THE EFFECTS OF LOAD SHARING SYSTEM TRAINING UPON TEAM PERFORMANCE

By

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ABSTRACT

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The purpose of this study was to investigate the effects of three types of team training (Task Skills, those competencies necessary to complete the team mission; Group Dynamics, those skills necessary to foster interaction and a feeling of cohesiveness among team members; and Team Skills, competencies necessary for the team to function as a coordinated unit) in various combinations upon the performance and cohesiveness of teams. Specifically, the research examined the ability of differentially trained teams to process complaint calls and assign patrol cars in a simulated police radioroom environment.

Method

Volunteer subjects from undergraduate criminal justice classes at Michigan State University were separated by sex and within sex were randomly assigned to one of four training treatments: (a) Task Skill Only; (b) Task Skill and Group Dynamics; (c) Task Skill and Load Sharing Skill; or (d) Task Skill, Group Dynamics, and Load Sharing Skill. Subjects within each of the treatments were also randomly

assigned to either a pre-test or a non-pretest group. The random assignment resulted in 48 four-person teams with a fifth alternate member designated for each team.

Each team viewed a series of 10-minute training tapes and received controlled practice with knowledge of results to allow team members to assess the effects of their training. The teams were then required to engage in two similar simulations in consecutive order. Each of the simulations involved complaint calls coming into a mock police radioroom. Teams were required to categorize the calls according to preestablished criteria and assign patrol cars to deal with the calls. At the conclusion of the simulations, team members completed a questionnaire designed to measure cohesiveness of the team.

Analysis

Hypothesis-testing procedures were conducted using Analysis of Variance in a 4 x 2 x 2 design. The independent variables were: Type of training (task skill only/task skill and group dynamics/ task skill and load sharing skill/task skill, group dynamics, and load sharing skill); Sex (male/female); Pretesting (pretest/no pretest). Dependent variables treated separately were: Simulation 1 Scores, the number of incorrect classifications; Simulation 2 Scores, the number of incorrect classifications; Cohesiveness Scores, the sum of five measures of team closeness.

Results

The type of training received did have a significant effect ($F\ [3,44] = 6.019$, $p < .002$; $F\ [3,44] = 7.256$, $p < .001$) upon team

performance. Post Hoc Analysis showed that teams which received load sharing training performed significantly better as measured by their Simulation 1 and Simulation 2 scores than teams which had not received such training.

The type of training (task, group dynamics, load sharing) did not have a significant effect ($F [3,44] = 1.067$, $p < .377$) upon the cohesiveness of the teams.

Neither the sex of the team members nor the pretesting of teams had a significant effect upon team performance ($F [1,46] = 1.608$, $p < .214$; $F [1,46] = 0.638$, $p < .430$; $F [1,46] = .001$, $p < .974$; $F [1,46] = 1.435$, $p < .240$) or team cohesiveness ($F [1,46] = 0.280$, $p < .600$; $F [1,46] = 0.244$, $p < .625$).

The results suggest that the training of work teams in team skills such as load sharing, which enhance the ability of members to function as a team, will improve the performance of the team and enhance their ability to accomplish a team mission.

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CHAPTER I

PROBLEM STATEMENT

Chapter I contains a general introduction to the research. The need for the study, the significance of the problem, and the purpose of the investigation are discussed. Chapter I concludes with an overview of the dissertation.

Need

The necessity of this research results from three major developments in American law enforcement during the past decade: (1) increased use of the team concept as an organizational model, (2) increased emphasis upon the training function, and (3) the inability of current team training strategies to foster improved team performance.

The Team Model

The team strategy has become a prevalent organizational style in American law enforcement during the past decade. As the most visible example of the team strategy, team policing dates back to 1948 in Aberdeen, Scotland. This organizational method came to the attention of the President's Commission on Law Enforcement and the Administration of Justice, which suggested:

> Police departments should commence experimentation with a team policing concept that envisions those with patrol and investigative duties combining under unified command with flexible assignments to deal with the crime problems in a defined sector (1967, p. 118).

The 1973 National Advisory Commission on Criminal Justice Standards and Goals recommended in police standard 6.1: "Every police agency should examine the team policing concept to determine its value to increasing coordination of patrol and specialized functions with the agency" (1973, p. 156).

Teams have come to be regarded as a panacea for organizational, political, and sociological problems facing the criminal justice system. The perspective is especially acute in public sector law enforcement. Patrick Murphy, President of the Police Foundation and former police chief of New York City, suggests:

> Neighborhood team policing represents a major departure from traditional, quasi-military style of police organization and management. It presents the potential for better relating modern police activities to crime control and service needs of urban communities and for putting to fuller and more satisfying use the skills, judgment and education of police officers (Schwartz & Clarren, 1977, p. iv).

The team model is seen by many agency administrators as an ideal to be accepted without question. Recent issues of the trade journals of criminal justice are replete with articles espousing merits of the team concept.[1] As a result, adoption of the team methodology has reached faddish proportions.

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[1] A review of Police Chief and Law and Order magazines during the years 1968 through 1978 found team models of organization mentioned second in frequency after Management by Objectives as an organizational reform strategy.

Increased Emphasis on Training

The second major development in American law enforcement which relates to this study is the increased attention which has been focused on formal instructional processes in the criminal justice community. Egon Bittner (1970) expressed the emphasis most precisely, writing:

> In simplest terms: it must be made clear as unambiguously as possible that education does matter in police work. . . . We merely propose that the need for protracted and assiduous study be firmly associated with the occupation of policing. The main objective of the recommendation is to abolish permanently the idea that is all too prevalent in our society that if one does not want to take the trouble of becoming something worthwhile, he can always become a cop (p. 83).

No attempt is made here to distinguish between differences between training and education. For the purposes of this study, the acquisition of specific skills to a level of mastery in a defined environment will be referred to as training. The Law Enforcement Assistance Administration currently allocates 42.5 million dollars to such activities (LEAA, 1978). Training has become an extremely high-priority issue in the criminal justice community.

Inadequate Team Training

A third development which gave rise to this study was the inability of existing team training strategies to foster improved team performance. The initial attempt to evaluate empirically team policing was conducted by the Urban Institute. In 1973 that organization examined "Operation Neighborhood," the team policing effort of the New York City Police Department. Researchers were quick to point out that Operation Neighborhood had an excellent public relations

image and had won a measure of popular acceptance. However, they concluded, "Looking at the variety of measures used in this report, one can infer that team members may be motivated to do more, but that the way they perform is very much the same as before they joined Operation Neighborhood" (Bloch & Specht, 1973, p. 13).

Similar conclusions were reached by the Police Foundation and the Urban Institute in their summary report of what was called by Patrick Murphy "the longest and most elaborate experiment yet to be conducted in an area of American law enforcement" (Schwartz & Clarren, 1977, p. iii). The Community Sector Team Policing Program (COMSEC) incurred approximately $500,000 in direct costs (p. 8). Evaluators were forced to conclude that "critics of team policing can point to the financial and human cost of the program, the lack of tangible changes in community relations, and the fear that team policing cannot be maintained for long, even if successfully introduced" (p. 9). Despite large expenditures, elaborate programming, and administrative commitment, the performance of trained police teams when measured by objective standards has been less than spectacular.

In summary, there is little question that the team model will continue to be a dominant organizational style in American law enforcement. The criminal justice system has placed a high priority on training as a means of improving organizational effectiveness. However, the training of law enforcement teams appears inadequate when measured against objective performance standards.

Significance of the Problem

Bloch and Specht (1973) in their evaluation of the New York City Police Department "Operation Neighborhood" pointed out: "This evaluation has been an effort to catch on to a program that has been taking off like a jet" (p. 12).

Between 1967 when team policing was recommended by the President's Commission on Law Enforcement and Administration of Justice and 1974, at least 60 departments in the traditionally conservative American law enforcement community implemented the radically innovative decentralized team policing organizational model in at least part of their jurisdiction (Schwartz & Clarren, 1977, p. 2). Since that time, team policing has been the subject of major experiments in agencies as diverse as Boulder, Colorado; Elizabeth, New Jersey; Multonamah County, Oregon; Hartford, Connecticut; Santa Ana, California; and Winston-Salem, North Carolina (White, Horst, Regan, Bell, & Waller, in press).

Team policing goals of reducing crime, improving police community relations and increasing the level of officer satisfaction are appealing to police administrators. In addition, the Cincinnati COMSEC experiment suggests that there is "no reason to believe that neighborhood team policing carries the risk of inviting crime or that it is worse than regular police practices in other ways" (Schwartz & Clarren, 1977, p. 9). The team concept presents an attractive alternative to traditional organizational styles of policing. It appears to have few drawbacks.

However, there exists a danger in program adoption based upon faddish impulse. A training strategy must be developed which will allow teams to fully exploit the potential of the team model of organization. Without such a training system the fad of team policing may be replaced with a more expedient, less expensive, or simply "more current" perspective.

Purpose of the Study

The purpose of this research was to investigate the influence of three team training methodologies on the performance and satisfaction of teams. The subject teams were engaged in the classification of calls and assignment of police cars to deal with the calls during a police radioroom simulation under laboratory conditions. The training methods studied were (a) task training, those skills necessary to complete the team mission; (b) group dynamics training, those skills necessary to foster interaction and a feeling of cohesiveness among team members; and (c) team training, skills such as load sharing which are necessary for the team to function as a coordinated unit.

Overview

Chapter II reviews the theories and literature related to this investigation. Chapter III outlines the design of the study, the hypotheses under investigation, and the analyses conducted on the data. Chapter IV contains the results of the analysis of data as it relates to the hypotheses. Chapter V includes a discussion of the findings and recommendations for further research.

CHAPTER II

REVIEW OF RELEVANT THEORIES AND LITERATURE

In the most general sense, this study is based upon three fields of social science inquiry: (1) group dynamics, (2) general systems theory, and (3) training. In conceptualizing this research, utility of the group dynamics literature as a foundation for the training of police teams is questioned. An alternative perspective is derived from general systems theory and human factors training research. Following discussion of the three fields of study, the divergent orientation, team skill training, is specified.

The chapter concludes with an analysis of the gaps in current research which this study helps to fill.

Group Dynamics

Cartwright and Zander (1958) define group dynamics as a field of inquiry dedicated to advancing knowledge about the nature of groups, the laws of their development, and their interaction with individuals, other groups, and larger institutions. A basic premise of the perspective is that the methods of science can be employed in the study of groups.

Group dynamics was first identified as a distinct field of inquiry in the late 1930s (Lewin, Lippitt, & White, 1939). Kurt Lewin (1943, 1948) popularized the label group dynamics, developed

theory, contributed to research, and established the first organization devoted explicitly to group dynamics research at Massachusetts Institute of Technology in 1945. However, the field was not the creation of any one person or the result of any one theoretical perspective.

The Major Theories

At least eight formal orientations toward analysis of group dynamics have been suggested. Shaw (1976) observed that there exists little agreement even among group dynamicists as to the most appropriate form of analysis of group behavior.

The most traditional perspective, field theory, contends that behavior is the result of a field of interdependent forces which act upon individuals in the group. Field theory was originated by Lewin (1951) and reviewed by Cartwright (1959a, 1959b) and Deutsch (1954).

Interaction theory (Bales, 1950; Homans, 1950; Whyte, 1951) suggests that group behavior is a function of the relationships among activity, interaction, and sentiment. A similar attempt to understand complicated processes through the analysis of basic elements is articulated by system theorists. The systems orientation views the group as a set of interlocking elements with emphasis upon inputs and outputs (Newcomb, 1950). An open system perspective of the group, recognizing continual interaction with the environment, is presented by Miller (1955) and Stogdill (1959).

The sociometric perspective as originated by Moreno (1934) deals with interpersonal choices among group members which bind the

group together. Sociometric theory was elaborated by Jennings (1943). Lindzey and Borgatta (1954) reviewed the position and found little systematic theory in the sociometric perspective.

Psychoanalytic group study is based upon Freud's (1922) work in extending motivational and defensive processes of the individual to the group. Freud's work has been elaborated by Bach (1954), Bion (1948, 1952), Ezriel (1950), Scheidlinger (1952), and Stock and Thelen (1958). Concepts of regression, identification, and the unconscious have had a dramatic influence upon group dynamics though little empirical research based upon the orientation has been conducted.

Application of individual processes such as learning, motivation, and perception to group processes has occurred under the general psychological orientation in group dynamics research. The manner in which individuals receive and integrate information about the group and the manner in which this affects behavior has been analyzed by Asch (1952), Festinger (1957), Heider (1958), and Krech and Crutchfield (1958). The work of Jones and Gerard (1967) in exchange theory and the systemization of exchange theory to small groups by Thibalt and Kelley (1959) are representative of this perspective.

An empirical-statistical orientation was presented by Cattell (1948). Cattell suggests that basic concepts of group theory can be discovered through application of statistical procedures such as factor analysis. Such a means of concept formulation is viewed as superior to ad hoc construction by a theorist. Borgatta, Cottrell, and Meyer (1956) and Hemphill (1956) are representative of this perspective.

A completely divergent orientation from the empirical school is the perspective of authors who have attempted to construct formal mathematical models to deal with specific aspects of group behavior. French (1956), Harary, Norman, and Cartwright (1965), Hays and Busch (1954), Rapoport (1963), and Simon (1957) have pursued this emphasis.

Lack of an Overriding Theory

In commenting upon the existence of a diverse number of orientations toward group dynamics, Shaw (1976) suggested the most critical limitation of the perspective:

> Each of these theories attempts to explain group behavior, although they differ in the range of group processes encompassed. . . . The theories also differ in precision, although it is difficult to compare them in terms of overall precision. . . . In spite of these problems, each theory aids in the understanding of the group process (pp. 35-36).

It is obviously true that divergent perspectives and alternative focuses within group dynamics tend to explain various aspects of group behavior. However, the total orientation offers so many suggestions that utility of the group dynamics movement is subject to question. The focus of group dynamics is upon "mastery of minutia." There exists no overriding theoretical orientation. There has been little conceptualization of the field. Thus, it is difficult to structure effective training programs for a system.

For every principle or finding in the group dynamics literature which suggests one course of action, there exists an alternative perspective to suggest the opposite. Many of the principles of group dynamics have acquired normative implications suggesting groups should be large or small, autocratic or participatory, task oriented or

social oriented, depending upon the perspective of the particular theorist. Simon (1945) found such internal inconsistency and normative bias of negligible utility for organizational decision making. Because of this multiplicity of orientations it is extremely difficult to structure effective training programs based upon group dynamics theory.

Lack of Demonstrated Effectiveness

Two extensive reviews have evaluated the group dynamics research literature (Campbell & Dunnette, 1968; House, 1967). Problems exist in drawing specific conclusions from the field as studies vary widely in quality and degree of control employed. In terms of behavior change on the job, group dynamics training appears to have an impact (Hinrichs, 1976). Participants do exhibit changed behavior when back on the job. However, such behavior change has not been linked to changes in organizational effectiveness. "People who are motivated to change become most involved in the program and in fact do change; on the other hand, it is clear that many people do not become involved and do not change their behaviors" (Hinrichs, 1976, p. 856).

The lack of an overriding theoretical perspective which would allow design of effective training programs and the absence of evidence suggesting that group dynamics impacts upon organizational effectiveness gives cause to question the utility of the perspective for criminal justice team training design.

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General Systems Theory

The classic body of organizational theory examines structure and function of an organization as the blueprint for design of a machine to fulfill some practical objective. Katz and Kahn (1966) argue, "The essential difficulty with this purposive or design approach is that an organization characteristically includes more and less than is indicated by the design of its founder or the purpose of its leader." They suggest, "It would be much better theoretically . . . to start with concepts which do not call for identifying the purposes of the designers and then correcting for them when they do not seem to be fulfilled" (p. 16).

