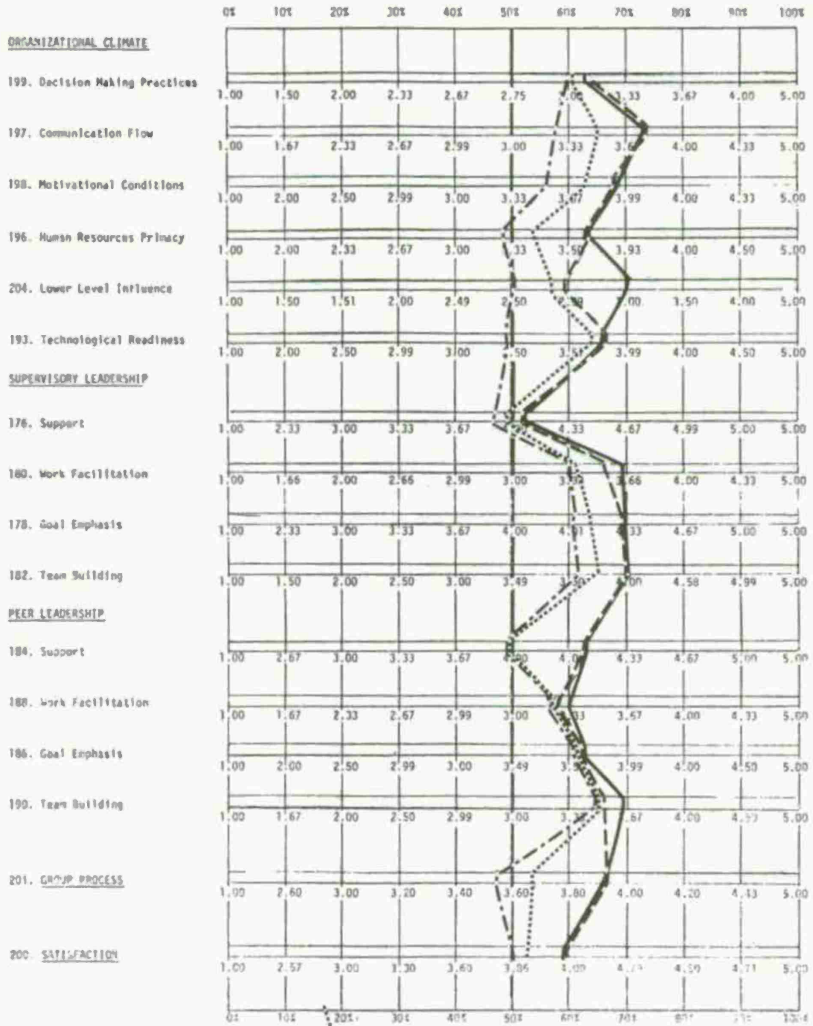
W2 = - - - - -

W3 = - - - - -

MAJOR INDICES

TREATMENT: Data Handback
SITE CLASS: Primary

Percentile Profile for Combined Groups

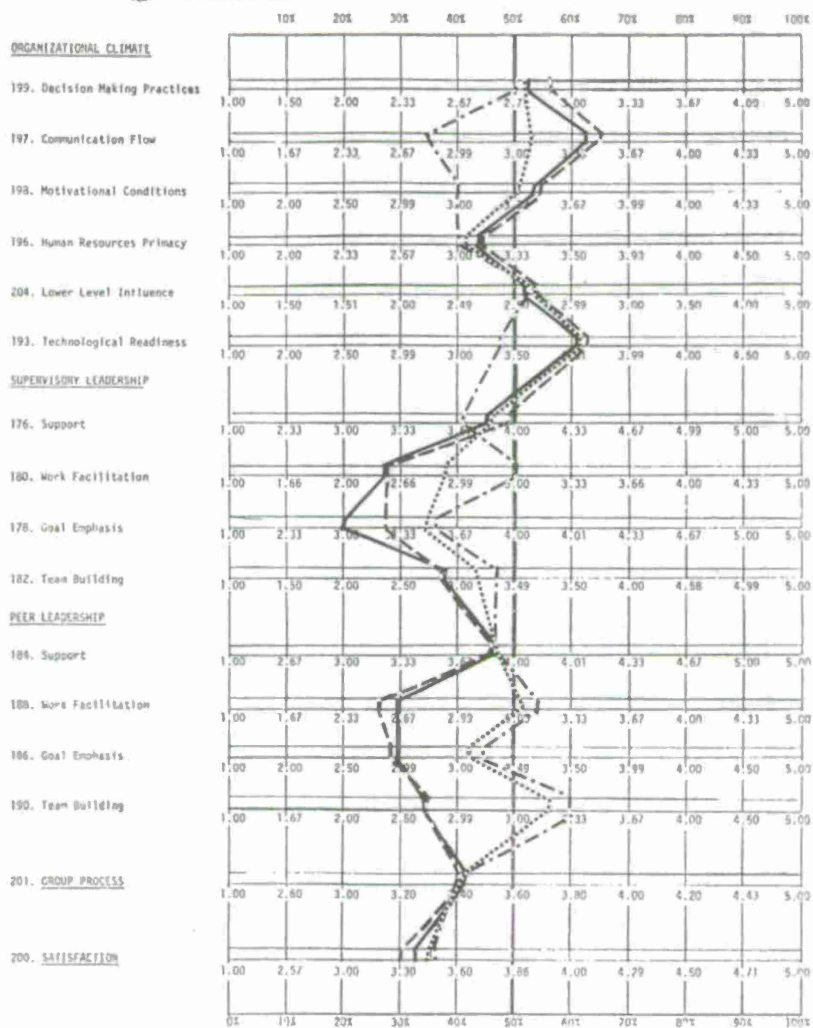


CLUSTER: CHANGE SCORE:
 Profile #4 N = 5
 H=8 W1 = -----
 W1= W2 = -----
 W2' =

MAJOR INDICES

TREATMENT: Data Handback
 SITE CLASS: Primary

Percentile Profile for Combined Groups



CLUSTER: CHANGE SCORE:
Profile #9 N = 9

W1 = 12 W2 = 12
W1 = 12 W2 = 12

MAJOR INDICES

TREATMENT: Data Handback

SITE CLASS: Primary

Percentile Profile for Combined Groups

ORGANIZATIONAL CLIMATE

199. Decision Making Practices

197. Communication Flow

198. Motivational Conditions

196. Human Resources Primacy

204. Lower Level Influence

193. Technological Readiness

SUPERVISORY LEADERSHIP

176. Support

180. Work Facilitation

178. Goal Emphasis

182. Team Building

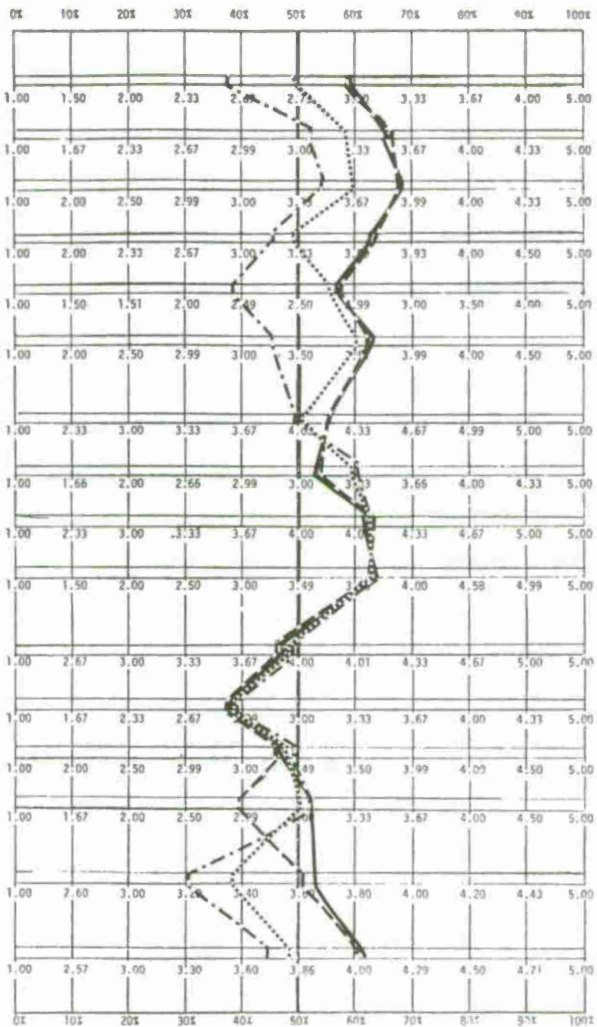
PEER LEADERSHIP

184. Support

188. Work Facilitation

186. Goal Emphasis

190. Team Building

201. GROUP PROCESS200. SATISFACTION

CLUSTER:
Profile # 14

CHANGE SCORE:

N = 10

N = 14

W1

W1

W2

W2'

MAJOR INDICES

TREATMENT: Data Handbook
SITE CLASS: Primary

Percentile Profile for Combined Groups

ORGANIZATIONAL CLIMATE

199. Decision Making Practices

197. Communication Flow

198. Motivational Conditions

196. Human Resources Primacy

204. Lower Level Influence

193. Technological Readiness

SUPERVISORY LEADERSHIP

176. Support

180. Work Facilitation

178. Goal Emphasis

182. Team Building

PEER LEADERSHIP

184. Support

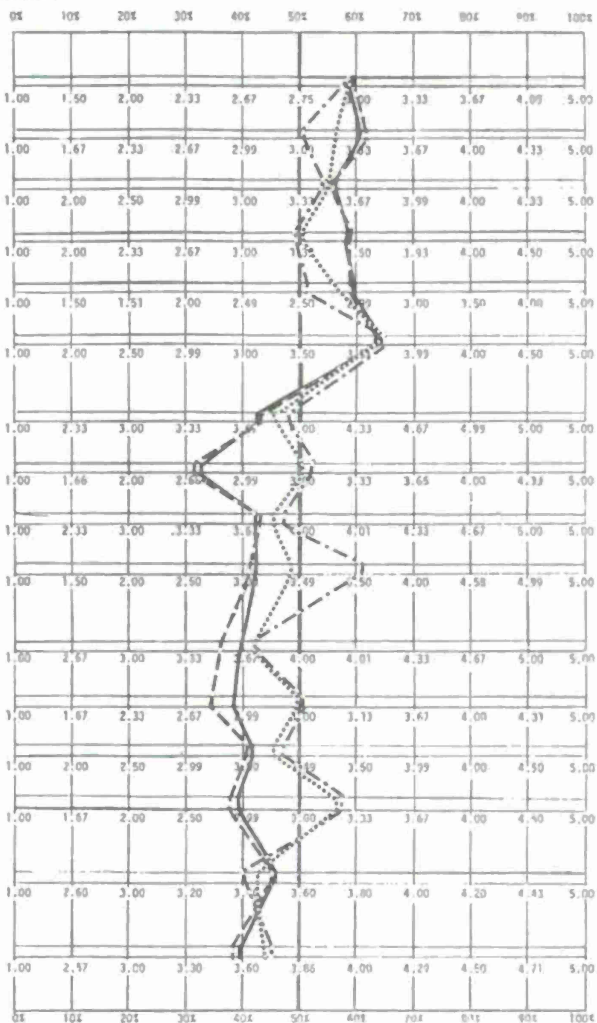
188. Work Facilitation

186. Goal Emphasis

190. Team Building

201. GROUP PROCESS

200. SATISFACTION

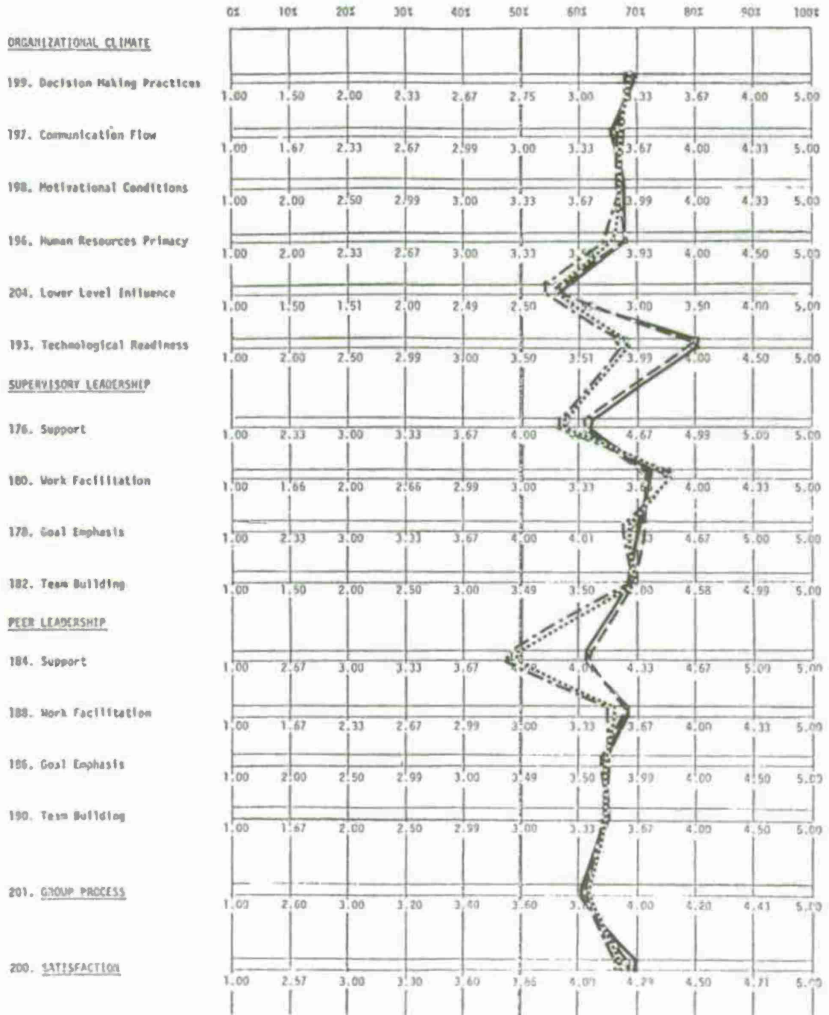


CLUSTER: CHANGE SCORE:
 Profile #2 N = 17
 N = 22 W1 =   
 W1 =  W2 = 

TREATMENT: Data/feedback
 SITE CLASS: Primary

MAJOR INDICES

Percentile Profile for Combined Groups



CLUSTER: CHANGE SCORE

MAJOR INDICES

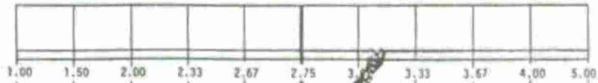
TREATMENT: Interpersonal Process Consultation

Profile #3

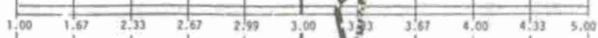
N = 25

SITE CLASS: Primary
Percentile Profile for Combined GroupsN = 33
W1 = ———
W2 = - - - - -
W3 = ·····ORGANIZATIONAL CLIMATE

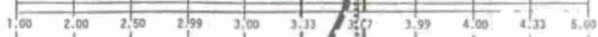
199. Decision Making Practices



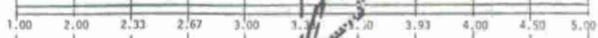
197. Communication Flow



198. Motivational Conditions



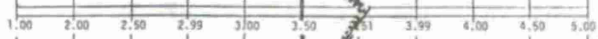
196. Human Resources Priority



204. Lower Level Influence



193. Technological Readiness

SUPERVISORY LEADERSHIP

176. Support



180. Work Facilitation



178. Goal Emphasis



182. Team Building

PEER LEADERSHIP

184. Support



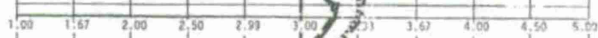
188. Work Facilitation



186. Goal Emphasis



190. Team Building

201. GROUP PROCESS206. SATISFACTION

CLUSTER: CHANGE SCORE:

Profile #4

N = 13

W1 = ---

W2 = - - -

W3 =
W4 = _____

N = 21

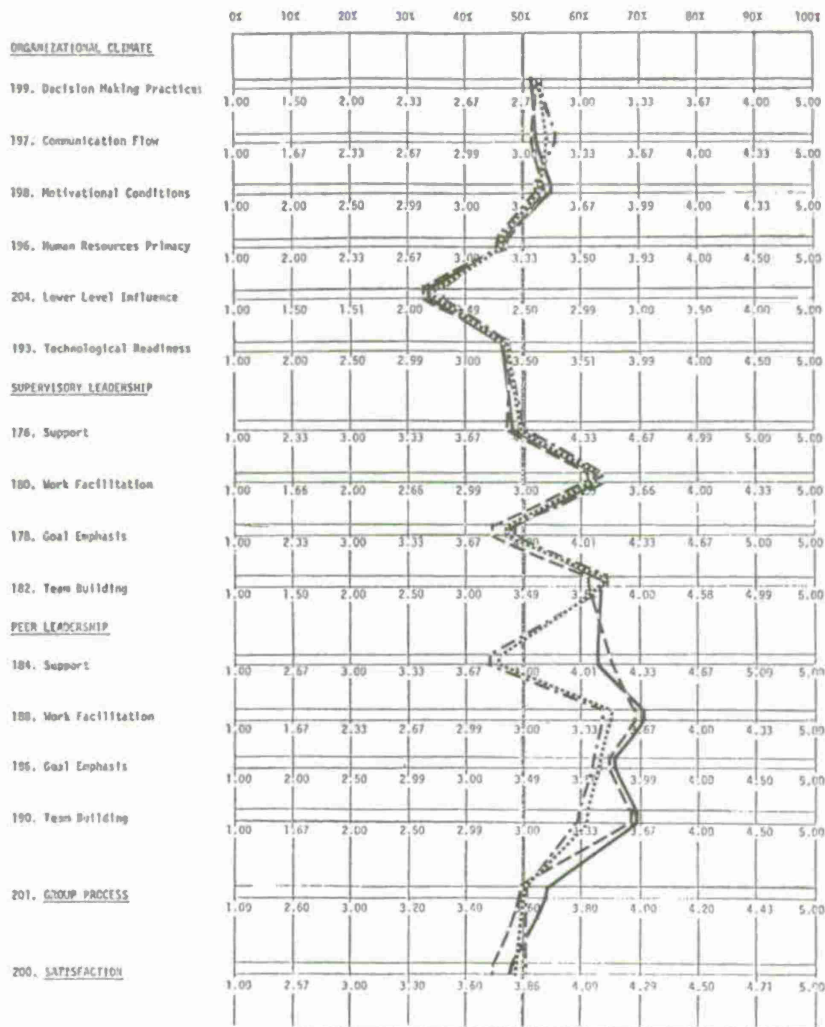
W1 = _____

TREATMENT: Interpersonal Process
Consultation

MAJOR INDICES

SITE CLASS: Primary

Percentile Profile for Combined Groups



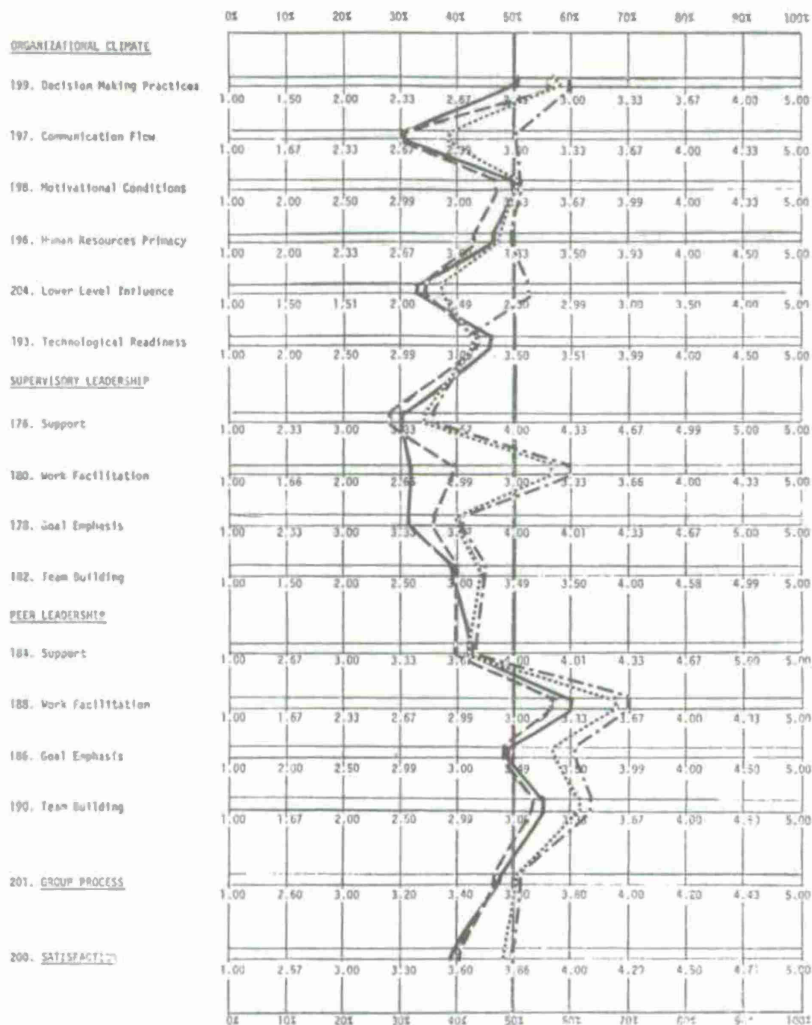
CLUSTER: CHANGE SCORE
 Profile #2 N = 2
 N = 16 W1 = ———
 W2 = - - - - -
 W1 = ——— W2' = - - - - -

MAJOR INDICES

TREATMENT: Interpersonal Process
 Consultation

SITECLASS: Primary

Percentile Profile for Combined Groups



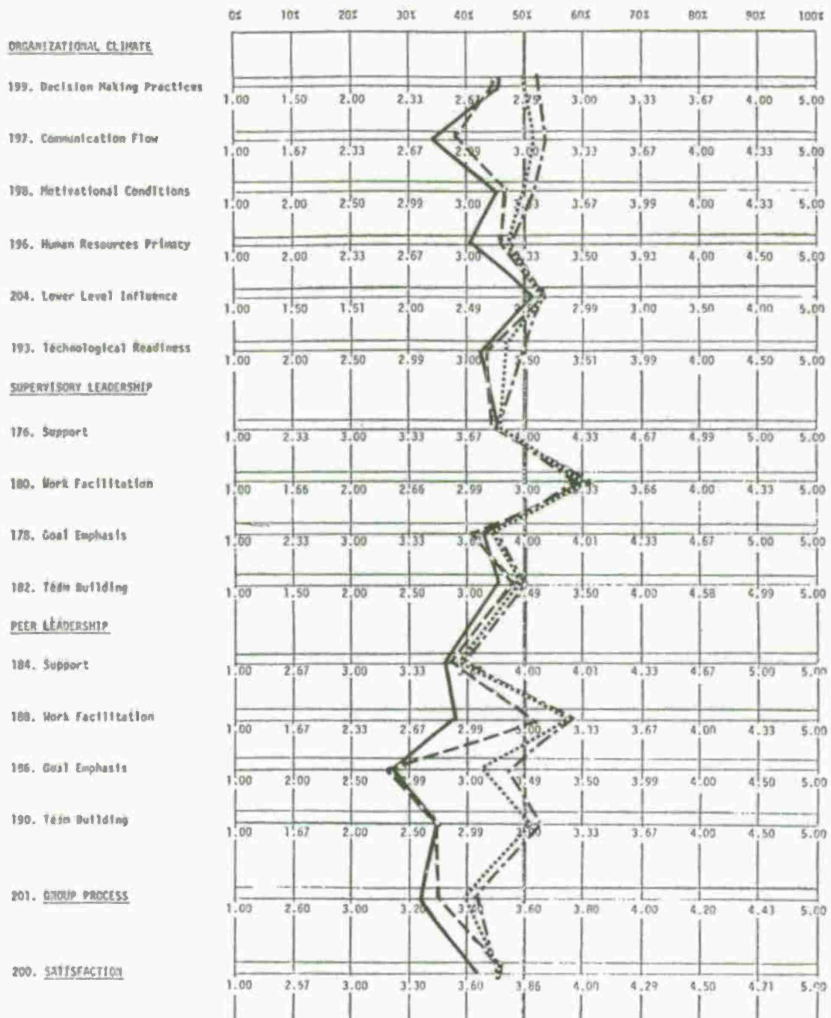
CLUSTER: CHANGE SCORE:

Profile #6 N = 5
 N = 9 W1 = ---
 W1 = W2 = - - - - -
 W2 = W2L =
 W2L =

TREATMENT: Interpersonal Process
 Consultation

MAJOR INDICES SITE CLASS: Primary

Percentile Profile for Combined Groups



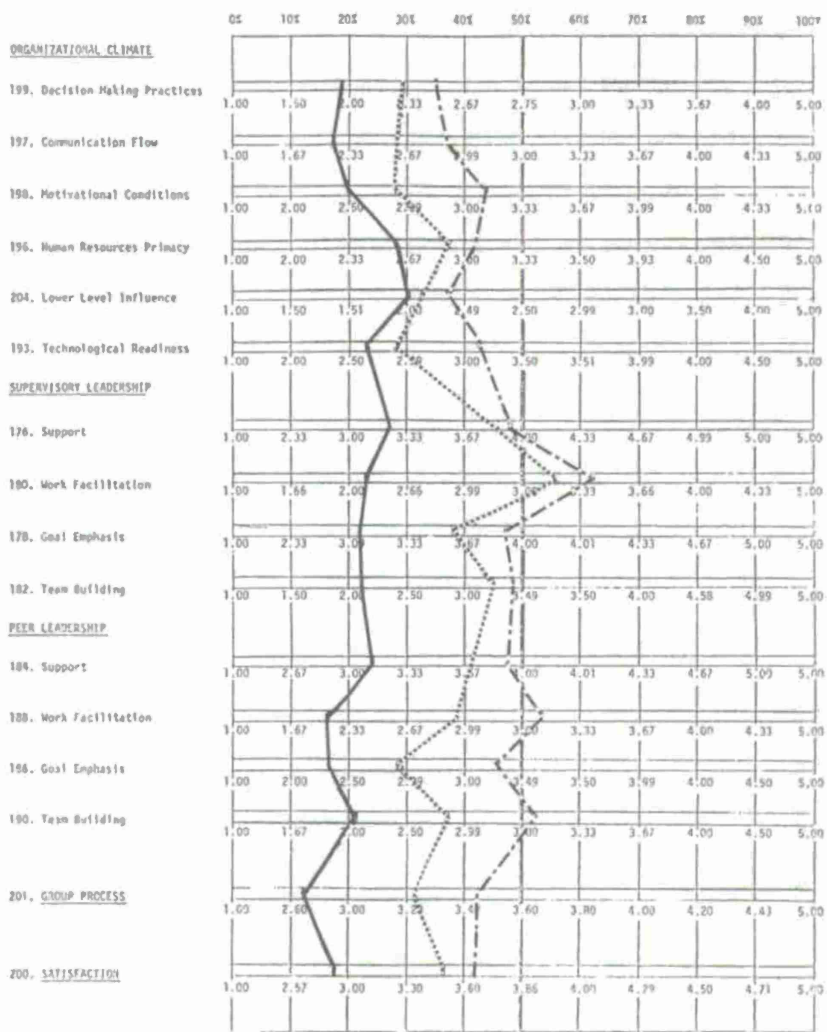
CLUSTER: CHANGE SCORE
 Profile #8 N = 6
 W1 = -----
 N = 6 W2 = -----
 W1 = ----- W2' =

MAJOR INDICES

TREATMENT: Interpersonal Process
 Consultation

SITE CLASS: Primary

Percentile Profile for Combined Groups



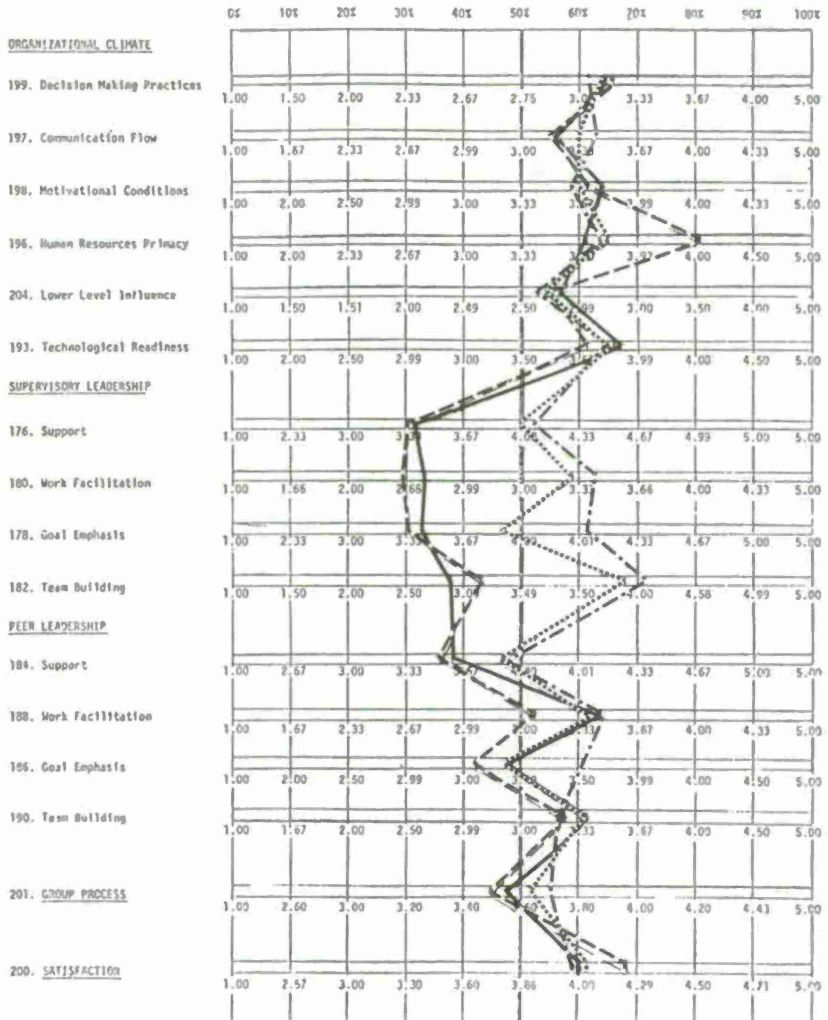
CLUSTER: CHANGE SCORE:
 Profile #12 N = 4
 W1 = -----
 N = 11 W2 = -----
 W1 = ----- W2' = -----

TREATMENT: Interpersonal Process
 Consultation

MAJOR INDICES

SITE CLASS: Primary

Percentile Profile for Combined Groups

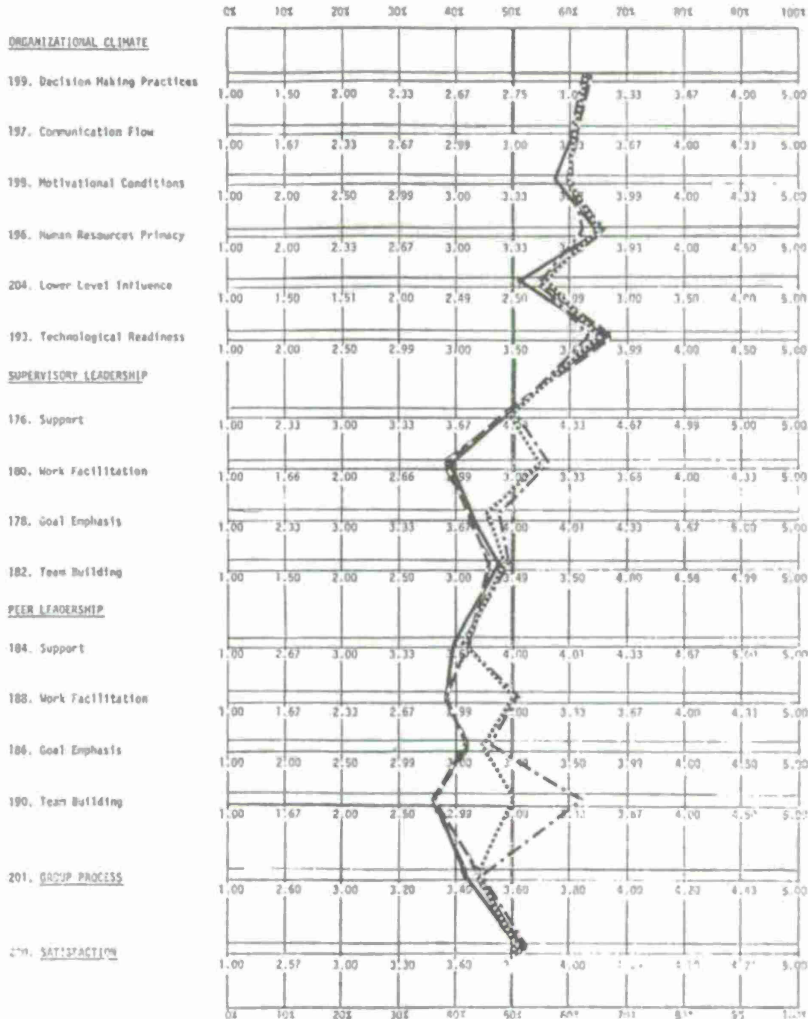


CLUSTER: CHANGE SCORE
 Profile #14 N = 16
 N = 19
 W1 W2

MAJOR INDICES

TREATMENT: Interpersonal Process
 Consultation

SITE CLASS: Primary
 Percentile Profile for Combined Groups



CLUSTER: CHANGE SCORE:
Profile #15 N = 6

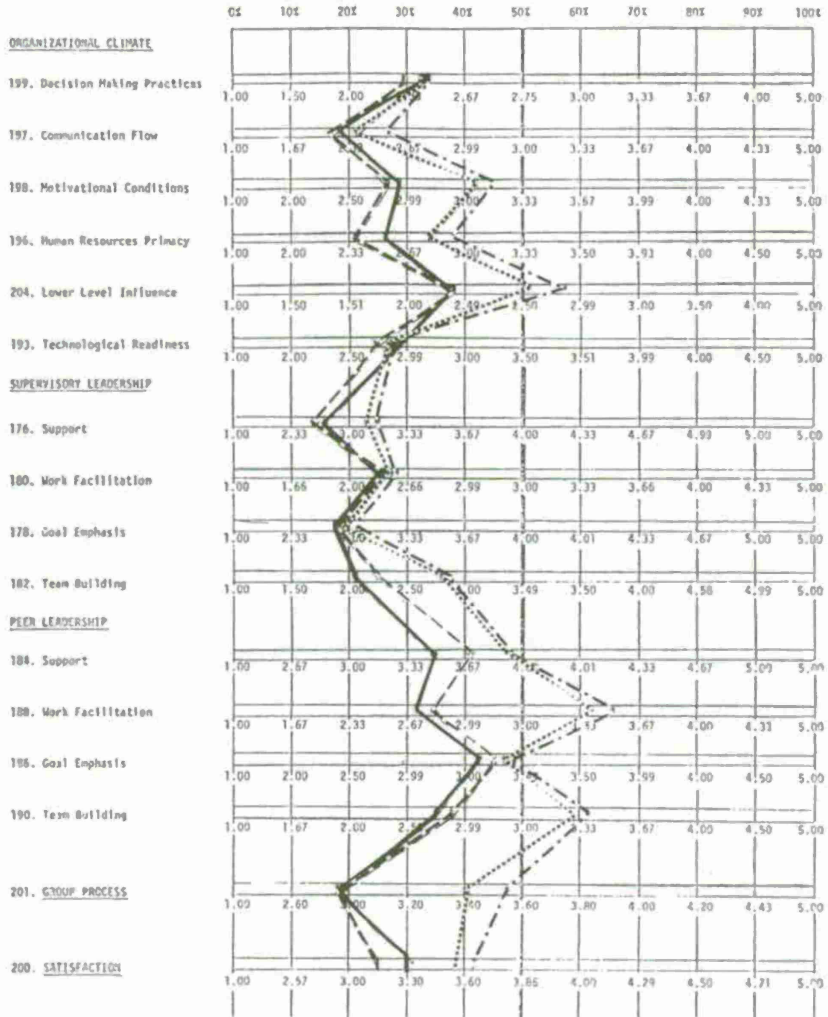
W1 = W2 = W1' = W2' =

TREATMENT: Interpersonal Process
Consultation

PAGE INDICES

SITECLASS: Primary

Percentile Profile for Combined Groups



CLUSTER:
Miscellaneous Profile

N = 16

W1 =

CHANGE SCORE:

N = 9

W1 =

W2 =

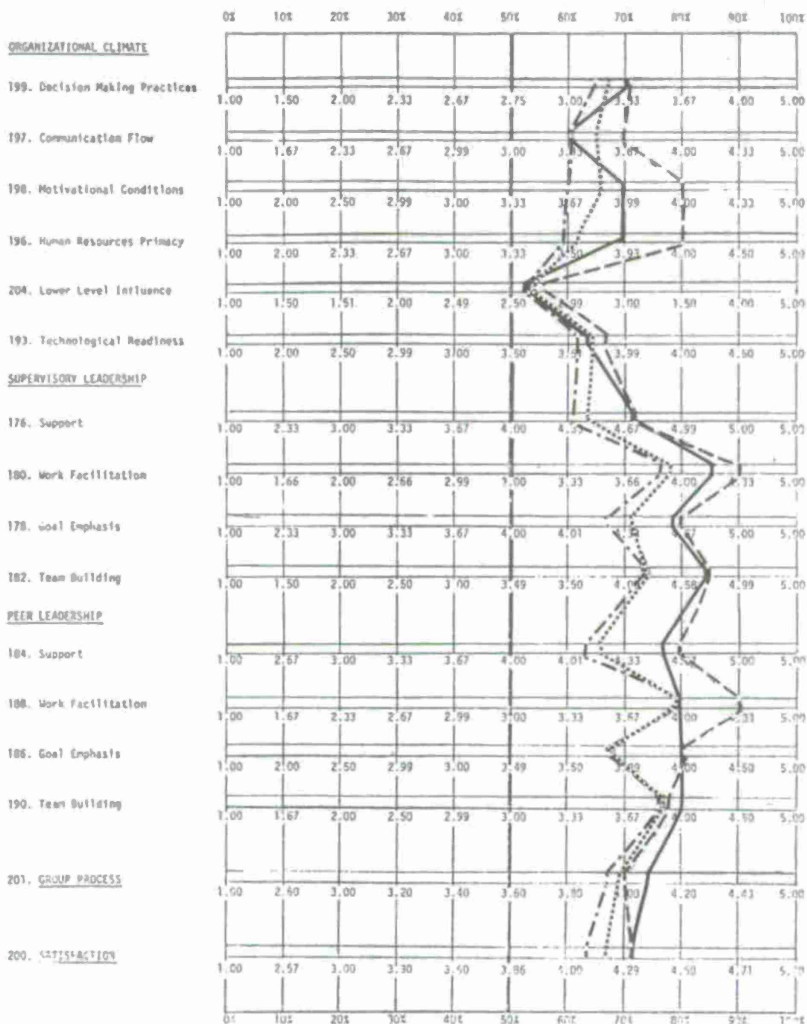
W2' =

MAJOR INDICES

TREATMENT: Interpersonal Process
Consultation

SITE CLASS: Primary

Percentile Profile for Combined Groups



CLUSTER: CHANGE SCORE:
Miscellaneous Profile N = 10

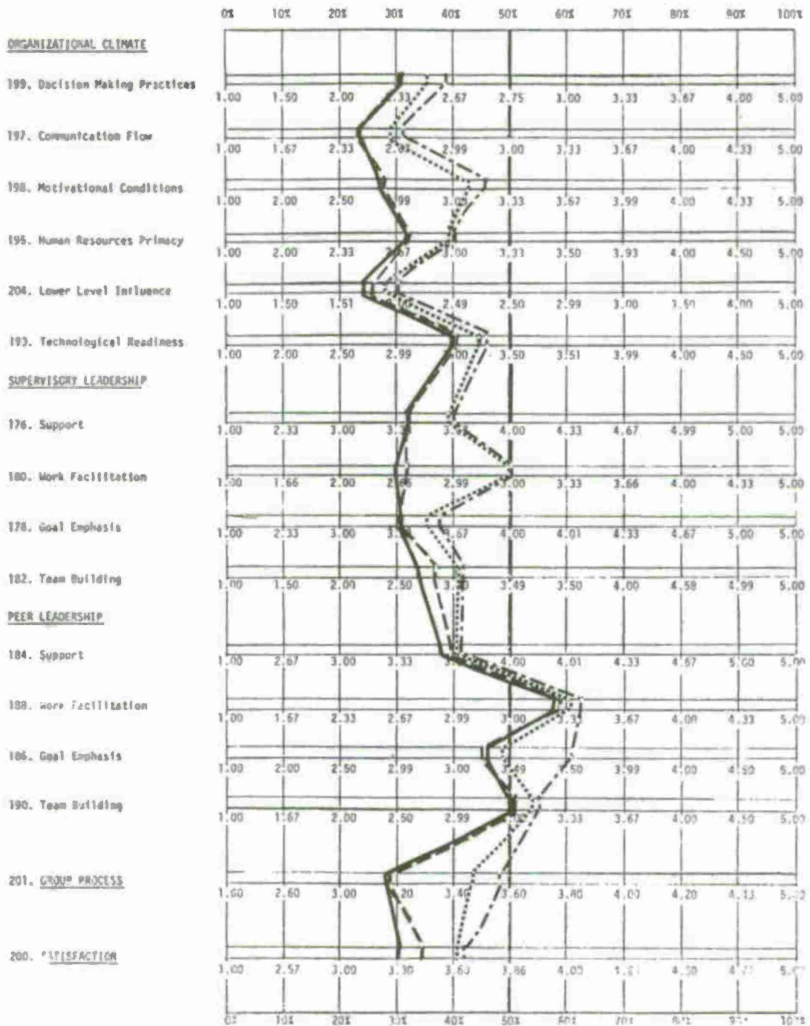
N = 15
W1

W1
W2
W2'

MAJOR INDICES

TREATMENT: Interpersonal Process
Consultation

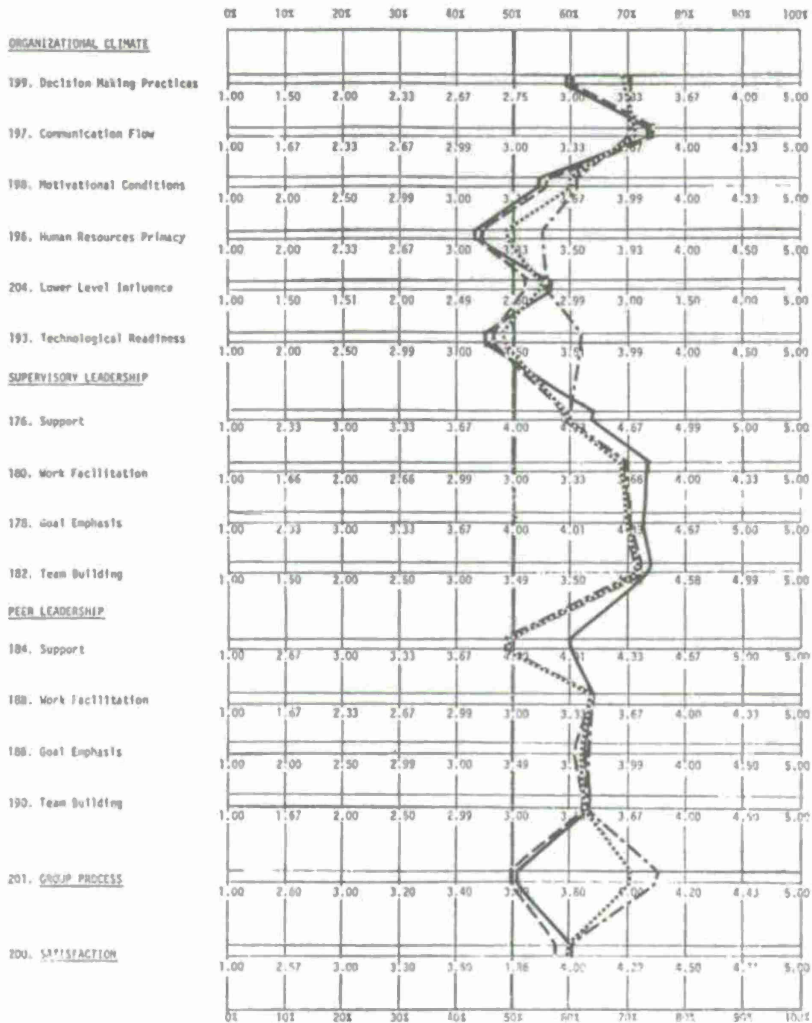
SITE CLASS: Primary
Percentile Profile for Combined Groups



CLUSTER: CHANGE SCORE:
 Profile #2 $\bar{n} = 9$
 $N = 12$ W1
 W1 W2
 W1 W2

TREATMENT: Laboratory Training
 MAJOR INDICES SITE CLASS: Primary

Percentile Profile for Combined Groups



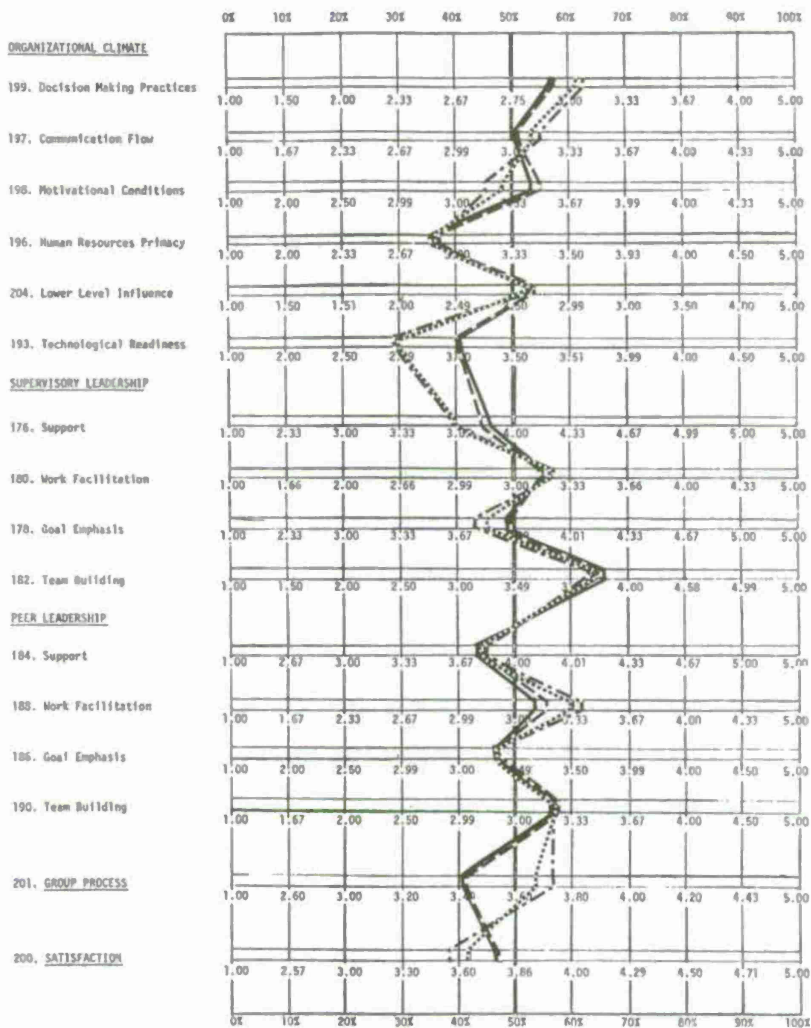
CLUSTER:
Profile #4CHANGE SCORE:
N = 12N = 16
W1W1 = - - - - -
W2 = - - - - -
W3 = - - - - -

TREATMENT: Laboratory Training

MAJOR INDICES

SITE CLASS: Primary

Percentile Profile for Combined Groups



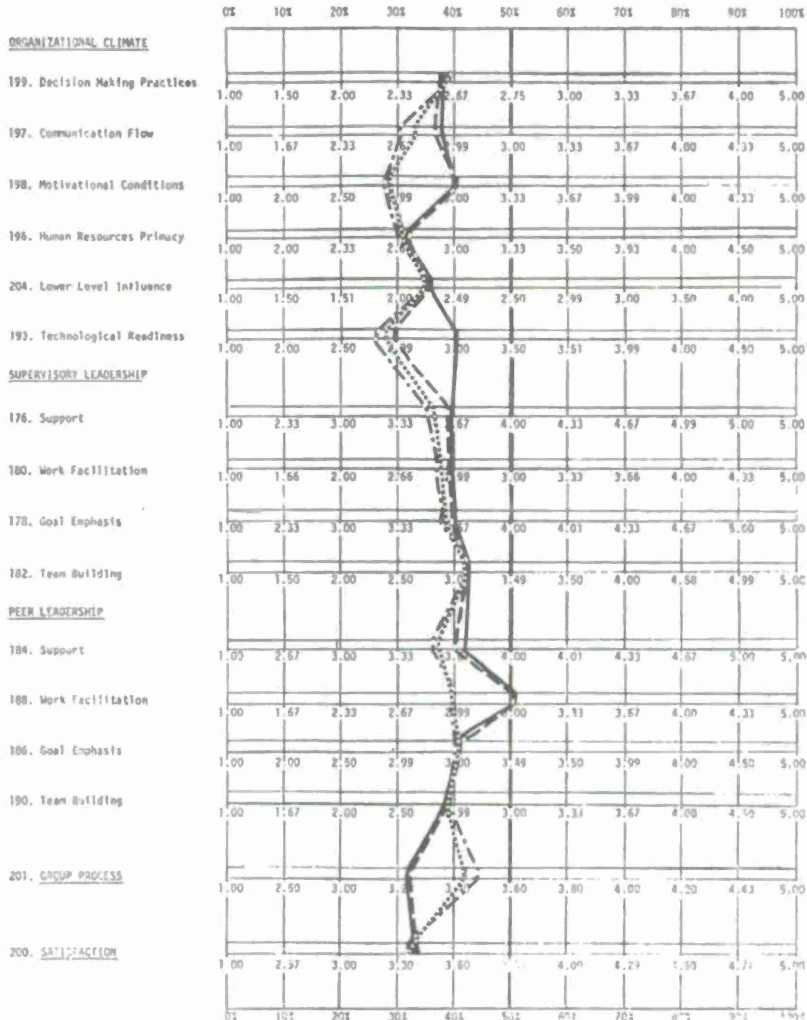
CLUSTER: CHANGE SCORE
 Profile #7 N = 13
 N1 = 15
 W1 = N2

MAJOR INDICES

TREATMENT: Laboratory Training

SITECLASS: Primary

Percentile Profile for Combined Groups



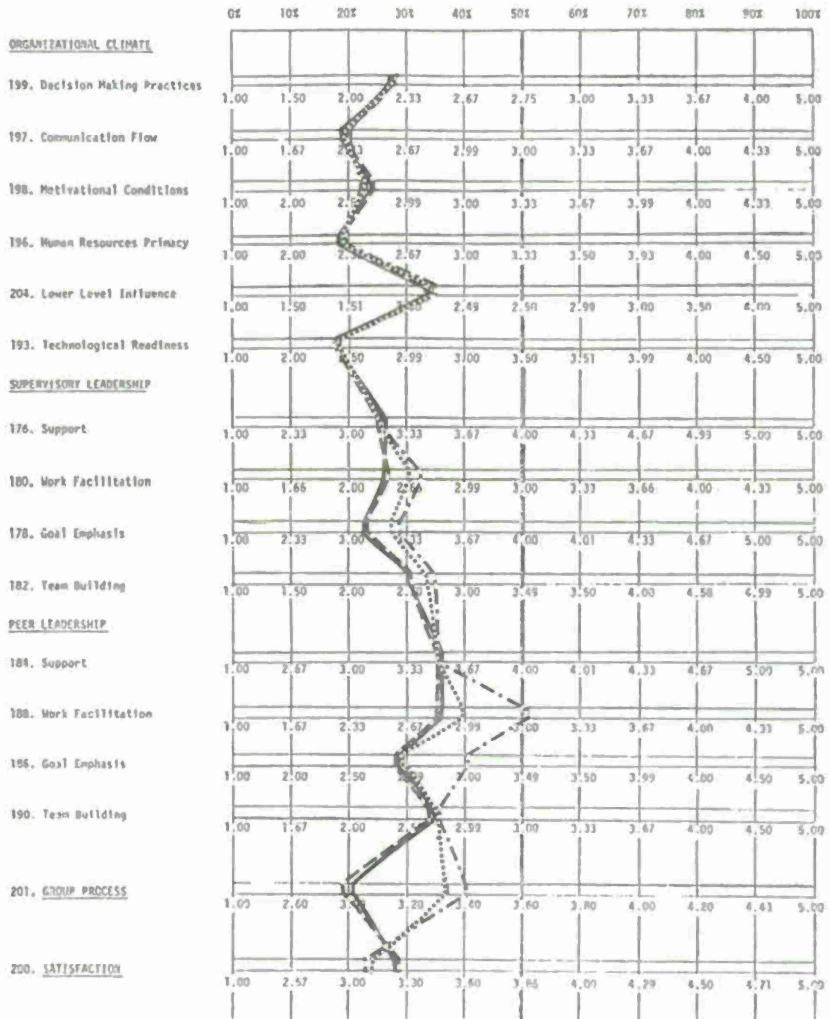
CLUSTER: CHANGE SCORE:
 Profile #8 N = 20
 N = 25 W1 =
 W2 =
 W3 =

TREATMENT: Laboratory Training

SITE CLASS: Primary

MAJOR INDICES

Percentile Profile for Combined Groups



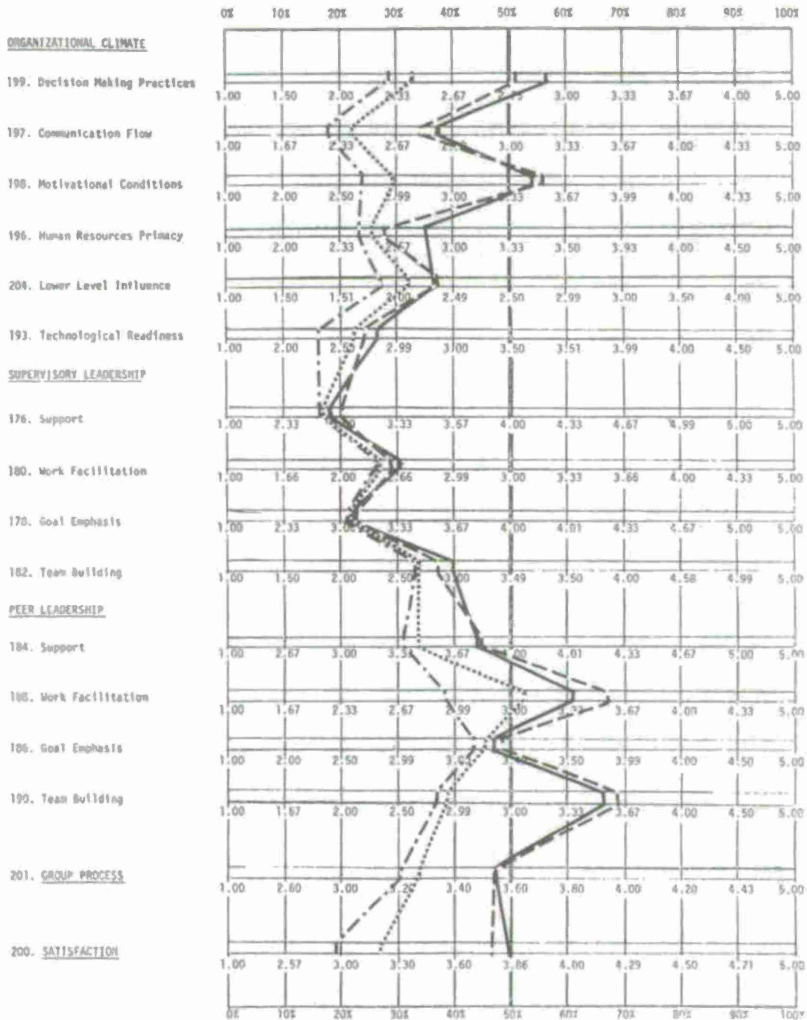
CLUSTER: CHANGE SCORE:
 Profile 12 N = 3
 N = 6 W1 = - - - - -
 W1 = - - - - - W2 = - - - - -
 W2 = - - - - - W2' = - - - - -

TREATMENT: Laboratory Training

MAJOR INDICES

SITE CLASS: Primary

Percentile Profile for Combined Groups



CLUSTER: CHANGE SCORE:
Profile #13 N = 6

N = 8

W1

W1

W2

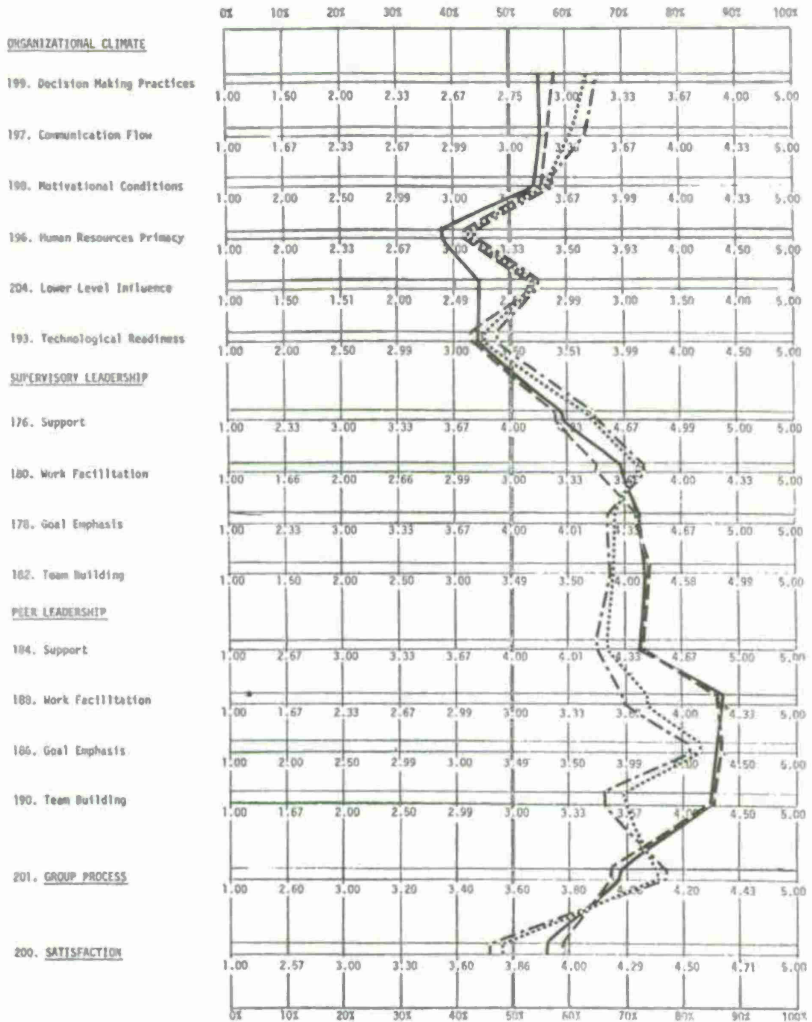
W2'

MAJOR INDICES

TREATMENT: Laboratory Training

SITE CLASS: Primary

Percentile Profile for Combined Groups



CLUSTER: CHANGE SCORE:

Profile # 1b

N = 11

N = 13

W1

W1

W2

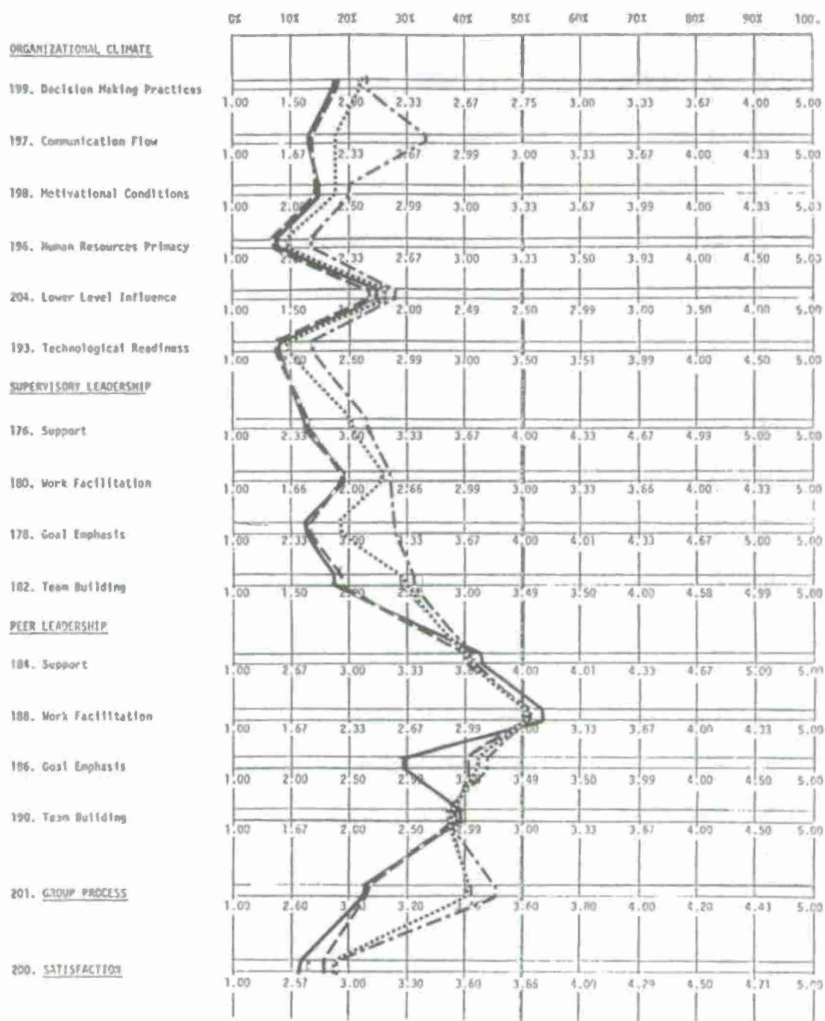
W2'

TREATMENT: Laboratory Training

SITE CLASS: Primary

MAJOR INDICES

Percentile Profile for Combined Groups



CLUSTER: CHANGE SCORE:
Profile #17 N = 4

W1 = ————
W2 = ————
W2' = ————

MAJOR INDICES

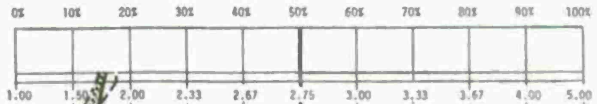
TREATMENT: Laboratory Training

SITE CLASS: Primary

Percentile Profile for Combined Groups

ORGANIZATIONAL CLIMATE

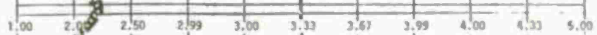
199. Decision Making Practices



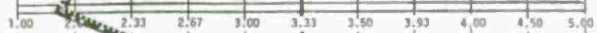
197. Communication Flow



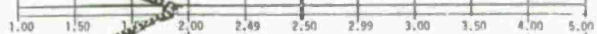
198. Motivational Conditions



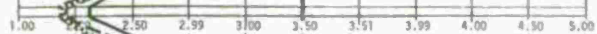
196. Human Resources Priority



204. Lower Level Influence

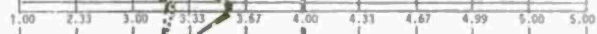


193. Technological Readiness

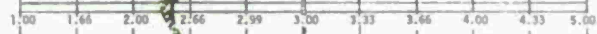


SUPERVISORY LEADERSHIP

176. Support



160. Work Facilitation



178. Goal Emphasis



182. Team Building

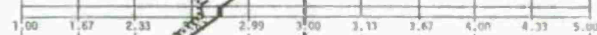


PEER LEADERSHIP

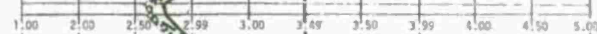
184. Support



188. Work Facilitation



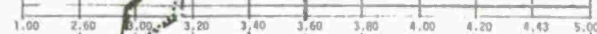
186. Goal Emphasis



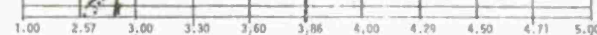
190. Team Building



201. GROUP PROCESS



200. SATISFACTION



CLUSTER
Miscellaneous Profile

N = 16

W1 = _____

CHANGE SCORE:

N = 15

W1 = _____

W2 = _____

W2' = _____

MAJOR INDICES

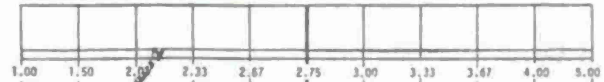
TREATMENT: Laboratory Training

SITE CLASS: Primary

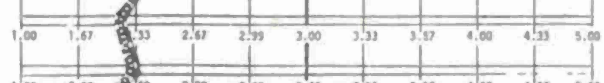
Percentile Profile for Combined Groups

ORGANIZATIONAL CLIMATE

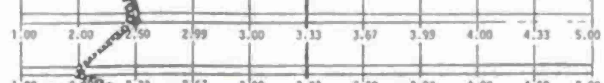
199. Decision Making Practices



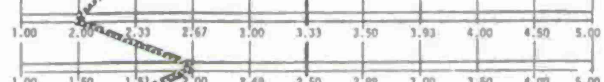
197. Communication Flow



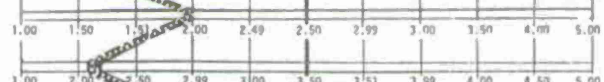
198. Motivational Conditions



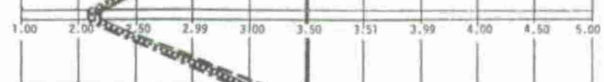
196. Human Resources Privacy



204. Lower Level Influence



193. Technological Readiness



SUPERVISORY LEADERSHIP

176. Support



180. Work Facilitation



178. Goal Emphasis



182. Team Building

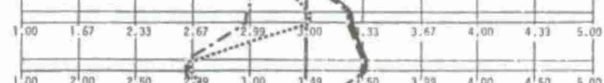


PEER LEADERSHIP

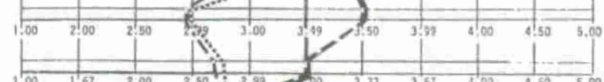
184. Support



188. Work Facilitation



186. Goal Emphasis



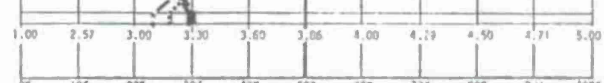
190. Team Building



201. GROUP PROCESS



200. SATISFACTION



CLUSTER:
Miscellaneous Profile
N = 5
W1 =

CHANGE SCORE:
N = 3

W1 =
W2 =
W2 =

222

TREATMENT: Laboratory Training
SITE CLASS: Primary

Percentile Profile for Combined Groups

ORGANIZATIONAL CLIMATE

199. Decision Making Practices

197. Communication Flow

198. Motivational Conditions

196. Human Resources Privacy

204. Lower Level Influence

193. Technological Readiness

SUPERVISORY LEADERSHIP

176. Support

180. Work Facilitation

178. Goal Emphasis

182. Team Building

PEER LEADERSHIP

184. Support

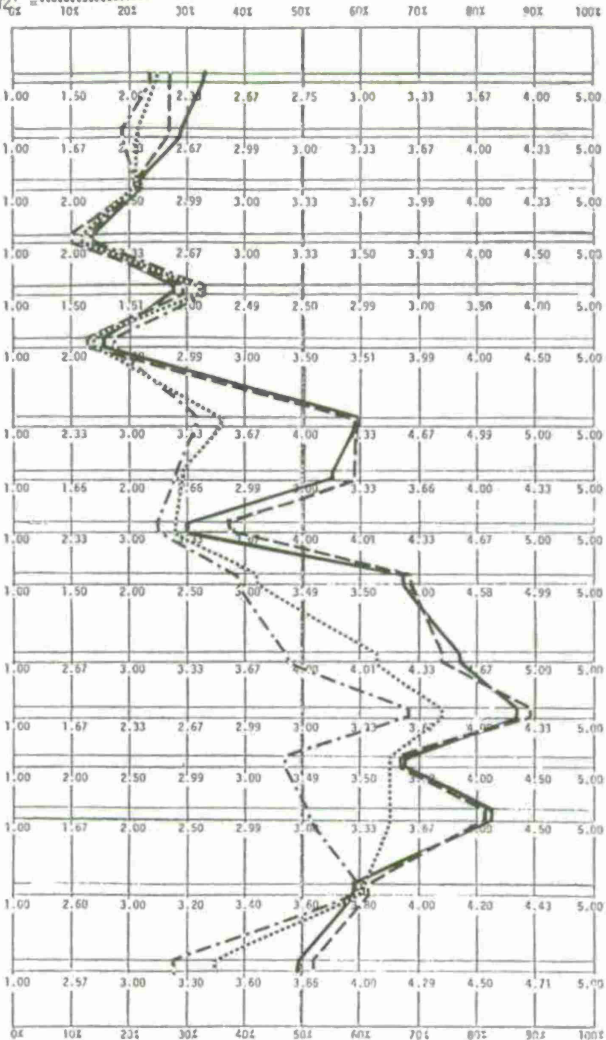
188. Work Facilitation

186. Goal Emphasis

190. Team Building

201. GROUP PROCESS

200. SATISFACTION



CLUSTER:
Miscellaneous Profile
N = 15
W1 = _____
W2 = _____

CHANGE SCORE:
N = 15

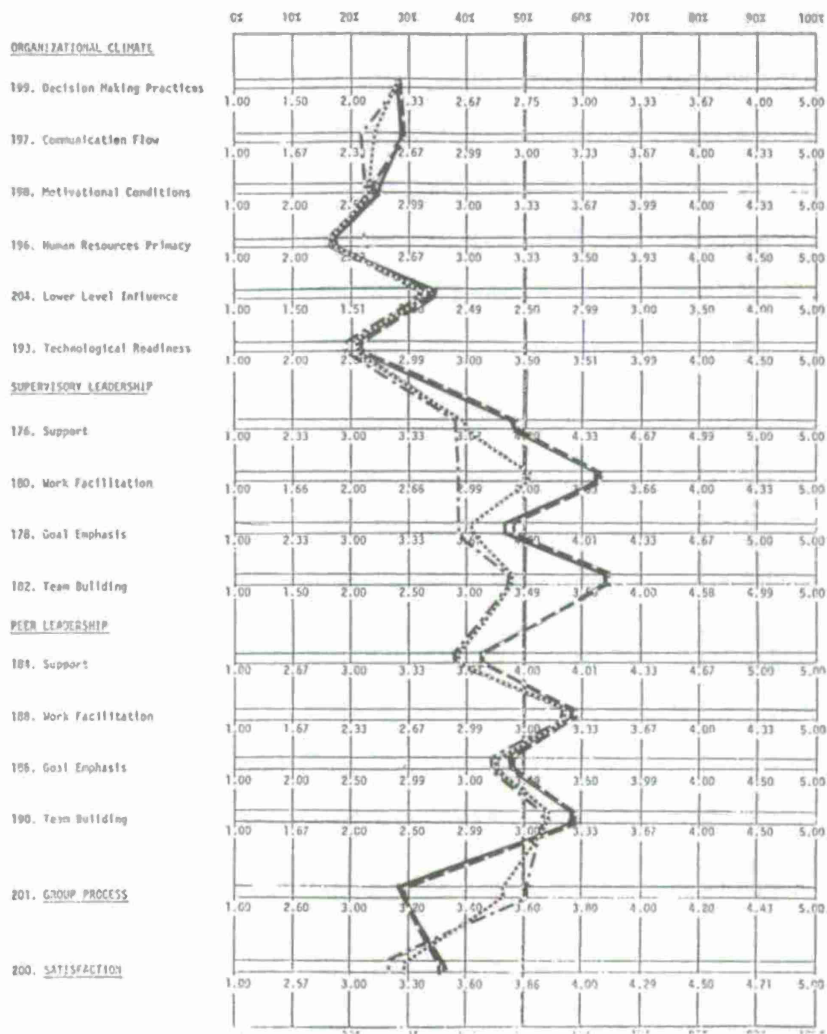
W1 = _____
W2 = _____
W2' = _____

MAJOR INDICES

TREATMENT: Laboratory Training

SITE CLASS: Primary

Percentile Profile for Combined Groups



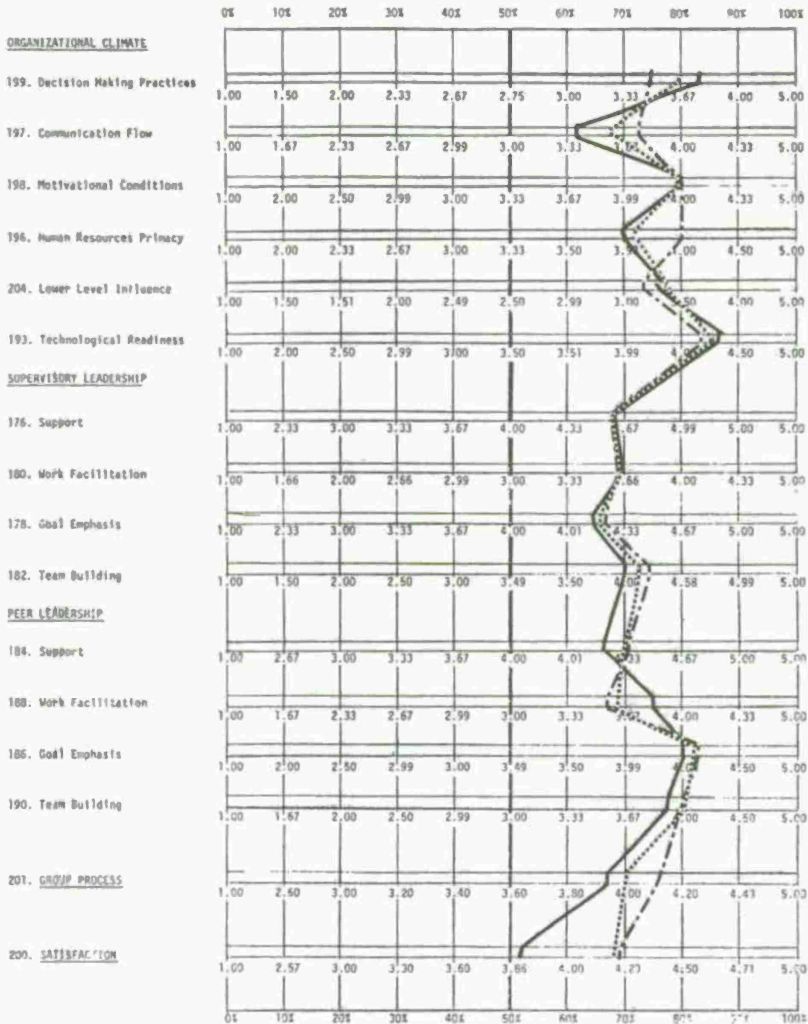
CLUSTER: CHANGE SCORE
 Profile #2 N = 4
 N = 4 W1 ————
 W1 = ———— W2 ————
 W2' ————