A Theoretical Basis for Training

The alternative theoretical position presented by Katz and Kahn (1966) for analyzing organizations is an energic input-output open systems model based upon general systems theory. Such systems develop a continual and ongoing exchange with the environment of which the system is a part. Katz and Kahn contend it is the very fact that organizations are open systems which is of importance to social scientists. If this were not the case, we could learn about organizations from the study of biological organisms or related closed systems.

The position taken here is that the open system perspective provides a sound theoretical foundation for the analysis of organizational subsystems such as training. Systems science provides a means of conceptualizing experience and utilizing it to generate a theory

of human interaction in organizations. This theoretical framework provides a basis for the design of training systems.

Training System Characteristics

Katz and Kahn (1966, pp. 19-26) outline nine characteristics[2] which they observe seem to define all open systems:

1. Importation of energy. Some form of energy is imported by the system from the external environment.

2. Throughput. Energy (input) available to the system is transformed or reorganized to create some product.

3. Output. The system exports some product into the environment.

4. Systems as cycles of events. The patterns of activities of the energy exchange have a cyclical character. The product exported into the environment furnishes energy for repetition of the cycle of activities.

5. Negative entropy. To survive, the open system must overcome entropy, the second law of thermodynamics. All forms of

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[2]The Katz and Kahn taxonomy is neither unique nor all inclusive as General Systems Theory has no definitive body of doctrine. Additional systems characteristics are discussed by Kast and Rosenzweig (1974, pp. 113-119), Litterer (1969, pp. 3-6), and Schoderbek, Kefacas, and Schoderbek (1975, pp. 12-14). Buckley's (1967, pp. 50-65) discussion of morphostasis (the degree to which systems maintain their given form, organization, or state), morphogenesis (the degree to which systems change to meet changing environments), and multifinality (the same paths lead to a variety of final states) is particularly applicable to training systems. For a critique of General Systems Theory see Phillips (1970).

The Katz and Kahn conceptualization is employed here because of the precision with which the authors have applied the nine characteristics to social science.

organizations (all systems) move toward disorganization or death. To survive, the system cannot remain static but must import more energy from its environment than it expends. Such energy must then be stored for periods of crisis.

6. a. Information input. Information comes into the system as energy.

b. Negative feedback. Information feedback from the system allows the organism to correct deviations.

c. Coding. Reception of inputs into the system is selective. Not all inputs are capable of being absorbed into the system. A system assimilates only those inputs to which it is adapted and attuned. The functions performed by the system determine its coding mechanism.

7. a. Steady state. The importation of energy to arrest entropy maintains some constancy in energy exchange. While a steady state is not motionless, the ratio of energy exchanges and the relations between parts remain the same.

b. Dynamic homeostasis. Any internal or external factor disrupting the system is countered by forces which restore the system as closely as possible to its previous state.

8. Differentiation. Open systems differentiate and elaborate. Diffuse global patterns are replaced by more specialized functions.

9. Equifinality. A system can reach the same final state from differing initial conditions and by a variety of paths.

Utility of the Training System Perspective

A distinction is often made between the conceptual, problem-oriented system of the scientist, in which the purpose is to understand, and the empirical, product-oriented system of the engineer, in which the purpose is to control (Gagne, 1962, p. 516). However, whether the stated purpose is to understand or to control, the general systems orientation provides a conceptual framework for extension of result (understanding or control) to the alternative intent (control or understanding). Finan (1962) provides an example:

> Viewed from within the limited system of science, the conclusions of theoretical research are, in fact, implicit recommendations for that special kind of action that seeks primarily to extend our understanding of nature. From the same perspective, the engineer's recommendations are accorded the status of information, since they have not yet been transformed into principles of action of the type useful for theoretical purposes. From the more inclusive viewpoint of the world of affairs, the engineer's recommendations serve as formulas for immediate action directed at controlling the environment; the conclusions of the theoretical scientist now serve the purpose of information to be adapted to the practical requirements of action (p. 544).

Thus the immediate goal of each approach becomes the long-term goal of the other perspective. The information that systems science can provide to help us understand organizational teams can be extended to allow system design of training for the control of team behavior. The open systems perspective, which provides a theoretical framework for derivation of a team training model, presents a means of understanding team behavior and improving the effectiveness of team performance.

Training

Training is a systematic, intentional process of altering the behavior of organizational members in a direction which contributes to organizational effectiveness (King, 1964, p. 125; McGehee & Thayer, 1961, p. 3; Warren, 1969, p. 3). Training is directed toward a particular skill. It is designed to enhance the level of skill proficiency on a specific task or group of tasks (Goldstein, 1974). Skills are distinguished from the abilities of individuals which are thought to be more basic, general, enduring, and less task specific than skills. Abilities comprise the individual difference variables that personnel bring to the training situation (Hinrichs, 1976, p. 833). Skills comprise the substance of training. An individual is said to be skilled when the competency which he performs requires "minimal effort for maximum effect" (Freed, 1962, p. 392).

The Psychology of Training

Campbell (1971) in his analysis of the psychology of training for the Annual Review of Psychology observed, "By and large, the training and development literature is voluminous, nonempirical, nontheoretical, poorly written and dull" (p. 565). Campbell, Dunnette, Lawler, and Weick (1970) pointed out that training is faddish to an extreme. If criminal justice training can be held as a shining example of nothing else, it most certainly is an exemplar of the training malady.

Hinrichs (1976) points out that training is where all factors of an organization come together, or at least is where they all

should come together when organizations are studied. Reviewing Campbell's assessment of personnel training to the end of the 1960s and based upon his own literature review through the mid-1970s, Hinrichs concluded:

1. The field of training in organizations is dominated by practitioners.
2. The major emphasis, in most organizations, tends to be on the "training program." The premium and organizational reward in real life most often is on doing something--anything seen as being responsive to organizational needs. In the rush to "do something," the practitioners all too often lose sight of the problem.
3. Fads move in and out with the greatest of ease.
4. There is little or no concern with using theory in the design of programs, much less with building new theory. The good program is one that is attention-getting, dramatic, contemporary, or fun. Whether or not it changes behavior becomes secondary.
5. There is precious little research on the effectiveness of training. Most programs are sold and accepted on faith. Psychologists seem to have played much more of a role in the design and evaluation of training efforts in the military than they have in the private sector of our economy. Most of our few generalizations about training are indebted to military-sponsored research.
6. The situation is very similar to what it was back in the 1950s or even the forties. While the content and emphasis of personnel training may have changed, the way in which training in organizations is designed and implemented has evolved very little (p. 829).

In terms of man-hours expended and dollars committed, training is of paramount importance to organizations. Mesics (1969) points out that the trend in American organizations is toward greater reliance upon training.

Shortcomings of Current Training Strategies

Current training does contribute to individual and organizational effectiveness (Campbell, 1971; Hinrichs, 1976). The contention

is simply that it can be done better. It is as important to understand why certain procedures work as it is to identify which ones work. Training technology cannot continue to build upon ad hoc considerations. General principles derived from systematic research must be employed in the design of training systems (Hinrichs, 1976, p. 821). McGehee and Thayer (1961) suggest:

> Sporadic research, however brilliant, will not give us answers to the many problems concerning learning which are required if we are to make training a useful management tool. What is required to answer these problems is systematic research (p. 179).

Perhaps one of the reasons for a lack of progress in a theory of training has been the focus of research. Major authors in the area of training adhere to "principles" derived from learning research, e.g., "motivate the learner," "distribute practice," "make instruction meaningful to the student" (Bijou, 1970; Blum & Naylor, 1968; Hallstein, 1969; Korman, 1971; McCord, 1968). However, such principles are often ignored with regularity by training practitioners. Gagne (1962) points out that there clearly exist many instances when the traditional principles are of little help or may be counterproductive to enhancement of training effectiveness. In complex tasks, learning principles such as "repetition" and "knowledge of results" are difficult to identify and use in a practical manner.

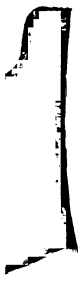
Gagne constructs a convincing argument for utility of component task identification, subtask mastery, and component skill sequencing as a training methodology to enhance performance effectiveness. Bass and Vaughan (1966, p. 134) provide an example of an empirical approach to optimal sequencing through examination of correlation

patterns among key subcomponents of training. As an example, five sequential tasks in a training program show the following intercorrelates:

Task	A	B	C	D	E
A	-	.35	.32	.40	.43
B		-	.70	.17	.52
C			-	.10	.45
D				-	.38
E					-

The patterning would suggest that some subcomponent tasks are more highly related to certain tasks than others. Subtasks b and c are highly correlated, and it could be expected that skills learned in one task might transfer to a high degree of performance in the other. The correlational matrix could be rearranged in such a manner that the magnitude of coefficients increased down the columns and decreased across the rows. In this manner each element is maximally related to adjacent elements. Thus maximum transfer could be expected to occur when training is sequenced in the following order:

Task	C	B	E	A	D
C	-	.70	.45	.32	.10
B		-	.52	.35	.17
E			-	.43	.38
A				-	.40
D					-



However, time is rarely spent determining in detail what training should accomplish. Imprecise ideas exist concerning the specific tasks toward which training should be directed. There is less understanding of the basic components which make up the task. Seldom is a determination made of how to achieve proficiency in component skills, how to link competencies together, and how to achieve mastery of the total task. As a result, training programs tend to degenerate to one of three perspectives:

1. Programs become oriented toward a preconceived objective or value system associated with a particular school of thought such as Theory Y, Grid Training, or Transactional Analysis (Campbell, 1971).

2. Programs focus upon a single technique such as the T-Group or Organizational Development which is seen as the panacea to organizational problems.

3. Programs are viewed as short-term, one-shot efforts which, once completed, indicate that all necessary skills have been mastered.

A second shortcoming of the training movement has been the simplistic manner in which the concept of training has been approached. Jensen (1967, p. 123) outlines a three-dimensional schema representing classes of variables in the learning process. The first dimension consists of learning content and modality (verbal, spatial, visual). The second dimension is learning procedures (pacing, distribution of practice). The final dimension represents the type of learning (psychomotor skills, cognitive skills, or interpersonal skills). Little research has been conducted within the cubes described by the intersection of the three dimensions.

The third difficulty associated with current training methodologies stems from superficial application of the systems concept without full understanding of the perspective. While the orientation is a very "in" perspective among personnel and training authors, "most descriptions of . . . training practices in systems terms are shallow and do little to clarify what's going on" (Hinrichs, 1976, p. 834). Glaser (1962) represents an early attempt to outline the system components of training: (a) instructional goals, (b) entering behavior, (c) instructional procedures, (d) performance assessment. Unfortunately, little research has been directed toward verification, elaboration, or implications of the components.

Though discussion of system training concepts is prevalent, little precise application of the orientation to the design of operational training systems exists. Use of the systems perspective in design of training programs remains rare outside of the military. A notable exception is the work of Davis, Alexander, and Yelon (1974). It should be noted that two of the authors (Robert Davis and Lawrence Alexander) were RAND and System Development Corporation (SDC) researchers. This may explain the use of system training technology (see Human Factors Research) which was developed by RAND and SDC under military contract.

In summary, the process of selecting training techniques and developing programs is today more of an art than a science. Most frequently, training design is based upon common sense and experience rather than upon research. Current training is further compounded by what Campbell, Dunnette, Lawler, and Weick (1970) refer to as modifiers:

the cost of training, equipment, facilities, time available on the part of trainee and instructor, competency of the training staff, and ability and motivation of trainees. Even the evaluation of training programs may be approached from a variety of orientations, including reaction of the participants, learning of the trainees, on-job behavior, or organizational results (Kirkpatrick, 1977).

Shortcomings of Current Team Training Strategies

Alexander and Cooperband (1965), Briggs and Johnson (1967), Klaus and Glaser (1968), and Fry (1970) have reviewed the team training studies. The current group dynamics movement provides little insight into improving the performance of working teams (Klaus & Glaser, 1968). Working teams are composed of individuals with highly specialized functions or jobs. Group dynamics research tends to focus only upon problem solving by small groups in emergent situations (Boguslaw, 1961). While a great deal of literature exists, Fry (1970) concludes that group dynamics theorists have contributed little of practical significance to designers of training programs for working teams. Even distinguished researchers in the field of group dynamics such as Borgatta (1960) acknowledge the enormous number of "waste" publications which proliferate in the field.

The distinction between work teams and small groups is made more precisely by Klaus and Glaser (1968). (See Figure 2.1.) Teams have a rigid structure and well-defined positions. They require proficiency and coordination of nonoverlapping tasks often employing equipment or psychomotor skills. Guidance may be given. Small groups

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Teams

1. Are relatively rigid in structure, organization, and communication networks.

2. Have well-defined positions or member assignments so that the participation in a given task by each individual can be anticipated to a given extent.

3. Depend on the cooperative or coordinated participation of several specialized individuals whose activities contain little overlap and who must each perform their task at least at some minimum level of proficiency.

4. Are often involved with equipment or tasks requiring perceptual-motor activities.

5. Can be given specific guidance on job performance based on a task-analysis of the team's equipment, mission, or situation.

Small Groups

1. Have an indefinite or loose structure, organization, and communication network.

2. Have assumed rather than designated positions or assignments so that each individual's contribution to the accomplishment of the task is largely dependent on his own personal characteristics.

3. Depend mainly on the quality of independent, individual contributions and can frequently function well even when one or several members are not contributing at all.

4. Are often involved with complex decision-making activities.

5. Cannot be given much specific guidance beforehand since the quality and quantity of participation by individual members is not known.

Figure 2.1. Characteristics of teams and small groups. (From Klaus & Glaser, 1968.)

have a loose structure with assumed positions. They depend upon the quality of independent, individual contributions involving complex decision-making activities. Little specific guidance may be advanced.

Thus, there exists a critical distinction in the type of training which is beneficial to the two organizational forms. Small groups allow the modification of organizational variables such as group structure. The stability of task-oriented teams allows only manipulation of variables which may enhance proficiency in a predetermined structure.

Despite this difference in form and functions, group dynamics training designed for small groups is continually applied to working teams in a criminal justice context. The police task force report by the National Advisory Commission on Criminal Justice Standards and Goals recommended that officers assigned to teams be given training in the "theory of group dynamics" and other skills which will allow them to work effectively as a team (National Advisory Commission, 1973, p. 161). A literature review of the issues in team policing by the National Sheriff's Association held team training programs in Albany, New York; Cincinnati and Dayton, Ohio; and Los Angeles, California, as exemplars because they "included some training or workshops in the areas of 'group dynamics and human relations'" (Gay, Woodward, & Day, 1977, p. 27). Group dynamics team-building workshops are common (Boer & McIver, 1973; Thibault & LeBaron, 1974).

The continued use of group dynamics training in a criminal justice team context, especially team policing, may be explained by James Q. Wilson's (1973) observation that "recruits are selected

and trained in ways that often bear little relationship to their inevitable responsibilities" (p. 219).

Team training in criminal justice requires neither mastery of specific team skills nor use of trained skills in an operational context. Therefore, continued use of group dynamics training intended for small groups is possible. While the literature on police teams is voluminous (Edgar, Marcus, Wheaton, & Hicox, 1976), analysis of police team training is all but neglected. What programs have been reviewed (Boer, Byron, & McIver, 1973) deal with group dynamics training. The existence of alternative team training strategies is seldom discussed.

Human Factors Research

The team training systems orientation has had its greatest impact upon military training. The work is a natural outgrowth of research by human-factors psychologists who designed military personnel training systems. Often referred to as "man-machine system experiments," the investigations made extensive use of simulation. The research involved not only multiperson team efforts, but also dealt heavily with man-machine interactions. (See Figure 2.2.)

Though man-machine system experiments were both pioneering and costly, little is known of the work outside of the organizations for which the research was conducted. While some sets of experiments cost in excess of one million dollars, reports were classified and have been downgraded only recently. Reviews of work in the field have been incomplete (Licklider, 1962; Sinaiko, 1962; Singleton, 1964) or

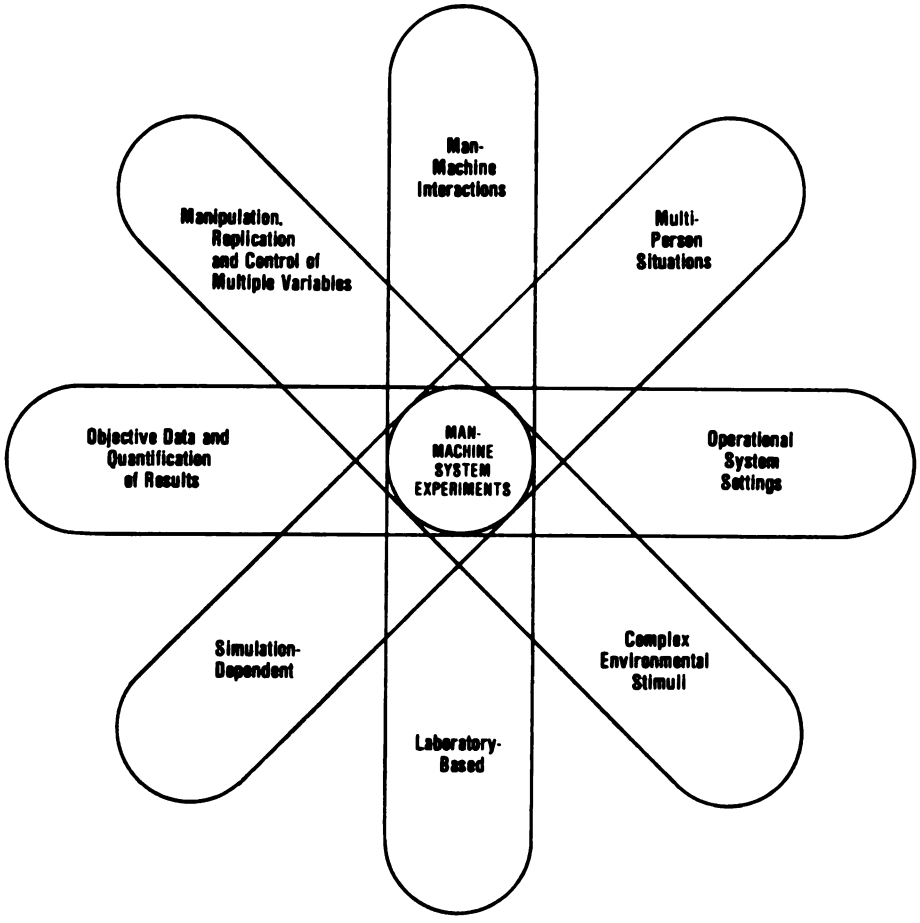

Figure 2.2. Cluster diagram showing characteristics of man-machine system experiments. (From Parsons, 1972, p. 2.)

touched only on specific methodologies (Chapman, 1965; Davis & Behan, 1962; Haythorn, 1963; Kidd, 1962).

In the first comprehensive review of what he called "fifty million dollars of buried research," Parsons (1972) explained the nature of the projects:

> By and large the experiments resulted from technological developments that placed new requirements on men to work together in military or civilian equipment aggregates which grew out of the new technology. Because in many cases these aggregates were developed as distinct entities for definite purposes, they came to be called systems (p. 3).

The technological development which had the greatest impact upon this type of team research was radar. The fact that personnel had to work together in such systems meant that the outputs of one individual or group of individuals became the inputs of another. It also implied central "nodal" positions where information was received and actions directed. Most important for our purposes was the realization that individuals must operate in some coordinated manner on the same general task--that they must share a load.

Load Sharing Research

The earliest investigation of load sharing occurred in a series of experiments between 1952 and 1954 at RAND Corporation's System Research Laboratory. A former pool hall in Santa Monica, California, was equipped to simulate Air Force air defense sites. The four programs--Casey, Cowboy, Cobra, and Cogwheel--"consumed 595 hours of session time, occupied 140 subjects and cost one million dollars" (Parsons, 1972, p. 161). An overview of the program was presented as a symposium at the 1955 American Psychological Association

meetings in San Francisco and was later published in Management Science (Chapman, Kennedy, Newell, & Biel, 1959).

The experiments of greatest interest here are Cowboy and Cobra. Both experiments involved the ability of radar crews to detect and track commercial, military, and "enemy" air traffic. In each case, researchers observed,

> Task difficulty was not the number of aircraft in the area but was instead the difference between the number of aircraft and the crew's load carrying capacity of the moment. The traffic load that was difficult to handle today might prove quite easy a week from now (Chapman, Kennedy, Newell, & Biel, 1959).

Experimental manipulation for both project Cowboy and project Cobra consisted of two classes of variables: "continuous pattern stresses" and "rare event stresses." The first three variables (intensity of the overall task load, distribution of the load, and uncertainty of the load) were termed "continuous pattern stresses." The last four variables (intensity of specific task load, i.e., number and types of definitely hostile aircraft, distraction from the task, variety of distractions, and redundancy of information) were classified as "rare event stresses."

The purpose of the second experiment, Cobra, was to verify the results of Cowboy. The success of Cobra personnel in dealing with the two classes of variables has not been declassified. However, Sweetland and Haythorn (1961) reported that crews were able to maintain important radar tracks and eliminate unimportant tracks. They called the process filtering and observed: "Load increases finally caused a pruning of almost all behavior not critical to defending the

area. . . . The crews also (as load went up) tended to carry tracks for shorter and shorter times, and also with fewer and fewer reports."

This series of research projects conducted by RAND Corporation's System Research Laboratory eventually resulted in a group of experiments by Systems Development Corporation. SDC was initially a division of RAND. When it became larger than the parent organization, SDC split off. System Development Corporation experiments were directed toward evaluating or improving both system training and the systems themselves.

The SDC Weapons Director Study experiments (Parsons, 1972, p. 226) resulted in four techniques designed to reduce and smooth quantitative team load. The first procedure allowed working faster by deleting nonessential, though helpful, actions. The second technique necessitated selection of alternative actions requiring less time. The third method required sequencing of actions according to required durations and associated delays. The fourth approach, anticipatory planning, consisted of an operator taking action before it was necessary when slack time existed.

Team Skills Training

Current literature concerning operational teams concentrates upon component acts such as problem solving, report writing, and precision shooting (Gordon & Howe, 1977; Lenk, 1977). However, component skill enhancement (the increased competency of team members to perform task skills) has not been shown to increase organization effectiveness (Gordon & Howe, 1977).

Team Skill Competencies

Freed (1962)[3] suggests that attention should be focused upon enhancement of team skills (e.g., load sharing, filtering, and adapting). He contends that such competencies will affect the entire organizational structure rather than restricting change to members of the organization. A by-product of such change will be the development of human relations attributes that have been impossible to convey as component skills. The Freed methodology suggests that team skill training systems which alter behavior will in turn affect attitudes. The perspective is in marked contrast to group dynamics training, which attempts to convey skills (active listening, tension release, establishing eye contact) that are believed to change attitudes. This is done in the hope that behavior will in turn be modified. The success of Burnaska (1976), Byham, Adams, and Kiggins (1976), Byham and Robinson (1976), Goldstein and Sorcher (1973, 1974), Latham and Sarri (1979), Moses (1978), Moses and Ritchie (1976), Smith (1976), Sorcher (1971), and Sorcher and Goldstein (1972) in changing attitudes through modification of behaviors suggests the wisdom of the Freed perspective.

Team skills training deals with "units of behavior composed of an action and reaction which occur between two or more individuals in a system and which have implications for the achievement of system goals" (Freed, 1962, pp. 390-391). Implicit in Freed's discussion is

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[3]Boguslaw and Porter (1962) discuss a similar orientation but with less precision than Freed. However, their discussion of overload (pp. 403-404) augments the Freed position employed in this study.

the assertion that team competencies must be anticipated in system formulation and included in system operation. If individuals are to function effectively as teams, interactive team skills must be conceptualized, elicited, and rehearsed in a training system and then maintained in an operational system under situations of stress.

It is not clear if researchers, trainers, or practitioners who deal with teams have conceptualized a distinction among skills which allow team members to complete their specific mission (task skills), develop a feeling of cohesiveness (group dynamics skills), and function as an effective team (team skills). It is clear that the major thrust of present criminal justice training is task oriented. Those agencies which implement training programs to improve team performance rely upon traditional group dynamics technologies. In both cases interactive team skills which allow team members to function as an effective team are ignored.

Freed's research appears to provide a solution to this void in the team training literature. The basic flaw in Freed's taxonomy of interactive team skills is the method of derivation. The listing is ad hoc "derived from observations of many people working together in several different system contexts" (Freed, 1962, p. 393). As a result there exists duplication of skills (assisting and load sharing are extremely closely related competencies in the Freed taxonomy) while flexibility, stress reduction, knowledge of results, and debriefing are ignored. The difficulty arises from Freed's lack of a theoretical perspective such as general systems theory for derivation of team competencies.

Considering a team as an integrated system rather than as a collection of individuals has implications for the personnel process. It indicates that teams rather than individuals should be selected. It suggests that the team should be trained as a unit rather than as individuals who are later assembled as a team.

Derivation of Team Skill Competencies

Chapman and Kennedy (1955) discovered that as the task load increased, air crews were caught between two stresses--failure stress and discomfort stress. Failure stress arises from the disparity between aspiration and performance. Discomfort stress occurs from the difference between effort demanded by the task and that which can be comfortably afforded. Failure stress guides the gradual acquisition of short cuts that do not degrade effectiveness. Discomfort stress forces discriminations and short cuts in response. The system concepts of steady state and dynamic homeostasis provide a model for use of stress concepts to predict how fast and how far a system can adapt. The framework allows identification of difficult components in the task and definition of conditions that will help a team to utilize its resources most efficiently. The systems concept of negative feedback indicates the importance of immediate knowledge of results to allow the system to correct deviations. The heuristic nature of a system accents the need for debriefing to allow the system to learn from previous system functions.

Derivation of Load Sharing Competency

It is not possible to present a refined theory of team training at this time. Nor is it feasible to derive a complete set of team skill competencies from general system theory. The purpose here is to outline a framework for future derivation of team training systems. The derivation process is outlined for the component load sharing which is considered critical to team performance. This team skill competency derivation methodology is offered as an alternative to ad hoc specification of team skills as presented by Freed.

A normal team system consists of components such as input, a specified number of team members, skills of those members, the motivation of the team, and the innovation of the team, the willingness of the team to take risks, team constraints such as processing procedures or amount of time, and output.

The relationships between team system components are not clear. Output may be inversely related to constraints and is perhaps inversely related to risks. It is logical that as the risk goes up innovation may decline.

Of greatest interest to us at this time is the role of load sharing in team performance. Team systems, like all other systems, have a variable output based upon input to the system. This means that the throughput function of a team will be variable. By definition, a team has a high degree of differentiation through which general patterns are replaced by more specialized functions. The system concept of equifinality assures that multiple means may be employed to reach the same end. The concept of dynamic homeostasis specifies

that any internal or external factor disrupting the system will be countered by forces to restore the system as closely as possible to its previous state.

An external factor such as rapidly increased input or an internal factor such as decreased efficiency in processing throughput due to less than normal team strength or unusual constraints such as new processing procedures or shorter processing time may cause a system overload. In such a case the system will respond to the overload in one of three ways:

1. Process the input in the best manner possible given existing constraints (possibly resulting in inferior output).

2. Process less input, resulting in unsatisfactory output.

3. Attempt to redistribute the load to assure normal output.

The most satisfactory option appears to be redistribution of the load among differentiated team members in an attempt to assure normal output.

The need for load sharing in a team system is based in the most abstract sense on what Freed (1962) refers to as incongruence between systems. The conceptual system that is designed and built is distinct from the operating system which evolves under impact of the environment, operations, and personnel once the system begins to function. Since it is not possible for system designers to anticipate all environmental conditions and system limitations during system design, the operating system must adapt to internal and external system disruptions. Thus loads within operating systems must be redistributed.

In traditional team systems, personnel are trained only in component task competencies (task skills or group dynamics skills). Under such circumstances no training is specifically directed toward mastery of interactions which must occur in the team in response to system needs. When systems which are untrained in team skill competencies do respond to load imbalance, output remains below optimal potential. Load sharing occurs only by chance.

The Value-Proficiency Paradigm

An important component of team training system design is the Freed (1962) value-proficiency paradigm. This orientation suggests that the same behavior, depending on its context, has divergent values. The skill of an individual as represented by precision, speed of response, and ability to repeat at will does not always have a positive system value. Skilled activity can be highly desirable in one context and undesirable in another.

An activity in the value-proficiency paradigm has value only in relation to the system in which it occurs. The value of a specific system behavior can only be determined within the context of the system of which it is a part and in relation to the system's goals. Contingent upon the system context, the same behavior may be enhancing, hindering, or neutral.

As an example, in a police context an officer who is "waiting" may be viewed as neutral in the investigative system, enhancing in the personnel system if he is waiting for his shift to begin, and

hindering in the patrol system if he is loafing. The same behavior has different values contingent upon the specific system context.

In the same manner, the load sharing competency may be of neutral value in a stable functioning team system, undesirable if abused when a system is not overloaded, and highly desirable should input, team strength, or constraints indicate system overload.

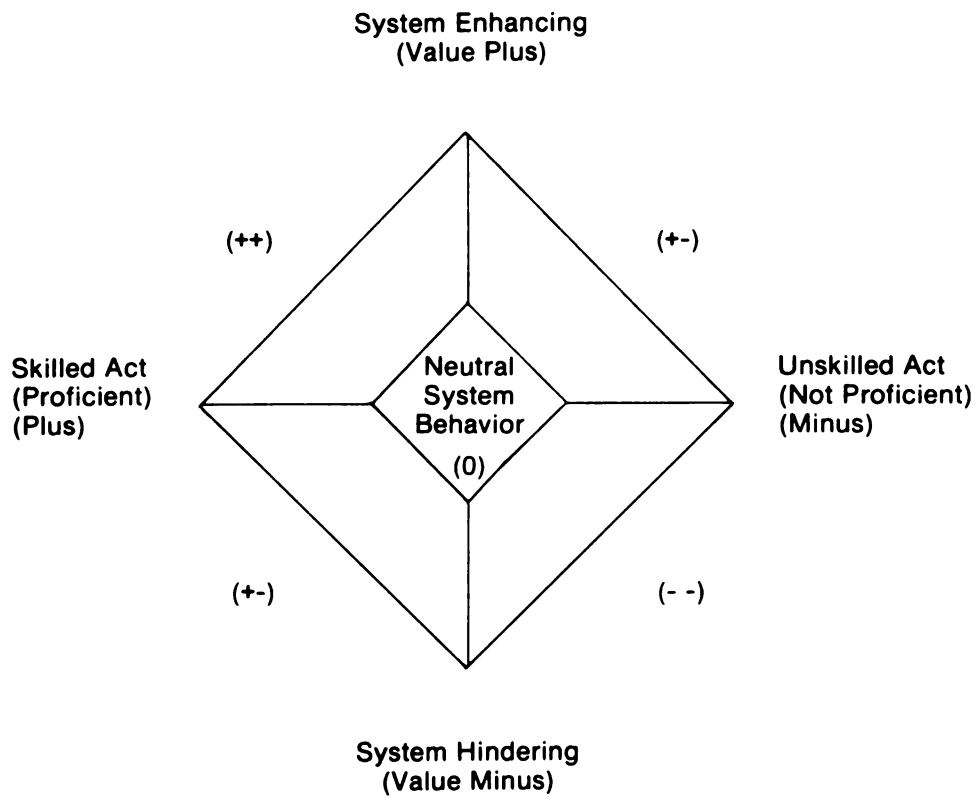

Figure 2.3. Value-proficiency paradigm. (From Freed, 1962, p. 392.)