MAJOR INDICES

TREATMENT: Task Process Consultation

SITE CLASS: Primary

Percentile Profile for Combined Groups



CLUSTER: CHANGE SCORE:
Profile #3 N = 12

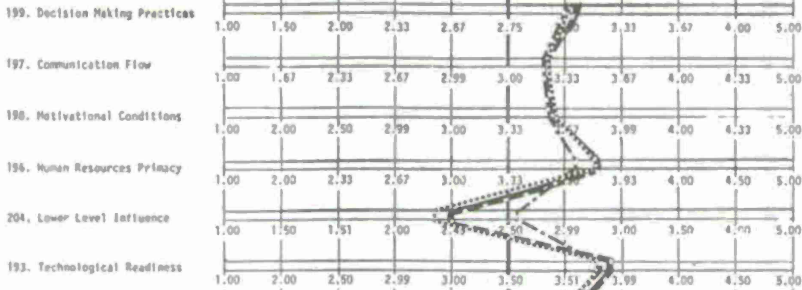
H = 13 W1 = - - - - -
W1 = - - - - -
W2 =
W2 =

MAJOR INDICES TREATMENT: Task Process Consultation

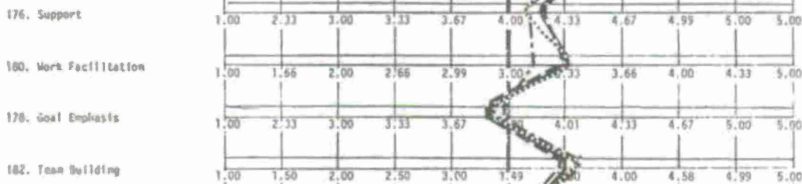
SITE CLASS: Primary

Percentile Profile for Combined Groups

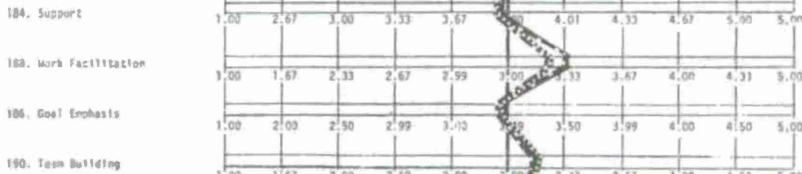
ORGANIZATIONAL CLIMATE



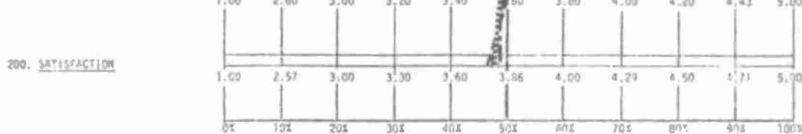
SUPERVISORY LEADERSHIP



PEER LEADERSHIP



201. GROUP PROCESS



CLUSTER:

CHANGE SCORE:

Profile #6

N = 8

W1

W1

W2

W2'

MAJOR INDICES

TREATMENT: Task Process Consultation

SITE CLASS: Primary

Percentile Profile for Combined Groups

ORGANIZATIONAL CLIMATE

199. Decision Making Practices

197. Communication Flow

198. Motivational Conditions

196. Human Resources Primacy

204. Lower Level Influence

193. Technological Readiness

SUPERVISORY LEADERSHIP

176. Support

180. Work Facilitation

178. Goal Emphasis

182. Team Building

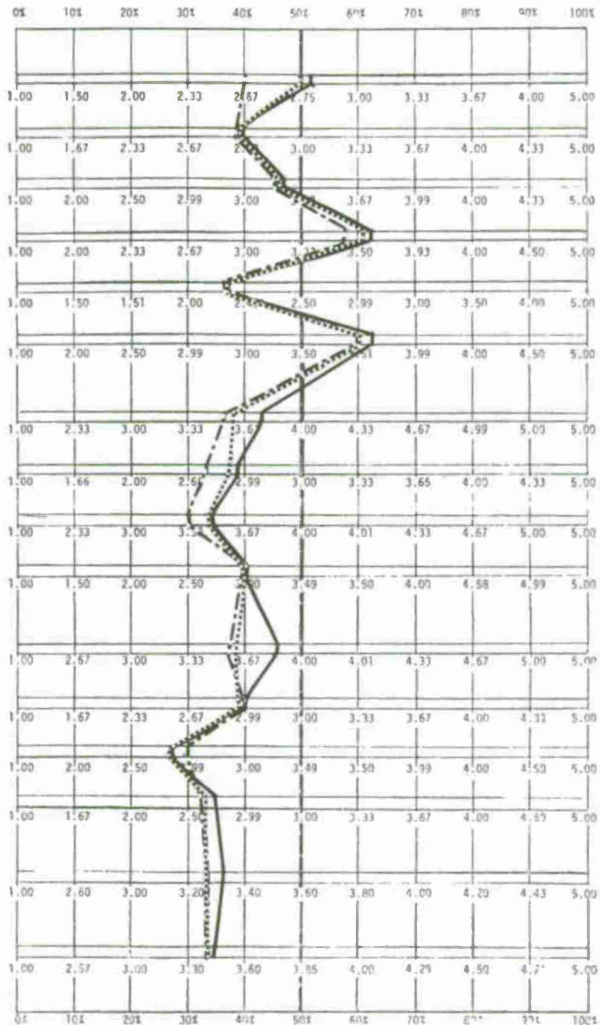
PEER LEADERSHIP

184. Support

188. Work Facilitation

186. Goal Emphasis

190. Team Building

201. GROUP PROCESS200. SATISFACTION

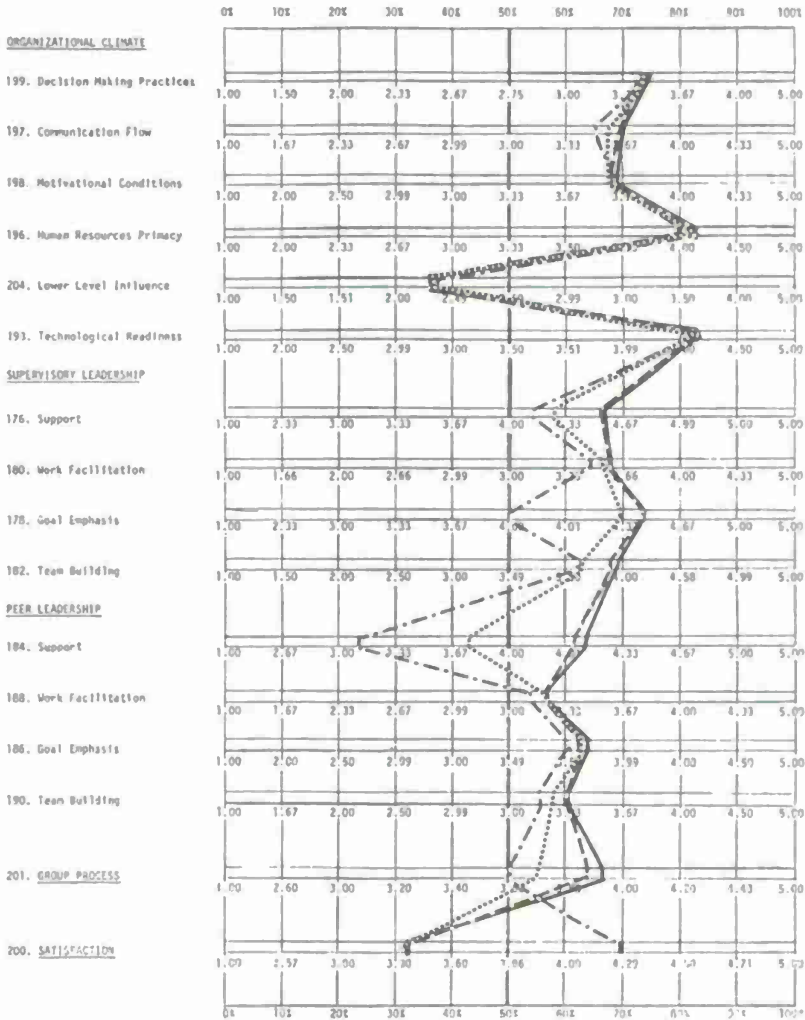
CLUSTER: CHANGE SCORE
 Profile #9 N = 6
 N = 7 W1 = ---
 W1 = --- W2 = ---
 W2' =

MAJOR INDICES

TREATMENT: Task Process Consultation

SITE CLASS: Primary

Percentile Profile for Combined Groups



CLUSTER:
Profile #14

CHANGE SCORE:
N = 4

N = 4

W1 = ———

W1 = - - - - -

W2 = - - - - -

W2' = - - - - -

MAJOR INDICES

TREATMENT: Task Process Consultation

SITE CLASS: Primary

Percentile Profile for Combined Groups

ORGANIZATIONAL CLIMATE

199. Decision Making Practices

197. Communication Flow

198. Motivational Conditions

196. Human Resources Privacy

204. Lower Level Influence

193. Technological Readiness

SUPERVISORY LEADERSHIP

176. Support

160. Work Facilitation

178. Goal Emphasis

182. Team Building

PEER LEADERSHIP

184. Support

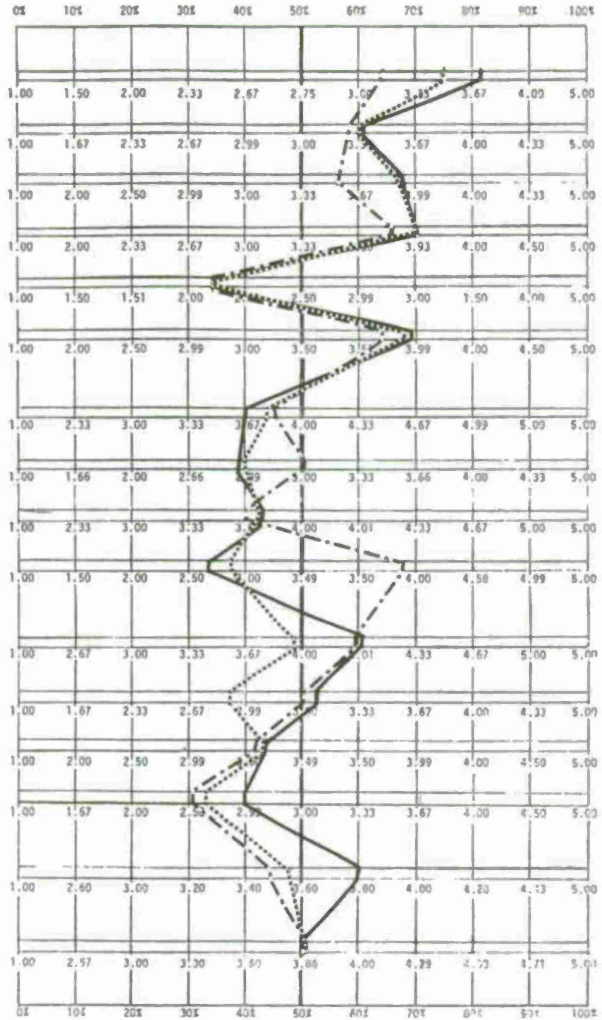
188. Work Facilitation

188. Goal Emphasis

190. Team Building

201. GROUP PROCESS

200. SATISFACTION



CLUSTER:
Miscellaneous Profile
N = 5
W1 = _____

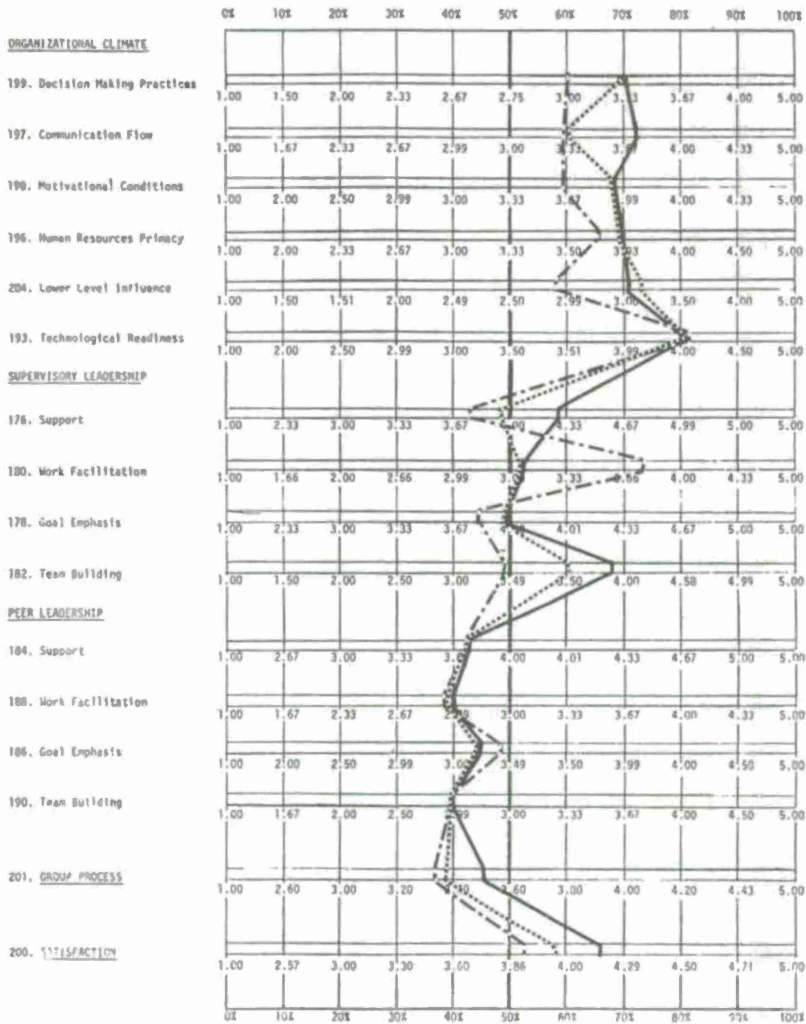
CHANGE SCORE:
N = 5
W1 = - - - - -
W2 = - - - - -
W2' = - - - - -

MAJOR INDICES

TREATMENT: Task Process Consultation

SITE CLASS: Primary

Percentile Profile for Combined Groups



CLUSTER:
Profile # 2CHANGE SCORE:
N = 15

W1 =

W2 =

W2'

MAJOR INDICES

TREATMENT: Survey Feedback

SITE CLASS: Primary

Percentile Profile for Combined Groups

ORGANIZATIONAL CLIMATE

199. Decision Making Practices

197. Communication Flow

198. Motivations/ Conditions

196. Human Resources Priority

204. Lower Level Influence

193. Technological Readiness

SUPERVISORY LEADERSHIP

178. Support

180. Work Facilitation

178. Goal Emphasis

182. Team Building

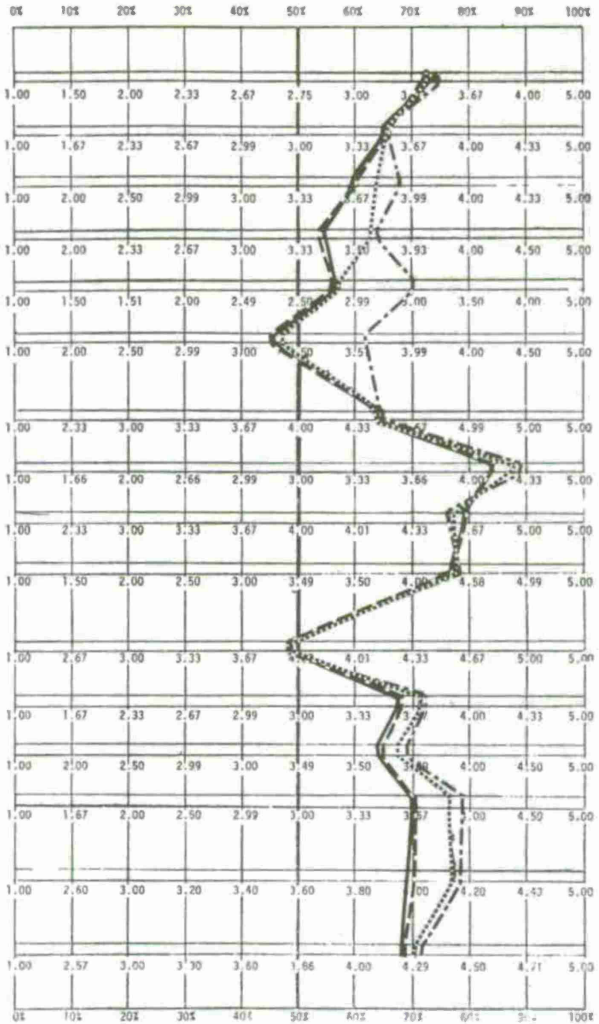
PEER LEADERSHIP

184. Support

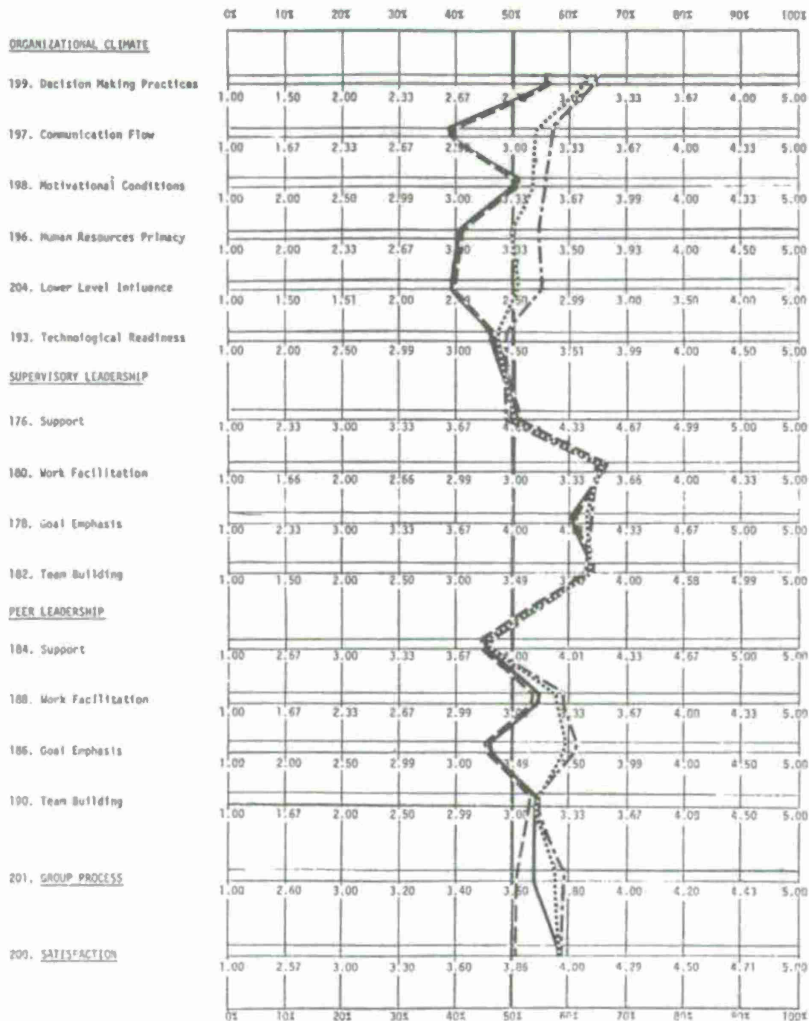
188. Work Facilitation

186. Goal Emphasis

190. Team Building

201. GROUP PROCESS200. SATISFACTION

Percentile Profile for Combined Groups



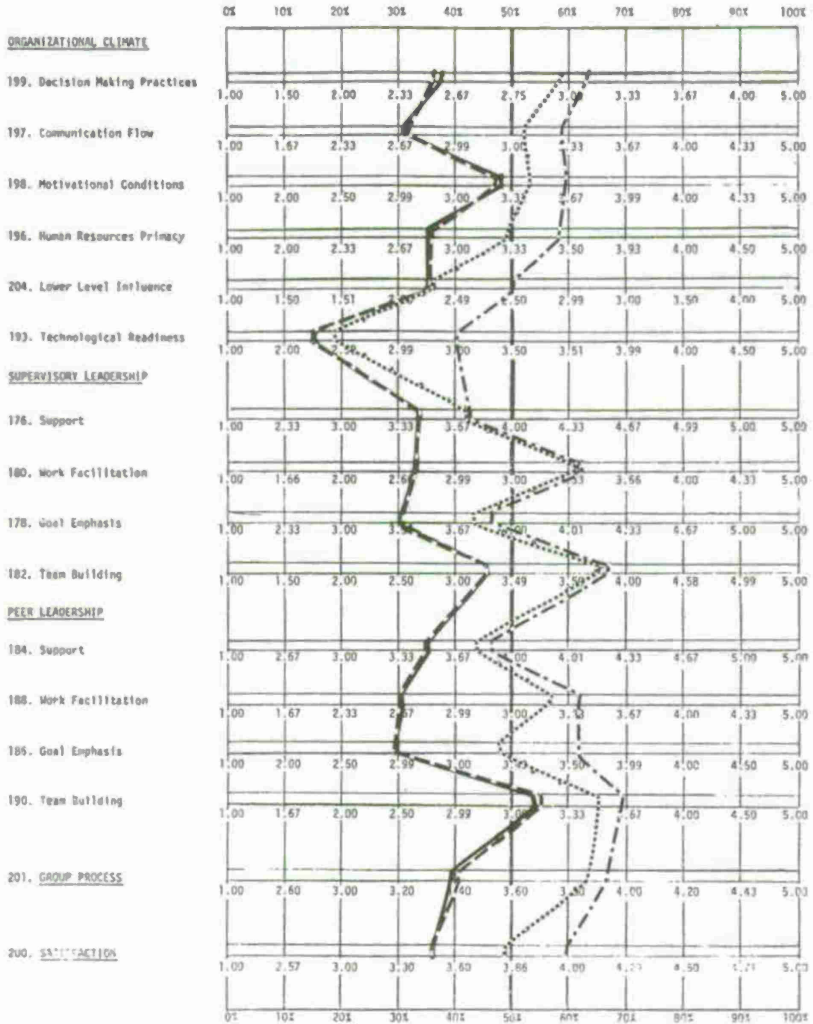
CLUSTER: CHANGE SCORE:
 Profile #6 N = 10
 W1 = 12
 W2 = 12
 W2' = 12

MAJOR INDICES

TREATMENT: Survey Feedback

SITE CLASS: Primary

Percentile Profile for Combined Groups



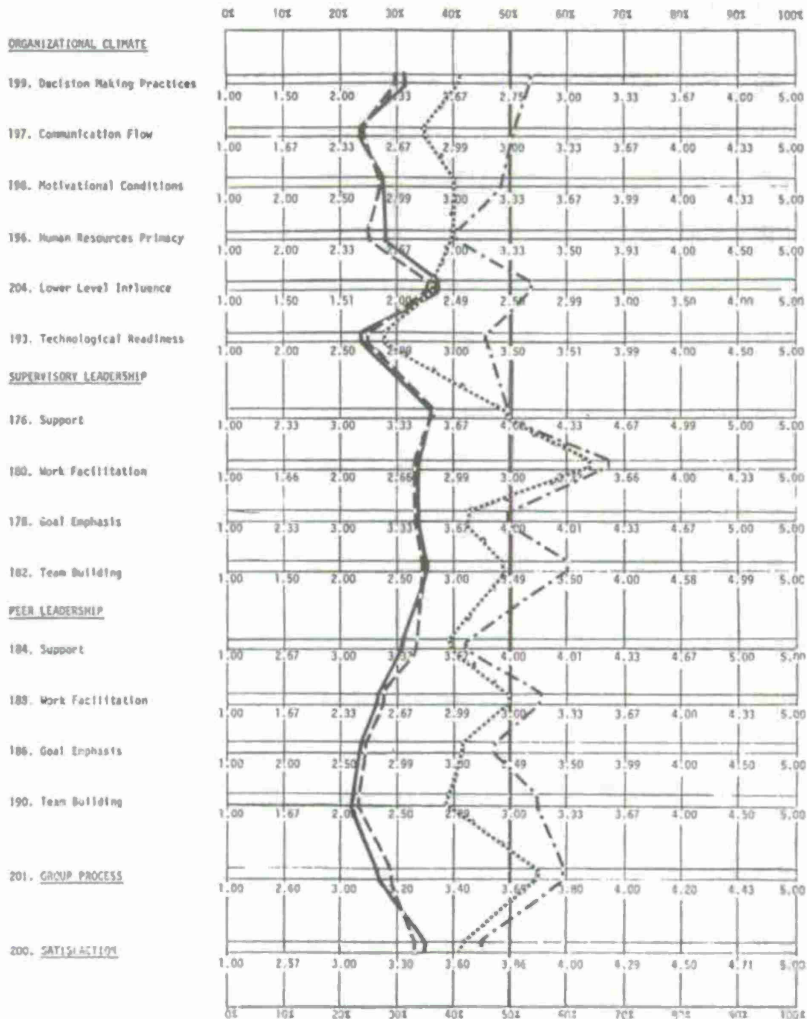
CLUSTER: CHANGE SCORE:
 Profile#7 N = 14
 H = 18 W1 = -----
 W1 = ----- W2 = -----
 W2' = -----

MAJOR INDICES

TREATMENT: Survey Feedback

SITE CLASS: Primary

Percentile Profile for Combined Groups



CLUSTER:
Profile #8

N = 9

W1 =

CHANGE SCORE:

N = 8

W1 =

W2 =

MAJOR INDICES

TREATMENT: Survey Feedback

SITE CLASS: Primary

Percentile Profile for Combined Groups

ORGANIZATIONAL CLIMATE

199. Decision Making Practices

197. Communication Flow

198. Motivational Conditions

196. Human Resources Primacy

204. Lower Level Influence

193. Technological Readiness

SUPERVISORY LEADERSHIP

176. Support

180. Work Facilitation

170. Goal Emphasis

182. Team Building

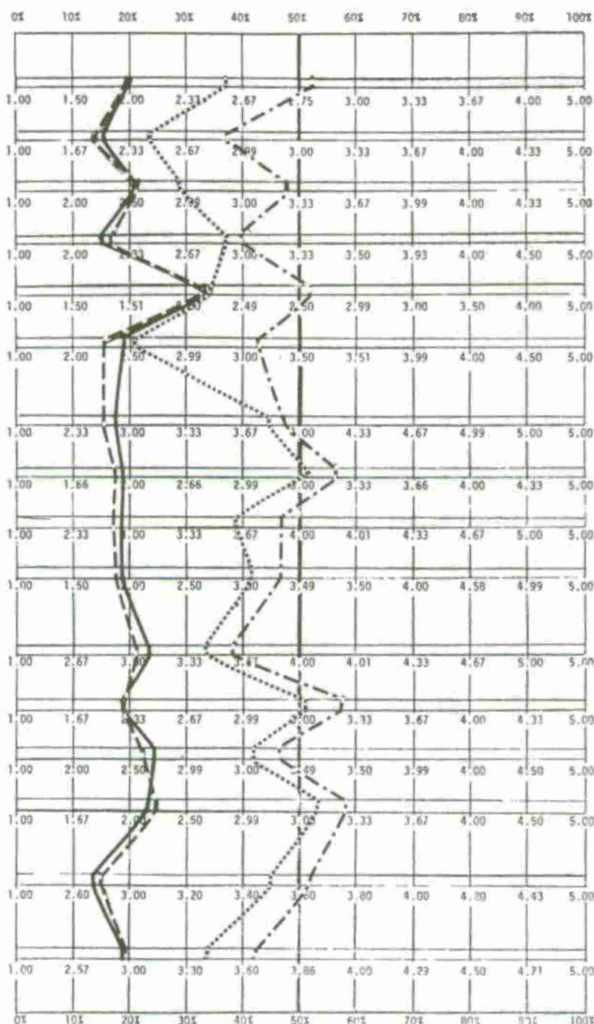
PEER LEADERSHIP

184. Support

188. Work Facilitation

186. Goal Emphasis

190. Team Building

201. GROUP PROCESS200. SATISFACTION

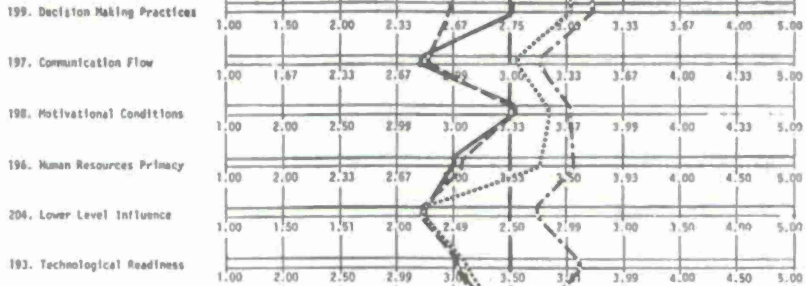
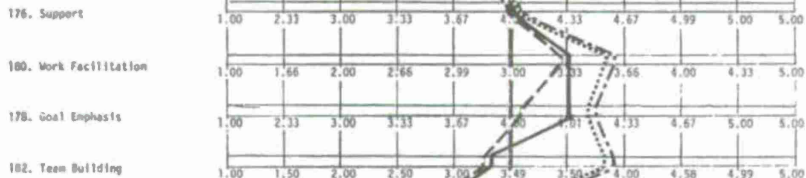
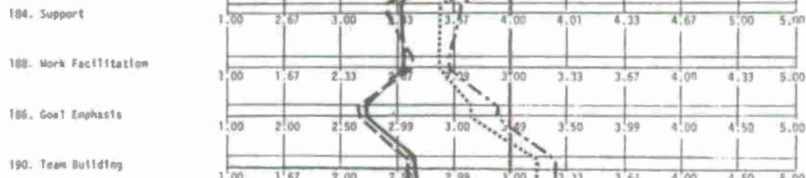
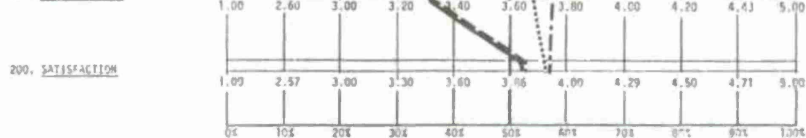
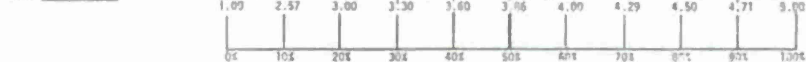
CLUSTER: CHANGE SCORE
 Profile #9 N = 10
 N = 12 W1 = - - - - -
 W1 = - - - - - W2 = - - - - -
 W2 = - - - - - W2' = - - - - -

MAJOR INDICES

TREATMENT: Survey Feedback

SITE CLASS: Primary

Percentile Profile for Combined Groups

ORGANIZATIONAL CLIMATESUPERVISORY LEADERSHIPPEER LEADERSHIP201. GROUP PROCESS200. SATISFACTION

CLUSTER: CHANGE SCORE:
 Profile #11 N = 14
 N = 15 W1 = ————
 W2 = - - - - -
 W2' =

MAJOR INDICES

TREATMENT: Survey Feedback

SITE CLASS: Primary

Percentile Profile for Combined Groups

ORGANIZATIONAL CLIMATE

199. Decision Making Practices

197. Communication Flow

198. Motivational Conditions

196. Human Resources Priority

204. Lower Level Influence

193. Technological Readiness

SUPERVISORY LEADERSHIP

176. Support

180. Work Facilitation

178. Goal Emphasis

182. Team Building

PEER LEADERSHIP

184. Support

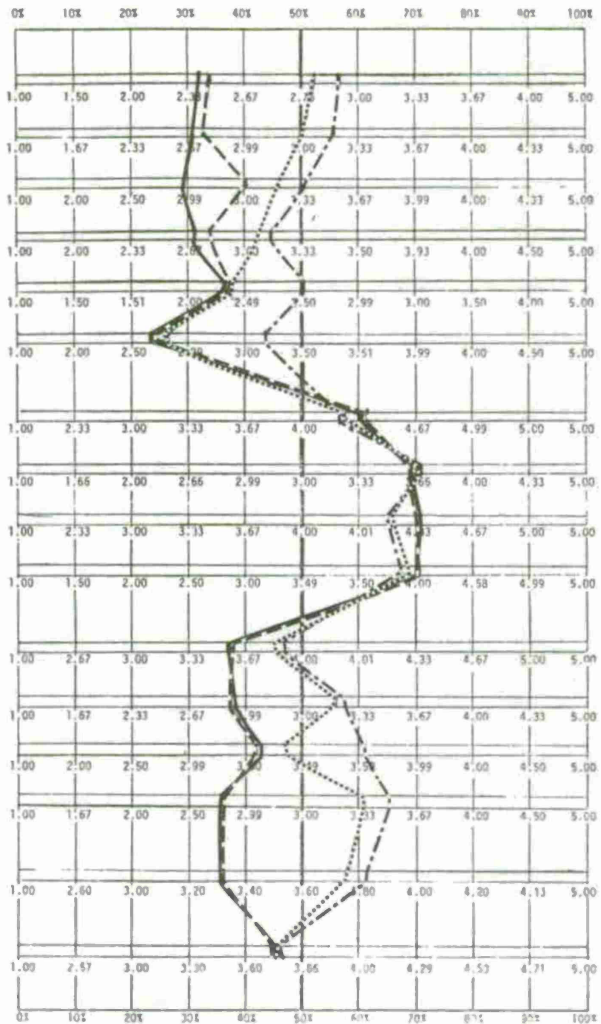
188. Work Facilitation

186. Goal Emphasis

190. Team Building

201. GROUP PROCESS

200. SATISFACTION



CLUSTER: CHANGE SCORE:
 Profile #12 N = 14
 N = 16 W1 ————
 W1 ———— W2 ————
 W2' ————

MAJOR INDICES

TREATMENT: Survey Feedback

SITE CLASS: Primary

Percentile Profile for Combined Groups

ORGANIZATIONAL CLIMATE

199. Decision Making Practices

197. Communication Flow

198. Motivational Conditions

196. Human Resources Primacy

204. Lower Level Influence

193. Technological Readiness

SUPERVISORY LEADERSHIP

176. Support

180. Work Facilitation

17d. Goal Emphasis

182. Team Building

PEER LEADERSHIP

184. Support

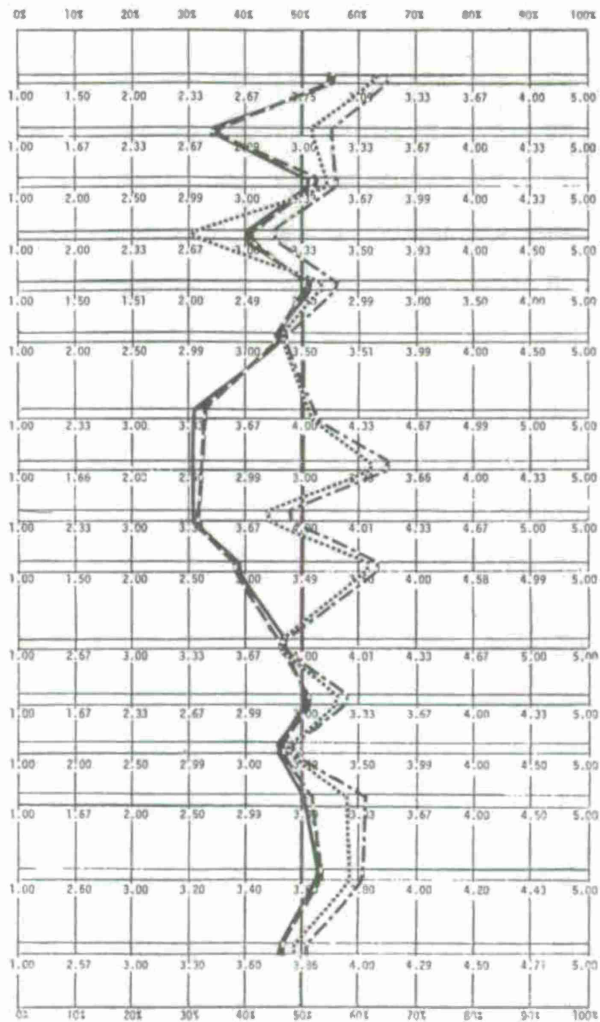
188. Work Facilitation

186. Goal Emphasis

190. Team Building

GROUP PROCESS

200. SATISFACTION



CLUSTER:
Profile #13

CHANGE SCORE:

N = 5

W1

W2

W2'

n = 9
W1

MAJOR INDICES

TREATMENT: Survey Feedback

SITE CLASS: Primary

Percentile Profile for Combined Groups

ORGANIZATIONAL CLIMATE

199. Decision Making Practices

197. Communication Flow

198. Motivational Conditions

196. Human Resources Priority

204. Lower Level Influence

193. Technological Readiness

SUPERVISORY LEADERSHIP

176. Support

180. Work Facilitation

178. Goal Emphasis

182. Team Building

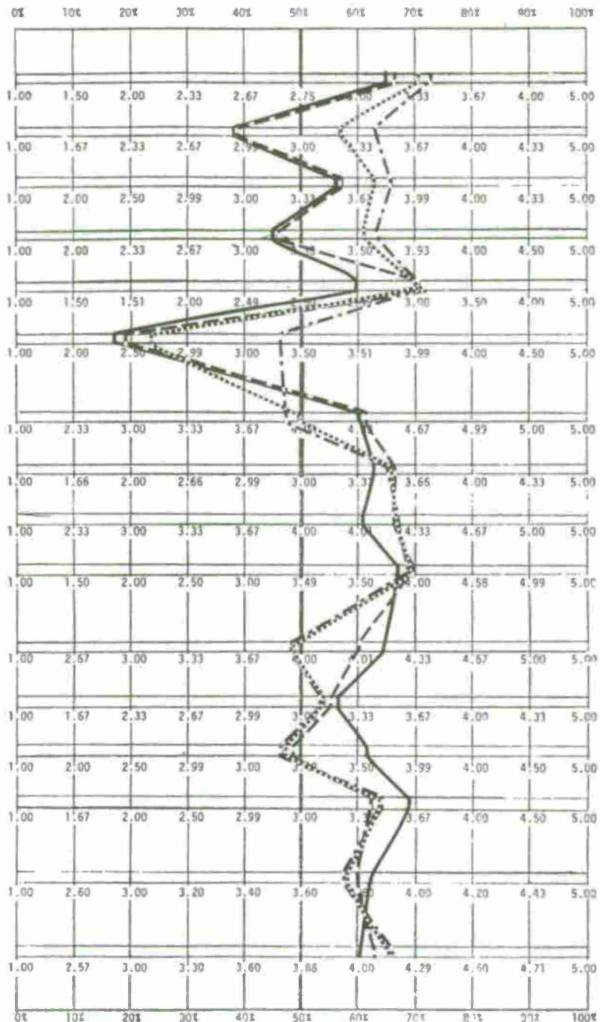
PEER LEADERSHIP

184. Support

188. Work Facilitation

186. Goal Emphasis

190. Team Building

GROUP PROCESS200. SATISFACTION

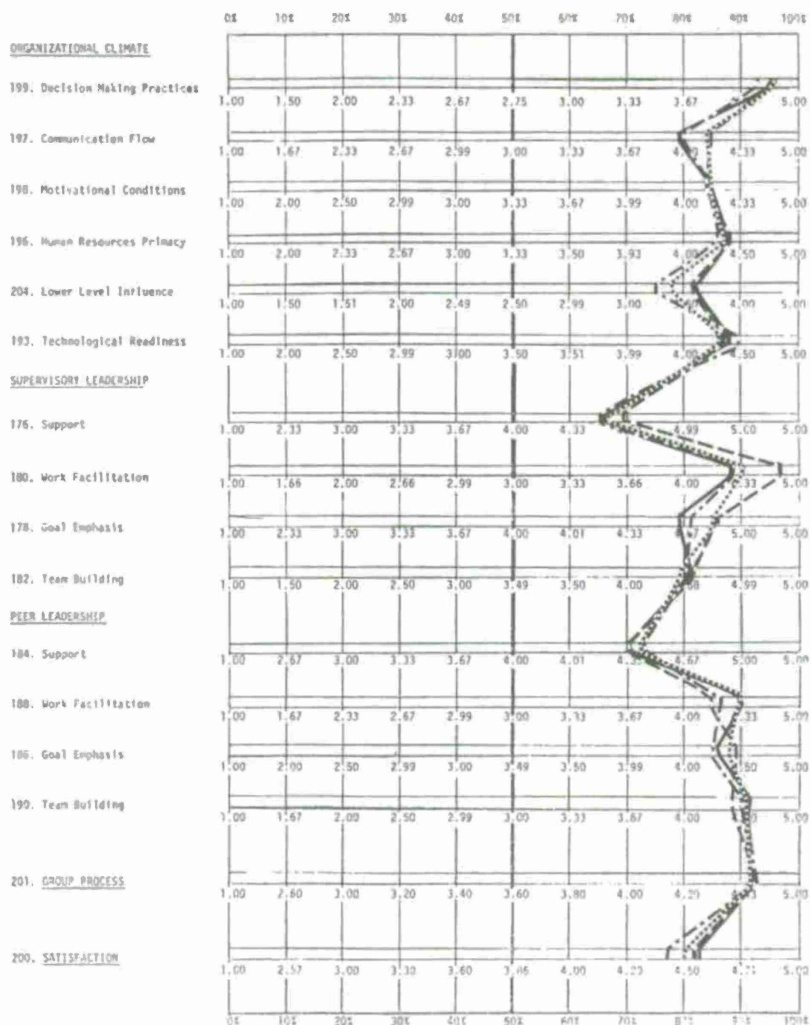
CLUSTER: CHANGE SCORE:
 Profile # 1
 N = 23
 W1 = -----
 W2 = -----

MAJOR INDICES

TREATMENT: Data Handback

SITE CLASS: Secondary

Percentile Profile for Combined Groups



CLUSTER:
Profile #2

CHANGE SCORE:

N = 11

W1 = - - - - -

W2 = - - - - -

N = 33

W1 = - - - - -

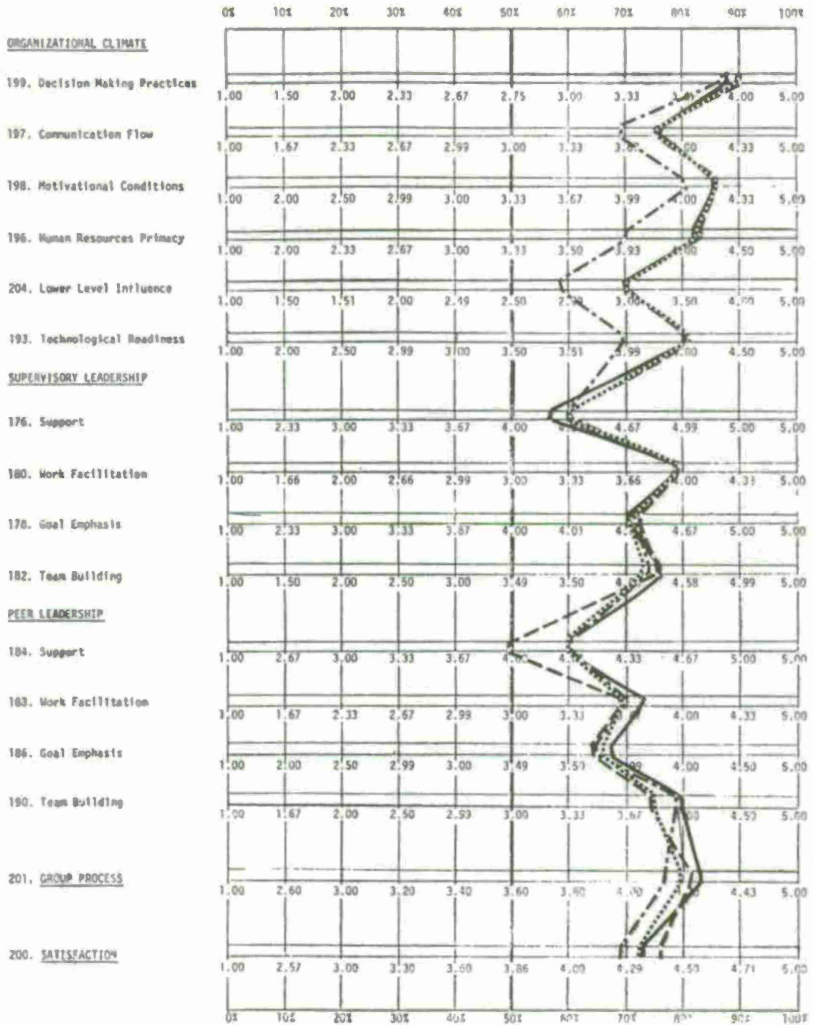
W2 = - - - - -

MAJOR INDICES

TREATMENT: Data Handback

SITE CLASS: Secondary

Percentile Profile for Combined Groups



CLUSTER:
Profile #4

CHANGE SCORE:
N = 3

MAJOR INDICES

TREATMENT: Data Handback

SITE CLASS: Secondary

d = 17

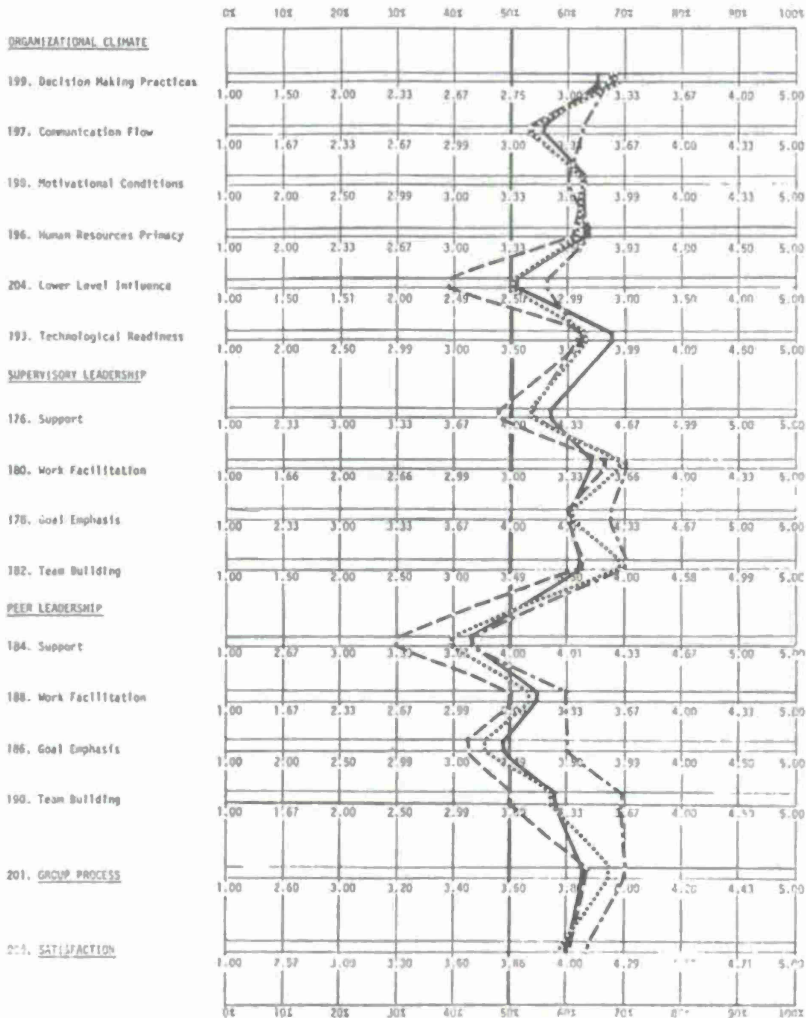
W1 =

W1

W2

W2'

Percentile Profile for Combined Groups



CLUSTER:
Profile #6

CHANGE SCORE:

N = 3

W1 = - - - - -

W2 = - - - - -

n = 10

W1 = - - - - -

W2 = - - - - -

242

MAJOR INDICES

TREATMENT: Data Handback

SITE CLASS: Secondary

Percentile Profile for Combined Groups

ORGANIZATIONAL CLIMATE

199. Decision Making Practices

197. Communication Flow

198. Motivational Conditions

196. Human Resources Privacy

204. Lower Level Influence

193. Technological Readiness

SUPERVISORY LEADERSHIP

176. Support

180. Work Facilitation

178. Goal Emphasis

182. Team Building

PEER LEADERSHIP

184. Support

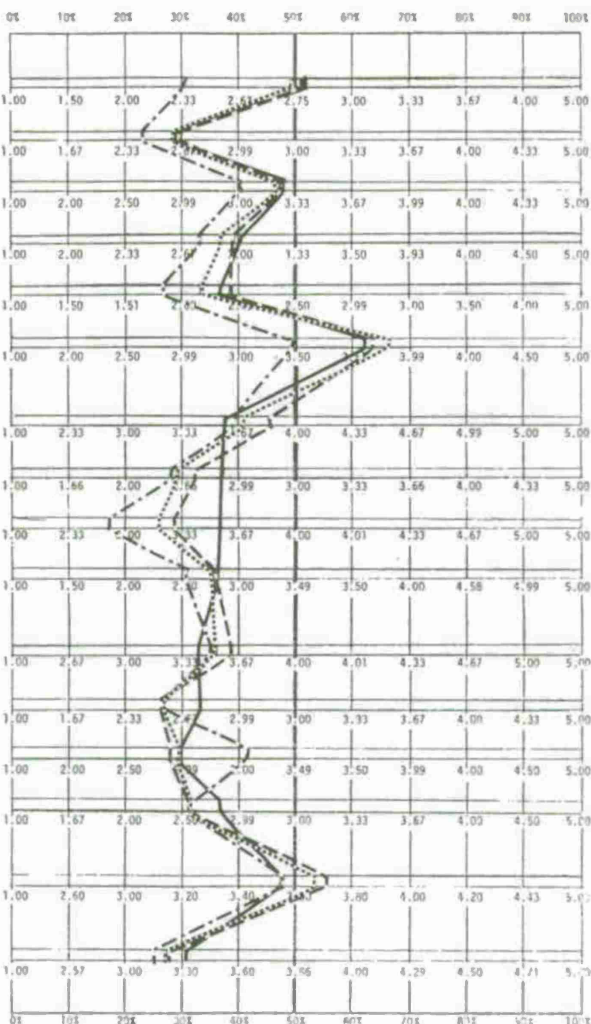
188. Work Facilitation

186. Goal Emphasis

190. Team Building

201. GROUP PROCESS

200. SATISFACTION



CLUSTER: CHANGE SCORE:
 Profile #10 N = 4
 W1 = 1.00
 W2 = 1.00
 W1 = 1.00 W2 = 1.00

MAJOR INDICES

TREATMENT: Data Handback

SITE CLASS: Secondary

Percentile Profile for Combined Groups

ORGANIZATIONAL CLIMATE

199. Decision Making Practices

197. Communication Flow

198. Motivational Conditions

196. Human Resources Primacy

204. Lower Level Influence

193. Technological Readiness

SUPERVISORY LEADERSHIP

176. Support

180. Work Facilitation

178. Goal Emphasis

182. Team Building

PEER LEADERSHIP

184. Support

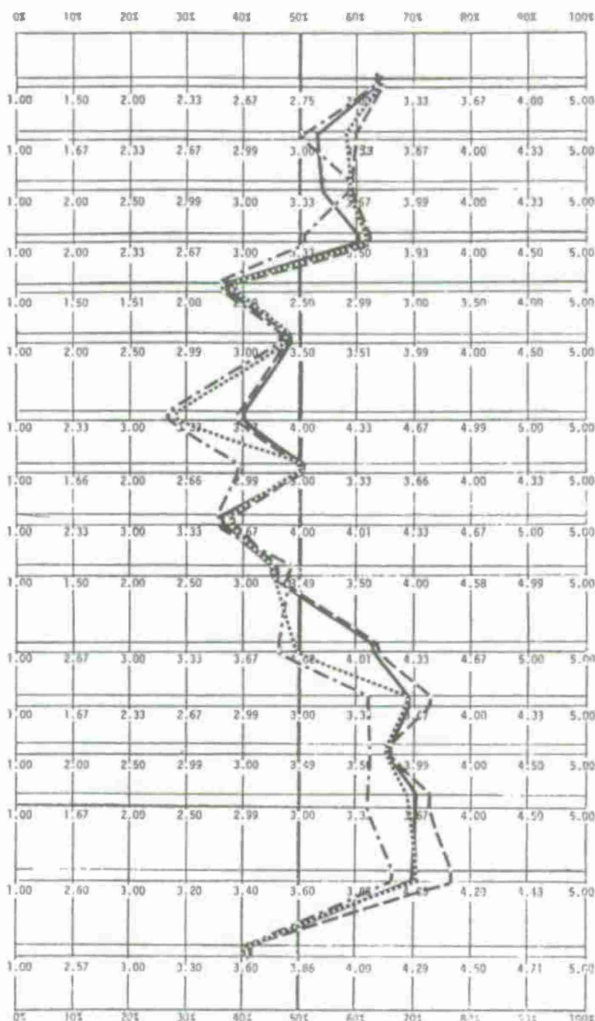
188. Work Facilitation

186. Goal Emphasis

190. Team Building

GROUP PROCESS

200. Satisfaction



CLUSTER:
Profile #12

CHANGE SCORE:

N = 1

W1

W2

N = 7
W1

MAJOR INDICES

TREATMENT: Data Handback

SITE CLASS: Secondary

Percentile Profile for Combined Groups

ORGANIZATIONAL CLIMATE

199. Decision Making Practices

197. Communication Flow

198. Motivational Conditions

196. Human Resources Primacy

204. Lower Level Influence

193. Technological Readiness

SUPERVISORY LEADERSHIP

176. Support

180. Work Facilitation

178. Goal Emphasis

182. Team Building

PEER LEADERSHIP

184. Support

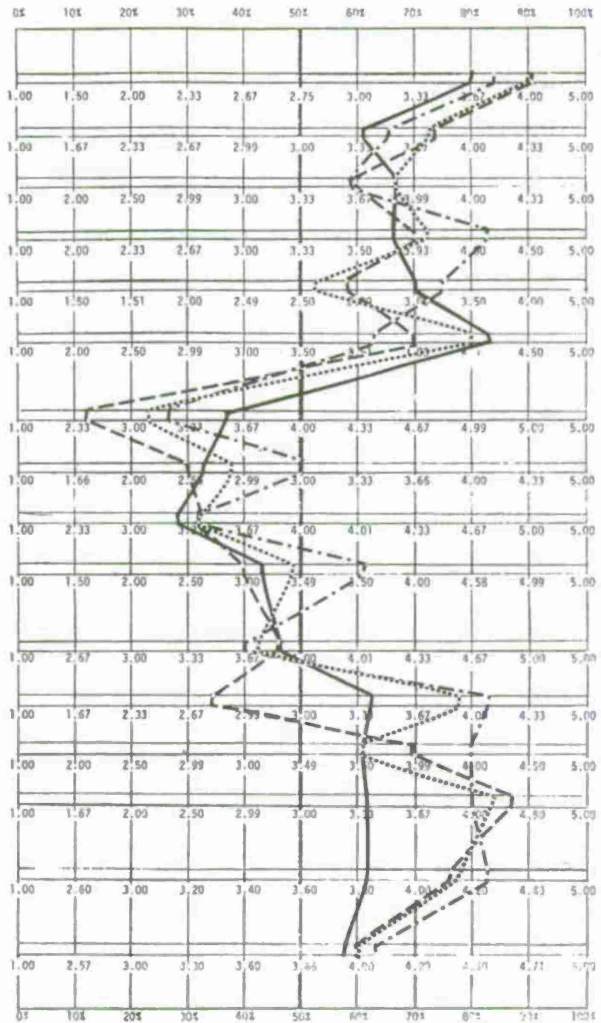
188. Work Facilitation

186. Goal Emphasis

190. Team Building

201. GROUP PROCESS

200. SATISFACTION



CLUSTER:
Profile #2

N = 15

W1 = —————

CHANGE SCORE:

n = 4

W1 = - - - - -

W2 = - - - - -

W2' = - - - - -

MAJOR INDICES

TREATMENT: Interpersonal Process
Consultation

SITE CLASS: Primary

Percentile Profile for Combined Groups

ORGANIZATIONAL CLIMATE

199. Decision Making Practices

197. Communication Flow

198. Motivational Conditions

196. Human Resources Primacy

204. Lower Level Influence

193. Technological Readiness

SUPERVISORY LEADERSHIP

176. Support

180. Work Facilitation

178. Goal Emphasis

182. Team Building

PEER LEADERSHIP

184. Support

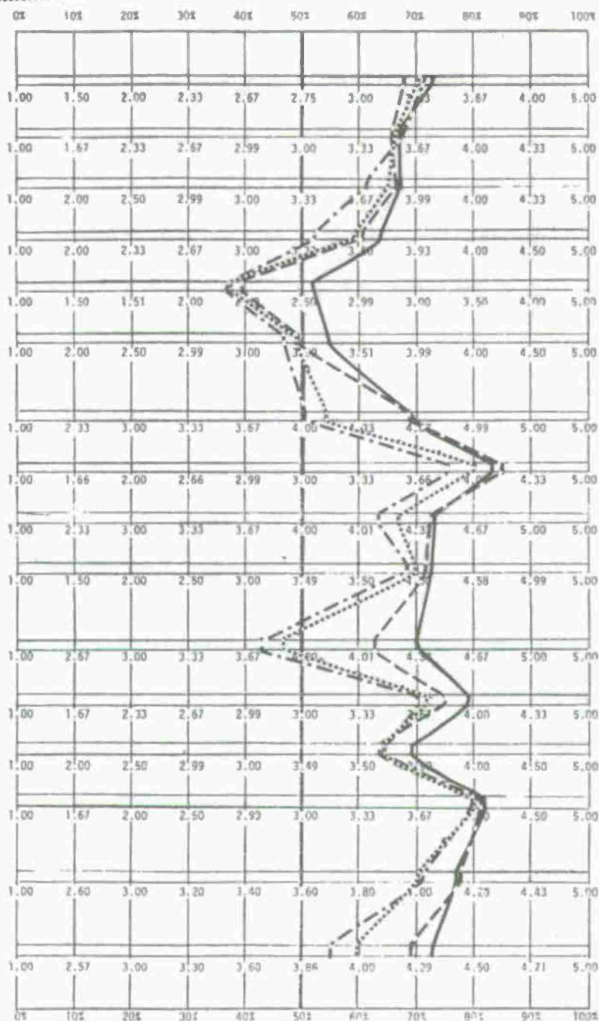
186. Work Facilitation

156. Goal Emphasis

190. Team Building

201. GROUP PROCESS

200. SATISFACTION



CLUSTER:
Profile #3

CHANGE SCORE:

N = 11

W1 =

W2 =

N = 30

W1 =

W2 =

TREATMENT: Interpersonal Process
Consultation

MAJOR INDICES

SITE CLASS: Primary

Percentile Profile for Combined Groups

ORGANIZATIONAL CLIMATE

199. Decision Making Practices

197. Communication Flow

198. Motivational Conditions

196. Human Resources Primacy

204. Lower Level Influence

193. Technological Readiness

SUPERVISORY LEADERSHIP

176. Support

180. Work Facilitation

178. Goal Emphasis

162. Team Building

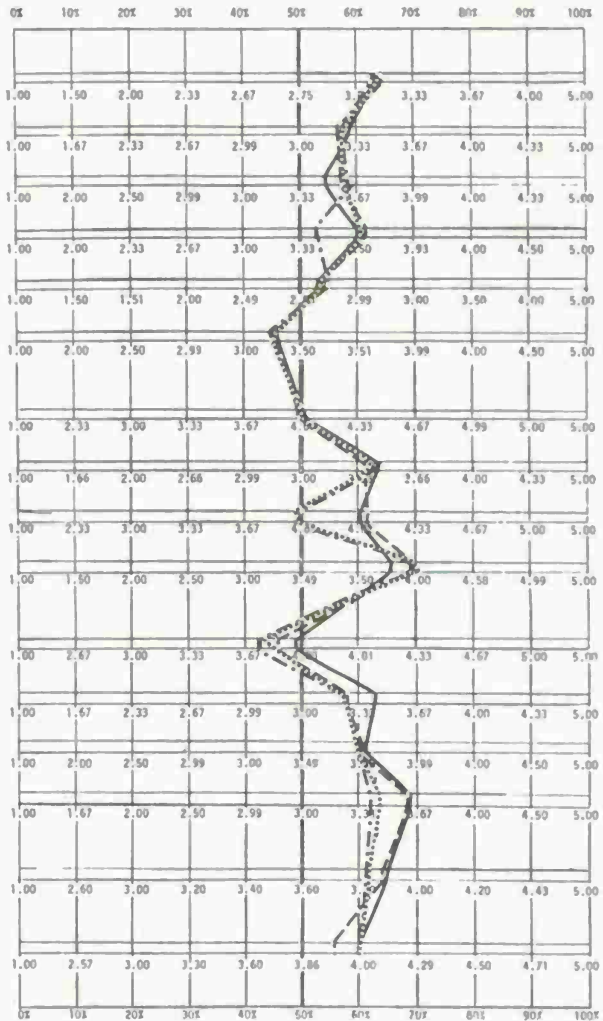
PEER LEADERSHIP

184. Support

188. Work Facilitation

186. Goal Emphasis

190. Team Building

201. GROUP PROCESS200. SATISFACTION

CLUSTER:
Profile #4

CHANGE SCORE:

Δ = 7

W1 = - - - - -

W2 = - - - - -

W2' = - - - - -

Δ = 20

W1 = - - - - -

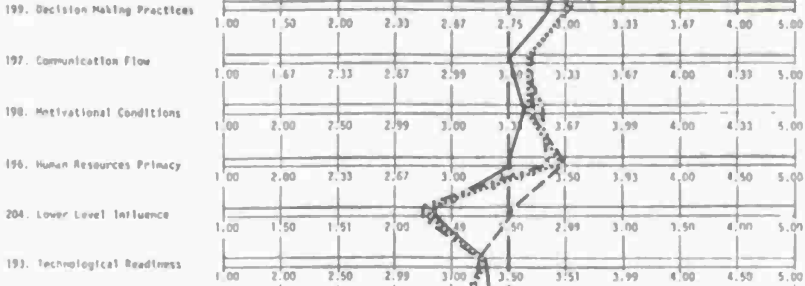
MAJOR INDICES

TREATMENT: Interpersonal Process
Consultation

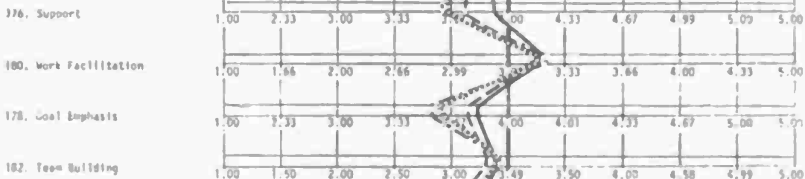
SITE CLASS: Secondary

Percentile Profile for Combined Groups

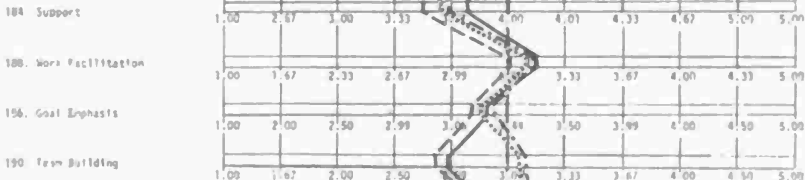
ORGANIZATIONAL CLIMATE



SUPERVISORY LEADERSHIP



PEER LEADERSHIP



GROUP PROCESS



CLUSTER:
Profile #7

CHANGE SCORE

N = 6

MAJOR INDICES

TREATMENT: Interpersonal Process
Consultation

W1 = 10

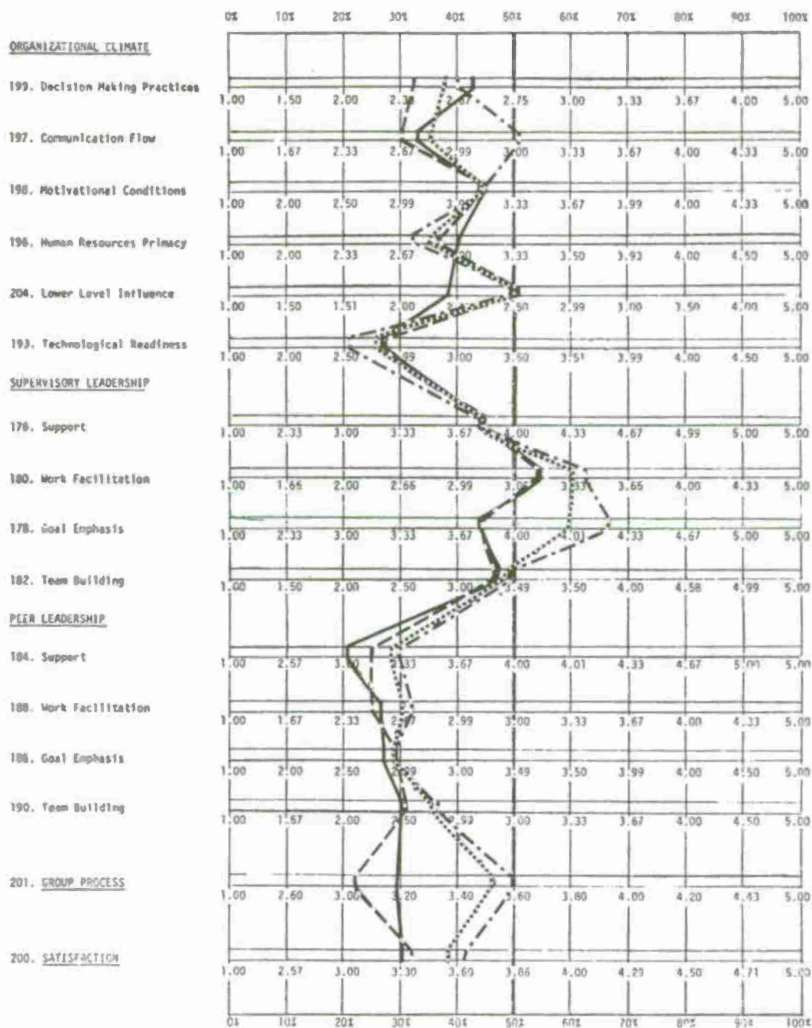
W2 =

W1 =

W2 =

SITE CLASS: Secondary

Percentile Profile for Combined Groups



CLUSTER
Profile #9

CHANGE SCORE:

N = 1

1.1

W1 = 6

W2 =

W2

W2

MINOR INDICES

TREATMENT: Interpersonal Process
Consultation

SITE CLASS: Secondary

Percentile Profile for Combined Groups

ORGANIZATIONAL CLIMATE

199. Decision Making Practices

197. Communication Flow

198. Motivational Conditions

196. Human Resources Priority

204. Lower Level Influence

193. Technological Readiness

SUPERVISORY LEADERSHIP

176. Support

180. Work Facilitation

178. Goal Emphasis

182. Team Building

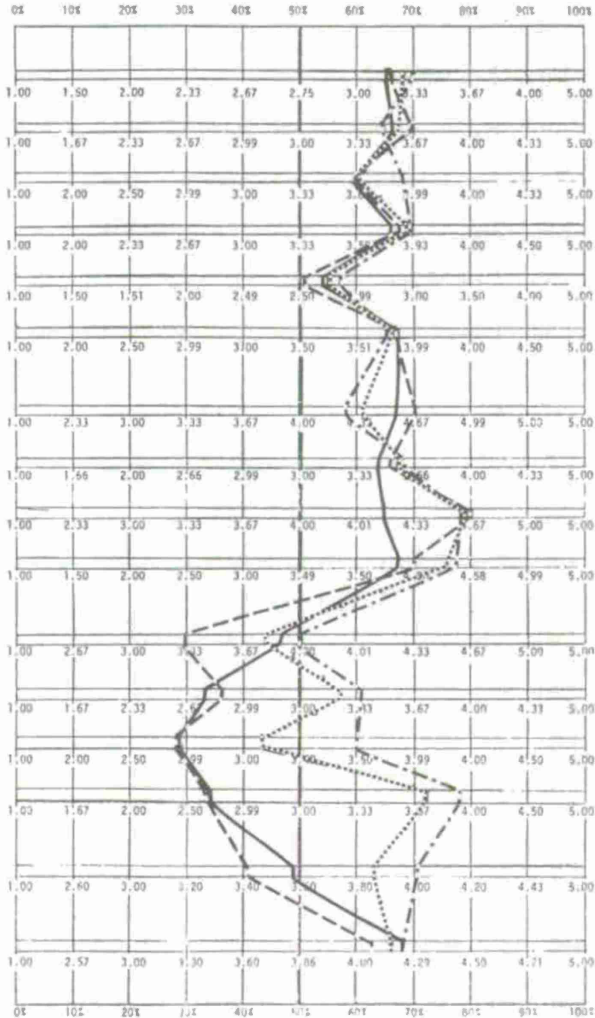
PEER LEADERSHIP

184. Support

188. Work Facilitation

186. Goal Emphasis

190. Team Building

GROUP PROCESS200. SATISFACTION

CLUSTER:
Profile #12

$\Delta = 5$
W1 =

CHANGE SCORE:

$\Delta = 1$
W1 =
W2 =
W2' =

250

MAJOR INDICES

TREATMENT: Interpersonal Process
Consultation

SITE CLASS: Secondary
Percentile Profile for Combined Groups

ORGANIZATIONAL CLIMATE

199. Decision Making Practices

197. Communication Flow

198. Motivational Conditions

196. Human Resources Privacy

204. Lower Level Influence

193. Technological Readiness

SUPERVISORY LEADERSHIP

176. Support

180. Work Facilitation

178. Goal Emphasis

182. Team Building

PEER LEADERSHIP

184. Support

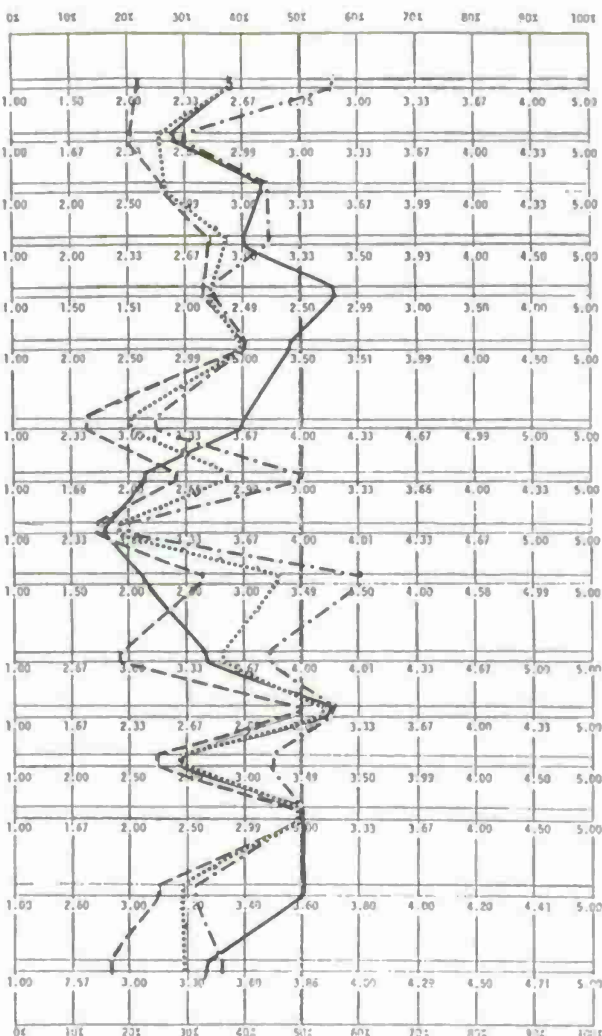
188. Work Facilitation

186. Goal Emphasis

190. Team Building

201. GROUP PROCESS

200. SATISFACTION



CLUSTER:
Profile #1

CHANGE SCORE
N = 3

MAJOR INDICES

TREATMENT: Laboratory Training
SITE CLASS: Secondary

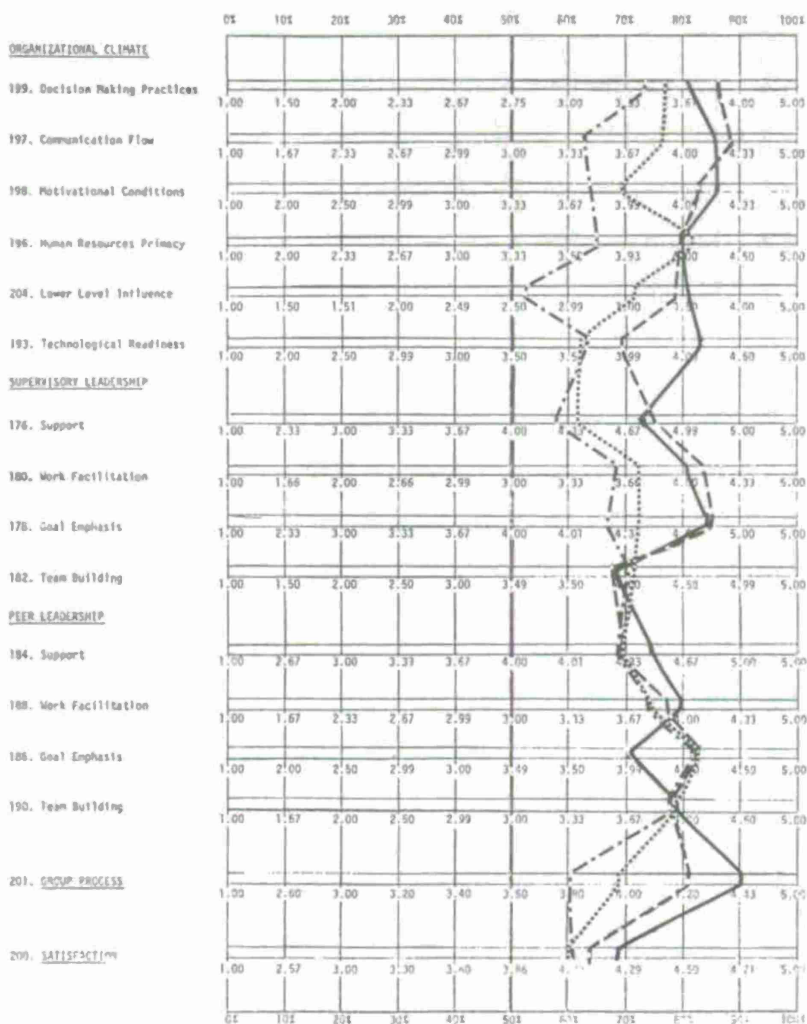
N = 1

W1

W1

W2

Percentile Profile for Combined Groups



CLUSTER:
Profile #3

CHANGE SCORE:

N = 25

W1

W2

W2'

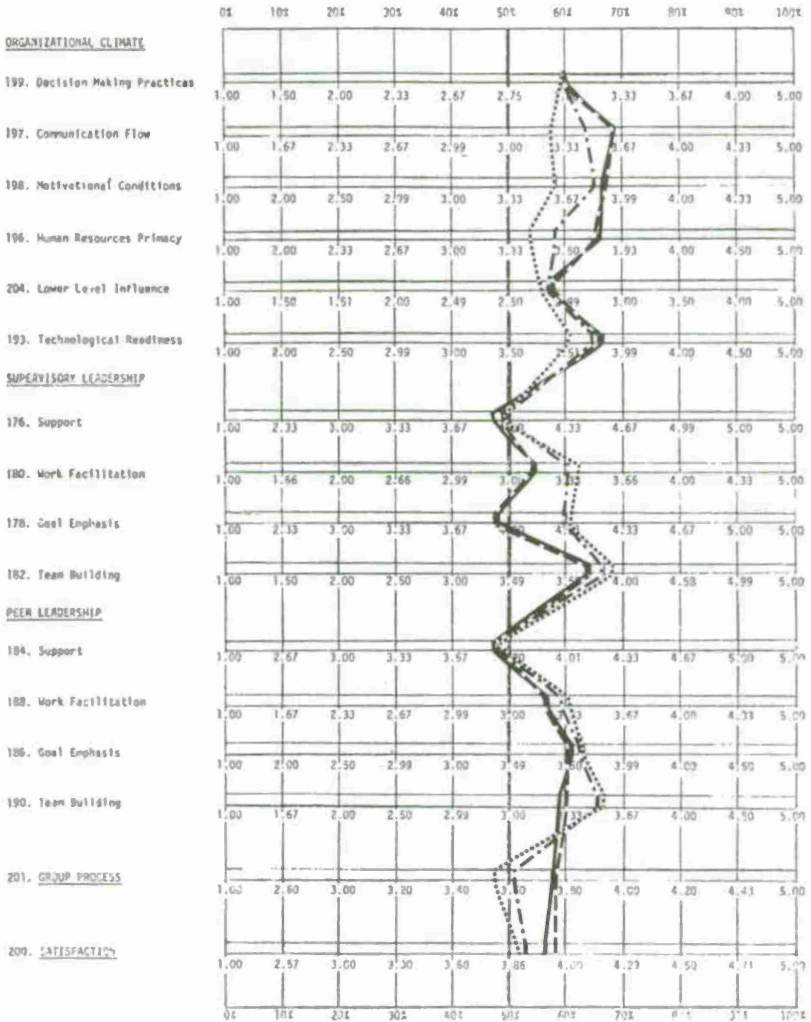
MAJOR INDICES

TREATMENT: Laboratory Training
SITE CLASS: Secondary

N = 29

W1

Percentile Profile for Combined Groups



CLUSTER:
Profile #6

CHANGE SCORE
= 23

MAJOR INDICES

TREATMENT: Laboratory Training
SITE CLASS: Secondary

W1 = 25

W2 =

Percentile Profile for Combined Groups

ORGANIZATIONAL CLIMATE

199. Decision Making Practices

197. Communication Flow

198. Motivational Conditions

196. Human Resources Primacy

204. Lower Level Influence

193. Technological Readiness

SUPERVISORY LEADERSHIP

176. Support

180. Work Facilitation

178. Goal Emphasis

182. Team Building

PEER LEADERSHIP

184. Support

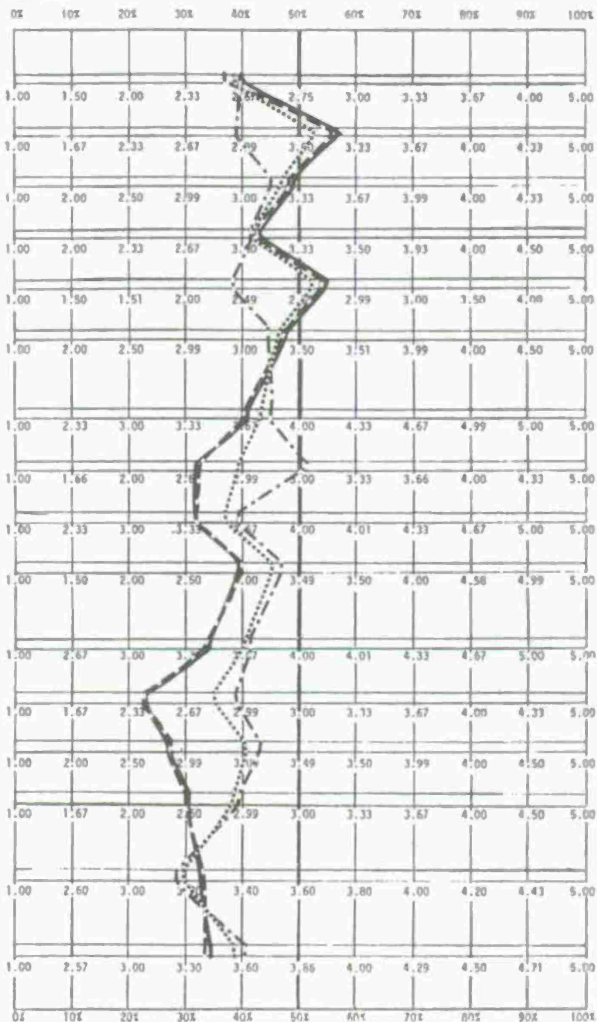
188. Work Facilitation

186. Goal Emphasis

190. Team Building

201. GROUP PROCESS

200. SATISFACTION



CLUSTER:
Profile #11

CHANGE SCORE

= 13

MAJOR INDICES

TREATMENT: Laboratory Training
SITE CLASS: Secondary

N = 14

J1 =

Percentile Profile for Combined Groups

ORGANIZATIONAL CLIMATE

199. Decision Making Practices

197. Communication Flow

198. Motivational Conditions

196. Human Resources Priority

204. Lower Level Influence

193. Technological Readiness

SUPERVISORY LEADERSHIP

176. Support

180. Work Facilitation

178. Goal Emphasis

182. Team Building

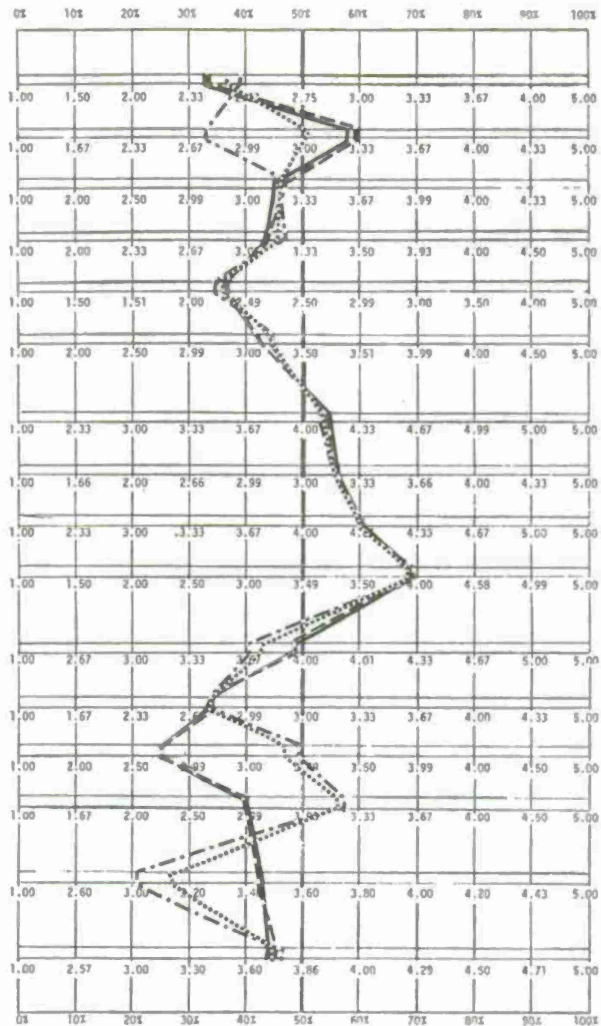
PEER LEADERSHIP

184. Support

188. Work Facilitation

186. Goal Emphasis

190. Team Building

201. GROUP PROCESS200. SATISFACTION

CLUSTER:
Profile #12

$n = 21$

$n_1 =$ _____

CHANCE SCORE:

$I: = 18$

$W1 =$ _____

$W2 =$ _____

$W2' =$ _____

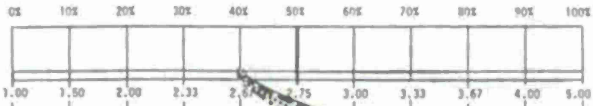
MAJOR INDICES

TREATMENT: Laboratory Training
SITE CLASS: Secondary

Percentile Profile for Combined Groups

ORGANIZATIONAL CLIMATE

199. Decision Making Practices



197. Communication Flow



198. Motivational Conditions



196. Human Resources Privacy



204. Lower Level Influence



193. Technological Readiness



SUPERVISORY LEADERSHIP

176. Support



180. Work Facilitation



178. Goal Emphasis



182. Team Building



PEER LEADERSHIP

184. Support



188. Work Facilitation



186. Goal Emphasis



190. Team Building



201. GROUP PROCESS



200. SATISFACTION



CLUSTER:
Profile #14

CHANGE SCORE
M = 26

MAJOR INDICES

TREATMENT: Laboratory Training
SITE CLASS: Secondary

W1 = 28

W2 =

W1 =

W2 =

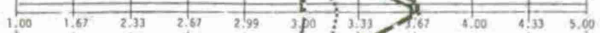
Percentile Profile for Combined Groups

ORGANIZATIONAL CLIMATE

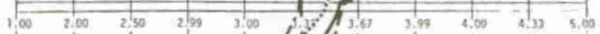
199. Decision Making Practices



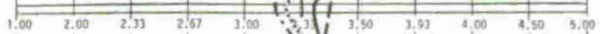
197. Communication Flow



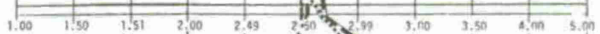
198. Motivational Conditions



196. Human Resources Primacy



204. Lower Level Influence



193. Technological Readiness



SUPERVISORY LEADERSHIP

176. Support



180. Work Facilitation



170. Goal Emphasis

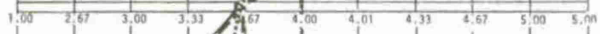


182. Team Building



PEER LEADERSHIP

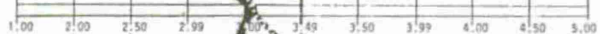
184. Support



188. Work Facilitation



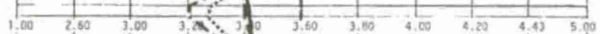
186. Goal Emphasis



190. Team Building



201. GROUP PROCESS



200. SATISFACTION



CLUSTER:
Miscellaneous Profile

CHANGE SCORE

N = 15

W1 = -----

W2 = -----

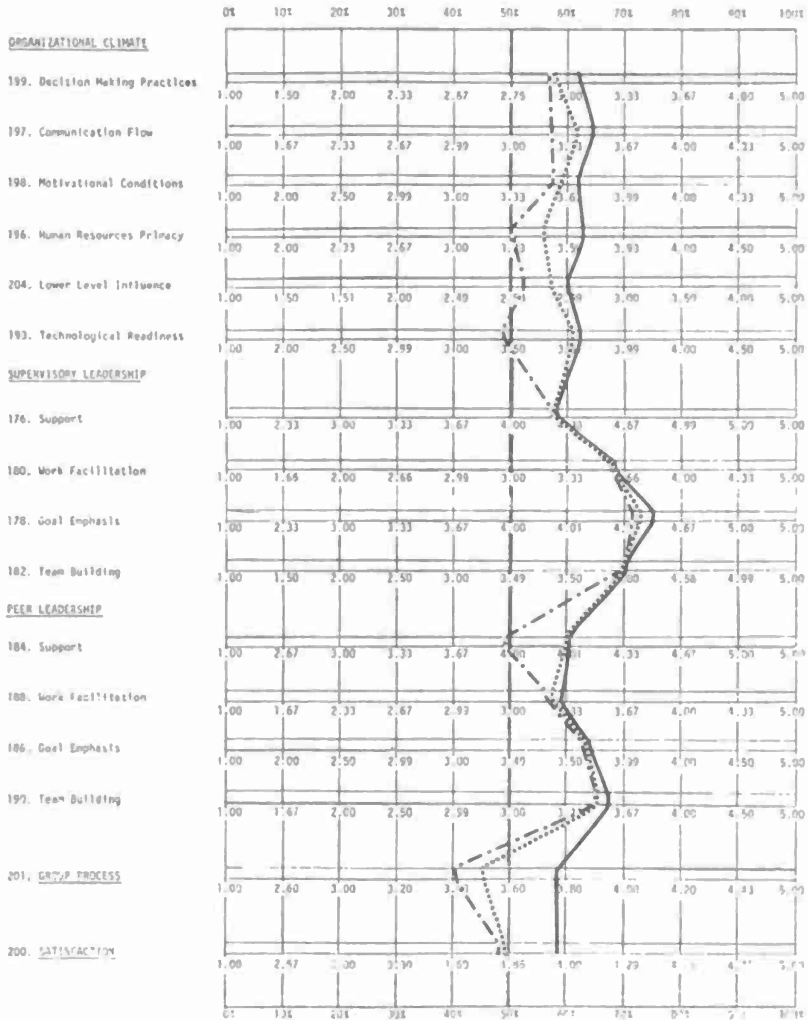
W2' = -----

MAJOR INDICES

TREATMENT: Laboratory Training
SITE CLASS: Secondary

N = 15
W1 = -----

Percentile Profile for Combined Groups



CLUSTER:
Profile #2

CHANGE SCORE:

258

— 6-11-82

N = 15

W1 =

.1 = 6

W1 =

W2 =

W2 =

TREATMENT: Task Process Consultation

SITE CLASS: Secondary

Percentile Profile for Combined Groups

ORGANIZATIONAL CLIMATE

199. Decision Making Practices

197. Communication Flow

190. Motivational Conditions

196. Human Resources Primacy

204. Lower Level Influence

193. Technological Readiness

SUPERVISORY LEADERSHIP

176. Support

180. Work Facilitation

170. Goal Emphasis

182. Team Building

PEER LEADERSHIP

184. Support

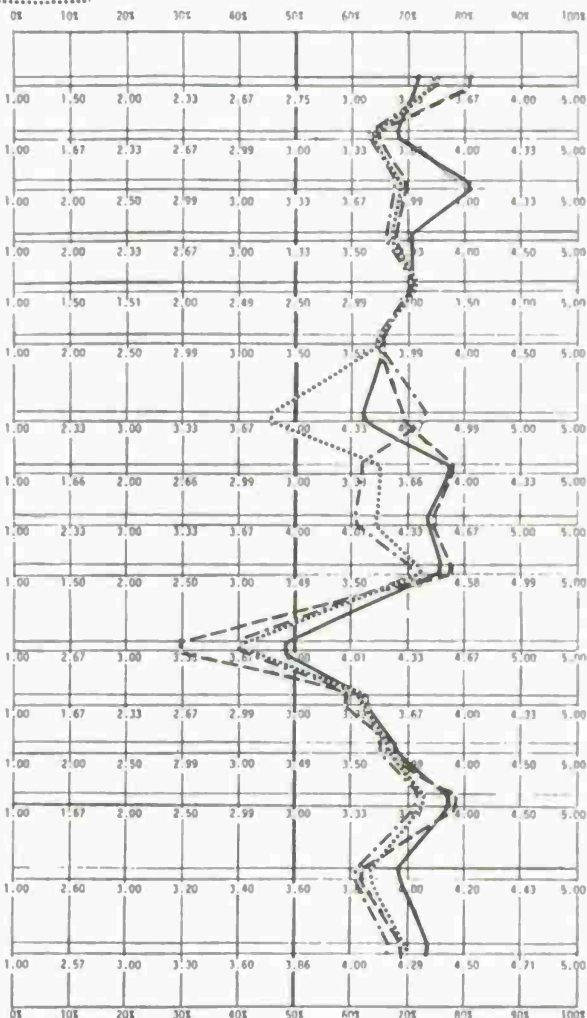
180. Work Facilitation

186. Goal Emphasis

190. Team Building

201. GROUP PROCESS

200. SATISFACTION



CLUSTER:
Profile #12

CHANGE SCORE:

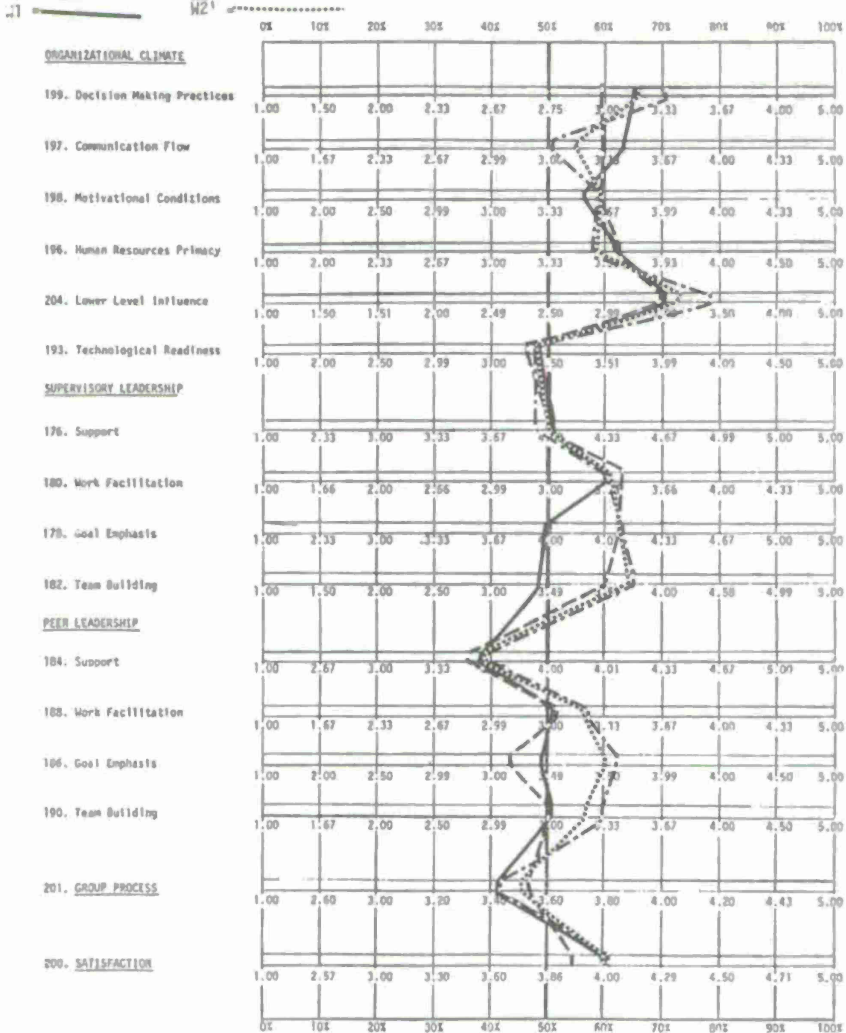
N = 4

MAJOR INDICES

TREATMENT: Task Process Consultation
SITE CLASS: Secondary

N = 12

Percentile Profile for Combined Groups



CLUSTER:
Profile #12

CHANGE SCORE:
N = 4

W1 = 10

W2 =

W1 =

W2 =

W2 =

TREATMENT: Task Process Consultation

SITE CLASS: Secondary

Percentile Profile for Combined Groups

ORGANIZATIONAL CLIMATE

199. Decision Making Practices

197. Communication Flow

198. Motivational Conditions

196. Human Resources Primacy

204. Lower Level Influence

193. Technological Readiness

SUPERVISORY LEADERSHIP

176. Support

180. Work Facilitation

178. Goal Emphasis

182. Team Building

PEER LEADERSHIP

184. Support

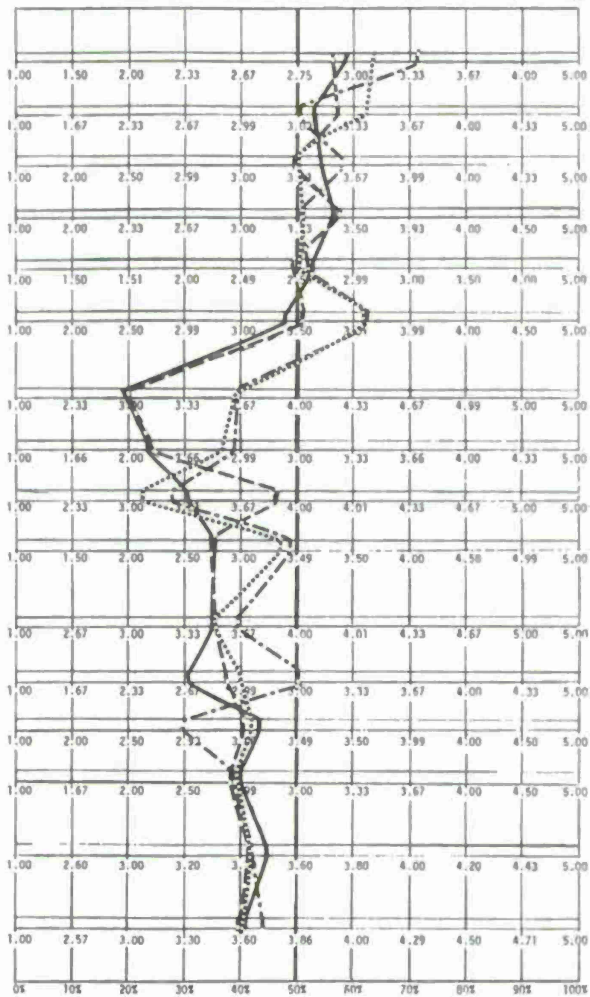
188. Work Facilitation

186. Goal Emphasis

190. Team Building

201. GROUP PROCESS

200. SATISFACTION



CLUSTER:
Profile #14

CHANGE SCORE:

N = 4

W1

W2

W1

MAJOR INDICES

TREATMENT: Task Process Consultation
SITE CLASS: Secondary

Percentile Profile for Combined Groups

ORGANIZATIONAL CLIMATE

199. Decision Making Practices

197. Communication Flow

198. Motivational Conditions

196. Human Resources Priority

204. Lower Level Influence

193. Technological Readiness

SUPERVISORY LEADERSHIP

176. Support

180. Work Facilitation

178. Goal Emphasis

182. Team Building

PEER LEADERSHIP

184. Support

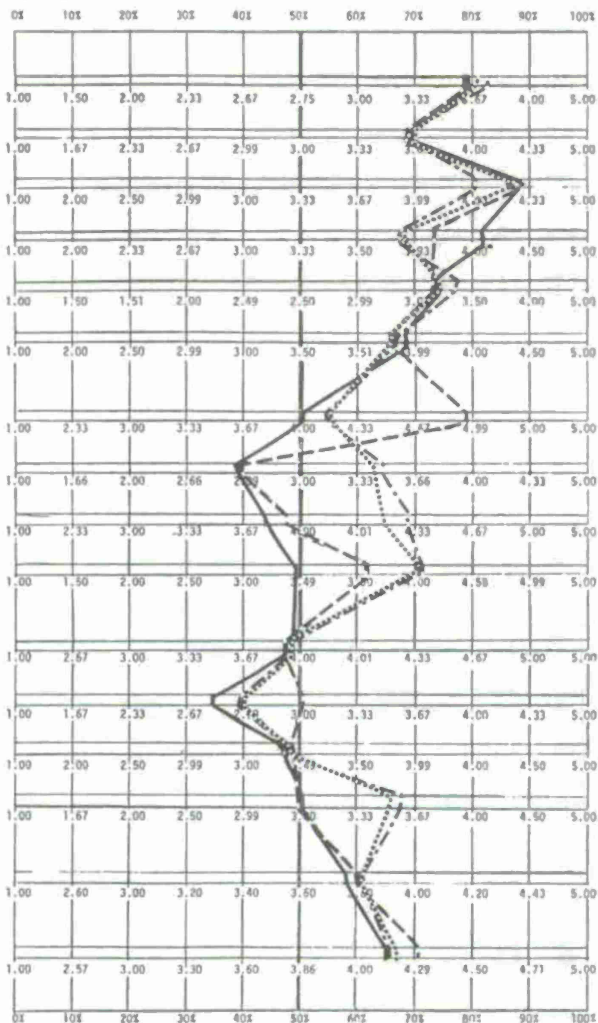
188. Work Facilitation

186. Goal Emphasis

190. Team Building

GROUP PROCESS

200. SATISFACTION

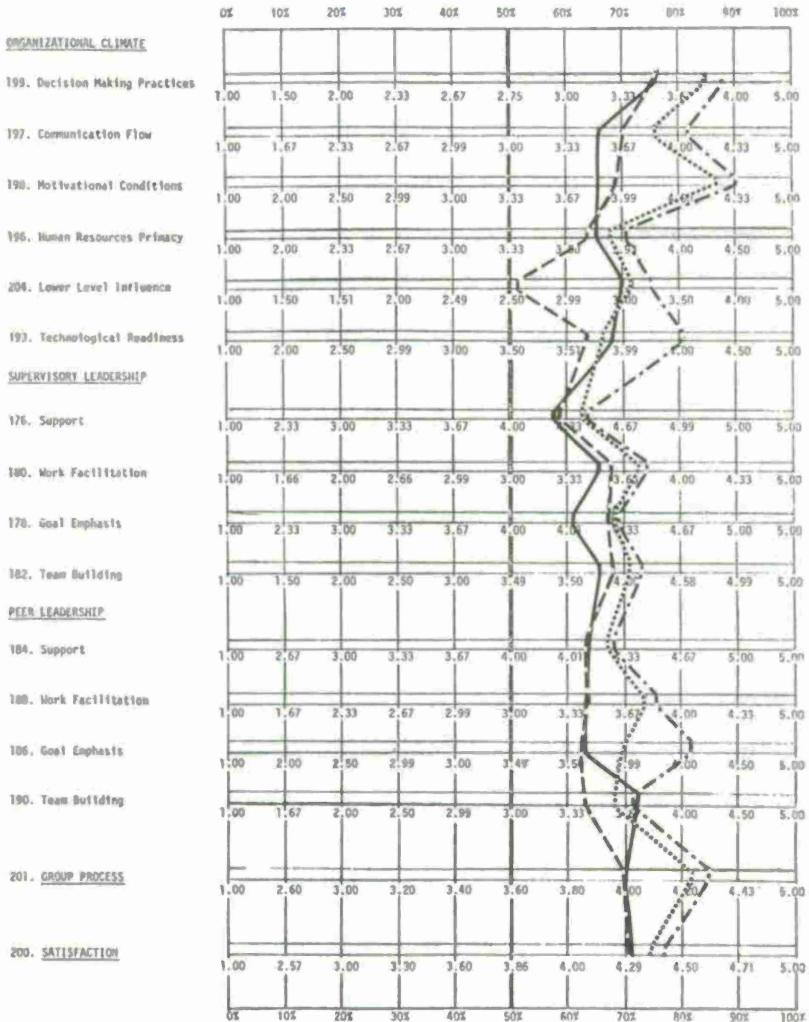


CLUSTER:
Profile #2CHANGE SCORE:
N = 2

MAJOR INDICES

TREATMENT: Survey Feedback
SITE CLASS: SecondaryW1 = 10
W2 =W1 =
W2 =

Percentile Profile for Combined Groups



CLUSTER:
Profile #3

N = 16

W1 = _____

CHANGE SCORE

N = 3

W1 = _____

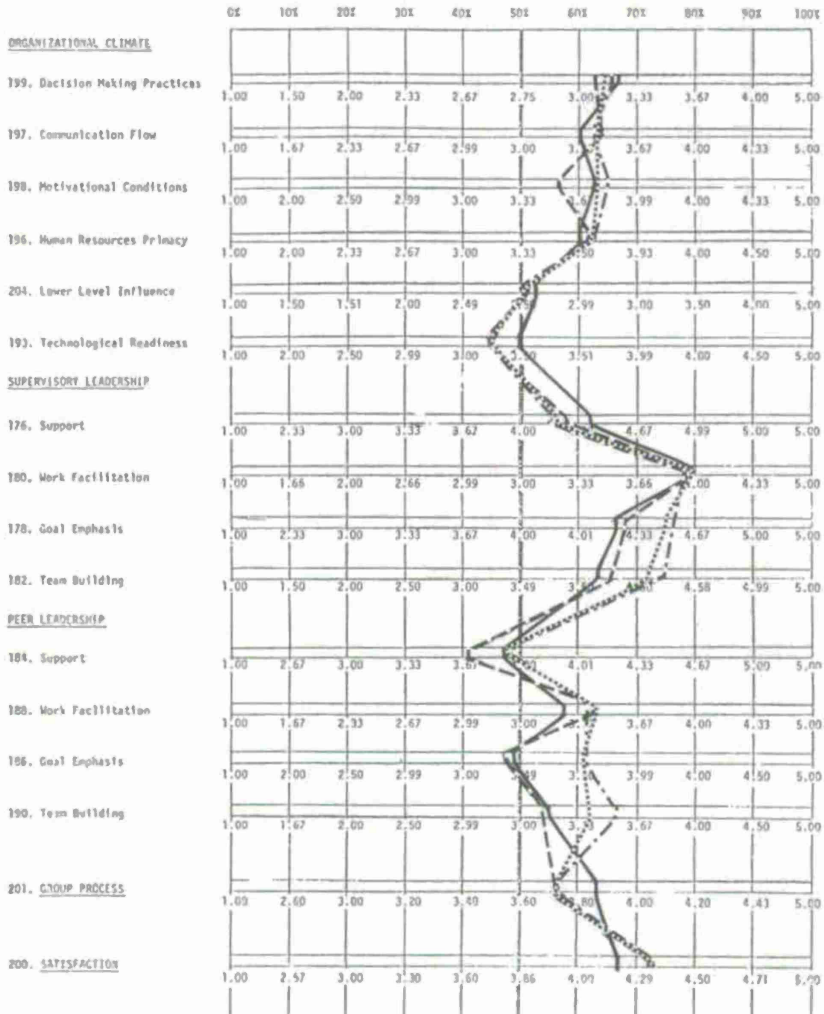
W2 = _____

W2' = _____

TREATMENT: Survey Feedback
SITE CLASS: Secondary

MAJOR INDICES

Percentile Profile for Combined Groups



CLUSTER:
Profile #4

CHANGE SCORE:
N = 3

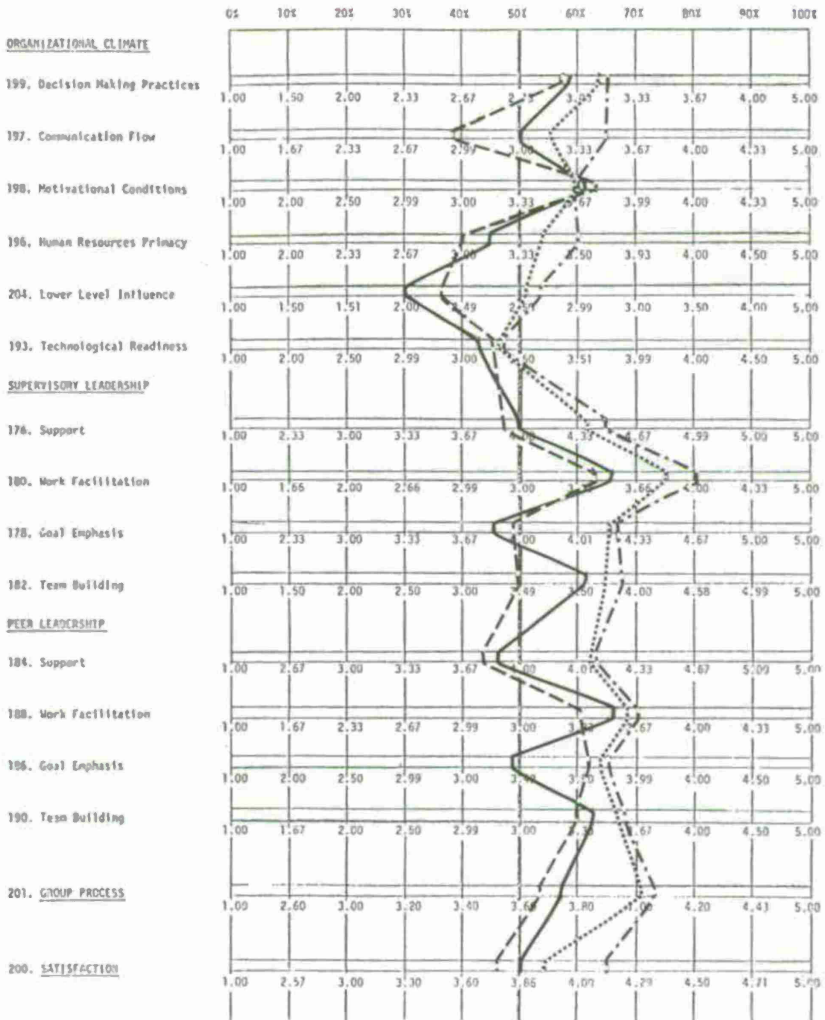
W1 =
W2 =
W3 =

M = 8
W1 =

TREATMENT: Survey Feedback
SITE CLASS: Secondary

MAJOR INDICES

Percentile Profile for Combined Groups



CLUSTER: CHANGE SCORE:
Profile #6 N = 5

N = 23

W1 =

W2 =

W2'