Gaps in the Reported Research

This study attempts to address three gaps in the team training research. First, no reported experimentation has occurred with a team competency derived from general system theory. As previously discussed, general systems theory provides a theoretical framework for understanding team behavior and improving team performance. It appears prudent to examine under experimental conditions the effectiveness of a team competency derived from the theoretical position.

Second, no study has compared the effectiveness of task training (skills which allow members to complete their mission), group dynamics training (skills which develop a feeling of cohesiveness), and team training (skills which allow members to function as an effective team).

Due to increased emphasis upon the team model in criminal justice, it seems wise to evaluate the effectiveness of each of the three previously discussed team training orientations.

Third, no research has investigated the effects of the sex of team members upon the effectiveness and level of satisfaction of teams. The major portion of previous team experiments dealt with male teams. The increasing role of women in the police function suggests the need to evaluate their effect upon team performance.

CHAPTER III

METHOD

Chapter III provides an overview of the research design. The study sample and research task (pretest, training, and simulations) are specified. Dependent variables involved in the study and the method of scoring them are discussed. The specific hypotheses investigated are presented. The chapter concludes with a summary of the procedures which were used to analyze the data.

Subjects

The sample consisted of 192 undergraduate freshman, sophomore, junior, and senior students enrolled in criminal justice classes at Michigan State University during the spring of 1978. The investigator did not teach any of the classes. Arrangements were made in each class to reward students participating in the study with extra-credit points. During the first two weeks of the spring term, the investigator visited seven classes in which the professor had agreed to award extra credit to subjects participating in the experiment. The following information was explained to students in each class:

1. The purpose of this study will be to determine the effect of various types of training upon team performance.

2. Participants will be placed in teams of four and will be trained in various skills. After completing the training program,

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each team will be asked to perform a task which consists of a simulation of a real-world criminal justice activity.

3. Up to 5 percent of the total possible points in this class may be earned by each student whose team completes the training and performs the task satisfactorily as scored on an objective performance measure.

4. The total experiment will require approximately two hours of time to complete.

After the study was outlined, questions concerning the experiment were answered. Students interested in participating in the research were asked to sign a form indicating their name, phone number, and time preference for participating in the experiment.

Volunteers were grouped by sex. Subjects within each sex category were randomly assigned by means of a table of random numbers (RAND, 1954) to one of four training treatments: Task Skill Only; Task Skill and Group Dynamics Skill; Task Skill and Load Sharing Skill; or Task Skill, Group Dynamics Skill, and Load Sharing Skill.

To control for learning as a result of pretesting, each of the training treatments had been subdivided into pretest and non-pretest groups. The random assignment resulted in 48 four-person teams with a fifth alternate member designated for each team.

Each training team was assigned a two-digit code. (See Appendix A.) The first number indicated the sex of the team, type of training to be received, and pretest treatment. Numbers 1 through 8 were male teams. Numbers 9 through 16 specified female teams. Numbers 7, 8, 15, and 16 indicated task skill only training. Numbers 1,

2, 9, and 10 identified task/group dynamics skill training. Numbers 3, 4, 11, and 12 specified task/load sharing skill training. Numbers 5, 6, 13, and 14 designated task/group dynamics/load sharing skill training. Odd numbers were used for pretested teams, while even numbers indicated teams which did not receive a pretest. (See Appendix A.)

The second team digit designated the particular team in each cell. Three teams were assigned to each cell.

Each individual in the team was assigned a code letter to facilitate identification: A (Adam), B (Boy), C (Charles), and D (David), consistent with the police alphabetic code used in radio communication. The letter codes of team members were determined at the time of random assignment to the team. Each code specified the set of calls which the particular team member was to deal with during the training and simulations. To ensure that team members utilized the correct call cards during each simulation, each call station was color coded: A (Adam) = Red, B (Boy) = Green, C (Charles) = Orange, D (David) = Blue.

As a result of the coding system it would be possible for the research staff to determine that subject 13.3C was a female, received task/group dynamics/load sharing skill training, was pretested, and received the third set of call cards in each simulation. A fifth alternative subject was sequentially assigned to each team. In the event that all five of the students were present for the experiment, the first four students assigned to the team participated in the study. The fifth student was taken to a separate room and informed

that credit for the project would be assigned even though participation was not possible.

Two student assistants telephoned each team member the night prior to the testing period and one hour prior to testing to remind the subject of the training session. Subjects did not know the identity of the other members of their team prior to the time they met to participate in the study.

Subjects reported to the fourth floor of Olds Hall on Michigan State University Campus. (See Appendix B.)

Each group of individuals was met by a student assistant who introduced the volunteers to each other. Students were asked to read and complete an Informed Consent Form (Appendix C) and a Biographical Data Sheet (Appendix D).

Procedures

Pretests

Following completion of the informed consent form and biographical data sheet, subjects were taken to the training room. Pretest subjects (one-half of the teams of each sex in each training treatment) were asked to complete a Skill Knowledge Pretest to determine knowledge of team skills being trained. (See Appendix E.) They were also administered a Pretest Simulation which was similar in construction to Post Test Simulations 1 and 2. The Pretest Simulation provided a score of the groups' ability to perform team tasks. (See Appendix F.)

Training

During the training segment of the experiment, subject teams were exposed to videotaped training programs which had been recorded in the studio of the Michigan State University Learning and Evaluation Service. (See Appendices G through I.) The training segments were each 10 minutes in length. During each training session, team members received basic skills, practiced the skills, and applied the competencies in a simulation of the task they were to perform (Goldstein & Sorcher, 1974). After practice and application of the skills, team members received knowledge of the results of their performance.

Each of the training groups viewed different combinations of the same tapes. All teams viewed the task skill training tape. (See Appendix G.) The task skill/group dynamics skill groups as well as the task skill/group dynamics skill/team skill groups viewed the same Group Dynamics training tape and participated in the same practice. In this manner it was possible to construct four training programs incorporating three types of team training. The training programs utilized different combinations of the same three basic training modules. (See Appendices J through L.)

Each team viewed the modules of their training program in sequence. At the conclusion of training, team members were given the Skill Knowledge Test to measure their knowledge of the basic skills which they had received during their training. At the conclusion of the test, each team was given a five-minute break. They

were instructed not to discuss the training that they had received or the test.

Simulations

Six criteria were considered essential for any measure employed to test effectiveness of the task skill, group dynamics skill, and team skill training methodologies:

1. Ability to test a variety of team skills or competencies.

2. Ability to yield quantifiable results.

3. Use of a task which could be performed by small teams in a laboratory setting on a college campus.

4. Economy for large numbers of subjects.

5. Need for minimal preparation of participants for meaningful participation.

6. Close relationship of tasks performed to the criminal justice system.

Given these criteria and a limited research budget, a simulation (Clark, 1970; Glazier, 1970; Horn, 1976) was selected as the most effective means of testing team training effectiveness. Therefore, a radio room simulation[4] was designed which allowed testing of the three basic categories of team competencies (task skills, group dynamics skills, team skills) simultaneously.

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[4]The idea for using a police radio room format was based upon a review of research by the Ohio State University Disaster Research Center (Drabek, 1965; Drabek & Haas, 1966). The Ohio simulation also employed four-person teams manning a simulated radio room. The Ohio State study involved the simulated crash of an airliner into an apartment house. Team subjects were Columbus policemen who held radio room duties in real life and were assigned to the study.

Three simulations (pretest simulation Ø, simulation 1, and simulation 2) were constructed involving calls coming into four telephones in a police radio room. Each telephone was monitored by a team member. At 60-second intervals a tape-recorded signal sounded. At the tone, subjects turned over sequential call cards at their station. Each card, simulating a telephone call, was classified into one of four categories. (See Appendix M.) A patrol car under direction of the research subject could be assigned to deal with the call. The category to which the call was assigned affected the length of time necessary for a patrol car to deal with the call.

A Type Three Personal or Violent Crime required three blocks of time to deal with the call. A Type Two Property Crime Call required two blocks of time. A Type One Victimless Crime, Status Offense, Nuisance Call, or Service Call required one block of time. A Type Zero "Noise Call" represented communication which did not require the service of a patrol car. Such calls were to be ignored.

The simulation required two task skills: proper classification according to predetermined criteria and proper assignment of cars consistent with correct classification. Subjects at each station recorded calls on a daily log sheet. (See Appendix N.) As in an operational setting, misclassification of a call would result in improper assignment of patrol cars. Misclassification was penalized in scoring of the simulation. Improper classification would likely yield an additional penalty for improper car allocation.

Three simulations were designed. All were of equal difficulty, equal length, and had the same number of calls of each

classification. The first simulation was employed as a pretest and designated Simulation Set Ø. It was administered to one-half of the teams of each sex within each training treatment. All teams received Simulation Sets 1 and 2. (See Appendices O and P.) In each of the three simulations one station had one block of "extra" time, one station had an excess of two calls, one station had an excess of three calls, and one station had four blocks of "extra" time. (See Appendices Q through S.) The crime load (frequency of each type of crime) was equal between simulations. (See Appendix T.)

In each simulation it was possible for the team to distribute calls in such a manner that no car was idle and all calls were correctly processed within the allocated time frame. Such internal balancing of calls would result in a team score of zero, indicating optimal load sharing between team members. (See Appendices U through W.) Each simulation was pretested on a sample of 32 undergraduate criminal justice students for content, predictive, concurrent, and construct validity (Borg & Gall, 1971). The reliability of the simulations was then examined. While the three simulations had high face validity and produced consistent results among the pretest sample, no specific measures of validity or reliability were administered.

At the conclusion of the post-training break, the four team members were taken to a second room where they were instructed to work as a team to complete the mission. Team members were seated around a square table facing each other. A deck of cards was on the table in front of each subject. A tape recording was activated.

Each 60 seconds a signal sounded and a sequential call number was announced. At the tone, each of the four team members turned over a card corresponding to the announced call number. Each time cards were turned over, team members had to decide into which of four categories the calls should be classified from the information given. After reviewing the cards, individuals in the team made a decision to allocate the four available patrol cars to deal with the calls. During each 10-minute simulation set, individual team members received 10 calls.

After completing the first simulation, the team was taken to a third room where they completed a second, like simulation. At the conclusion of the second simulation, team members were asked to evaluate the cohesiveness of their team. (See Appendix X.)

The composite measure of cohesiveness was pretested for validity and reliability on a sample of 32 undergraduate criminal justice students. As with the study simulations, face validity was high and results were consistent. However, no specific measures of validity or reliability were administered.

Dependent Variables

Simulation 1 and Simulation 2 Performance Scores served as the first two dependent variables in the study. These measures were computed by adding the number of individual patrol car assignment errors to produce a total Team Performance Score. Scores could range from 0 to 40 errors. A Performance Score of 40 would reflect a maximum of 10 errors for each of the four team members.

In addition to the two Simulation Performance Scores for each team, a Team Cohesiveness Score was constructed. The measure reflected the level of "closeness" perceived by the team members toward each other. The composite team score represented the perceptions of each of the four team members concerning questions of closeness. Team scores could range from a low of 20 to a possible high of 100 representing a highly cohesive team.

Hypotheses

The research for this study involves an experimental design in the Campbell and Stanley (1963) taxonomy. The three independent and three dependent variables form the 4 x 2 x 2 design shown in Table 3.1. The nine research hypotheses below relate to the three dependent measures taken separately.

Hypothesis 1:

H_0: There will be no significant difference in the Simulation 1 performance scores between teams receiving different types of training.

Hypothesis 2:

H_0: There will be no significant difference in Simulation 1 performance scores between male and female teams.

Hypothesis 3:

H_0: There will be no significant difference in the Simulation 1 performance scores between teams receiving a pretest and those not receiving a pretest.

Hypothesis 4:

H_0: There will be no significant difference in the Simulation 2 performance scores between teams receiving different types of training.

Table 3.1: Experimental Design Independent Variables

Training	Sex	Pretest
Task Only	Male	Pretest
		No Pretest
	Female	Pretest
		No Pretest
Task + Group Dynamics	Male	Pretest
		No Pretest
	Female	Pretest
		No Pretest
Task + Load Sharing	Male	Pretest
		No Pretest
	Female	Pretest
		No Pretest
Task + Group Dynamics + Load Sharing	Male	Pretest
		No Pretest
	Female	Pretest
		No Pretest

Hypothesis 5:

H_0: There will be no significant difference in Simulation 2 performance scores between male and female teams.

Hypothesis 6:

H_0: There will be no significant difference in the Simulation 2 performance scores between teams receiving a pretest and those not receiving a pretest.

Hypothesis 7:

H_0: There will be no significant difference in the cohesiveness scores between teams receiving different types of training.

Hypothesis 8:

H_0: There will be no significant difference in Cohesiveness scores between male and female teams.

Hypothesis 9:

H_0: There will be no significant difference in the Cohesiveness scores between teams receiving a pretest and those not receiving a pretest.

Data from the orthogonal factorial design were analyzed using an analysis of variance program from Version 7.0 of the Statistical Package for the Social Sciences (Nie, Hull, Jenkins, Steinbrenner, & Bent, 1975). Simulation 1, Simulation 2, and the Cohesiveness score each represented a distinct and unique training effectiveness measure. Simulation 1 and Simulation 2 represented like measures but are not the same measure. They do not represent a repeated measures (X_{ij}) design (Glass & Stanley, 1970). Therefore, all three performance measures (Simulation 1, Simulation 2, Cohesiveness) were treated separately.

All probabilities from the F-tests were rounded to three decimal places. A level of .05 was used as the criterion for all statistical tests.

CHAPTER IV

RESULTS

This chapter analyzes the data as they apply to the nine hypotheses listed in Chapter III. Results of the analysis of variance for main effects upon Simulation 1, Simulation 2, and Cohesiveness are presented in Table 4.1. Tables showing cell sizes, means, and standard deviations for main effects are included. A table showing all cell sizes, means, and standard deviations is presented in Appendix Z.

Simulation 1

Hypothesis 1:

H_0: There will be no significant difference in the Simulation 1 performance scores between teams receiving different types of training.

As can be seen in Table 4.1, the type of training received did have a significant effect upon the Simulation 1 performance scores ($F\ [3,44] = 6.019$, $p < .002$). The result of the post hoc analysis of the performance scores employing Tukey's Honestly Significant Difference (HSD) test is shown in Table 4.2. The more powerful Tukey Procedure was selected in place of Scheffé's S Method (Hayes, 1973; Kirk, 1968). Based upon Simulation 1 performance scores, it is clear that training groups 1 (task only) and 2 (task/group dynamics) do not differ from each other. Training groups 3 (task/load sharing) and

Table 4.1: Results of the ANOVA[a] for Main Effects of Training, Sex, and Pretesting Upon Simulation 1, Simulation 2, and Cohesiveness

Source	Variable	SS	df	MS	F	p<
Training	Simulation 1	355.896	3	118.632	6.019	.002
	Simulation 2	409.500	3	136.500	7.256	.001
	Cohesiveness	828.396	3	276.132	1.067	.377
Sex	Simulation 1	31.687	1	31.687	1.608	.214
	Simulation 2	12.000	1	12.000	0.638	.430
	Cohesiveness	72.521	1	72.521	0.280	.600
Pretest	Simulation 1	0.021	1	0.021	0.001	.974
	Simulation 2	27.000	1	27.000	1.435	.240
	Cohesiveness	63.021	1	63.021	0.244	.625

[a]ANOVA = analysis of variance.

Table 4.2: Simulation 1 Differences Between Paired Groups Employing Tukey's Honestly Significant Difference Test

	$\bar{X}_1$	$\bar{X}_2$	$\bar{X}_3$	$\bar{X}_4$
$\bar{X}_1$ = 12.00	--	1.17	4.00*	4.58*
$\bar{X}_2$ = 13.17		--	6.17*	5.75*
$\bar{X}_3$ = 7.00			--	0.42
$\bar{X}_4$ = 7.42				--

Note. 1 = Task Only Training

2 = Task + Group Dynamics Training

3 = Task + Load Sharing Training

4 = Task + Group Dynamics + Load Sharing Training

*$p < .05$.