MAJOR INDICES

TREATMENT: Survey Feedback
SITE CLASS: Secondary

Percentile Profile for Combined Groups

ORGANIZATIONAL CLIMATE

199. Decision Making Practices

197. Communication Flow

198. Motivational Conditions

196. Human Resources Priority

204. Lower Level Influence

193. Technological Readiness

SUPERVISORY LEADERSHIP

176. Support

180. Work Facilitation

178. Goal Emphasis

182. Team Building

PEER LEADERSHIP

184. Support

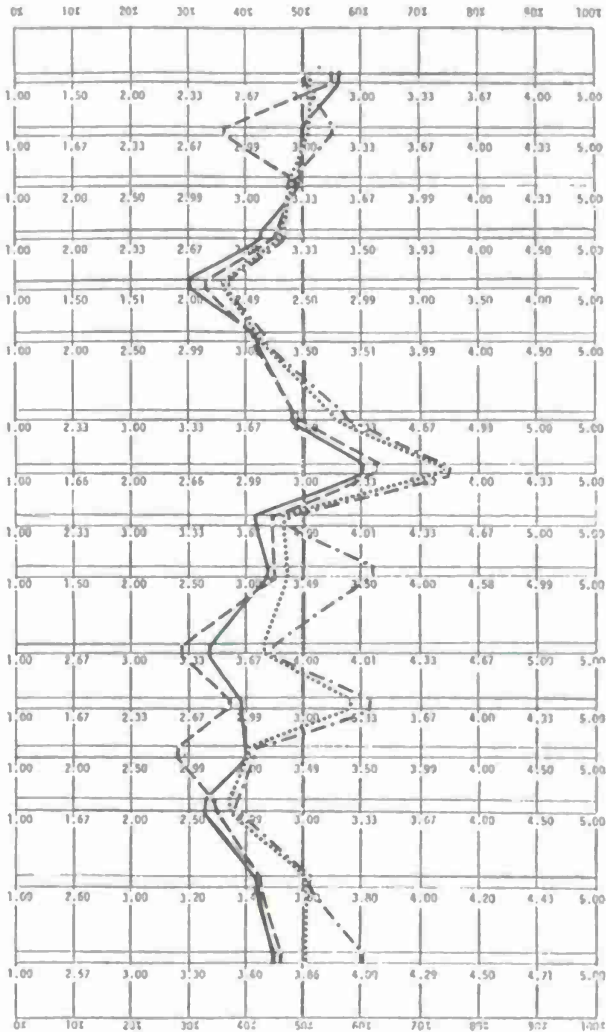
188. Work Facilitation

186. Goal Emphasis

190. Team Building

201. GROUP PROCESS

200. SATISFACTION



CLUSTER:
Profile #7

CHANGE SCORE:

H

= 1

W1

=

W2

=

W2'

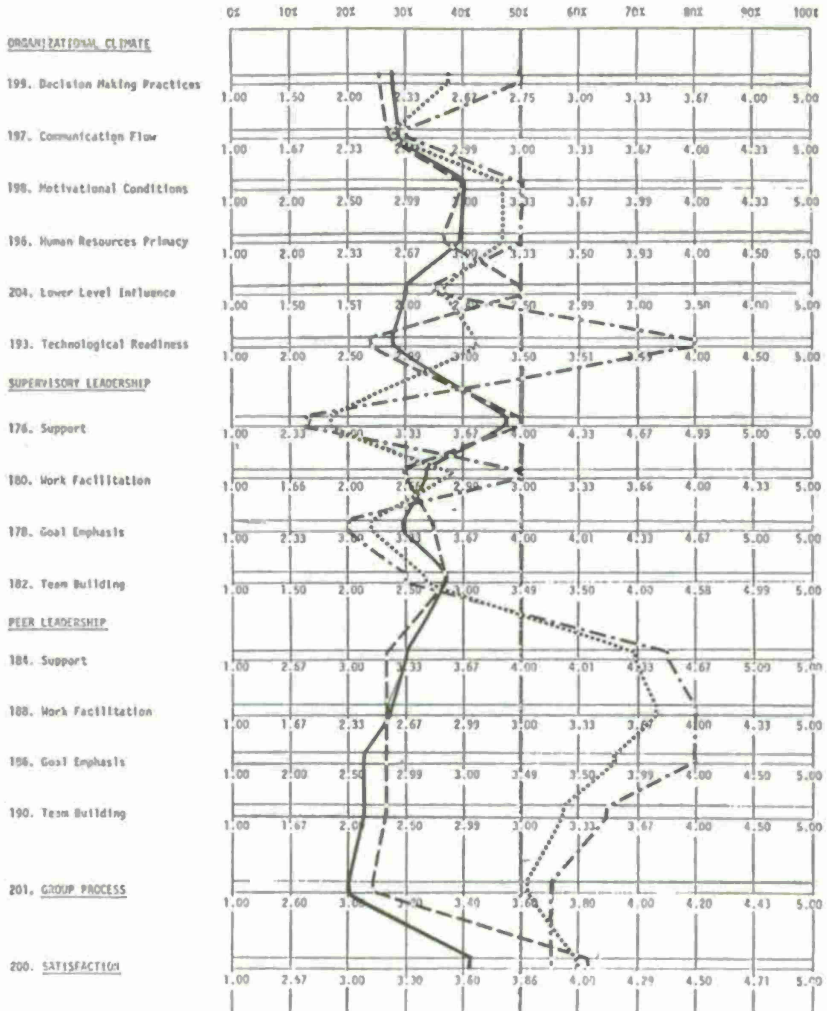
=

N = 9
W1 =

MAJOR INDICES

TREATMENT: Survey Feedback
SITE CLASS: Secondary

Percentile Profile for Combined Groups



CLUSTER:
Profile #12

CHARGE SCORE:

W1 = 1
W2 = -----
W1 = 17
W2 = -----
W1 = -----
W2 = -----

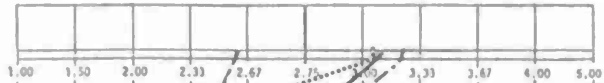
MAJOR INDICES

TREATMENT: Survey Feedback
SITE CLASS: Secondary

Percentile Profile for Combined Groups

ORGANIZATIONAL CLIMATE

199. Decision Making Practices



197. Communication Flow



198. Motivational Conditions



196. Human Resources Privacy



204. Lower Level Influence



193. Technological Readiness



SUPERVISORY LEADERSHIP

176. Support



180. Work Facilitation



178. Goal Emphasis



182. Team Building



PEER LEADERSHIP

184. Support



188. Work Facilitation



186. Goal Emphasis



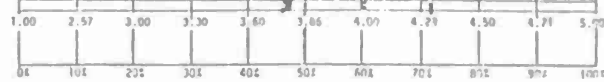
190. Team Building



201. GROUP PROCESS



200. SATISFACTION



CLUSTER: CHANGE SCORE:

Miscellaneous Profile

N = 3

N = 11

W1 =

W2 =

MAJOR INDICES

TREATMENT: Survey Feedback

SITE CLASS: Secondary

Percentile Profile for Combined Groups

ORGANIZATIONAL CLIMATE

199. Decision Making Practices

197. Communication Flow

198. Motivational Conditions

196. Human Resources Primacy

204. Lower Level Influence

193. Technological Readiness

SUPERVISORY LEADERSHIP

176. Support

180. Work Facilitation

178. Goal Emphasis

182. Team Building

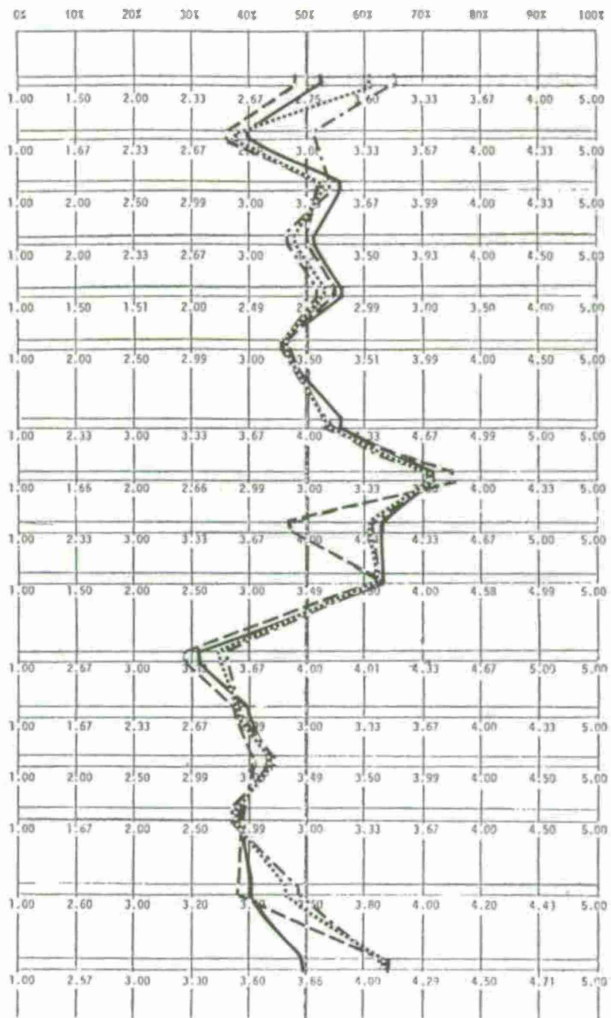
PEER LEADERSHIP

184. Support

188. Work Facilitation

186. Goal Emphasis

190. Team Building

201. GROUP PROCESS200. SATISFACTION

Appendix D

A Methodology for the Studies of the Impact of Organizational Values, Preferences, and Practices on the All-Volunteer Navy*

*This appeared as a technical report in a series upon which this report is based.

SAMPLE

Subjects in this study are 2522 officers and enlisted Navy personnel, drawn from a broad cross section of ships and shore stations and 1855 civilians age 16 and over drawn from a national sample of dwellings from the conterminous United States exclusive of those on military reservations. The sampling procedures used in the selection of these respondents are outlined in detail below.

Navy Sample

Two major objectives of the present study heavily influenced the procedures used in the selection of the Navy sample. One of these was the need to validate the body of empirical findings from research in civilian industrial organizations concerning practices and preferences in behavior within groups and across hierarchical levels. The other was the requisite selection of a sample that was sufficiently representative of the Navy as a whole to enable generalization of the findings to the total organization. Unfortunately, given the practical necessity of limiting the total number of respondents to around 2500, these two objectives called for diametrically opposite sampling procedures. The first demanded the collection of data from intact organizational units and the second called for a random sample of individuals. Consequently, the sampling procedure that was eventually adopted was a compromise between these two extremes.

In order to satisfy the need for intact units, it was decided to collect data from all members of a selected number of organizational subunits or organizational "modules." These modules consisted of a pyramid of work groups three echelons, or tiers, tall. With the exception of the top group, each of the groups was linked to the group above it through its supervisor who was a

subordinate member of the group immediately above in the organizational hierarchy. The supervisor of the top group was thus at the apex of a structure of the three-tier pyramid. Thus data was collected from all members of the three organizational levels immediately below a designated "module head."

In order to satisfy the need for representativeness, it was decided to sample a broad cross-section of ship types and shore stations through stratification of the population on a number of key dimensions. Intact organizational modules would then be randomly selected from the total population of such modules in the organizations of the designated ships and shore stations. Consequently, approximately half of the total sample, was to come from units currently assigned to ships and half from shore stations. Within these two subsamples additional stratification criteria were applied.

Ships. The ship subsample was divided evenly between Atlantic and Pacific Fleets and then within the fleets into ship types proportional to the total number of personnel currently assigned to each ship type within each fleet.

Once the desired number of respondents aboard each ship type (carriers and air groups, cruiser-destroyer, support, submarine, and amphibious) was determined, specific ships were selected on the basis of availability during the data collection period.

Given this group, we then faced the decision as to how many ships of each type to include in the sample. From the standpoint of generalization of the results, the ideal would have been to collect data aboard as many ships as possible as long as we were sampling intact modules and were not exceeding our sample quota. Due to budget and time limitations, however, this was not possible. Consequently it was decided to minimize the total number of ships as long as the number of personnel included in our sample from any given ship did not represent more than 30% of the ships company. Specific ships were

then selected on the basis of "availability" during the data collection period. As might be expected, availability was affected by many factors including the overall data collection schedule, operating schedule of the ships, logistics of moving ISR staff from one ship to another, and at times, even the weather.

In addition, for at least two reasons, an effort was made to maximize in the sample as many ships as possible currently deployed away from their home ports. First, larger proportions of the billets are in fact filled on deployed ships than on ships in port. Second, personnel aboard deployed ships are more likely to have had a period of exposure to the organizational variables being measured. For these reasons, more than half of the ships sampled were deployed at the time of the administration of the survey.

Shore Stations. The shore station subsample was divided proportionately according to the total numbers of personnel assigned to nine shore station commands (Atlantic Fleet, Pacific Fleet, Training, Material, Personnel, Medicine and Surgery, Security Communications, and the CNO Staff) and between four geographical areas (Washington, DC-Norfolk, Pensacola-Memphis, San Diego, and Hawaii). These geographical areas were chosen because the large numbers of personnel and the diversity of functions located there made it possible to meet our selection needs and at the same time to minimize the logistical problems involved with a study of this magnitude.

The total number of shore stations to be included from any single command in the sample was, as in the ship sample, a compromise between a maximal number to increase the generalizability of the results and a minimal number to reduce the cost in time and money of collecting the data. Consequently it was decided to collect data from up to approximately 100 persons at any one site.

Then, if the sample quota had not been reached for that command, data would be collected from an additional 100 persons from another site and so on until the quota had been filled.

Selection of organizational modules. Once the specific ships and shore stations had been designated and the sampling quotas for each had been determined, one or more organizational modules was selected at each site.

To accomplish this, a list of all personnel aboard a ship who met the criteria for module head was obtained from manpower authorization documents, organizational charts, or some like source, and from these documents an appropriate number of module heads was randomly selected. If a particular module did not provide a large enough sample of personnel required to fill the quota for the particular ship, a shore station, another module head was selected by the same method. Questionnaires were subsequently administered to the selected module heads and all personnel in the three tiers immediately below them in the organization.

Navy questionnaire administration procedures. The data for the present study were collected aboard the ships and at the shore stations during a three month period from November 1972 to February 1973 through the use of a paper-and-pencil questionnaire to be described in detail below. This questionnaire required about 50 minutes for the average respondent to complete with some taking as little as 25 minutes and a few as much as two hours. The questionnaires were administered to groups of 5-100 respondents with the assistance and supervision of a member of the Organizational Development Research Program Staff of the Institute for Social Research (ISR) of the University of Michigan.

At the beginning of each questionnaire administration session, the ISR staff member gave a brief presentation that included a description of

1) the ongoing organizational development research program at ISR of which the current study is a part; 2) the nature of the contractual arrangement between ISR and the Navy; 3) the overall plan and objectives of the current study; 4) the procedures through which the respondents had been selected to participate; 5) the uses to which the data were to be put; and 6) instructions on how to fill out the questionnaire instrument.

Many of the points in this presentation were intended to encourage the respondents to answer the questions as frankly as possible. For example, the respondents were assured that their individual questionnaire scores would not at any time be reported to the Navy. In addition, it was pointed out that while the final question asked them to write in their service number, it was more important for them to respond frankly to the other questions than it was to complete the final question and by so doing identify themselves with their responses.

Navy Sample Characteristics

The present sample of 2522 Navy personnel includes 296 officers, 33 warrant officers, and 2074 enlisted men and women* from 20 ships and 18 shore station commands and 1309** assigned to ships. The sample also includes 154 Blacks, and 77 women.

In spite of the rather unusual sampling procedure used in the present study, the overall demographic composition of the current sample is strikingly similar to the Navy as a whole on many dimensions. Some of these are the percentage of Blacks and women (see Table 26) the distribution of officers by age (see Table 27) and rank (see Table 28) and distribution of enlisted personnel by age (see Table 29) and rank (see Table 30).

*The total numbers of officers, warrant officers and enlisted personnel is 2403, the ranks of the remaining 119 respondents are missing data.

**Again, due to missing data, the ship vs. shore station assignment of the remaining personnel is unknown.

Table 26

Percentages of Women and Blacks
in the Present Sample and in the U.S. Navy

	<u>U.S. Navy*</u>	<u>Present Sample</u>
Blacks	.058	.061
Women	.020	.031

*Data on U.S. Navy taken from Navy and Marine Corps Military Personnel Statistics, 31 December 1972.

Table 27

Distribution of Officers by Age
for U.S. Navy and Present Sample

<u>Officers</u>		
<u>Age</u>	<u>Sample</u>	<u>U.S. Navy*</u>
17	--	--
18	--	--
19	--	--
20	--	--
21-22	.031	.021
23-24	.096	.108
25-29	.267	.301
30-34	.236	.191
35-39	.137	.152
40-44	.161	.133
45+	.062	.089

*Data on U.S. Navy taken from Navy and Marine Corps Military Personnel Statistics, 31 December 1972.

Table 28

Distribution of Officers by Rank
for U.S. Navy and Present Sample

<u>Rank</u>	<u>Sample</u>	<u>U.S. Navy*</u>
Admiral	.003	.006
Captain	.050	.079
Commander	.151	.158
Lt. Cdr.	.224	.262
Lieutenant	.245	.248
Lt. Jr. Gr.	.127	.107
Ensign	.093	.051
W04	.003	.001
W03	.033	.014
W02	.042	.051
W01	.018	.020

*Data on U.S. Navy taken from Navy and Marine
Corps Military Personnel Statistics, 31 December
1972.

Table 29

Distribution of Enlisted Men by Age
for U.S. Navy and Present Sample

<u>Enlisted Men</u>		
<u>Age</u>	<u>Sample</u>	<u>U.S. Navy*</u>
17	.007	.021
18	.041	.067
19	.091	.010
20	.116	.114
21-22	.209	.206
23-24	.125	.127
25-29	.137	.133
30-34	.123	.109
35-39	.096	.084
40-44	.026	.022
45+	.015	.017

*Data on U.S. Navy taken from Navy and Marine Corps
Military Personnel Statistics, 31 December 1972.

Table 30

Distribution of Enlisted Men by Rank
for U.S. Navy and Present Sample

<u>Rank</u>	<u>Sample</u>	<u>U.S. Navy*</u>	<u>U.S. Navy Without E-1**</u>
E-1	.016	.089	---
E-2	.099	.101	.111
E-3	.179	.158	.174
E-4	.243	.185	.203
E-5	.148	.159	.175
E-6	.171	.141	.155
E-7	.098	.071	.078
E-8	.028	.017	.019
E-9	.013	.007	.008

*Data on U.S. Navy taken from Navy and Marine Corps Military Personnel Statistics, 31 December 1972.

**Due to the fact that the bulk of the Navy Sample was drawn from operational units, this probably is the best set of comparison statistics.

Civilian Sample

The civilian data collection was conducted during February and March of 1973, as a part of an "Omnibus" survey conducted by the Survey Research Center. (The term "Omnibus" refers to a survey designed to serve the purposes of two or more different investigators, whose projects can be combined into a single survey of a national cross-section of adults.) The data collection included 1327 housing units, sampled according to procedures outlined below. At each housing unit, a trained interviewer from the Survey Research Center conducted an interview with one sampled respondent. The final segment of the interview consisted of questions related to the all-volunteer force. Following this personal interview, respondents were asked to complete the ONR questionnaire (civilian version). In addition, questionnaires were administered to a supplementary sample consisting of all other individuals sixteen or older who were present in the household at the time of the interview. (Response rates are detailed below.) Interviewers waited until all questionnaires in a household were completed; none were left behind.

The Survey Research Center's National Sample of Dwellings.* The Survey Research Center's sample is designed to represent dwellings in conterminous United States exclusive of those on military reservations. The 74 sample points, currently located in 37 states and the District of Columbia, include 12 major metropolitan areas, 32 other Standard Metropolitan Statistical Areas (SMSA's) and 30 counties or county-groups representing the nonmetropolitan or rural portions of the country. In the multistate area probability sampling, first-stage stratification of SMSA's and counties is carried out independently

*The description of the Civilian sample is provided by J. G. Bachman of the Survey Research Center under whose general direction the data was collected by the Center's full staff.

within each of the four major geographical regions, Northeast, North Central, South and West, each of which receives representation in proportion to its population.

Over all regions, the SMSA's and counties are assigned to 74 relatively homogeneous groups or strata. Twelve of these strata contain only one primary area each; these are the two Standard Consolidated Areas and the 10 largest SMSA's outside the Consolidated Areas, which are included with certainty. The remaining 62 strata average a little over two million population and may contain from two to 200 or more primary areas (SMSA's or county groups). From each stratum one primary area is selected with probability proportionate to population. This sampling process leads to approximately equal sample sizes from the 62 primary sample areas.

Instead of independent selections within each of the 62 strata, controlled probability selection is introduced for a more efficient sample. Within each of the four geographic regions the selections of primary areas are linked by a procedure that controls the distribution of sample areas by states and degree of urbanization beyond the controls effected through the formation of the 62 strata. This controlled selection yields a more balanced sample and increases the precision of sample estimates.

As the multistate area sampling continues within the 74 primary units, the area is divided and subdivided, in two to five stages, into successively smaller sampling units. By definition and procedure, each dwelling belongs uniquely to one sampling unit at each stage. Within the primary areas, cities, towns and rural areas are the secondary selections. Blocks or clusters of addresses in cities and towns, and chunks of rural areas are the third-stage units. In a fourth-stage there is a selection of small segments or clusters of housing units where interviews are taken for a study. In a last stage of sampling, one or more respondents is selected from among household members.

Probability selection is enforced at all stages of the sample selection; the interviewer has no freedom of choice among housing units or among household members within a sample dwelling.

Response Rates. The 1327 interviews obtained in the Omnibus survey represent a response rate of 75 percent, which is slightly lower than the usual level of participation in recent household surveys from the Survey Research Center. Approximately 90 percent of those who were interviewed also filled out questionnaires. A few individuals began questionnaires but did not finish them. The principal reasons given for refusing to complete questionnaires included lack of time, lack of interest, and reading difficulties (although in some such instances interviewers read the questionnaires to the respondents). Refusal rates were below average among those under age 25, and above average among those 45 and older.

It turns out to be rather difficult to fix an exact number of questionnaire respondents, because response rates vary from item to item, and because of those few respondents who "dropped out" throughout the course of the questionnaire. We can say that about 1200 of the 1327 interviewed provided data in section "B" of the questionnaire (section "A" applied only to those currently working outside the home, and thus was not well-suited for this sort of tabulation), and about 1160 went all the way through the instrument. Within the supplementary sample--those individuals who were not interviewed but who were asked to complete questionnaires--about 655 provided data in section "B" and 635 of them completed the full instrument. Combining the interview sample and the supplementary sample, we had about 1795 individuals who provided essentially complete questionnaire data, plus another 60 or more who provided at least partial data.

Weighted Versus Unweighted Data. Before analyzing the data from our interview sample and our supplementary sample, we had to decide whether the two samples should be kept separate or combined, and whether to use weights in analyzing the interview sample. The Survey Research Center's sample of dwellings described above is not, strictly speaking, a sampling of individuals; rather, it is a sampling of housing units. In this type of sample, people who live alone will be "overrepresented" (compared with their proportion in the population) while people who live with large families will be "underrepresented" because the chance of any particular person being selected for interview is inversely proportional to the number of eligible household members. These over- and under-representations can be corrected simply by assigning a weighting factor equal to the number of eligible respondents in the housing unit. (Thus, a widow living alone or with young children would be given a weight of "1", a husband living with his wife would be given a weight of "2", and a nineteen-year-old living in a household that included two parents and two grandparents would be given a weight of "5".)

The reader may already have noted that combining our supplementary sample with the interview sample would tend to compensate for the over- and under-representations described above. The more eligible respondents in a household, the more questionnaires we were likely to obtain, thus giving heavier weight to those households with larger numbers of people--the same sort of thing that is accomplished by our weighting procedures. Of course, not all members of each household were present at the times when the interviews were taken, and some who were present declined to participate. For these reasons, addition of the supplementary sample could not provide an exact equivalent to the weighting procedure. Nevertheless, we felt it might provide a reasonably good approximation, and we set about to explore that possibility. The table below

shows age distributions for the interview sample both unweighted and weighted, and for the total set of respondents (interview sample plus supplementary sample). (See Table 31)

As the table demonstrates, there are not large differences in age distributions among the several different sample treatments. What differences do appear seem to suggest that the total set of respondents are more similar to the weighted interview data than to the unweighted interview data, consistent with the argument presented above. Moreover, the total set of respondents distribute across age categories in nearly the same proportions as those shown in 1970 Census figures.

The possibility remains, of course, that while age distributions favor the combination of interview plus supplement samples, the types of responses given in the two groups might not be strictly comparable. An examination of a dozen or more indexes, taken from various portions of the questionnaire, revealed no such systematic differences between the two samples.

We find, then, that using the total sample--interview plus supplement--is not likely to give us findings that differ strongly and systematically from those that would result from using the weighted interview sample alone. In other words, we have not detected any major disadvantages to using the the total sample (unweighted). But are there any positive advantages to such a procedure? There are two. First, it provides a larger total number of cases to work with, thereby reducing the kinds of instability which result when small numbers of respondents appear in a particular category of analysis. Second, it avoids the extra expense (plus an added degree of instability) involved in using weighted data.

Our conclusion is that there are important advantages to treating the civilian interview and supplementary samples as a single, unweighted sample

Table 31
Age Distributions for Different Sample Treatments*

AGE	INTERVIEW SAMPLE		TOTAL (Interview & Supplement)	CENSUS (1970)
	Unweighted	Weighted		
16-18	(2.1%)**	(2.9%)**	6.4%	8.1%
19-20	4.5	5.5	5.5	5.0
21-24	9.3	9.9	9.0	9.1
25-29	12.5	12.1	11.6	9.5
30-34	11.9	11.5	11.0	8.1
35-39	8.3	8.5	7.7	7.9
40-44	8.3	8.5	8.0	8.5
45 +	43.2	41.2	40.8	43.8

* Percentages based on those sixteen and older.

The sample frequencies are based on those who completed the "B" section of the interview (in particular, the "Job Challenge" index). Frequencies differ only very slightly from one variable to another.

**The interview sample was limited to those 18 and older; thus the first category is disproportionately low.

of people age 16 and older throughout the United States. Our explorations of age distributions as well as a number of substantive dimensions suggest no systematic bias will result.

THE MEASUREMENT INSTRUMENT

Two prominent features of the present study served to guide the development of the data collection instrument. One of these was the planned collection of data from both Navy and civilian respondents and the other was the importance of being able to compare and contrast the responses of these two groups. Consequently a basic instrument was developed with questions worded so that they would be appropriate for both groups and then a limited set of unique questions were added for use in each of the data collections. These instruments are described in detail below.

The Navy Questionnaire

The instrument used in the collection of the data for the current research is a machine-scored, paper-and-pencil questionnaire, containing 241 items, mostly of the multiple choice variety, with either 4 or 5-point Likert-type response scales. The questionnaire is divided into four sections on the basis of question content. Part A includes questions about the respondents' present job and about the conditions they experience as members of the ship or shore station to which they are currently assigned. Part B contains a series of questions, many of which have parallels in Part A that deal with the type of job and organizational conditions that respondents would prefer. Part C explores the respondents' attitudes toward military service--attitudes about the role of military service in the nation, about issues linked to the development of an all-volunteer force, and about war in general

and the Vietnam War in particular. The final section, Part D, requests background information from the respondents, including both demographic data (age, education, etc.) and information about their decision to join the Navy. The entire questionnaire instrument appears as Appendix A below.

Most of the questions included in the questionnaire are the product of two major research programs at ISR, the Organizational Development Research Program of the Center for Research on the Utilization of Scientific Knowledge (CRUSK) and the Youth in Transition Project of the Survey Research Center (SRC). (A complete list of the questions and the sources from which they are derived appears as Appendix C below.)

The first of these two research programs has resulted in the development of a questionnaire instrument for assessing and diagnosing functional properties associated with organizational effectiveness, the Survey of Organizations (S00) (Taylor & Bowers, 1970, 1972).

Twenty four multi-item indices from the S00 are used in the current study. Included in these are measures of a wide variety of organizationally relevant topics including Supervisory and Peer Leadership, Organizational Climate, Group Processes and Satisfaction.

Organizational Leadership. In all 16 of the S00 indices are measures of organizational leadership behavior. Four of these have to do with the actual and four with the preferred behavior of supervisors. Similarly four refer to the actual and four refer to the preferred behavior of members of subordinate peer groups. Each of these actual and ideal leadership domains has four facets: Support, Goal Emphasis, Work Facilitation, and Interaction Facilitation (Bowers & Seashore, 1966). A description of these Supervisory and Peer Leadership indices along with a listing of the numbers of the questions from which they are derived is as follows:

Supervisory Support--the behavior of a supervisor toward a subordinate which serves to increase the subordinate's feeling of personal worth. (Actual - A28, A30, A32; Ideal - A29, A31, A33)

Supervisory Goal Emphasis--behavior which generates enthusiasm (not pressure) for achieving excellent performance levels. (Actual - A34, A36; Ideal - A35, A37)

Supervisory Work Facilitation--behavior on the part of supervisors which removes obstacles which hinder successful task completion or, positively, which provides the means necessary for successful performance. (Actual - A38, A40, A41; Ideal - A39, A41, A43)

Supervisory Interaction Facilitation--team building, i.e., behavior which encourages subordinates to develop mutually satisfying interpersonal relationships. (Actual- A44, A46; Ideal - A45, A47)

Peer Support--behavior of subordinates, directed toward one another, which enhances each member's feeling of personal worth. (Actual - A55, A57, A59; Ideal - A56, A58, A60)

Peer Goal Emphasis--behavior on the part of subordinates which stimulates enthusiasm for doing a good job. (Actual - A61, A63; Ideal - A62, A64)

Peer Work Facilitation--behavior which removes roadblocks to doing a good job. (Actual - A65, A67, A69; Ideal - A66, A68, A70)

Peer Interaction Facilitation--behavior of subordinates toward one another which encourages the development of close, cooperative working relationships. (Actual - A71, A73, A75; Ideal A72, A74, A76)

Organizational Climate. Another group of indices from the SOO used in the current study are concerned with the measurement of Organizational Climate which refers to the relatively enduring qualities of an organization's internal environment distinguishing it from other organizations; (a) which result from the behavior and policies of members of the organization, especially top management; (b) which are perceived by members of the organization; (c) which serve as a basis for interpreting the situation; and (d) act as a source of pressure for directing activity (Prichard and Karasick, 1973). The dimensions of organizational climate tapped by the SOO and included here are Human Resources Primacy, Communication Flow, Motivational Conditions, Lower Level Influence, and Decision Making Practices (Taylor & Bowers, 1972). A description of these Organizational Climate indices and the numbers of the questions from which they derived appears below.

Human Resources Primacy--the extent to which the climate, as reflected in the organization's practices, is one which asserts that people are among the organization's most important assets. (A2, A3, A4)

Communication Flow--the extent to which information flows freely in all directions (upward, downward, and laterally) through the organization (A5, A6, A7)

Motivational Conditions--The extent to which conditions (people, policies, and procedures) in the organization encourage or discourage effective work (A8, A16, A18)

Lower Level Influence--The extent to which non-supervisory personnel and first line supervisors can influence the course of events in their work areas (A20, A21)

Decision Making Practices--the manner in which decisions are made in the system: whether they are made effectively, made at the right level, and based upon all of the available information. (A22, A23, A24, A25)

Additional S00 Measures. Three additional indices from the S00 are included in the present study: Group Process, Satisfaction, and Supervisory Needs.

Group Process--the processes and functioning of the work group as a group, e.g., adaptability, coordinations, and the like. (A75, A76, A77, A78, A79, A80, A81)

Satisfaction--a measure of general satisfaction made up of items tapping satisfaction with pay, with the supervisor, with co-workers (peers), with the organization, with advancement opportunities, and with the job itself. (A9, A10, A11, A12, A13, A14, A15)

Supervisory Needs--measures of subordinates' perceptions of the areas in which their supervisor needs to improve. (A49, A50, A51, A52, A54)

Goal Integration. Goal integration is defined as the extent to which individuals can easily attain both personal goals and organizational objectives through the activities they engage in as organization members (Barrett, 1970). In the current study Goal Integration is measured by an algebraic combination of two questionnaire items:

To what extent is the organization you work for effective in getting you to meet its needs and contribute to its effectiveness?

To what extent does the organization you work for do a good job of meeting your needs as an individual?

The response alternatives to these two items are five point extent scales ranging from one for "to a very little extent" to five for "to a very great extent." The formula for constructing the index from these two items is:

$$G.I. = \left(\frac{L}{H} \right) \left(\frac{L + H}{2} \right)$$

Where G.I. is goal integration,
L is the score for the item with the lower score, and
H is the score for the item with the higher score.

In effect, the goal integration index is a function of both the consistency of the responses to the items and the mean of the two items. Table 32 presents the possible values for this index. The consistency factor serves to maximize scores for those individuals in situations where the individual and the organization take equal measures to meet each other's needs or objectives. Given the mean of any two items, the score is highest when the response to both items is the same.

Technological sophistication. The current research also examines the nature of the relationship between the characteristics of jobs and the characteristics of the social-psychological environments within which they occur. This work builds on the studies by Taylor (1970, 1971). Three of the items he used to measure the technological sophistication of respondents' jobs are adapted for the present research. These items, which measure the sophistication of the three job dimensions of input, throughput, and feedback are listed below along with their response alternatives:

Input

Are the objects of materials you work on in your job the same or different?

1. Each case is almost totally unique.
2. Most cases are somewhat unique.
3. Some of the cases are similar and some are unique.
4. There is only slight variation from case to case.
5. There is no variation from case to case.

Table 32

THE DISTRIBUTION OF POSSIBLE SCORES
WHICH THE GOAL INTEGRATION INDEX CAN HAVE

To what extent is the organization you work for effective
in getting you to meet it's needs and contribute to its
effectiveness?

	To a very little extent	To a lit- tle extent	To some exteht	To a great extent	To a very great extent
	1	2	3	4	5
1	1.00	.75	.66	.63	.60
2	.75	2.00	1.65	1.50	1.40
3	.66	1.65	3.00	2.63	2.40
4	.63	1.50	2.63	4.00	3.60
5	.60	1.40	2.40	3.60	5.00

To what extent does the organization
you work for do a good job meeting
your needs as an individual?

Throughput

Nearly all jobs involve using some kind of tool or machine. In your job, what is the most complex type of tool or machine you use every day?

1. Simple devices (pencils, letter opener, wiping cloth).
2. Hand tools (manual typewriter, wrenches, wheelbarrow).
3. Small power-driven machines (electric drill, electric typewriter, 2-cycle engine).
4. Power-driven equipment (car or truck, airplane, electronic equipment, copy machine, hoist).
5. Automated equipment (largely computer-directed).

Feedback

In your job, how much time usually passes between your performance of an average unit of work and the time you find out how well you did?

1. Longer than a day.
2. Less than a day.
3. Less than an hour.
4. A few minutes.
5. A few seconds or less.

High scores on any of the items indicate the presence of more sophisticated input, throughput or feedback respectively. Individuals whose work entails processing standardized materials are said to have sophisticated input; those who use highly automated equipment are said to have sophisticated throughput; and those who report having rapid feedback time are said to have sophisticated feedback.

In the current analysis respondents are grouped into technically sophisticated or unsophisticated work environments on the basis of the similarity of responses to all three items. Respondents in technically unsophisticated systems are defined as those who respond with one or two on all items. Those who respond with four or five on all items are defined as working in technically sophisticated systems. Respondents who use the middle category or who do not indicate high or low responses on all items are eliminated from the analysis.

Organizational Values and Beliefs. Another facet of the research conducted by the Organizational Development Research program of CRUSK is concerned with the measurement and study of the impact the values held by organization members on the quality of organizational functioning. Two measures of organizationally relevant values that have been identified in earlier ODRP work (Michaelson, 1973) are included in the current study. These measures are called Theory X and Human Factors Awareness.

Theory X--The extent to which organization members agree with the philosophies consistent with the Theory X assumptions proposed by McGregor (1961) such as "effective motivation is best achieved through rewards and penalties," "people prefer to be directed rather than making their own decisions," and "supervisors must keep a close check on subordinates to see if they are doing a good job. (B27, B28, B29, B30, B31, B32)

Human Factors Awareness--The extent to which organization members feel that effective organizational functioning is dependent on mutual confidence and good interpersonal relationships and the opportunity for expression of individual feelings and ideas. (B22, B23, B24, B25, B26)

The second major research program at ISR from which a number of measures are drawn for use in the present study is the Youth in Transition project of the Survey Research Center. The primary focus of this program has been a longitudinal study of a nationwide panel of more than two thousand young men to investigate their patterns of early occupational interest and involvement, and their attitudes and behavior toward the continuation of formal educational pursuits, military service, and their attitudes on a variety of national issues (Bachman, Green, and Wirtanen, 1971; Bachman and Van Duinen, 1971).

Many of the analyses using X the measures derived from the Youth in Transition project in their application to the current data are reported elsewhere (Bachman, 1973). Two of their multi-item indices are, however, used rather extensively in the current research. These are measures of the degree of challenge actually experienced in one's job and the degree of challenge preferred in one's job.

These measures, originally developed by Gurin (1970) have to do with the characteristics of the respondents' present job (Actual) and preferred job (Ideal).

Job Challenge--A measure of the extent to which the job requires hard work, acceptance of responsibility, and acquisition of new skills and offers a chance to get ahead (Actual-A85, A86(R)¹, A88, A89(R), A93, A95(R); Ideal - B3, B4(R), B6, B7(R), B11, B13(R).

Additional measures. A number of additional measures are used in the current research that are specifically designed for that purpose. These include measures of Promotion Rate, the presence or absence of Critical Skills, Draft Motivation, and a variety of demographic measures including an index of socioeconomic level.

Promotion rate. In the current study Promotion Rate is a measure of the rapidity of advancement through the enlisted pay rates from E1 through E9. Promotion Rate for each individual is determined by dividing the median number of years normally required to achieve his particular pay rate* by the number of years he has been on active duty, rounded to the nearest whole year, thus:

$$PR = \frac{\text{Median years normally required to attain pay grade} \\ \text{(Based on total Navy data)}^2}{\text{Years of active duty}}$$

¹(R) indicates that the item score is reversed in the computation of index scores.

²Data on the median numbers of years of active duty to attain a particular rate was taken from the document: Navy Military Manpower Rate Cost Data for Life Cycle Planning Purposes. United States Department of the Navy, Personnel Research Division, April, 1972.

The frequencies of cases in a promotion rate by pay rate matrix are presented in Appendix D. A promotion rate of one indicates that an individual is advancing at a rate comparable to those of most Navy men. To the extent that the score is greater than one, the individual has a promotion rate higher than most others at his particular rate; to the extent that it is less than one, the individual is advancing at a rate slower than others at his pay grade. The index is designed so that across pay rates, individuals who progress at a particular rate will have the same score.

In its present application, this Promotion Rate index qualifying statements are in order. First, since no one has a rate lower than E-1, E-1's are excluded from analyses which use this index. Second, in the current sample, all E-2's have promotion rates lower than one. This is due to the fact that the median period of time to attain a rate of E-2 is 0.8 years and respondents were asked to round their number of years of active duty to the nearest whole year. No respondent reported zero years of active duty. Because of this, E-2's have also been eliminated from analyses where promotion rate is used as a variable. A third issue concerns the amount of time a respondent has spent at a certain pay rate. For example, an enlisted man may have been at one pay rate for a given period of time and he may soon be promoted to the next rate. His promotion rate, therefore, is likely to reflect one for a person who is advancing slowly. It is assumed that most of the scaled promotion rates for respondents will be near the actual promotion rate, and that in cases where substantial bias enters into the measure, there will be other cases where the bias is in the opposite direction. Thus, the net effect will be for disparate scores which are due to measurement error to cancel each other out.

A final issue concerns a measure of promotion rate for officers. In the course of administering the survey, Institute for Social Research staff learned that many officers receive their commission after moving up through

the enlisted and warrant officer ranks. The questionnaire itself, however, did not include a question about previous service in the enlisted ranks. Because of this, we were unable to measure promotion rates for officers or warrant officers with any degree of confidence. For example, a man may have been an enlisted man for 15 years and then have received a commission at a lower officer level. By definition of promotion rate, his calculated rate would be extremely low compared to a man who was commissioned upon entering the Navy. Future analyses will endeavor to determine whether we can ferret out from the officers those men who rose through the enlisted ranks and then took a commission. Analyses which use the promotion rate index, then, include only those personnel at pay rates of E-3 through E-9.

For analyses requiring that promotion rate be categorized, respondents were broken into subgroups of low, medium, and high promotion rates. The sizes of these subgroups in the present analysis vary slightly due to the fact that the thirty-third percentile often fell within one category rather than between them. The decision as to whether one promotion rate which overlapped the thirty-third or sixty-sixth percentile point should be in the higher or lower category was based on which resultant bracketing would bring the group sizes closest to one third of the total sample. For example, if in deciding the upper limit for the lowest third, one category ended at the 30th percentile, and the next category contained 9 percent of the cases, the lower score was chosen as the break point since it was only 3 percent away from a true 1/3 division, whereas adding the next category would have provided a group 6 percent away from the mark. The frequencies and percentages for the three categories of promotion rate are presented in Table 33.

Table 33

Frequencies and Percentages of E-3's through E-9's
in Low, Medium and High Groups of Promotion Rate

	N	Percentage
Low	564	33.7
Medium	533	31.9
High	572	34.4

Critical Skills. In the current study, Critical Skills is a measure of the estimated "value" of individuals to the Navy on the assumption that highly trained and skilled personnel require greater training costs and perform more important tasks than do less skilled personnel. The presence or absence of a critical skill was determined by comparing the relative costs of teaching an enlisted man the skills required to attain the various ratings.* Specifically, respondents to the Navy survey were asked what their rating was, and ratings were recoded to reflect the cost of attaining this initial rating.

One potential problem was encountered, however, with respect to this Critical Skills measure. Respondents were not asked for their Naval Enlisted Classification (NEC) which is an indication of advanced skills within a

* These Data were taken from: Annual Training Time and Cost for Navy Ratings and NECS, United States Department of the Navy, Bureau of Naval Personnel, November, 1972.

specific rating. Consequently, in order to test the validity of this index as a measure of value to the Navy, pearson product-moment correlation coefficients were run to determine whether the cost for initial rating is related to the mean and median cost of attaining an NEC. The results of this analysis, shown in Table 34, establish the existence of high relationships among these measures, thus supporting the use of Critical Skills as a measure value. Appendix E shows the distribution of ratings among respondents in the current sample along with the cost of training for that rating and the rank of the rating.

Table 34
The Correlation Coefficients Between Costs of
Initial Rating and Subsequent NEC Training Costs

	<u>Median NEC</u>	<u>Average NEC</u>
Rating	.80	.78
Median NEC		.97

As with promotion rate, several analyses required the categorization of this variable into low, middle, and high groups. The technique for bracketing these data was the same as for promotions rate, and Table 35 shows the distribution of ratings in these three categories.

Table 35

The Frequencies and Percentages of
E-2's through E-9's with Low, Medium, and High Critical Skills

	Ranks Within Category	N	Percentage
Low	1-16	594	33.6
Medium	17-34	605	34.4
High	35-38	565	32.0

Draft motivation. Two questions from the questionnaire are designed to tap one's motivation to enlist in the Navy. Based on a preliminary analysis of the data, it was decided that the information from one of these measures, the draft lottery number, should not be used for further analysis.*

Problems are also encountered in using the second draft motivation question, "Would you have been drafted had you not enlisted?" to determine an individual's motivation to join the Navy. Respondents who answered negatively on this question can validly be labeled true volunteers since there was no

*Respondents were asked whether they had been assigned a lottery number, and if they had, they were to write it on the survey. Lottery numbers have been assigned to all male United States citizens who were born during or after 1945 for purposes of conscription into the United States armed forces. Thus, all male respondents born during or after that year should have answered the first question affirmatively. The data show that of the 65.4 percent of the total sample who were born in or after that year, only 36% of them answered affirmatively. This is an indication of some ambiguity about the meaning of the question or of a lack of information about the lottery system on the part of many respondents. Notwithstanding the fact that some Navy personnel may not have been interested in their lottery number because they enlisted before the number was assigned, the percentage of respondents who answered this question seems incredibly low. For this reason, it was decided not to use lottery numbers in this analysis.

threat of being drafted into another branch of the service; thus, they were not draft motivated. A great deal of difficulty is encountered, however, in the determination of the motivational conditions of the respondents who answered this question affirmatively. Some of these individuals may have joined the Navy because they preferred it to other branches of the service into which they would have been drafted. Others, however, although they would have been drafted had they not enlisted, nevertheless might have enlisted. Still others, while they too would have been drafted, may have joined the Navy even though they had no clear preference for it. Consequently, in an attempt to reduce some of these ambiguities, respondents who answered this question affirmatively were further divided on the basis of their response to an additional question:

Wanted to fulfill my military obligation at a time and
in the service of my choice rather than being drafted.

- (1) Extremely important
- (2) Important
- (3) Somewhat important
- (4) Not very important
- (5) Of no importance

The response alternatives to this question consisted of importance ratings. Respondents who said that it was very important or somewhat important for them to be in the service of their choice were grouped together. Notice that this group does not discriminate among totally draft motivated individuals and those who otherwise would have been volunteers. What these people have in common is that they would have been drafted into another branch of the service but made a clear choice in favor of the Navy. Hereafter, these individuals will be referred to as "choice motivated," and it can be assumed that under all-volunteer force conditions some of them would enlist and that others would not. The final category consists of those individuals who would have been drafted but for whom it was not important to be in the service of their choice rather than being drafted. This group is labeled "draft avoidant."

Table 36 presents the frequencies and percentages of respondents in each draft motivation category.

Table 36

FREQUENCIES AND PERCENTAGES OF RESPONDENTS
IN EACH DRAFT MOTIVATION CATEGORY

	N	%
Draft Avoidant	359	21.3
Choice Motivated	747	44.4
True Volunteers	581	34.2

Demographic measures. In the current study, the only one multi-item demographic measure is an index of socio-economic well being. This measure, called Socio-Economic Level, is composed of two items measuring the educational level of respondents' parents. These items are:

How much schooling has your father had? (D5)

How much schooling has your mother had? (D6)

The response alternatives for both questions are:

- (1) Completed grade school or less
- (2) Some high school
- (3) Completed high school
- (4) Some college
- (5) Completed college
- (6) Some graduate school

The remaining items in the demographic section have to do with the respondent himself on such dimensions as his personal background, his reasons for

joining the Navy, and his current status relative to the Navy (rank, tenure, rating, etc.). In addition, one of the questions in this section requires each of the respondents to write in a precoded number that identifies his immediate supervisor (and as a result, his work group which is defined as all those who report to the same supervisor you do), the module, and the ship or shore station to which he is currently assigned.

The Civilian Questionnaire

The Civilian questionnaire is identical to the Navy questionnaire in Parts A, B, and C. In addition, the descriptions of the multiple-item indices presented above in connection with the Navy questionnaire hold true for the Civilian instrument as well. Part D, the demographic items, is in many respects necessarily unique. Appendix B contains Part D of the Civilian questionnaire. For example the civilian instrument contains questions about the respondents past military experience and present civilian job while just the reverse was true of the Navy questionnaire.

Index Scoring and Reliability

Scale scores. Scores on each of the multiple-item indices used in the current study, unless otherwise specified are the sum of the item responses divided by the number of items in the index.

Thus if a respondent marked alternative (2) on one item of a two item index and alternative (3) on the other, his score would be 2.5 ($2+3=5$, divided by 2 = 2.5).

Index reliabilities. Internal consistency-reliability alpha coefficients have been computed, where appropriate,* using both Navy and Civilian data

*This procedure produces meaningful results for scales that are combinations of items measuring the same theoretical construct. Consequently alpha coefficients were not computed for the measures of Goal Integration, Technological Sophistication, Promotion Rate, Critical Skills, and Draft Motivation

for all of the multi-item indices used in the present study. These coefficients are presented in Table 37. In addition, Table 37 contains alpha coefficients reported by Bowers and Taylor (1972) for the measures in the present study that were developed on the basis of their earlier work with data from civilian organizations.

One caution is in order in making comparisons between the coefficients generated from the Navy and Civilian data and those from the Bowers and Taylor (1970) work; while the coefficients in the current study are computed from individual data, those reported by Bowers and Taylor were computed from grouped or aggregated data. Since it is expected that coefficients calculated from aggregated data will be higher than those calculated at the individual level (Nunnally, 1967), the coefficients reported by Bowers and Taylor (1972) should be somewhat higher than those calculated on the basis of the current data.

Table 37

Index Reliabilities for Previous Research
and Current Navy and Civilian Samples

Index Title	S.O.O. α	Navy α	Civilian α
<u>Actual</u>			
Supervisory Support	.94	.89	.88
Supervisory Goal Emphasis	.85	.80	.78
Supervisory Work Facilitation	.88	.85	.84
Supervisory Interaction Facilitation	.89	.82	.81
<u>Ideal</u>			
Supervisory Support		.82	.80
Supervisory Goal Emphasis		.79	.81
Supervisory Work Facilitation		.77	.78
Supervisory Interaction Facilitation		.79	.75
<u>Actual</u>			
Peer Support	.87	.82	.86
Peer Goal Emphasis	.70	.75	.75
Peer Work Facilitation	.89	.83	.85
Peer Interaction Facilitation	.90	.87	.89
<u>Ideal</u>			
Peer Support		.77	.83
Peer Goal Emphasis		.75	.73
Peer Work Facilitation		.84	.83
Peer Interaction Facilitation		.69	.72
<u>Climate</u>			
Human Resources Primacy	.80	.76	.82
Communication Flow	.78	.62	.71
Motivational Conditions	.80	.64	.57
Decision Making Practices	.79	.79	.80
Lower Level Influence	.70	.61	.68
Satisfaction	.87	.78	.87
Group Process	.96	.87	.90
Supervisory Needs		.61	.90
Human Factors Awareness		.78	.82
Theory X		.85	.85
Job Challenge - Actual		.73	.65
Job Challenge - Ideal		.60	.63

Appendix E

The Navy Questionnaire

A current national issue involves putting the military services on an all-volunteer (no draft) basis. Should this occur, it would mean that the armed forces must provide work settings and conditions comparable to those expected and experienced in civilian life.

This questionnaire is part of a study sponsored by the Navy in which we are attempting to learn more about the ways that the armed forces may have to change to fit in with the views and values of Americans.

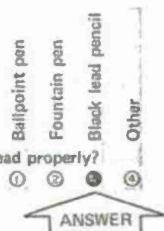
This questionnaire includes items about your present job in the Navy. (The same questions are also being asked of civilian respondents, so you will notice that instead of saying "ship or duty station" the questions will often say "this organization.") Other questions ask your attitudes and opinions in a number of areas. (These questions have also been worded in a way that makes them suitable for civilians as well as Navy personnel.)

If this study is to be helpful, it is important that you answer each question as thoughtfully and frankly as possible. This is not a test; there are no right or wrong answers.

The completed questionnaires are processed by automated equipment which summarize the answers in statistical form. Your own individual answers will remain strictly confidential, since they will be combined with those of many other persons in reports which are prepared.

1. Most questions can be answered by filling in one of the answer spaces. If you do not find the exact answer that fits your case, use the one that is closest to it.
2. Please answer all questions in order.
3. Remember, the value of the study depends upon your being straightforward in answering this questionnaire. You will not be identified with your answers.
4. This questionnaire is designed for automatic scanning of your responses. Questions are answered by marking the appropriate answer spaces (circles) as illustrated in this example:

Q. Which is the only marking instrument that will be read properly?



5. Please use a soft pencil (No. 2 is ideal), and observe carefully these important requirements:
- Make heavy black marks that fill the circles.
 - Erase cleanly any answer you wish to change.
 - Make no stray markings of any kind.
6. One of the major purposes of this research is to compare and contrast work experiences and organizational practices in the military services with those in civilian life. In the next section, questions about "the organization" refer to your present duty station, the questions about "your supervisor" refer to the person to whom you report directly, and the questions about "your work group" refer to all those persons who report to the same supervisor.

for office use only

PART 2

BEFORE BEGINNING BE SURE YOU HAVE READ THE INSTRUCTIONS ON THE OPPOSITE PAGE.

These first questions are about your present job and the organization in which you presently work.

NOTE: Read each answer category carefully. Then enter a number in the following circles by blackening in the numbered circle under the answer you want to give.

To a very high extent
in a little extent
To some extent
To a great extent
To a very great extent

1. To what extent is this organization generally quick to use improved work methods? (1) (2) (3) (4) (5)
2. To what extent does this organization have a real interest in the welfare and happiness of those who work here? (1) (2) (3) (4) (5)
3. How much does this organization try to improve working conditions? (1) (2) (3) (4) (5)
4. To what extent are work activities sensibly organized in this organization? (1) (2) (3) (4) (5)
5. How adequate for your needs is the amount of information you get about what is going on in other departments or shifts? (1) (2) (3) (4) (5)
6. How receptive are those above you to your ideas and suggestions? (1) (2) (3) (4) (5)
7. To what extent are you told what you need to know to do your job in the best possible way? (1) (2) (3) (4) (5)

8. How are differences and disagreements between shifts or departments handled in this organization?

- (1) Disagreements are almost always defined, or explained, or suppressed.
- (2) Disagreements are almost always defined, or explained, or suppressed.
- (3) Sometimes disagreements are almost always defined, or explained, or suppressed.
- (4) Disagreements are almost always defined, or explained, or suppressed.
- (5) Disagreements are almost always defined, or explained, or suppressed.

Very dissatisfied
Somewhat dissatisfied
Neither satisfied nor dissatisfied
Slightly satisfied
Very satisfied

9. All in all, how satisfied are you with the persons in your work group? (1) (2) (3) (4) (5)
10. All in all, how satisfied are you with your supervisor? (1) (2) (3) (4) (5)
11. All in all, how satisfied are you with your work? (1) (2) (3) (4) (5)
12. All in all, how satisfied are you with this organization, compared to most others? (1) (2) (3) (4) (5)
13. Considering your skills and the effort you put into the work, how satisfied are you with your pay? (1) (2) (3) (4) (5)
14. How satisfied do you feel with the work you have made in this organization up to now? (1) (2) (3) (4) (5)
15. How satisfied do you feel about the future of this organization? (1) (2) (3) (4) (5)

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16. Why do people work hard in this organization?

- ① Just to keep their jobs and avoid being chewed out
- ② To keep their jobs and to make money
- ③ To keep their jobs, make money, and to seek promotions
- ④ To keep their jobs, make money, seek promotions, and for the satisfaction of a job well done
- ⑤ To keep their jobs, make money, seek promotions, do a satisfying job, and because other people in their work group expect it

To a very little extent
To a little extent
To some extent
To a great extent
To a very great extent

17. To what extent do you enjoy performing the actual day-to-day activities that make up your job?

① ② ③ ④ ⑤

18. To what extent are there things about working here (people, policies, or conditions) that encourage you to work hard?

① ② ③ ④ ⑤

Little or no influence
Some
Quite a bit
A great deal
To a very great extent

19. In general, how much say or influence do you have on what goes on in your work group?

① ② ③ ④ ⑤

Little or no influence
Some
Quite a bit
A great deal
To a very great extent

IN GENERAL, HOW MUCH SAY OR INFLUENCE DOES EACH OF THE FOLLOWING GROUPS OF PEOPLE HAVE ON WHAT GOES ON IN YOUR DEPARTMENT?

20. Lowest-level supervisors (supervisors of non-supervisory personnel) ① ② ③ ④ ⑤

21. Non-supervisory personnel ① ② ③ ④ ⑤

22. How are objectives set in this organization?

- ① Objectives are announced with no opportunity to raise questions or give comments
- ② Objectives are announced and explained, and an opportunity is then given to ask questions
- ③ Objectives are drawn up, but are discussed with subordinates and sometimes modified before being issued
- ④ Specific alternative objectives are drawn up by supervisors, and subordinates are asked to discuss them and indicate the one they think is best
- ⑤ Problems are presented to those persons who are involved, and the objectives felt to be best are then set by the subordinates and the supervisor jointly, by group participation and discussion

To a very little extent
To a little extent
To some extent
To a great extent
To a very great extent

23. In this organization to what extent are decisions made at those levels where the most adequate and accurate information is available? ① ② ③ ④ ⑤

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To a very little extent
To a little extent
To some extent
To a great extent
To a very great extent

24. When decisions are being made, to what extent are the persons affected asked for their ideas?
☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

25. People at all levels of an organization usually have know-how that could be of use to decision-makers. To what extent is information widely shared in this organization so that those who make decisions have access to all available know-how?
☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

NOTE: IN QUESTIONS 26 THROUGH 54, SUPERVISOR MEANS THE PERSON TO WHOM YOU REPORT DIRECTLY.

26. When your supervisor has problems related to the work, to what extent does he or she make meetings to talk things over with his subordinates and get their ideas?
☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

27. To what extent does your supervisor handle well the technical side of his job—for example, general expertise, knowledge of job, technical skills needed in his profession or trade?
☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

FOR THE FOLLOWING SET OF ITEMS, PLEASE READ EACH QUESTION AND THEN ANSWER HOW IT IS NOW, AND NOW YOU'D LIKE IT TO BE.

How friendly and easy to approach is your supervisor?

28. This is how it is now: ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

29. This is how I'd like it to be: ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

When you talk with your supervisor, to what extent does he pay attention to what you say?

30. This is how it is now: ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

31. This is how I'd like it to be: ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

To a very little extent
To a little extent
To some extent
To a great extent
To a very great extent

To what extent is your supervisor willing to listen to your problems?

32. This is how it is now: ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

33. This is how I'd like it to be: ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

How much does your supervisor encourage people to give their best effort?

34. This is how it is now: ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

35. This is how I'd like it to be: ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

To what extent does your supervisor maintain high standards of performance?

36. This is how it is now: ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

37. This is how I'd like it to be: ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

To what extent does your supervisor show you how to improve your performance?

38. This is how it is now: ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

39. This is how I'd like it to be: ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

To what extent does your supervisor provide you the help you need so that you can schedule work ahead of time?

40. This is how it is now: ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

41. This is how I'd like it to be: ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

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To a very little extent
To a little extent
To a great extent
To a very great extent

To what extent does your supervisor offer new ideas for solving job-related problems?

42. This is how it is now: ① ② ③ ④ ⑤

43. This is how I'd like it to be: ① ② ③ ④ ⑤

To what extent does your supervisor encourage the persons who work for him to work as a team?

44. This is how it is now: ① ② ③ ④ ⑤

45. This is how I'd like it to be: ① ② ③ ④ ⑤

To what extent does your supervisor encourage people who work for him to exchange opinions and ideas?

46. This is how it is now: ① ② ③ ④ ⑤

47. This is how I'd like it to be: ① ② ③ ④ ⑤

HOW MUCH DOES YOUR IMMEDIATE SUPERVISOR RISE EACH OF THE FOLLOWING TO BE A BETTER MANAGER?

48. More information about how his people see and feel about things: ① ② ③ ④ ⑤

49. More information about principles of good management: ① ② ③ ④ ⑤

50. A new kind of work he personally feels are important: ① ② ③ ④ ⑤

51. Greater freedom to do things he thinks are important: ① ② ③ ④ ⑤

To a very little extent
To a little extent
To a great extent
To a very great extent

52. Practice in making use of information he already has about how his people feel, how to be a good manager, etc. ① ② ③ ④ ⑤

53. A situation that lets him do what he already knows how to do and wants to do: ① ② ③ ④ ⑤

54. More interest in and concern for the people who work for him: ① ② ③ ④ ⑤

IN THE QUESTIONS BELOW, WORK GROUP MEANS ALL THOSE PERSONS WHO REPORT TO THE SAME SUPERVISOR.

How friendly and easy to approach are the persons in your work group?

55. This is how it is now: ① ② ③ ④ ⑤

56. This is how I'd like it to be: ① ② ③ ④ ⑤

When you talk with persons in your work group, to what extent do they pay attention to what you're saying?

57. This is how it is now: ① ② ③ ④ ⑤

58. This is how I'd like it to be: ① ② ③ ④ ⑤

To what extent are persons in your work group willing to listen to your problems?

59. This is how it is now: ① ② ③ ④ ⑤

60. This is how I'd like it to be: ① ② ③ ④ ⑤

How much do persons in your work group encourage each other to give their best effort?

61. This is how it is now: ① ② ③ ④ ⑤

62. This is how I'd like it to be: ① ② ③ ④ ⑤

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To a very little extent
To a little extent
To some extent
To a great extent
To a very great extent

To what extent do persons in your work group maintain high standards of performance?

63. This is how it is now: (1) (2) (3) (4) (5)

64. This is how I'd like it to be: (1) (2) (3) (4) (5)

To what extent do persons in your work group help you find ways to do a better job?

65. This is how it is now: (1) (2) (3) (4) (5)

66. This is how I'd like it to be: (1) (2) (3) (4) (5)

To what extent do persons in your work group provide the help you need so that you can plan, organize and schedule work ahead of time?

67. This is how it is now: (1) (2) (3) (4) (5)

68. This is how I'd like it to be: (1) (2) (3) (4) (5)

To what extent do persons in your work group offer each other new ideas for solving job-related problems?

69. This is how it is now: (1) (2) (3) (4) (5)

70. This is how I'd like it to be: (1) (2) (3) (4) (5)

How much do persons in your work group encourage each other to work as a team?

71. This is how it is now: (1) (2) (3) (4) (5)

72. This is how I'd like it to be: (1) (2) (3) (4) (5)

To a very little extent
To a little extent
To some extent
To a great extent
To a very great extent

How much do persons in your work group encourage a team goal?

73. This is how it is now: (1) (2) (3) (4) (5)

74. This is how I'd like it to be: (1) (2) (3) (4) (5)

75. To what extent does your work group plan together and coordinate its efforts? (1) (2) (3) (4) (5)

76. To what extent does your work group make good decisions and solve problems well? (1) (2) (3) (4) (5)

77. To what extent do persons in your work group know what their jobs are and know how to do them well? (1) (2) (3) (4) (5)

78. To what extent is information about important events and situations shared within your work group? (1) (2) (3) (4) (5)

79. To what extent does your work group really want to meet its objectives successfully? (1) (2) (3) (4) (5)

80. To what extent is your work group able to respond to unusual work demands placed on it? (1) (2) (3) (4) (5)

81. To what extent do you have confidence and trust in the persons in your work group? (1) (2) (3) (4) (5)

82. On the basis of your experience and information, how would you rate your work group on effectiveness? How well does it do in fulfilling its mission or achieving its goals in comparison with other work groups? (1) (2) (3) (4) (5)

(1) The work group does a fair job.

(2) Fair.

(3) Good.

(4) Very good.

(5) The work group does an excellent job.

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How true is each of the following statements about the job you have now?

- | | Very Untrue | Fairly Untrue | Fairly True | Very true |
|--|-------------|---------------|-------------|-----------|
| 93. There's no one to boss me on the work. | ① | ② | ③ | ④ |
| 94. It is steady, no chance of being laid off. | ① | ② | ③ | ④ |
| 95. I can learn new things, learn new skills. | ① | ② | ③ | ④ |
| 96. I don't have to work too hard. | ① | ② | ③ | ④ |
| 97. It is a clean job, where I don't get dirty. | ① | ② | ③ | ④ |
| 98. It has good chances for getting ahead. | ① | ② | ③ | ④ |
| 99. I don't have to take a lot of responsibility. | ① | ② | ③ | ④ |
| 99. It leaves me a lot of free time to do what I want to do. | ① | ② | ③ | ④ |
| 91. The pay is good. | ① | ② | ③ | ④ |
| 92. It is a job that my friends think a lot of - has class. | ① | ② | ③ | ④ |
| 93. It uses my skills and abilities - lets me do the things I can do best. | ① | ② | ③ | ④ |
| 94. There are nice friendly people to work with. | ① | ② | ③ | ④ |
| 95. It doesn't make me learn a lot of new things. | ① | ② | ③ | ④ |
| 96. It allows me to stay in one place so I can establish roots in a community. | ① | ② | ③ | ④ |
| 97. It gives me a chance to serve my country well. | ① | ② | ③ | ④ |
| 99. It gives me a chance to make the world a better place. | ① | ② | ③ | ④ |
| 99. The fringe benefits (medical care, retirement plan, etc.) are good. | ① | ② | ③ | ④ |
| 100. I can control my personal life. | ① | ② | ③ | ④ |

- | | Very Untrue | Fairly Untrue | Fairly True | Very True |
|---|-------------|---------------|-------------|-----------|
| 101. I don't get endlessly referred from person to person when I need help. | ① | ② | ③ | ④ |

- | | Very Untrue | Fairly Untrue | Fairly True | Very True |
|---|-------------|---------------|-------------|-----------|
| 102. I don't have to go through a lot of "red tape" to get things done. | ① | ② | ③ | ④ |

- | | Very Untrue | Fairly Untrue | Fairly True | Very True |
|---|-------------|---------------|-------------|-----------|
| 103. I don't get hemmed in by longstanding rules and regulations that no one seems to be able to explain. | ① | ② | ③ | ④ |

To a very little extent	To a little extent	To some extent	To a great extent	To a very great extent
-------------------------	--------------------	----------------	-------------------	------------------------

- | | To a very little extent | To a little extent | To some extent | To a great extent | To a very great extent |
|---|-------------------------|--------------------|----------------|-------------------|------------------------|
| 104. On the job, to what extent do you feel pressure from your supervisor for better performance, over and above what you yourself think is reasonable? | ① | ② | ③ | ④ | ⑤ |

- | | To a very little extent | To a little extent | To some extent | To a great extent | To a very great extent |
|--|-------------------------|--------------------|----------------|-------------------|------------------------|
| 105. To what extent is your job a one-person job; you have little need to check or work with others? | ① | ② | ③ | ④ | ⑤ |

- | | To a very little extent | To a little extent | To some extent | To a great extent | To a very great extent |
|---|-------------------------|--------------------|----------------|-------------------|------------------------|
| 106. To what extent do you have to collaborate with others in order to do a good job? | ① | ② | ③ | ④ | ⑤ |

- | | To a very little extent | To a little extent | To some extent | To a great extent | To a very great extent |
|--|-------------------------|--------------------|----------------|-------------------|------------------------|
| 107. To what extent is the organization you work for effective in getting you to meet its needs and contribute to its effectiveness? | ① | ② | ③ | ④ | ⑤ |

- | | To a very little extent | To a little extent | To some extent | To a great extent | To a very great extent |
|--|-------------------------|--------------------|----------------|-------------------|------------------------|
| 108. To what extent does the organization you work for do a good job of meeting your needs as an individual? | ① | ② | ③ | ④ | ⑤ |

- | | To a very little extent | To a little extent | To some extent | To a great extent | To a very great extent |
|---|-------------------------|--------------------|----------------|-------------------|------------------------|
| 109. To what extent does your present job provide an opportunity to work for competent, fair supervisors? | ① | ② | ③ | ④ | ⑤ |

- | | To a very little extent | To a little extent | To some extent | To a great extent | To a very great extent |
|---|-------------------------|--------------------|----------------|-------------------|------------------------|
| 110. To what extent does your present job provide an opportunity to be evaluated fairly in proportion to what you contribute? | ① | ② | ③ | ④ | ⑤ |

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To a very little extent
 To a little extent
 To some extent
 To a great extent
 To a very great extent

111. To what extent do you feel in any way discriminated against in your job because of your race or national origin?

① ② ③ ④ ⑤

112. Nearly all jobs involve using some kind of tool or machine. In your job, what is the most complex type of tool or machine you use every day?

- ① simple devices (pencils, letter opener, wiping cloth)
- ② hand tools (manual typewriter, wrenches, wheelbarrow)
- ③ small power-driven machines (electric drill, electric typewriter, 2-cycle engine)
- ④ power-driven equipment (car or truck, airplane, electronic equipment, copy machine, hoist)
- ⑤ automated equipment (largely computer-directed)

113. Are the objects or materials you work on in your job the same or different?

- ① There is no variation from case to case.
- ② There is only slight variation from case to case.
- ③ Some of the cases are similar and some are unique.
- ④ Most cases are somewhat unique.
- ⑤ Each case is almost totally unique.

114. In your job, how much time usually passes between your performance of an average unit of work and the time you find out how well you did?

- ① a few seconds or less ④ less than a day
- ② a few minutes ⑤ longer than a day
- ③ less than an hour

115. What race is your immediate supervisor?

- ① White
- ② Black
- ③ Mexican-American
- ④ Other

116. What race are the majority of the members of your work group (those individuals who report to the same supervisor you do)?

- ① White
- ② Black
- ③ Mexican-American
- ④ Other

117. What other race (if any) is most heavily represented in your work group?

- ① White
- ② Black
- ③ Mexican-American
- ④ Other
- ⑤ None

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PART B

These questions ask about the kind of job and supervisor you would consider most ideal. Please answer them in terms of the kind of job you would like to have.

On thinking about the kind of a job you would like to have (whether or not you have it now), how important are each of the following?