4 (task/group dynamics/load sharing) do not differ from each other. Groups 1 and 2 do, however, differ from groups 3 and 4. Stated another way, the groups which received load sharing training differ from those groups which did not receive such training.

Hypothesis 2:

H_0: There will be no significant difference in Simulation 1 performance scores between male and female teams.

The sex of the team was found to have no significant effect upon the performance of the team ($F [1,46] = 1.608$, $p < .214$).

Hypothesis 3:

H_0: There will be no significant difference in the Simulation 1 performance scores between pretest and nonpretest teams.

As can be seen in Table 4.1, the low F-ratio and extremely high probability did not permit rejection of the null hypothesis ($F [1,46] = .001$, $p < .974$). There was no effect of pretesting on Simulation 1 performance scores. There were no significant two- or three-way interactions between training, sex, and pretesting as they related to Simulation 1.

Simulation 2

Hypothesis 4:

H_0: There will be no significant difference in the Simulation 2 performance scores between teams receiving different types of training.

The null hypothesis was again rejected beyond the .05 level of significance ($F [3,44] = 7.256$, $p < .001$) as shown in Table 4.1. As with the first performance measure, the type of training received had a significant impact upon the performance score of the team. The

result of the post hoc analysis of the performance scores employing Tukey's HSD Test is shown in Table 4.3. Based upon Simulation 2 performance scores, it is clear that training groups 1 (task only) and 2 (task/group dynamics) do not differ from each other. Training groups 3 (task/load sharing) and 4 (task/group dynamics/load sharing) do not differ from each other. Groups 1 and 2 do, however, differ from groups 3 and 4. Stated another way, the groups which received load sharing training differ from those groups which did not receive such training.

Table 4.3: Simulation 2 Differences Between Paired Groups Employing Tukey's Honestly Significant Difference Test

	$\bar{X}_1$	$\bar{X}_2$	$\bar{X}_3$	$\bar{X}_4$
$\bar{X}_1$ = 10.92	--	.91	4.00*	6.25*
$\bar{X}_2$ = 11.83		--	4.91*	7.16*
$\bar{X}_3$ = 6.92			--	2.25
$\bar{X}_4$ = 4.67				--

Note. 1 = Task Only Training
2 = Task + Group Dynamics Training
3 = Task + Load Sharing Training
4 = Task + Group Dynamics + Load Sharing Training

*$p < .05$.

Hypothesis 5:

H_0: There will be no significant difference in Simulation 2 performance scores between male and female teams.

The low F-ratio and high probability did not allow rejection of the null hypothesis ($F [1,46] = 0.638$, $p < .430$). The sex of teams did not have a significant impact upon team performance in the second simulation.

Hypothesis 6:

H_0: There will be no significant difference in the Simulation 2 performance scores between pretest and nonpretest teams.

Again, the null hypothesis could not be rejected ($F [1,46] = 1.435$, $p < .240$). The pretest and Simulation 1 did not serve as effective advanced organizers for the teams, as shown in Table 4.1.

There were no significant two- or three-way interactions between training, sex, and pretesting as they related to Simulation 2.

Cohesiveness

Hypothesis 7:

H_0: There will be no significant difference in the cohesiveness scores between teams receiving different types of training.

As shown in Table 4.1, the null hypothesis was not rejected due to low F-ratio and high probability ($F [3,44] = 1.067$, $p < .377$). Despite the emphasis placed upon cohesiveness in the task skill/group dynamics and task skill/group dynamics skill/load sharing skill team training programs, there was not a significant difference in the cohesiveness scores between teams.

Hypothesis 8:

H_0: There will be no significant difference in cohesiveness scores between male and female teams.

The null hypothesis could not be rejected ($F [1,46] = 0.280$, $p < .600$). Male teams did not differ significantly from female teams in the degree of cohesiveness measured. (See Table 4.1.)

Hypothesis 9:

H_0: There will be no significant difference in the cohesiveness scores between pretest and nonpretest teams.

The null hypothesis could not be rejected, as shown in Table 4.1. The pretesting of teams did not have an effect upon the cohesiveness of the teams as measured in the study ($F [1,46] = 0.244$, $p < .625$).

There were no significant two- or three-way interactions between training, sex, and pretesting as they related to cohesiveness.

Summary

The results of the hypotheses tests are summarized in three sections: effect of training, effect of sex, and effect of pretesting.

Effect of Training

This variable was of primary interest and proved to be the only factor of significance in the experiment. The effect of training was shown to be significant for both dependent measures Simulation 1 and Simulation 2.

There were no significant two- or three-way interactions between training, sex, and pretesting. In Simulation 1 the training eta = 0.51. The eta^2 for each factor indicates the proportion of

variation in Y explained by the factor. Thus the training in Simulation 1 explains 26 percent of the variation. In Simulation 2 the training eta = 0.56, explaining 31 percent of the variation.

It is clear from Table 4.4 that load sharing has a significant impact upon the performance scores. It must be remembered that the lowest mean represents the least number of team errors and thus the highest performance. Thus, the Simulation 1 performance rank of teams receiving the various types of training could be summarized: task/load sharing, task/group dynamics/load sharing, task, task/group dynamics. In Simulation 2 task/group dynamics/load sharing trained teams performed better than task/load sharing teams. However, both treatments continued to perform significantly better than task only and task/group dynamics training treatments. Thus, the performance rank for Simulation 2 could be represented: task/group dynamics/load sharing, task/load sharing, task, task/group dynamics. From post hoc analysis of both Simulation 1 and Simulation 2 employing Tukey's HSD Procedure, it is clear that groups which received load sharing training performed significantly better than groups which did not receive such training.

Training did not have a significant effect upon cohesiveness. The first questions on the cohesiveness scale were highly related, as shown in Table 4.5. Controlling for the effects of training, the relationships remained extremely high, as shown in Table 4.6. While the items on the cohesiveness scale have internal reliability and face validity, they were not significantly affected by the type of training.

Table 4.4: Cell Sizes, Means, and Standard Deviations Showing the Effects of Training Upon Simulation 1, Simulation 2, and Cohesiveness[a]

Training	Simulation 1			Simulation 2			Cohesiveness		
	n	$\bar{X}$	S.D.	n	$\bar{X}$	S.D.	n	$\bar{X}$	S.D.
Task	12	12.00	5.53	12	10.92	6.50	12	69.00	23.24
Task + Group Dynamics	12	13.17	5.04	12	11.83	4.30	12	76.00	6.31
Task + Load Sharing	12	7.00	3.62	12	6.92	3.12	12	76.33	23.25
Task + Group Dynamics Load Sharing	12	7.42	4.78	12	4.67	3.28	12	80.58	8.35

Note. The lowest mean represents the least number of team errors and thus the highest team performance.

[a] N = 48.

Table 4.6: Partial Correlation of the Five Cohesiveness Factors and the Composite Cohesiveness Measure Controlling for Training

	CLOSENESS	GETALONG	GETTKNOW	SUCCESS	BELIEF	COHESIVE
CLOSENESS	--	0.5826 (45) P=0.000	0.7979 (45) P=0.000	0.6672 (45) P=0.000	0.3731 (45) P=0.005	0.8862 (45) P=0.000
GETALONG		--	0.4925 (45) P=0.000	0.5171 (45) P=0.000	0.2063 (45) P=0.082	0.6836 (45) P=0.000
GETTKNOW			--	0.5675 (45) P=0.000	0.3101 (45) P=0.017	0.8257 (45) P=0.000
SUCCESS				--	0.5109 (45) P=0.000	0.8413 (45) P=0.000
BELIEF					--	0.6371 (45) P=0.000
COHESIVE						--

Coefficient
(Cases)
Significance

Effect of Sex

The effect of sex was found to be unrelated to the performance and cohesiveness of teams. Table 4.7 summarizes the mean scores for Simulation 1, Simulation 2, and the cohesiveness measure by sex.

Table 4.7: Cell Sizes, Means, and Standard Deviations Showing Effect of Sex Upon Simulation 1, Simulation 2, and Cohesiveness[a]

Sex	Simulation 1			Simulation 2			Cohesiveness		
	n	$\bar{X}$	S.D.	n	$\bar{X}$	S.D.	n	$\bar{X}$	S.D.
Male	24	10.71	4.89	24	8.08	4.23	24	74.25	18.02
Female	24	9.08	5.85	24	9.08	6.19	24	76.71	16.62

[a]Total N = 48.

Effect of Pretesting

The effect of pretesting was also found to be unrelated to the performance and cohesiveness of teams. Table 4.8 outlines the mean scores and standard deviations for Simulation 1, Simulation 2, and the Cohesiveness measure by pretest and nonpretest treatments. The pretest simulation and Simulation 1 scores were compared using a t-test for correlated means. There was a significant difference in the means of the two simulations ($p < .002$). Simulation 1 scores were significantly greater than pretest simulation scores ($p < .001$). An analysis of variance revealed no significant difference ($F [3,44] = 0.029$, $p < .993$) between training treatments in the amount of gain between the pretest simulation scores and Simulation 1 scores. (See Table 4.9.)

Table 4.8: Cell Sizes, Means, and Standard Deviations Showing Effect of Pretesting Upon Simulation 1, Simulation 2, and Cohesiveness[a]

Pretest	Simulation 1			Simulation 2			Cohesiveness		
	n	$\bar{X}$	S.D.	n	$\bar{X}$	S.D.	n	$\bar{X}$	S.D.
Pretest	24	9.92	4.79	24	7.83	3.93	24	76.63	17.02
No Pretest	24	9.88	6.04	24	9.33	6.33	24	74.33	17.68

[a]Total N = 48.

Table 4.9: Results of the ANOVA[a] of Gain Scores From Pretest Simulation Ø to Simulation 1 for Training Treatments

Source	SS	df	MS	F	p<
Between Groups	22.417	3	7.472	0.029	0.993

[a]ANOVA = analysis of variance.

CHAPTER V

DISCUSSION

This final chapter contains a discussion of the main conclusions concerning team training. Possible study weaknesses are presented, and implications for additional research are outlined.

Conclusions Concerning Team Training

This study is significant as an attempt to provide information concerning the effect of task training, group dynamics training, and team skills training on the performance of working teams. The research, for the first time, specifies a distinction among these three types of training which may be employed to train teams. Prior to this investigation, team training has primarily been viewed as a subarea of group dynamics development. While emphasis has at times been placed upon task training, team skills have been ignored. This work provides preliminary laboratory data concerning the effectiveness of task training, group dynamics training, and team skills training such as load sharing in improving team performance and satisfaction. The research deals with the triad of training methods as individual intervention strategies and in combination with each other. The result is a preliminary set of data concerning the effect of three types of team training upon the performance of teams which may be employed in future team training system design. The conclusions

concerning team training which result from this investigation are:

1. The type of training did significantly affect the ability of subjects to complete the team mission but did not impact upon the cohesiveness of team members. This finding counters the team building and group dynamics literature, which suggests that team performance will increase as a result of a spirit of team cooperation (Cartwright & Zander, 1958; Shaw, 1976). This investigation confirms the skills training orientation (Gagne, 1962a; Klaus & Glaser, 1968). The training of teams in a specific team skill to a defined level of competency (Freed, 1962) significantly enhances the performance of the team.

Freed suggested an orientation to team training based largely upon ad hoc team skills. This research employed general systems theory as a theoretical basis from which a specific team skill, load sharing, was derived. This team skill was then compared under controlled laboratory conditions to two additional team training strategies, task skill training and group dynamics training. The performance of the teams which received the load sharing training differed significantly from those teams which did not receive such training.

The cohesiveness of team skill trained teams was not significantly different than that of group dynamics trained teams. Group theorists will suggest that the time that group dynamics teams spent together was not enough to foster an increase in cohesiveness. It is perhaps true that given enough time together, any group may evolve into a cohesive unit. There remain questions concerning the effectiveness and the efficiency of such a methodology. It must be

remembered that public sector law enforcement is a labor-intensive enterprise that must compete for scarce resources. In such a context, extensive allocations of time for training programs must be carefully reviewed.

2. The sex of a team did not have an influence upon the ability of subjects to complete a team mission or upon the cohesiveness of team members. As discussed in Chapter II, the major portion of team experiments have dealt with male teams (Alexander & Cooperband, 1965; Briggs & Johnson, 1967; Fry, 1970; Klaus & Glaser, 1968). This may be attributed to the large number of team experiments which were conducted with military teams. Until recent years, such units were composed mainly of male personnel (Parsons, 1972).

Female officers are playing an increasing role in law enforcement operational assignments. As a result, we chose to investigate the influence of the team member's sex upon the ability of subjects to complete a team mission and upon team cohesiveness. This research suggests that neither significantly different performance nor cohesiveness results from all-male or all-female teams.

3. Pretesting did not influence the ability of subjects to complete a team mission or the cohesiveness of team members. This finding suggests that the pretest did not serve as an effective advance organizer for Simulation 1 and Simulation 2. This result may be attributed to the fact that the skills required for the simulations were not self-evident. Engaging in a simulation was of little advantage without having first acquired the skills which would allow a significant increase in performance.

The additional time spent in group activity did not foster "emergence of cohesiveness" as suggested by the team building and group dynamics literature. Group theorists may argue that not enough additional time was allowed to foster increased cohesiveness. As in operational settings, limited training time was available during this investigation. Under such conditions it is clear that neither significantly different performance nor cohesiveness resulted from pretesting.

Study Limitations

Three major study weaknesses have been of concern since the inception of this research. The areas of consideration deal with the design of the experiment, training that was conducted, and data that were not collected.

Design

The first weakness of this study concerns the basic experimental design. The research was a laboratory rather than a field experiment. The setting allowed more control and greater exploitation of load sharing dimensions. However, the lack of face validity in the training and simulations may have hindered commitment on the part of the teams. Since the load sharing competency was derived from a theoretical basis, there also exists a possibility that load sharing is not a significant competency for operational teams. Transferability of the laboratory results to a field setting may be questioned.

Face validity could have been improved through use of "police" personnel to conduct the training program and a simulation environment

which more closely approximated an operational setting. The importance of load sharing could have been validated through observation of working teams. It also may have been wise to conduct field research with operational teams.

A second dimension of the design weakness is the lack of a system model to exploit all dimensions of the load sharing process. The use of a computer model would have allowed more sophisticated interaction between team members, yielding consequences which in turn could have been dealt with by the teams.

Third, in this simulation the necessity to redistribute the load was self-apparent. However, in operational settings the need may not be as obvious. In the simulation there was little cost in sharing a load and assisting other team members. In an operational context there are distinct costs associated with load sharing in terms of time, effort, and commitment. Operational teams may acquire load sharing competencies but be unwilling to share loads when such personal costs are involved.

Finally, there exist questions of validity and reliability in several areas. The training validity, performance validity, intra-organizational validity, and interorganizational validity of the training may be questioned (Goldstein, 1978).

The validity and reliability of the limited number of performance measures are also subject to question. While the measures possessed content validity, the concurrent, predictive, and construct validity (Borg & Gall, 1971) of the variables is not known.

The reliability of the performance measures was investigated. Simulation 1 and Simulation 2 were compared through a Pearson Product-Moment Correlation and produced a coefficient of 0.6383 ($p = 0.000$). A partial correlation controlling for training produced an r of 0.5446 with 45 degrees of freedom ($p = 0.000$). Thus the performance measures may be said to be highly related to each other and reliable indicators of team performance. However, it should be noted that they do not represent a repeated measures (X_{ij}) design (Glass & Stanley, 1970, p. 469).

Training

The second major study weakness was the training. It is possible that the 10-minute training programs were too short to adequately develop team skills. This is especially true of group dynamics skills which proponents contend "evolve over time" during team building (Gordon & Howe, 1977). Compounding this weakness was the use of videotaped programs to train group dynamics skills which require human interaction.