Very Unimportant
Fairly Unimportant
Fairly Important
Very Important

1. A job where there's no one to boss me on the work
① ② ③ ④
2. A job that is steady, no chance of being laid off
① ② ③ ④
3. A job where I can learn new things, learn new skills
① ② ③ ④
4. A job where I don't have to work too hard
① ② ③ ④
5. A clean job, where I don't get dirty
① ② ③ ④
6. A job with good chances for getting ahead
① ② ③ ④
7. A job where I don't have to take a lot of responsibility
① ② ③ ④
8. A job that leaves me a lot of free time to do what I want to
① ② ③ ④

Very Unimportant
Fairly Unimportant
Fairly Important
Very Important

9. A job where the pay is good
① ② ③ ④
10. A job that my friends think a lot of - has class
① ② ③ ④
11. A job that uses my skills and abilities - lets me do the things I can do best
① ② ③ ④
12. A job that has nice friendly people to work with
① ② ③ ④
13. A job that doesn't make me learn a lot of new things
① ② ③ ④
14. A job that allows me to establish roots in a community and not have to move from place to place
① ② ③ ④
15. A job that gives me a chance to serve my country well
① ② ③ ④
16. A job that gives me a chance to make the world a better place
① ② ③ ④
17. A job where the fringe benefits (medical care, retirement plan, etc.) are good
① ② ③ ④
18. A job where I can control my personal life
① ② ③ ④
19. A job where I don't get endlessly referred from person to person when I need help
① ② ③ ④
20. A job where I don't have to go through a lot of "red tape" to get things done
① ② ③ ④
21. A job where I am not hemmed in by long-standing rules and regulations that no one seems to be able to explain
① ② ③ ④

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How much do you agree with the following statements about the way supervisors should treat the people who work under them?

22. A supervisor should help others exercise their individuality. ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5
23. A good supervisor must pay attention to the needs of his subordinates to keep people working. ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5
24. Supervisors should rely more on the use of authority and good relationships with subordinates than on the exercise of authority to get things done. ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5
25. In work relationships, emotions should be expressed and worked out. ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5
26. It is essential for the good supervisor to be sensitive to the feelings of others. ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5
27. A clear-cut hierarchy of authority and responsibility is essential in a work organization. ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5
28. Being firm with subordinates is the best way to insure that they will do a good job. ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5
29. Subordinates prefer to be directed rather than making their own decisions in their work. ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5
30. A supervisor must keep a close check on his subordinates to see that they are doing their work properly. ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5
31. The most effective way to get people to do a job and commit themselves to it is to give them appropriate rewards and praise. ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5
32. Although a supervisor can control his subordinates, he must also be fair to them. ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

PART C

These next questions ask for your opinions about the military services in the United States. Some questions ask about the way you think things actually are, and others ask about the way you would like things to be.

- | | To a very little extent | To a little extent | To some extent | To a great extent | To a very great extent |
|--|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| To what extent do you think the following opportunities are available to people who work in the military services? | | | | | |
| 1. A chance to get ahead | ☐ 1 | ☐ 2 | ☐ 3 | ☐ 4 | ☐ 5 |
| 2. A chance to get more education | ☐ 1 | ☐ 2 | ☐ 3 | ☐ 4 | ☐ 5 |
| 3. A chance to advance to a more responsible position | ☐ 1 | ☐ 2 | ☐ 3 | ☐ 4 | ☐ 5 |
| 4. A chance to have a personally more fulfilling job | ☐ 1 | ☐ 2 | ☐ 3 | ☐ 4 | ☐ 5 |
| 5. A chance to get their ideas heard | ☐ 1 | ☐ 2 | ☐ 3 | ☐ 4 | ☐ 5 |
| 6. To what extent is it likely that a person in the military can get things changed and set right if he is being treated unjustly by a superior? | ☐ 1 | ☐ 2 | ☐ 3 | ☐ 4 | ☐ 5 |
| 7. To what extent do you think there is any discrimination against women who are in the armed services? | ☐ 1 | ☐ 2 | ☐ 3 | ☐ 4 | ☐ 5 |
| 8. To what extent do you think there is any discrimination against black people who are in the armed services? | ☐ 1 | ☐ 2 | ☐ 3 | ☐ 4 | ☐ 5 |

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9. Do you personally feel that you would receive more just and fair treatment as a civilian or as a member of the military service?

① Much more fair in the military service
 ② More fair in the military service
 ③ About the same
 ④ More fair as a civilian
 ⑤ Much more fair as a civilian
 ⑥ Question not appropriate for me

10. If you had a son in his late teens or early twenties who decided to enter the military service, how would you feel about his decision?

① Strongly positive
 ② Mostly positive
 ③ Mostly negative
 ④ Strongly negative

Agree
 Agree Mostly
 Disagree Mostly
 Disagree

11. The United States should provide high enough salaries and benefits so that it can man its armed forces with volunteers.

① ② ③ ④

12. Most of our servicemen should be "citizen soldiers" - men who spend just three or four years in the military and then return to civilian life.

① ② ③ ④

13. Our military service should be staffed mostly with "career men" who spend twenty or more years in the service.

① ② ③ ④

14. Only those who agree with our military policy should be allowed to serve in the armed forces.

① ② ③ ④

15. There ought to be a wide range of different political viewpoints among those in the military service.

① ② ③ ④

16. In some countries the military force has overthrown and thrown out the civilian government. Do you think there is any chance that this could happen in the United States?

① It probably will happen in the U.S.
 ② It is certainly possible, but not very likely
 ③ It is nearly impossible
 ④ It could never happen in the U.S.

To a very little extent
 To a little extent
 To some extent
 To a great extent
 To a very great extent

17. To what extent do you think our armed forces are capable of meeting all of our present military needs?

① ② ③ ④ ⑤

18. To what extent do you think the military makes efficient use of the money in its budget?

① ② ③ ④ ⑤

19. To what extent do you think our military leaders are smart people who know what they are doing?

① ② ③ ④ ⑤

20. To what extent would it be possible to improve the caliber of our officer ranks?

① ② ③ ④ ⑤

21. To what extent do we fall short of the military preparedness we need in today's world?

① ② ③ ④ ⑤

22. To what extent is there waste in the way our military services are run at present?

① ② ③ ④ ⑤

23. To what extent do you think military officials try to do as good a job as they can?

① ② ③ ④ ⑤

24. To what extent do you think you can get more military leadership to do what is right?

① ② ③ ④ ⑤

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25. All things considered, do you think the armed services presently have too much or too little influence on the way this country is run?

- ① Far too much
② Too much
③ About right
④ Too little
⑤ Far too little

26. Do you think the U. S. spends too much or too little on the armed services?

- ① Far too much
② Too much
③ About right
④ Too little
⑤ Far too little

27. Overall, how do you feel about the role of the military services in our society during the time since World War II - has it been mostly positive or mostly negative?

- ① Strongly Positive
② Mostly Positive
③ Mostly Negative
④ Strongly Negative

The next questions ask your opinion about the influence that military leaders and civilian leaders (such as the President or Congress) have over certain decisions affecting national security.

Civilians much more
Civilians somewhat more
About equal influence
Military somewhat more
Military much more

Who has most influence over whether to involve U. S. servicemen in foreign conflicts?

28. This is how I think it is now:
① ② ③ ④ ⑤
29. This is how I'd like it to be:
① ② ③ ④ ⑤

Civilians much more
Civilians somewhat more
About equal influence
Military somewhat more
Military much more

Who has most influence over what tactics to use on the battlefield?

30. This is how I think it is now:
① ② ③ ④ ⑤
31. This is how I'd like it to be:
① ② ③ ④ ⑤

Who has most influence over which new weapon systems to develop?

32. This is how I think it is now:
① ② ③ ④ ⑤
33. This is how I'd like it to be:
① ② ③ ④ ⑤

Who has most influence over levels of pay and fringe benefits in the armed services?

34. This is how I think it is now:
① ② ③ ④ ⑤
35. This is how I'd like it to be:
① ② ③ ④ ⑤

Who has most influence over whether to use nuclear weapons?

36. This is how I think it is now:
① ② ③ ④ ⑤
37. This is how I'd like it to be:
① ② ③ ④ ⑤

Agree
Agree Mostly
Disagree Mostly
Disagree

38. The U. S. should begin a gradual program of changing whether other countries do or not.

39. There may be times when the U. S. should go to war to protect the rights of other countries.

40. The U. S. should be willing to go to war to protect its own economic interests.

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Agree
Disagree
Mostly
Mostly

41. The only good reason for the U. S. to fight is to defend against an attack on our own country.
① ② ③ ④
42. The U. S. does not need to have greater military power than the Soviet Union.
① ② ③ ④
43. The U. S. ought to have much more military power than any other nation in the world.
① ② ③ ④
44. Our present foreign policy is based on our own narrow economic and power interests.
① ② ③ ④
45. Fighting the war in Vietnam has been damaging to our national honor or pride.
① ② ③ ④
46. Fighting the war in Vietnam has not really even in the national interest.
① ② ③ ④
47. Fighting the war in Vietnam has been important to fight the spread of Communism.
① ② ③ ④
48. Fighting the war in Vietnam has brought us closer to world war.
① ② ③ ④
49. Fighting the war in Vietnam has been important to protect friendly countries.
① ② ③ ④
50. Fighting the war in Vietnam has been important to show other nations that we keep our promises.
① ② ③ ④
51. Going to Canada to avoid fighting in Vietnam was wrong, and those who did so should be punished.
① ② ③ ④
52. The men who went to Canada rather than fight in Vietnam were doing what they felt was right. They should be allowed to return to the U. S. without being punished.
① ② ③ ④

Agree
Agree Mostly
Disagree Mostly
Disagree

53. Servicemen should obey orders without question.
① ② ③ ④
54. Suppose a group of soldiers in Vietnam were ordered by their superior officers to shoot all inhabitants of a village suspected of aiding the enemy including old men, women and children? In your opinion, what should the soldiers do in such a situation?
① Follow orders and shoot
② Refuse to shoot them
③ Don't know
55. What do you think most people actually would do if they were in this situation?
① Follow orders and shoot
② Refuse to shoot them
③ Don't know
56. What do you think you would do in this situation?
① Follow orders and shoot
② Refuse to shoot them
③ Don't know
57. In general to what extent do your friends agree (disagree) with your views on the armed forces?
① Practically all agree
② Many agree
③ Some agree, some disagree
④ Many disagree
⑤ Practically all disagree

PART D

These final few questions ask for some background information about yourself. The information is important for research purposes. Your answers to all questions will be kept strictly confidential.

1. Present Age _____

Write in

2. Sex: ① Male ② Female

3. Race: ① White ② Mexican-American
 ③ Black ④ Other

4. How much schooling have you had?

- ① Completed grade school or less
- ② Some high school
- ③ Completed high school
- ④ Some college
- ⑤ Completed college
- ⑥ Some graduate school

5. How much schooling has your father had?

- ① Completed grade school or less
- ② Some high school
- ③ Completed high school
- ④ Some college
- ⑤ Completed college
- ⑥ Some graduate school

6. How much schooling has your mother had?

- ① Completed grade school or less
- ② Some high school
- ③ Completed high school
- ④ Some college
- ⑤ Completed college
- ⑥ Some graduate school

7. While you were growing up—say until you were eighteen—what kind of community did you live in for the most part?

- ① Rural area or farm
- ② Town or small city
- ③ Suburban area near a large city
- ④ Large city

8. While you were growing up, what region of the country did you primarily live in?

- ① New England
- ② East
- ③ South
- ④ Midwest
- ⑤ West
- ⑥ None of the above

9. Your Supervisor's number: _____

10. How long have you been assigned to your present ship or station?

- ① less than 1 month
- ② between 1 and 6 months
- ③ between 6 months and 1 year
- ④ between 1 and 2 years
- ⑤ between 2 and 5 years
- ⑥ between 5 and 10 years
- ⑦ between 10 and 15 years
- ⑧ more than 15 years

11. How long have you been assigned to your present work group?

- ① less than 1 month
- ② between 1 and 6 months
- ③ between 6 months and 1 year
- ④ between 1 and 2 years
- ⑤ between 2 and 5 years
- ⑥ between 5 and 10 years
- ⑦ between 10 and 15 years
- ⑧ more than 15 years

12. Were you assigned a draft lottery number?

- ① Yes ② No (skip to question 14)

13. What is your lottery number? _____

14. What is your military status?

- ① Regular ② Reserve

15. What is your present enlistment or extension status?

- ① First enlistment
- ② Extension of first enlistment
- ③ Second enlistment
- ④ Extension of second enlistment
- ⑤ Third or later enlistment

16. What do you plan to do when you complete this enlistment?

- ① Re-enlist and make the Navy a career
- ② Re-enlist or extend but undecided about making the Navy a career
- ③ Re-enlist or extend but do not intend to make the Navy a career
- ④ Return to civilian life
- ⑤ Retire

GO ON TO PAGE 16

- ☐ Strongly positive
☐ Fairly positive
☐ Fairly negative
☒ Strongly negative

☐ (1) Very much in favor of it
☐ (2) Somewhat in favor
☐ (3) Neutral or indifferent
☐ (4) Somewhat dissatisfied
☐ (5) Very much dissatisfied

- ☐ ① None of them ☐ ④ Three of them
☐ ② One of them ☐ ⑤ Four of them
☐ ③ Two of them ☐ ⑥ Five or more

- ☐ 1 Strongly positive
☐ 2 Mostly positive
☐ 3 Mostly negative
☐ 4 Strongly negative
☐ 5 Not applicable

- ① Strongly positive
 ② Moderately positive
 ③ Moderately negative
 ④ Strongly negative
 ⑤ Not applicable

- | | |
|---|---|
| 0 | 0 |
| 1 | 1 |
| 2 | 2 |
| 3 | 3 |
| 4 | 4 |
| 5 | 5 |
| 6 | 6 |
| 7 | 7 |
| 8 | 8 |
| 9 | 9 |

Extremely important
Important
Somewhat important
Not very important
Of no importance

25. Job opportunities looked better than in civilian life.
- 1 2 3 4 5
27. For travel, adventure, new experiences.
- 1 2 3 4 5
28. Opportunity for advanced education or technical training.
- 1 2 3 4 5
29. Wanted to fulfill my military obligation at a time and in the service of my choice rather than being drafted.
- 1 2 3 4 5
30. Wanted to serve my country.
- 1 2 3 4 5
31. To continue a family tradition of military service.
- 1 2 3 4 5
32. For a secure job with promotions and favorable retirement benefits.
- 1 2 3 4 5
33. How long have you worked in full time civilian jobs?

-

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Appendix F

PART D of the Civilian Questionnaire

PART D

These final few questions ask for some background information about yourself. The information is important for research purposes. Your answers to all questions will be kept strictly confidential.

1. Present Age _____
Write in

2. Sex: ☐ Male ☐ Female

3. Race: ☐ White ☐ Mexican-American
☐ Black ☐ Other

4. How much schooling have you had?

- ☐ Completed grade school or less
- ☐ Some high school
- ☐ Completed high school
- ☐ Some college
- ☐ Completed college
- ☐ Some graduate school

5. How much schooling has your father had?

- ☐ Completed grade school or less
- ☐ Some high school
- ☐ Completed high school
- ☐ Some college
- ☐ Completed college
- ☐ Some graduate school

6. How much schooling has your mother had?

- ☐ Completed grade school or less
- ☐ Some high school
- ☐ Completed high school
- ☐ Some college
- ☐ Completed college
- ☐ Some graduate school

7. While you were growing up—say until you were sixteen—what kind of community did you live in for the most part?

- ☐ Rural area or farm
- ☐ Town or small city
- ☐ Suburban area near a large city
- ☐ Large city

8. While you were growing up, what region of the country did you primarily live in?

- ☐ New England
- ☐ East
- ☐ South
- ☐ Midwest
- ☐ West
- ☐ None of the above

0	0
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9

IF NOT WORKING OUTSIDE THE HOME, SKIP TO QUESTION 12.

9a. What company do you work for?

9b. If this is a part of a larger company, what company is it?

0	0	0	0	0
1	1	1	1	1
2	2	2	2	2
3	3	3	3	3
4	4	4	4	4
5	5	5	5	5
6	6	6	6	6
7	7	7	7	7
8	8	8	8	8
9	9	9	9	9

10. How long have you worked there?

- ☐ less than 1 month
- ☐ between 1 and 6 months
- ☐ between 6 months and 1 year
- ☐ between 1 and 2 years
- ☐ between 2 and 5 years
- ☐ between 5 and 10 years
- ☐ between 10 and 15 years
- ☐ more than 15 years

11. How long have you been a member of your present work group?

- ☐ less than 1 month
- ☐ between 1 and 6 months
- ☐ between 6 months and 1 year
- ☐ between 1 and 2 years
- ☐ between 1 and 5 years
- ☐ between 5 and 10 years
- ☐ between 10 and 15 years
- ☐ more than 15 years

12. Were you assigned a draft lottery number?

- ☐ Yes ☐ No (skip to question 14)

13. What is your lottery number? _____

0	0	0
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7
8	8	8
9	9	9

14. Have you ever served in any branch of the service?

- ☐ Yes ☐ No (skip to 22)

15. If yes, what branch did you serve in?

- ☐ Army
- ☐ Navy
- ☐ Air Force
- ☐ Marines
- ☐ Coast Guard

16. Were you drafted?

- ☐ Yes ☐ No

(If yes, skip to Q. 18)

GO ON TO PAGE 16

17. Do you think you would have been drafted if you had not enlisted?

① Yes

③ No

⑤ Not applicable

18. What was the highest rank you reached in the service?

→

①	②	③
④	⑤	⑥
⑦	⑧	⑨
⑩	⑪	⑫
⑬	⑭	⑮
⑯	⑰	⑱
⑲	⑳	㉑
㉒	㉓	㉔
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19. What was your specialty or rating?

→

20. Would you say your feelings about having been in the military are

- ① Strongly positive
② Mostly positive
③ Mostly negative
④ Strongly negative

21. Which of the following best describes the feelings of your family when they first learned you were going to enter the service?

- ① They were very much in favor of it
② Somewhat in favor
③ Neutral or indifferent
④ Somewhat dissatisfied
⑤ Very much dissatisfied

22. How many of the following relatives have served in the armed forces? Parents, children, brothers, sisters, spouse?

- ① None of them ④ Three of them
② One of them ⑤ Four of them
③ Two of them ⑥ Five or more

23. What were their feelings about having been in the military service?

- ① Strongly positive
② Mostly positive
③ Mostly negative
④ Strongly negative
⑤ Not applicable

24. What are your feelings about their having been in the military service?

- ① Strongly positive
② Mostly positive
③ Mostly negative
④ Strongly negative
⑤ Not applicable

25. How many years of active duty have you served? (Round to the nearest year.)

→

①	②
③	④
⑤	⑥
⑦	⑧
⑨	⑩
⑪	⑫
⑬	⑭
⑮	⑯
⑰	⑱
㉑	㉒
㉓	㉔
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37. Log Number

①	②	③	④	⑤
⑥	⑦	⑧	⑨	⑩
⑪	⑫	⑬	⑭	⑮
⑯	⑰	⑱	㉑	㉒
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38. Intv.

①	Yes
②	No

Appendix G

Outline of Instrument Content

Questions	Description	Source
---PART A---		
1 - 82	Items which form 28 critical indices of <u>Survey of Organizations</u>	Taylor & Bowers, <u>The Survey of Organizations</u> . Ann Arbor, Michigan: Institute for Social Research, 1972, (in press).
83 - 103	Measures of job content	Youth in Transition (See Johnston and Bachman, <u>Young Men Look at Military Service</u> . Ann Arbor, Michigan: Institute for Social Research, 1970) and other ISR studies of meaning of work, work satisfaction, and motivation.
104	Measure of pressure for production	Michaelsen, L.K., <u>Leader Orientation, Leader Behavior, Group Effectiveness, and Situational Favorability: An Empirical Extension of the Contingency Model. Organizational Behavior and Human Performance</u> , 1973, 9, 226-245.
105-106	Measures from technology studies	Mohr, L., "Organizational Technology and Organizational Structure," <u>Administrative Science Quarterly</u> , 1971, 16, 444-459.
107-108	Goal Integration index	Barrett, J. <u>Individual goals and organizational objectives</u> . Ann Arbor, Mich.: Institute for Social Research, 1970.
109-110	Measures of fairness and equitable treatment	Butterfield, D., <u>An integrative approach to the study of leadership effectiveness in organizations</u> . Unpublished doctoral dissertation, University of Michigan, 1968.
111	Measure of perceived discriminatory treatment	Constructed for present study.
112-114	Measures of Technological Sophistication of Job	Taylor, J., <u>Technology and planned organizational change</u> . Ann Arbor, Michigan: Institute for Social Research, 1971.
115-117	Measures of work group racial composition.	Adapted from current work within ISR.

Appendix G
(cont.)

Questions	Description	Source
---PART B---		
1 - 21	Measures of job preferences (match job content items 83-103 in Part A)	Youth in Transition and other ISR studies of meaning of work, work satisfaction, and motivation.
22-32	Items contained in two index measures of supervisory values, from <u>Survey of Management Beliefs</u> .	Michaelsen, L., <u>op. cit.</u>
---PART C---		
1-5	Perceived opportunities for those in armed services	Constructed for present study based on items from the Youth in Transition project.
6-9	Perceived fairness of treatment in armed services	Youth in Transition Project (see Johnston and Bachman, <u>op. cit.</u>) Items 7 and 8 constructed for present study.
10	Attitudes toward having a son enlist in the military service.	Constructed for present study.
11-16	Attitudes about several issues related to an all-volunteer force (12 & 13, 14 & 15 are matched pairs, balanced to counteract agreement bias)	Constructed for present study.
17-24	Perceived effectiveness of armed services	Constructed for present study.
25-26	Armed services influence	Youth in Transition project.
27	Overall attitude toward military services since WW II	Constructed for present study
28-37	Civilian and military influence, actual and ideal	Constructed for present study

Appendix H

Percentage Distributions of Promotion Rate
for Each Enlisted Pay Rate E2-E9

Promotion Rate	Pay Rate							
	E-2	E-3	E-4	E-5	E-6	E-7	E-8	E-9
.1	--	--	.4	--	--	--	--	--
.2	6.0	1.2	1.1	--	--	--	--	--
.3	--	2.1	1.3	1.8	--	--	--	--
.4	14.9	7.4	1.9	2.5	.9	--	--	--
.5	--	17.1	3.4	2.8	.9	--	--	--
.6	--	--	--	7.4	2.8	3.4	10.2	--
.7	--	--	18.6	2.5	11.8	2.2	8.2	--
.8	79.2	37.1	--	6.0	14.9	15.1	6.1	12.5
.9	--	--	26.2	8.2	15.2	29.1	8.2	20.8
1.0	--	--	--	--	6.5	8.9	26.5	12.5
1.1	--	--	--	8.9	8.4	12.8	22.4	12.5
1.2	--	--	--	--	4.6	16.2	12.2	8.3
1.3	--	--	--	16.0	9.0	--	4.1	25.0
1.4	--	--	22.8	--	--	3.9	2.0	4.2
1.5	--	--	--	--	5.3	5.0	--	4.2
1.6	--	35.0	--	--	--	2.8	--	--
1.7	--	--	--	22.0	5.9	--	--	--
1.9	--	--	--	--	5.3	--	--	--
2.1	--	--	--	--	--	.6	--	--
2.2	--	--	--	--	5.6	--	--	--
2.3	--	--	--	17.7	--	--	--	--
2.7	--	--	--	--	2.5	--	--	--
2.9	--	--	24.3	--	--	--	--	--
3.4	--	--	--	4.3	.3	--	--	--
13.6	--	--	--	--	.3	--	--	--

Appendix H
(cont.)

Questions	Description	Source
38-39	Pacifist attitudes	Developed by Putney, "Some Factors Associated with Student Acceptance or Rejection of War," <u>American Sociological Review</u> , 1962, 27, 655-667, and used in the Youth in Transition Project (see Johnston and Bachman, <u>op. cit.</u>).
40-44	Attitudes about U.S. military policy	Items 40-43 constructed for present study. Item 44 adapted from Kelman and Lawrence, "Assignment of Responsibility in the Case of Lt. Calley: Preliminary Report on a National Survey," <u>Journal of Social Issues</u> , 1972, 28, 177-212.
45-50	Attitudes about U.S. policy in Vietnam (6-item scale, balanced to counteract agreement bias)	The Youth in Transition Project (see Johnston and Bachman, <u>op. cit.</u>).
51-52	Attitudes about amnesty	Constructed for present study.
57	Perceived agreement with friends	Constructed for present study Items 54-56 adapted from Kelman and Lawrence, <u>op. cit.</u>
---PART D - Navy---		
1-8	Background measures	Adapted from current work within ISR
9-25	Military experience	Constructed for present study
26-32	Reasons for joining Navy	Constructed for present study
33	Service number (optional)	Constructed for present study
---PART D - Civilian---		
1-8	Background measures	Adapted from current work within ISR
9-11	Job identification	Constructed for present study
12-24	Military experience	Constructed for present study

Appendix I

Ranks, Initial Training Costs, N's and Percentages
for Each Rating Designation

Cost Rank	Rating Designation	N	Percentage	Cost for Initial Rating
38	STG Sonar Technician, G	68	3.9	13,248
	STS Sonar Technician, S			
37	AX Aviation ASW Technician	276	15.6	8,330
	AT Aviation Electronics Tech.			
	AQ Aviation Fire Control Tech.			
	CTM Maintenance (Comm. Tech.)			
	DS Data Systems Tech.			
	ET Electronics Tech.			
	EW Electronics Warfare Tech.			
	OT Ocean Systems Tech.			
	TD Trademan			
36	FTB, Fire Control Tech. B	187	10.6	7,899
	FTG, Fire Control Tech. G			
	FTM, Fire Control Tech. M			
	GMG Gunner's Mate G			
	GMM Gunner's Mate M			
	GMT Gunner's Mate T			
	MN Mineman			
	MT Missile Tech.			
	TM Torpedoman's Mate			
35	AE Aviation Electrician's Mate	32	1.8	7,031
34	IM Instrumentman	2	.1	6,783
33	AC Air Controlman	152	8.6	6,452
	AW Aviation ASW Operator			
	CTR Collection Branch (Comm. Tech.)			
	CTT Tech. Branch (Comm. Tech.)			
	RD Radarman			
	RM Radioman			

Appendix I (cont.)

Cost Rank	Rating Designation	N	Percentage	Cost for Initial Rating
32	PR Aircrew Survival Equip.	7	.4	6,318
31	CTO Communications	4	.2	6,090
30	AG Aerographer's Mate	8	.5	6,013
29	AS Aviation Supt. Eq. Tech.	12	.7	5,907
	CM Construction Mechanic			
28	DM Illustrator Draftsman	4	.2	5,499
27	EM Electrician's Mate	76	4.3	5,471
	IC Interior Comm. Electrician			
26	EO Equipment Operator	1	.1	5,391
25	UT Utilities Man	1	.1	5,334
24	AO Aviation Ordnanceman	4	.2	5,302
23	MM Machinist's Mate	141	8.0	5,294
22	ABE Aviation Boatsw. Mate E	5	.3	5,292
21	LI Lithographer	1	.1	5,282
20	SH Ships Serviceman	18	1.0	5,282
19	HM Hospital Corpsman	23	1.3	5,261
18	BM Boatswain's Mate	110	6.2	5,245
	QM Quartermaster			
	SM Signalman			
17	EN Engineman	38	2.2	4,972
16	BT Boilerman	95	5.4	4,945
15	BR Boilermaker	1	.1	4,945
14	ABH Aviation Boatsw. Mate H	20	1.1	4,803
13	AMS Aviation Struct. Mech. S	32	1.8	4,759
12	ADJ Aviation Mach. Mate J	122	6.9	4,693
	ADR Aviation Mach. Mate R			
	AME Aviation Struct. Mech. E			
	AMH Aviation Struct. Mech. H			
11	MR Machinery Repairman	11	.6	4,619
10	ABF Aviation Boatsw. Mate F	1	.1	4,313

Appendix I (cont.)

Cost Rank	Rating Designation	N	Percentage	Cost for Initial Rating
9	DK Dispensing Clerk	4	.2	4,126
8	DP Data Processing Tech.	9	.5	4,100
7	AK Aviation Storekeeper	71	4.0	4,058
	SK Storekeeper			
6	AZ Aviation Maint. Admin.	3	.2	3,820
5	PC Postal Clerk	1	.1	3,786
4	CS Commissaryman	126	7.1	3,600
	SD Steward			
3	YN Yeoman	13	.7	3,527
2	PN Personnelman	39	2.2	3,527
1	HT Hull Maint. Tech.	46	2.6	3,441

References

- Andrews, F.M.; Morgan, J.N. and Sonquist, J.A. Multiple classification analysis. Institute for Social Research, 1967.
- Barrett, J. Individual goals and organizational objectives: A study of integration mechanisms. Institute for Social Research, 1970.
- Beam, H.H. Effectiveness and satisfaction as a function of managerial style and technological complexity in a Navy work environment. 1975.
- Bowers, D.G. Perspectives in organizational development. Institute for Social Research, September, 1970, pp. 43.
- Bowers, D.G. OD techniques and their results in 23 organizations: The Michigan ICL Study. The Journal of Applied Behavioral Science, 1973, Vol. 9, No. 1, pp. 21-43.
- Bowers, D.G. and Bachman, J.G. Military manpower and modern values. Institute for Social Research, 1974.
- Bowers, D.G. and Franklin, J.L. The Navy as a functioning organization: a diagnosis. Institute for Social Research, 1973.
- Bowers, D.G.; Franklin, J.L. and Pecorella, P.A. A taxonomy of intervention: The science of organizational development. Institute for Social Research, 1973.
- Campbell, J.P. and Dunnette, M.D. Effectiveness of T-Group experiences in managerial training and development. Psychological Bulletin, Vol. 70, No. 2 (August 1968) pp. 73-104.
- Davis, L.E. and Taylor, J.C. (eds.) Design of jobs. Penguin Books.
- Drexler, J.A. Comparative profiles of true volunteers and draft-motivated Navymen. Institute for Social Research, 1973.
- Drexler, J.A. Socialization and accommodation mechanisms for achieving goal integration. Institute for Social Research, 1973.
- Drexler, J.A. Technological sophistication and organizational practices. Institute for Social Research, 1973.
- Drexler, J.A. An inquiry into the effectiveness of managerial and peer goal emphasis as socializers of individual values and preferences. Institute for Social Research, 1974.
- Franklin, J.L. A path analytic approach to describing causal relationships among social-psychological variables in multi-level organizations. Institute for Social Research, 1973.

- Kaplan, H.R.; Gausky, C. and Bolaria, B.S. Job enrichment. Personnel Journal, Vol. 48, No. 10, October 1969.
- Land, K.C. Principles of path analysis. In E.F. Borgatta (ed.), Sociological Methodology, 1969. San Francisco: Jossey-Bass Inc., 1969, 3-37.
- Likert, R. and Bowers, D.G. Organizational theory and human resource accounting. American Psychologist, 1969, 24, 585-592.
- Likert, R. and Bowers, D.G. Improving the accuracy of P/L reports by estimating the change in dollar value of the human organization. Michigan Business Review, 1973, 25 (2), 15-24.
- Likert, R. New patterns of management. New York: McGraw-Hill, 1961.
- Likert, R. The human organization. New York: McGraw-Hill, 1967.
- Likert, R. and Seashore, S.E. Making cost control work. Harvard Business Review. 1963.
- Michaelsen, L.K. A methodology for the studies of the impact of organizational values, preferences, and practices on the all-volunteer Navy. Institute for Social Research, 1973.
- Nunnally, J.C. Psychometric Theory. New York: McGraw-Hill, 1967.
- Parker, W.S. Differences in organizational practices and preferences in the Navy by race. Institute for Social Research, 1974.
- Pecorella, P.A. Predictors of race discrimination in the Navy. Institute for Social Research, 1975.
- Siepert, A.F. and Likert, R. The organizational climate for successful innovation. Public Management, 1973.
- Taylor, J.C. Technology and planned organizational change. Institute for Social Research, 1971.
- Taylor, J.C. and Bowers, D.G. Survey of organizations: a machine-scored standardized questionnaire instrument. Institute for Social Research, 1972.
- Veldman, D.J. Fortran programming for the behavioral sciences. New York: Holt, Rinehart and Winston, 1967.

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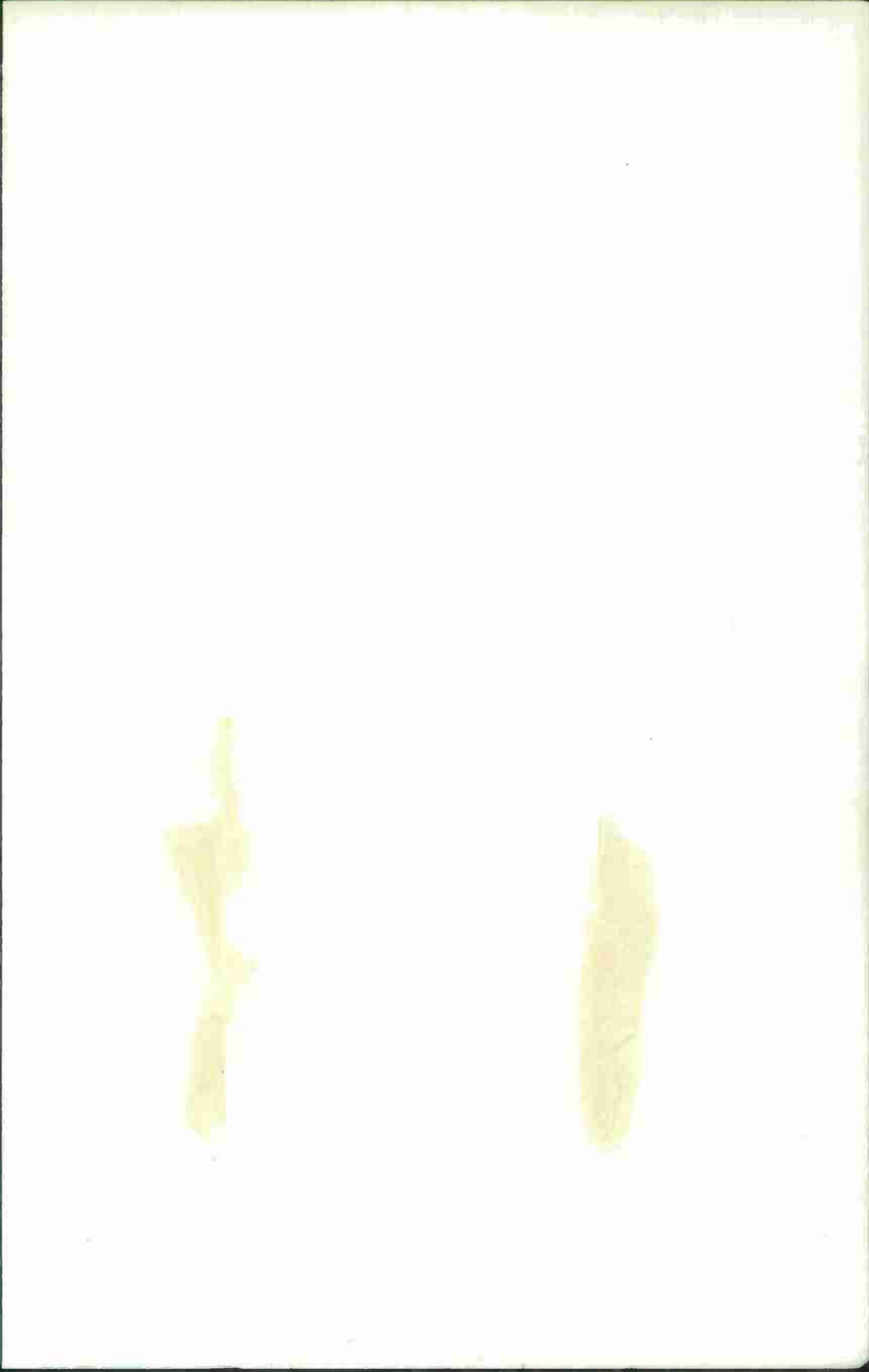
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