Differential reading ability was not considered in the study. However, it was apparent from observation that some subjects had a great deal of difficulty reading the call cards and extracting information necessary to classify the complaints. In fact, one team member in the load sharing group was observed who could not understand the mission. As the first simulation progressed, other team members grew increasingly frustrated. On the fourth call the three other subjects began taking the card from the student immediately after it was drawn.

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The three then classified the call as a team. This process continued through the second simulation. It seems likely that the design would have been strengthened by the inclusion of some base qualification measure to assure that subjects were capable of being trained.

A third training weakness was the time during which the training took place. The experiment was conducted two weeks prior to the end of spring quarter. As a result, there existed problems of motivation. Some team members did not keep training appointments. More of a work atmosphere might have existed had the experiment been conducted during the fall or winter quarter.

A fourth difficulty was inherent in the training conditions. The training room was not air-conditioned and was on the top floor of an old building. Although a fan was placed in the training room, the temperature at times exceeded 90 degrees. The conditions were not conducive to sitting for extended periods of time to view videotaped presentations. However, the type of training was randomly assigned throughout each training day.

Finally, there was a contamination problem on two levels. Many of the individuals who participated in the study were criminal justice majors or had classes together. However, the specific purpose of the experiment was unknown to the students. The fact that teams were receiving different types of training was not clear to the research subjects though the experiment was a topic of conversation. On a second level, the physical facilities used in the experiment made it possible for students in one room to overhear some of what was

going on in other rooms. The contamination was most often in the form of system noise rather than intelligible training programs.

Uncollected Data

An additional weakness in this study was the failure to collect certain data. No information concerning friendship between team members or work with other team members was requested prior to the experiment.

A more serious data void resulted from the absence of trained observers. As a result there was no determination of the length of time it took for teams to redistribute their load. In addition, some teams not trained in load sharing began to redistribute calls and balance the call load among team members on their own. No systematic means existed for determining when such teams first began sharing loads. Based upon random observation, it appeared that male teams were more prone to begin load sharing even though not trained in its use. Female teams, by contrast, were more prone to complete a mission without attempting to find ways of making the tasks easier. A pretest sample larger than 32 may have highlighted the necessity of determining at what point specific teams began to share their load.

Implications for Additional Research

This research project made extensive use of videotaped training programs and of simulations. The methodology provided a sound format for obtaining basic information concerning the team training process.

The validity and reliability of the training interventions and the validity and reliability of the performance measures should be a major concern in future exploratory research of this type. An effective means of conducting controlled group dynamics training within a reasonable time frame must also be explored. Given these concerns, the following research areas emerge as a result of this study:

1. Replication research should be conducted under field conditions with operational teams.

2. Research involving additional dimensions of the load sharing competency should be conducted employing a simulation model (Davis & Behan, 1962).

3. A complete taxonomy of team training competencies based upon general systems theory should be derived, designed into training systems, and tested.

4. The impact of mixed male and female teams upon completion of the team mission and upon cohesiveness of the team should be tested.

5. Research concerning motivation which causes use of team skills which have been trained should be conducted.

APPENDICES

APPENDIX A

TEAM CODES

Males

1. PT T+G M
   - 1.1 M-7
   - 1.2 M-9
   - 1.3 M-21

2. NP T+G M
   - 2.1 M-15
   - 2.2 M-23
   - 2.3 M-24

3. PT T+L M
   - 3.1 M-6
   - 3.2 M-12
   - 3.3 M-16

4. NP T+L M
   - 4.1 M-14
   - 4.2 M-19
   - 4.3 M-20

5. PT T+B M
   - 5.1 M-11
   - 5.2 M-22
   - 5.3 M-17

6. NP T+B M
   - 6.1 M-1
   - 6.2 M-5
   - 6.3 M-8

7. PT T+N M
   - 7.1 M-2
   - 7.2 M-10
   - 7.3 M-13

8. NP T+N M
   - 8.1 M-3
   - 8.2 M-4
   - 8.3 M-18

Females

9. PT T+G F
   - 9.1 F-4
   - 9.2 F-8
   - 9.3 F-13

10. NP T+G F
    - 10.1 F-15
    - 10.2 F-23
    - 10.3 F-24

11. PT T+L F
    - 11.1 F-6
    - 11.2 F-16
    - 11.3 F-17

12. NP T+L F
    - 12.1 F-5
    - 12.2 F-10
    - 12.3 F-18

13. PT T+B F
    - 13.1 F-3
    - 13.2 F-20
    - 13.3 F-21

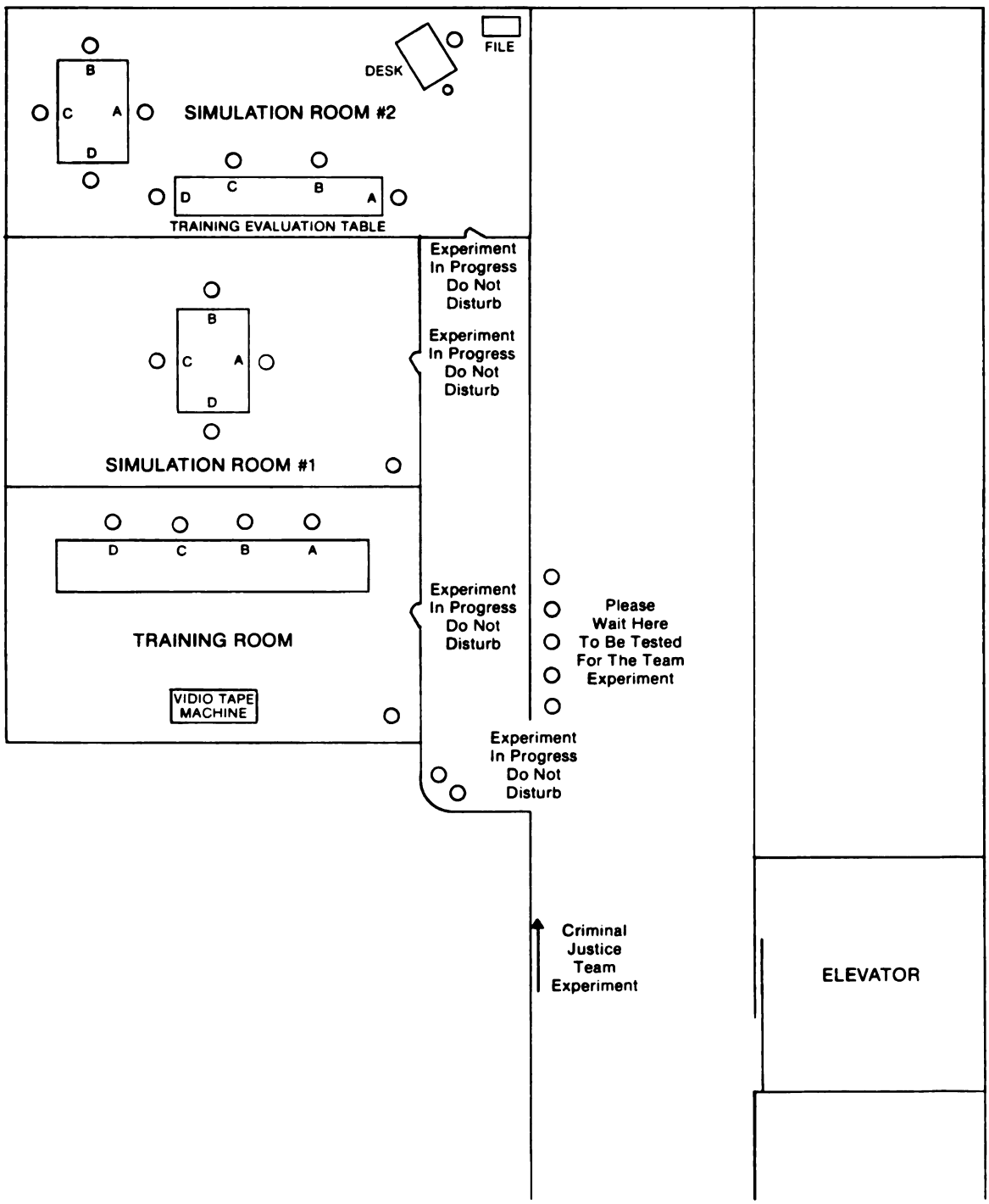
14. NP T+B F
    - 14.1 F-22
    - 14.2 F-7
    - 14.3 F-19

15. PT T+N F
    - 15.1 F-9
    - 15.2 F-12
    - 15.3 F-14

16. NP T+N F
    - 16.1 F-1
    - 16.2 F-2
    - 16.3 F-11

APPENDIX B

RESEARCH SITE



APPENDIX C

INFORMED CONSENT FORM

I have freely consented to take part in a scientific study being conducted by Kevin Parsons under the supervision of Frank S. Horvath, Ph.D., Assistant Professor, School of Criminal Justice, Michigan State University. I have been informed that the study is designed to test the effects of certain types of training upon the performance of teams. I am aware that I will complete a training program and be given a task which must be completed by myself and members of my team.

The study has been explained to me. I understand the explanation that has been given and what my participation will involve.

I understand that I am free to discontinue my participation in this study at any time without penalty.

I understand that the results of this study will be treated in strict confidence and that I remain anonymous. Upon completion of this study, results will be made available to me at my request within the specified limitations.

I understand that my participation does not guarantee any beneficial results to me. I understand that, at my request, I can receive additional explanation of the study after my participation is completed.

_____

Signed

_____

Date

APPENDIX D

BIOGRAPHICAL DATA SHEET

1. _____
Team Code

2. Name _____
Last *First* *Middle*

3. Student Number . . . . . _____

Local Address _____

City _____ Phone _____

4. Age . . . . . _____

5. Sex (Male = 1, Female = 2) . . . . . _____

6. Race (Caucasian = 1, Black = 2, Hispanic = 3,
Oriental = 4, American Indian = 5, Other = 6) . . . . _____

7. Family Income
0 - 4,999 = 1
5,000 - 9,999 = 2
10,000 - 14,999 = 3
15,000 - 19,999 = 4
20,000 - 24,999 = 5
25,000 - 29,999 = 6
30,000 and over = 7 . . . . . _____

8. Number of Children in Your Family . . . . . _____

9. Number of Parents or Guardians Working . . . . . _____

10. College Major (Criminal Justice = 1, Other
Please Fill in Below) . . . . . _____

_____

11. Year in College (Freshman = 1, Sophomore = 2,
Junior = 3, Senior = 4) . . . . . _____

12. Criminal Justice Practitioner (Yes = 1, No = 2) . . . _____

If Yes, Where? _____ Doing What? _____

_____

13. Grade Point Average . . . . . _____

14. Have You Worked as Part of a Team Before?
(Yes = 1, No = 2) . . . . . _____

If Yes, Explain _____

If Yes, How Many Times? . . . . . _____

15. Class to Which Extra Credit Should Apply
(CJ 110 Brown = 1, CJ 110 Horvath = 2,
CJ 110 Kalinich = 3, CJ 335 Cordnor = 4,
CJ 335 Trojanowicz = 5, CJ 315 Beckman = 6) . . . . . _____

16. Today's Date . . . . . ____ May 1978

APPENDIX E

SKILL KNOWLEDGE TEST

1. A "noise" call is assigned to how many units of time? _____

2. A service call is an example of what type of crime? _____

3. If a call is classified as a property crime, how many units of time must be blocked for the call? _____

4. How many categories of crime types are used in the radio room simulation? _____

5. In a type three crime, calls must be blocked in which of the following manners? _____

   a) Alternately
   b) Randomly
   c) Consecutively
   d) Anonymously
   e) Conversely

6. What is meant by the expression, "the whole is greater than the sum of all parts"?

7. What is an example of a nonverbal reaction?

8. Which will make superior decisions: a group of individuals working together or the smartest members of the group working independently?

9. What should be done in a team if a problem <u>does not</u> exist to keep the team functioning effectively?

10. When a problem does exist in your team and there is not agreement, what should be done?

Briefly but precisely define the following:

11. Balancing

12. Adapting

13. Communicating

14. Observing and Alerting

15. In the following team situation, if you were at station A and for your second call received a type two call while station B received a type zero call, station C received a type zero call and station D received a type three call, what should you do?

	Station			
	A	B	C	D
Call #1	3	2	1	0
Call #2	2	0	0	3

SKILL KNOWLEDGE TEST

Answers

1. 0
2. 1
3. 2
4. 4
5. A = 1
   B = 2
   *C = 3
   D = 4
   E = 5
6. Teams working as a group produce better results than the best members of those teams working alone.
7. Raise your eyebrows to look surprised
   Lean forward to show interest
   Nod your head for agreement
   Smile to show amusement
   Establish eye contact to show interest
   Scowl to show displeasure
8. Group
9. Show solidarity
   Attempt to raise the status of others
   Give help
   Reward others for their contributions
   Give constant, sensitive, sympathetic attention to what is going on
10. Establish eye contact
    Actively listen
    Put personal feelings aside and go back to the facts of the problem
11. Interactive effort to relieve overload
12. Modify consistent with current needs of the system
13. Receiving and/or imparting information cooperatively and effectively
14. Signaling others and receiving acknowledgment or receiving a signal and acknowledging it
15. Load Share

APPENDIX F

SIMULATION SET Ø

"The mission of your team is to classify all calls which you receive and assign cars as quickly as possible so that no important call goes unclassified or unassigned. At the tone you may begin turning over the call cards in front of you as the call number is announced. A new call will be announced each sixty seconds."

Ring, Call One:

A-1 *Yes, my son's bicycle has been stolen and I'd like to make a report with your department. I live at 330 North 11 th Street and my name is Mrs. James C. Colby. When will you be here to take my report?*

B-1 *This is the Assistant Principal at West High. We're holding the District Wrestling Finals here in our gym today and there are a group of students in the bleachers who appear to be smoking pot. Can you get some men over here right away to take care of this? My name is Joe Oliver. I'll be waiting at the entrance.*

C-1 *I'd like to report a robbery. This is Vera Johns. I live at 876 Rainbow Drive, but that's not where the robbery happened. I was walking downtown in front of Foxe's Shoe store when this young blonde boy ran up and grabbed my purse. It was full of credit cards... not much money, but all my credit cards. I screamed and a man chased him for a few blocks but couldn't catch him. What shall I do? Do I have to file a formal report? I'm at my home now. Can an officer come out?*

D-1 *This is George Hill over on Alameda Street. I'm usually not one to complain to the police, but at this point I have no other alternative. I've called the Petersons, the owners of that awful dog, and they refuse to do anything about him, so I decided to call you. His barking is keeping us awake most of the night and we really don't think we should have to put up with such a disturbance. Would you please send some officers to the Petersons? That's 3323 Alameda.*

Ring, Call Two:

A-2 *Hello, this is Faith Jenkins from the Policemen's Wives Auxiliary. I am in a real bind and do hope you can help me solve the situation. Three weeks ago I reserved the meeting room at the community center for our monthly meeting and today I received a call from the Director of the community center telling me they are having furnace problems. Our meeting is scheduled for tomorrow and here I am without a place to meet. Do you suppose we could use the second floor conference room at the station?*

B-2 *Hello, this is Janet Olsen at the Century Homes Real Estate Office. I have a client interested in seeing Lt. Mossberg's home today and I can't seem to reach his wife. Would you please give him this message and have him call my office when he's free. Yes, the number is... 348-2370.*

C-2 *Hello? I don't like to bother you, but I'm having a bit of trouble. Some neighborhood kids have been ruining my lawn with their constant bicycle traffic. I guess they take a short-cut through my yard on their way to school. I've asked them to keep off the grass, but they don't seem to remember. I was wondering if a police officer could come out here and talk to them. I live at 555 Dixon Drive. Nathan Corte is the name.*

D-2 *This is Maximum Security Incorporated. One of our alarms at National China has been set off. We're sending someone over there now. Can you have some officers meet us there? Right. It's on Fort Street.*

Ring, Call Three

A-3 *John Andrews here from IBM typewriter repair service. I'm afraid we have a real problem today. We received the call for repair from 3rd Floor-Records and assured them we'd be right over. Now my secretary tells me our repairman had some kind of family emergency to tend to and will be out for the rest of the day. It looks as if we won't be able to get to your machine until tomorrow. Sorry.*

B-3 *Yes, this is Mrs. Hoffman. My husband is riding patrol today, but do you suppose you could have the dispatcher contact him and ask him to call home?*

C-3 *My name is Mary Ann Murray. I'm a neighbor to the Jeffersons at 909 Denver Drive. The Jeffersons are out of town on vacation and their burglar alarm has been set off. Can you get some police officers out here fast?*

D-3 *Yes, I'd like to report a crime. My name is Julie Edwards. I live at 7653 Applegate. Yes, that's right 7653. This man, he jumped out of the bushes near my apartment tonight. It was terrible, he... he assaulted me. I don't know what to do. Can you send a policewoman to help me? Yes, yes, I'm alright now, but I can't believe this. Oh, I shouldn't have called.*

Ring, Call Four

A-4 *Hello, this is Joanne Lemke, Scout Leader for Troop 337. Is it permissible for our Girl Scouts to come down to the station and try to sell some Girl Scout Cookies? We don't want to be a bother, but would appreciate the opportunity to come into the station.*

B-4 *Hello, my name is Roger White and I need some help. I was driving home down Lincoln Boulevard when someone threw a rock at my car and broke the window on the passenger's side. I didn't see anyone. What am I supposed to do? Who's going to pay for this? Have you heard of any other incidents like this on Lincoln? Can you get an officer out here to look at this? I live at 8585 Altavista.*

C-4 *Hello, this is Chief Randall at the Fire Department. Can you dispatch a couple of your officers out to the S & S Lumber Company? We suspect arson and will need some help with the investigation. We're on our way out there now.*

D-4 *Hello, this is Kate Limbrecht at Limbrecht Office Supply Company. I'm calling about the order placed by your department on 5-9-78. The file folders... style number 457923, have been discontinued. Would it be alright if we replaced them with another brand in a similar style?*

Ring, Call Five

A-5 *Hi, this is Ted over at the Plymouth garage. Please tell Captain Bell that car 105 and 779 are repaired and ready for pick up.*

Officer? Please send a squad car immediately. We need your help. My name is Julia Henry and I live on Orchard Drive... 113 Orchard.
B-5 *I can't believe something like this happened in <u>our</u> neighborhood. My husband and I are furious. This morning Joey, our son, left the house to deliver the papers on his route and when he went into the garage, he discovered that his new ten speed Schwinn bicycle was missing. Someone must have stolen it last night. Can you help us?*

Hi, this is Harold Hopkins, Sgt. Hopkins' brother. Would you
C-5 *please tell him that I called and would appreciate it if he could return my call sometime this afternoon? I'll be at my office until 5:00. The number there is 234-5555. After 5:00 he can reach me at home. Thanks.*

Good afternoon. This is Dr. Davison. I'd like to speak with
D-5 *Lieutenant Jensen please. This is in regard to a tentative schedule for the officers' yearly physical examinations.*

Ring, Call Six

I'd like an officer to come over to Cherry Manor Apartments right away! I live in H-14, just north of the carports. The people in the apartment above me have been having a wild
A-6 *party all night. I've called them and asked them to at least put an end to that awful music, but it's 2 o'clock AM and the party is still going strong. The music is giving me a headache, I'm exhausted and have to be at work at eight AM. Can you do something about this? My name? Yes, Judith Conklin.*

This is Ross Taylor, assistant manager of the Hyatt Regency Hotel. I'd like a couple of officers out here as soon as possible. There's a gentleman in the cocktail lounge whose obviously had
B-6 *a few too many to drink. He's heckling our vocalist and harassing many of the other customers. Any help you could give us would certainly be appreciated.*

I'd like to report a traffic accident. A woman in a green Nova was driving on the wrong side of the road. She forced another car to hit a telephone pole; that car is in flames. The woman in
C-6 *the Nova hit the guard rail and kept driving. She's left the scene. Another motorist is chasing her. Can you send help? People in the car? The driver is dead. There is a woman passenger who is pretty banged up, but she should be alright. My name? Yes, I'm sorry. This is Dr. Davis. I'll wait for your car.*

D-6 *Yes, this is Kyle Horman. I'm the insurance adjuster for All State and I would like to come over and take a look at that equipment damaged by the water in the basement. I'll be there in an hour if it's convenient.*

Ring, Call Seven

A-7 *Hello, I don't want to give you my name... Sally would never speak to me again if she knew that I called the police department. But I'm worried about her and I think you can help. My friend's name is Sally Heinz. She told me she was running away from home today... hitching to California. She's upset with her parents, her boyfriend, school... everything, I guess. She's only 14. She met me at my locker this morning, told me and then left. Can you find her and stop her? Her house is on 11th.*

B-7 *Hello? Police Department? This is Mrs. Edward Volseth calling. My address is 997 Cedar Heights Drive. I'm calling you in hopes that you will help me save the life of our neighbor's cat. My husband is at the end of his rope. He tells me he can't take it anymore and is threatening to put an end to the cat and the howling. That cat has been howling outside our bedroom window for the past three nights and it is very disturbing. Can you help?*

C-7 *Hello, this is Brad Cronkite. I'm organizing the fourth annual ten mile marathon run and would like some assistance from a few of your officers. We'll need road blocks, etc... much like last year. The marathon is scheduled for next Saturday, weather permitting.*

D-7 *Hello, this is Black's Department Store calling. We're holding a young lady here with a purse full of makeup from our cosmetics counter. A cashier spotted her filling her purse with the merchandise and brought her to the office. Can you come over soon and take care of this situation? My name is Fred Kercheval. Our policy is to prosecute shoplifters.*

Ring, Call Eight

A-8 *Yes, I'm a waitress at the Thunderbird Bar and Grill. I'd like to report a high stakes poker game going on in the back room. Yes, right now. I can't talk anymore...*

D-6 *Yes, this is Kyle Horman. I'm the insurance adjuster for All State and I would like to come over and take a look at that equipment damaged by the water in the basement. I'll be there in an hour if it's convenient.*

Ring, Call Seven

A-7 *Hello, I don't want to give you my name... Sally would never speak to me again if she knew that I called the police department. But I'm worried about her and I think you can help. My friend's name is Sally Heinz. She told me she was running away from home today... hitching to California. She's upset with her parents, her boyfriend, school... everything, I guess. She's only 14. She met me at my locker this morning, told me and then left. Can you find her and stop her? Her house is on 11th.*

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Ring, Call Eight

A-8 *Yes, I'm a waitress at the Thunderbird Bar and Grill. I'd like to report a high stakes poker game going on in the back room. Yes, right now. I can't talk anymore...*

B-8 *This is Anne at Sanitary Cleaners calling. I'd like you to know that the uniforms you sent over are cleaned, pressed and ready for delivery. They should be at the station by two o'clock PM.*

C-8 *My name is Andrew Howard. I'm an eighth grader at Kerr Junior High. It's career week at our school and everyone in Miss Neal's fifth hour has to pick a career that interests them and write a report. I think I might like to be a police officer. Would it be possible for me to come to the station and interview a couple of the policemen?*

D-8 *Hello? I just came home from work and was confronted by a young man in front of my house. He pulled a knife on me, but I ran as fast as I could. He said he wanted my money. He looked a little like a boy who lives down the street from me. I can't believe this could happen to me. My name is Ardeth Drew. I live at 576 North Haywood.*

Ring, Call Nine

A-9 *Hello, Officer? This is Vic Arvono at Arvono's Pizza Place and I'd like to report a group of young boys, probably about 12 or 13 years old, hanging around my Pizza Place smoking cigarettes. Now, I don't prohibit smoking in here for adults; but I don't like to sit back and see kids do it. Can you put a stop to it? Right, I'm out on Dodge Street.*

B-9 *I'm sorry to bother you with this, but I'm afraid I do need some help with a rather embarrassing situation. I'm over in the Jacobson's parking ramp. I work here, but we've closed for the night and there is no one else around. I locked my keys in my car this morning and unfortunately, didn't realize it until just now. Is there someone who can help me get into my car? My name is Laurie Leavett. I'll be on the 3rd level. My VW is the only car there.*

C-9 *Hello, this is Harriet Long over at the Woman's Club. I have some very bad news for Captain Odell. Several weeks ago he called me to reserve the ballroom for the Officer's Christmas Dance. Unfortunately, we have developed some problems with our electrical system and much of that room will be torn up for repairs. I hope he will be able to make other arrangements.*

D-9 *Hello, please send an officer to 428 Neola Street. This is Kent Ardmore. My wife and I just came home from a dinner party; our house has been burglarized. I'm not sure of the extent of this, but the T.V. is gone among other things. The house is a mess... lamps knocked over, drawers open, etc. I don't know how they got in. When will you be here?*

Ring, Call Ten

A-10 *This is Safariland Leather Company calling from Monrovia, California, with regard to your recent order. You requested the basketweave belts, but did not specify color. We carry both brown and black in the style you ordered and would be happy to supply either. Can you tell me which the Department prefers?*

B-10 *What does your department do these days? Don't you know what's going on in my neighborhood? What do we pay you fellas for? I want to talk to the Chief. I want to tell him about these women walking up and down my sidewalk. I live 2 blocks from the business district... 482 Maple. This used to be a respectable neighborhood. Now these women are here, men drive up, they get in the car and we <u>all</u> know where they go. You tell the Chief to call Hazel Merner. Meanwhile, get these people off my sidewalk!*

C-10 *My name is Jody Schultz. I'm out on Shriver Street near the True Value Hardware Store. I have a flat tire on my car and I don't know how to change it. I'd try to find a station, but it's so late, I'm afraid most of them will be closed. I walked as far as this phone booth... outside the Hardware Store but I'm skeptical about going any further this time of night. Would it be possible for you to send an officer out here to help me?*

D-10 *Yes, could you please give me the parade route for the Fourth of July parade? Also, what time will it begin?*

Ring, this concludes this simulation. Your team must now stop work immediately.

APPENDIX G

TASK SKILL TRAINING PROGRAM VIDEO TAPE MANUSCRIPT

The objective of this training exercise is to instruct your team in the proper review, analysis, and assignment procedures for calls coming into the Radio Room of the Lansing, Michigan, Police Department. During the year 1977 the Lansing PD Crime Analysis Division catalogued over 750,000 individual calls to the department. Through computer analysis the average time required to deal with each category of call was determined. It is the responsibility of your team to correctly classify the simulated calls that you will receive and assign the patrol cars at your disposal to the calls for the correct amount of time. Your team's classifications will be compared by the research staff with the correct classifications as determined by the Lansing Crime Analysis Division.

If you will look at the Call Definition Sheet before you, you will see that there are four categories of calls in use by the Lansing Department.

Type three calls consist of personal or violent crimes. This type of call requires that you assign a patrol car for three consecutive blocks of time to deal with the call. Take a minute to become familiar with the type three crimes.

Type two calls consist of property crimes. Two consecutive units of time are required for a patrol car to deal with such calls. Take a minute to become familiar with the type two crimes.

Type one calls consist of victimless crimes, status offenses, nuisance calls, and service calls. One block of time is required for a patrol car to handle these calls. Take a minute to become familiar with the type one crimes.

Type zero calls are classified by the Lansing Police Department as noise calls. They consist of calls which do not require you to assign a patrol car. These calls are not related to the direct function of the emergency radio room which your team is staffing. These calls interfere with the mission of the radio room, are considered "noise" within the system, and should be ignored.

Each of you has been assigned a color-coded station corresponding to the cards before you. The first station (color code red) controls car Adam and will process 10 calls A-1 through A-10. The second station (color code green) controls car Boy and will process 10 calls B-1 through B-10. The third station (color code orange) controls car Charles and will process 10 calls C-1 through C-10. The fourth station (color code blue) controls car David and will process 10 calls D-1 through D-10.

When the phone rings **** indicating an incoming call, you will receive instructions concerning the number of the call: "Call One," "Call Two," and so on.

At that time, each member of the team will turn over the numbered card in front of you which corresponds to the call number.

Each of you will read the card to determine the nature of the call.

Because the calls may come in fairly rapidly, it is often helpful to "skim" each call for vital information so that more time may be spent determining the correct classification and car assignment for the call.

From the information on the card you must decide into which category of crime the call belongs. You will have the call definition sheet in front of you to assist you in deciding into which category the call should be placed. At this time you will receive practice in categorizing a call. At the tone, turn over the card in front of you, determine the nature of the call, and record its classification on the practice sheet in front of you.

> *Hello, Officer? This is Al McKnight at llll Norton Street. I've been robbed. I was at the ballgame this afternoon. I had my wallet when I got there and when I went to the concession stand after the fifth inning. I know because I made a purchase; but then as I was returning to my seat... you know, my hands full of hotdogs and Pepsi, I felt this guy brush against me. I really didn't think much about it at the time, but now that I'm home and don't have my wallet, I'm almost positive that guy took it. Can you come out?*

You will note that the call concerned a pickpocket. Because there was no force or threat of force, the call should have been classified as a larceny and a number two recorded on the practice sheet under the heading "Classified As." The crime was not a robbery, and classification of the call as a type three crime would be incorrect. There was no force or threat of force necessary for a robbery.

Once each team member has determined the classification for a call (zero, one, two, or three), that classification is recorded on the Daily Log for the car which your station controls. You will notice that the Daily Log Sheet before you has a classification line for each of the 10 calls that you will process. Since there are four individuals

on your team, the team will classify a total of 40 calls, four at a time. Calls will come in at 60-second intervals.

Once you have determined the classification of each call, your team must assign the calls to the available cars. Remember that zero calls are ignored, one calls require one block of time, two calls require two consecutive blocks of time, three calls require three consecutive blocks of time.

Each of you will staff one station. Each station has 10 time blocks available for the patrol car under your command. If the first call which station A receives (Call A-1) is classified as a type two call, the call must be assigned two blocks of time. This could be accomplished by assigning call A-1 to time block one and to time block two on the Daily Log.

In this case an A-1 would be recorded in both time block one and time block two.

At this time you will receive practice in categorizing a call and assigning it to time blocks. At the tone, turn over the card in front of you, determine the nature of the call, classify it on the practice sheet in front of you, and assign it to the appropriate number of time blocks.

> *Officer, send someone to the Sunset Tap as soon as possible. A man has been shot. I'm sure he's dead. A big guy walked into the bar a few minutes ago, pulled a gun and fired three times. He ran out, but people are chasing him. Can you get an officer out here right away? My name? Sure... Jack Muldoon. I'm the owner of the Sunset.*

You will note that the second call concerned a murder. Therefore, it is a type three crime and should have been classified as a three.

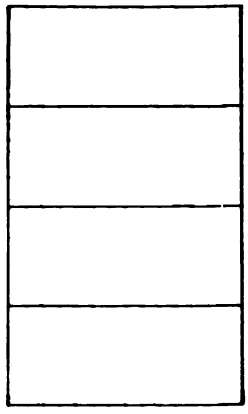
The call would have been assigned to three time blocks on the practice sheet. Station A should have marked A-2 in three consecutive time blocks. Station B should have marked B-2 in three consecutive blocks. Station C should have marked C-2 in three blocks, and Station D should have marked D-2 in three consecutive time blocks.

In this training session you have learned how to classify and assign calls according to standards established by the Lansing, Michigan, Police Department. During the training you have learned the difference between type zero, type one, type two, and type three crime calls. You have also learned the proper way to block calls once they have been classified. During the training program each member of your team received identical calls. During the simulation each call will be unique. During the simulation you will have 60 seconds to turn over, read, determine the nature of a call, classify it, and assign the call to the proper number of time blocks. You must record all data for a given call before you can go on to the next call. At the conclusion of the 10-minute simulation, your team must stop work, whether or not all calls have been classified and blocked. Your team will complete two 10-minute simulations with a 5-minute break between each exercise.

Remember that this is a team effort. Work together as a team to assure best results.

Task Skill Practice Sheet

Your Call	Classified As
1	_____

Your Call	Classified As	Your Time Block	Call Assigned
2	_____	2	

TRAINING PROGRAM ANSWERS

	A	B	C	D
Classified As	2	2	2	2
Classified As	3	3	3	3
Call Assigned	A-2	B-2	C-2	D-2
	A-2	B-2	C-2	D-2
	A-2	B-2	C-2	D-2

APPENDIX H

GROUP DYNAMICS SKILL TRAINING PROGRAM VIDEO TAPE MANUSCRIPT

The objective of this training exercise is to instruct your team in the use of group dynamics skills which will improve your team's ability to review, analyze, and assign the calls which you will receive during this simulation. The procedures you will learn are the result of research conducted by the Federal Bureau of Investigation at their National Academy in Quantico, Virginia. The training will enable you to more effectively deal with the calls you will receive by allowing your team to include all team members as part of the team process.

From research conducted throughout the United States during the 1960s and early 1970s, it is clear that a group as a whole can make better decisions and more effectively accomplish a task than the best individual members of that team working alone. The data give rise to the saying that the "whole is greater than the sum of all its parts." The point is that something happens when a group of individuals work together as a team. Better results are obtained than when the same number of individuals work on parts of a project, but do not work as a team.

During the team simulation in which you are about to engage, it is vital that the following group dynamics processes be followed as calls are classified and assigned to blocks of time:

1. When listening to other members of your team during the simulation, be certain to give nonverbal reactions. If you agree,

nod your head. Let others know if you are puzzled by what they say and give reactions through the expression on your face.

2. When talking to the team, talk to them as a whole; search out reactions to what you are saying from others and give your reactions to what they have said.

3. Be certain to ask for orientation, information, repetition, clarification, and confirmation when it is needed. Ask for others' opinions, experiences, evaluations, analysis, and feelings. Ask for suggestions, direction, and possible ways of action.

4. In the same way, be certain to give orientation, repetition, clarification, and confirmation when it is needed. Give others your opinions; let them know of your experiences, evaluations, analyses, and feelings. Give them your suggestions, direction, and possible ways of action that you believe to be possible.

5. Agree and show that you accept, understand, concur, and comply when you do.

6. When a problem exists within your team: establish eye contact; actively listen to what was said instead of listening to form your own argument. Once that has been done, put personal feelings aside and go back to the facts of the problem.

7. If a problem does not exist, show solidarity with the team, attempt to raise the status of others, give help, and reward other members for their contributions. Give constant, sensitive, and sympathetic attention to what is going on in the group.

8. When situations of tension exist in the group, try to relieve the tension with a joke, laughter, or by showing satisfaction with the process and what has been accomplished thus far.

At this time you will receive practice in the group dynamics process. At the tone, turn over the card in front of you and work as a team to determine the proper classification of each member's call and block it into the correct time unit on the practice sheet provided. You will have 60 seconds to classify the call and block the units of time before the next call comes in.

> *Hello, Officer. This is Mabel Herricks calling. I am on the fund-raising committee for the new Children's Hospital and would like to know if the Fraternal Order of Police plan to make a donation to the hospital?*
>
> *This is Ed Lund from the Firestone Tire Store. Please tell Lt. Wilson that I have the estimate on the new tires for the squad cars. If he could give me a call sometime this afternoon, I'd sure appreciate it.*
>
> *Yes, this is Jerry Snyder at 436 Northwood Lane. My wife and I just returned from vacation and can't believe what we see! Someone broke into our house. The place is a mess and my coin collection is missing. It's very valuable... I had some extremely rare coins. The thief must have come specifically for the coins, as nothing else appears to be missing. How would some crook know about my collection? It's irreplaceable. Can you get an officer out here soon?*
>
> *Hello, Officer. This is Elizabeth Edwards. I just received a call from some strange men. They said I shouldn't contact the authorities, but I don't know what else to do. I need help. They want money...five hundred thousand. They have kidnapped my husband. They said they'd kill him. Can you help me?*

You will note that Calls A-1 and B-1 were type zero calls, while Call C-1 was a type two crime and call D-1 was a type three crime. Calls A-1 and B-1 should have been ignored, call C-1 blocked for units

of time, and call D-1 blocked for three consecutive units of time on the practice sheet. More important to the total team, however, is the fact that each member of the team should have been involved in the classification decision as much as possible and in the blocking of calls into time units. It is only in this manner that all members will feel that they are part of the team effort and satisfaction of team members can remain at a high level.

Remember to have an effectively functioning team:

1. Give nonverbal reactions when listening.
2. Talk to the group as a whole, searching out opinions.
3. Ask for information and clarification.
4. Give information and clarification.
5. Agree and show you understand when you do.
6. When a problem exists in your team, establish eye contact, listen actively, and go back to the facts of the problem.
7. If a problem does not exist, show solidarity with the team and give constant attention to what is going on in the group.
8. Try to relieve situations of tension.

During this training program you have learned how to use group dynamics skills to assist your team in classifying and blocking crime calls during the radio room simulation in which you are about to engage.

During the simulation your team will receive 40 calls, four at a time. There will be 60 seconds between each group of calls. During this time, remember that it is important that you work as a team to

classify and block all crime calls so that all calls may be effectively handled and that the level of satisfaction within your team will remain high.

GROUP DYNAMICS PRACTICE SHEET

Your Station	Your Call	Classified As	Your Time Block	Call Assigned
_____	1	_____	1	

TRAINING PROGRAM ANSWERS

	A	B	C	D
Classified As	0	0	2	3
Call Assigned	Blank	Blank	C-1	D-1
			C-1	D-1
				D-1

APPENDIX I

LOAD SHARING SKILL TRAINING PROGRAM VIDEO TAPE MANUSCRIPT

The objective of this training exercise is to instruct your team in the use of load sharing team skills which will improve your ability to review, analyze, and assign the calls which you will receive during this simulation. The procedures you will learn are the result of research conducted by the Los Angeles, California, Police Department. The training will enable you to more effectively deal with the calls you will receive by allowing your team to balance the call load at each station with that of other members of your team.

If you will look at Section A on the Load Sharing Call Sheet before you, you will see an illustration of a hypothetical load situation for a team. The first call was classified by the team member at Station A as a type one call, at Station B as a type three, at C as a two, and at D as a one. In Section B the calls were assigned to the appropriate time blocks.

In Section C of the Load Sharing Call Sheet you will see that the second call to Station A was classified as a 0, the second call to Station B was classified as a 1, in C as a 1, and D as a 0. By looking back at Section B you will see that a problem exists. Station B has already blocked three units of time in dealing with the first call. Station C has already blocked two units of time in dealing with that station's first call C-1.

This problem is an illustration of overload on a particular part of a system. You will note that while Stations B and C are overloaded

and thus will not be able to deal with the new calls they received immediately, Stations A and D both have received what were classified as zero calls, calls that should be ignored. Thus while Stations B and C are overloaded, Stations A and D do not have an adequate load. In an emergency situation this would mean that two very important calls would go unanswered for a time, while at that same time two cars would be doing absolutely nothing. The most effective solution to the problem is to have the team members at each station share the total load of the team so that all cars are busy as much as possible and that no important calls go unanswered.

Section D illustrates the one hypothetical solution to this overload problem. Since Station A has a zero call, the station can ignore the current call and assign its car to deal with the type two crime received by Station B. Station D can ignore its second call that has been classified as a zero call and take some of the overload from Station C. Thus, calls A-2 and D-2 would be ignored. Call B-2 would be assigned to two of Station A's time blocks. Call C-2 would be assigned to one time block under Station D.

This process of load sharing is extremely simple to perform on a continuing basis. Yet, it is often ignored by teams. When used, it can assure more effective use of the resources (cars and units of time in this case) available to teams.

As you work as part of this team during the coming simulations, you will have an extreme advantage if you share the load within your team. This can be accomplished through the following five procedures:

1. Observe and Alert--Continue to work as a team to monitor the progress of all team members. Watch for overload situations that may develop. Watch for other team members having an overload problem. If you as a team member have an overload problem, make other team members aware of it immediately.

2. Communicate--Carry on a dialogue with your team at all times. Ask other members questions if you are unsure of how a call should be classified. Ask other members if they have an overload or inform others if you do.

3. Balancing--If you as a team member do have an overload problem, quickly decide which station can help receive the overload and reassign the call to that station.

4. Adapting--The load sharing process must occur on a continual basis for your team to function effectively. During each call, the load should be balanced if an overload exists.

At this time you will receive practice in the load sharing process. At the tone, turn over the card in front of you and work as a team to properly classify each member's call and block it into the correct time units on the practice sheet provided. Call one has already been made and blocked in this practice simulation. You will have 60 seconds to classify the calls and block the units of time:

> *This is Joe Ackely. Can you send a police officer to my home as soon as possible? I live at 7789 Winter Ridge Road. I can't believe this happened in my neighborhood. Someone has taken my two new snowmobiles..trailer and all. I didn't think I had to worry about such things in this area, but guess I learned the hard way.*

Hello, this is Captain Sanderson's wife calling. Would you please ask him to call home when he's free?

My name is Andrea Wright. I teach fourth grade at Emerson Elementary School. My class has just finished a unit on community helpers and would be very interested in touring the police station. Is there someone I must talk with to obtain permission to visit?

Officer? I'd like to report a loud party in apartment 335-A at Windsor Heights Apartments. I've put up with the music all night and simply can't take it any longer. Can you send a patrol car out here?

If you will turn to Section A of the Load Sharing Answer Sheet you will see that call A-2 should have been classified as a type two call, Call B-2 as type zero, C-2 as a type zero, and D-2 as a type one.

In Section B of the Answer Sheet one possible load sharing alternative is offered. Call A-2 is blocked for two units of time under Station B and Call D-2 is blocked for one unit of time under Station C. This is possible because the calls B-2 and C-2 are to be ignored since they are type zero calls.

A second possible solution is offered in Section C of the Answer Sheet. In this case Call D-2 was blocked in under Station B for one unit of time and Call A-2 was blocked for two units of time under Station C.

The important thing to remember is that there is not one absolutely correct way to distribute the team load. There are hundreds of possible combinations in any simulation. However, to effectively deal with the load of your team, it is important that you:

1. Observe and Alert others to a possible overload.

2. Communicate at all times with other team members so that an overload may be spotted and dealt with.

3. Balance the load of your team to relieve any overload.

4. Continue to monitor the team load throughout the simulation to guard against overload.

During this training program you have learned how to recognize and relieve overload situations which may arise during the assignment-of-calls-received radio room simulation.

During the simulation your team will receive 40 calls, four at a time. There will be 60 seconds between each group of calls. During this time remember it is important that you work as a team to relieve any overload which may exist so that all calls may be effectively handled.

Load Sharing Call Sheet

Section A — Call / Classified As

	A	B	C	D
1	1	3	2	1

Section B — Time Block / Call Assigned

	A	B	C	D
1	A-1	B-1	C-1	C-1
2		B-1	C-1	
3		B-1		

Section C — Call / Classified As

		A	B	C	D
	1	1	3	2	1
→	2	0	2	1	0

Section D

Time Block	Call Assigned			
	A	B	C	D
1	A-1	B-1	C-1	D-1
→ 2	B-2*	B-1	C-1	C-2*
3	B-2*	B-1		

Load Sharing Practice Sheet

Calls previously assigned from Call #1:

Station

Time Block	A	B	C	D
1	A-1	B-1	C-1	D-1
2	A-1			D-1
3	A-1			

Your Station	Your Call	Classified As	Your Time Block	Call Assigned
_____	2	_____	2	
			3	
			4	

Answer To
Load Sharing Practice Sheet

Section A

	Call	Classified As			
		A	B	C	D
	1	3	1	1	2
→	2	2	0	0	1

Section B

	Time Block	Call Assigned			
		A	B	C	D
	1	A-1	B-1	C-1	D-1
→	2	A-1	A-2*	D-2*	D-1
	3	A-1	A-2*		

OR

Section C

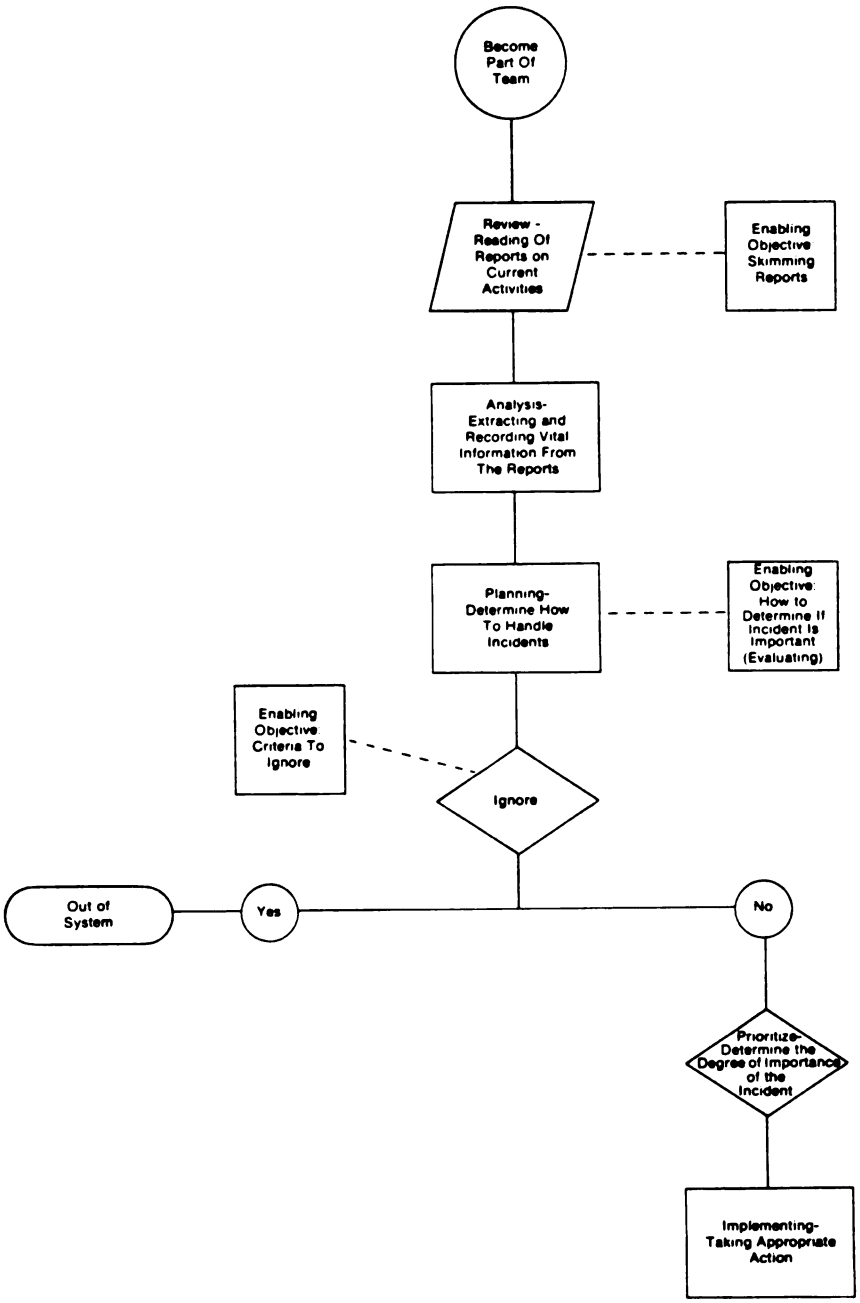
	Time Block	Call Assigned			
		A	B	C	D
	1	A-1	B-1	C-1	D-1
→	2	A-1	D-2*	A-2*	D-1
	3	A-1		A-2*	

TRAINING PROGRAM ANSWERS

	A	B	C	D
Classified as	2	0	0	1
Call Assigned	Blank	A-2 A-2 or D-2	D-2 A-2 A-2	Blank

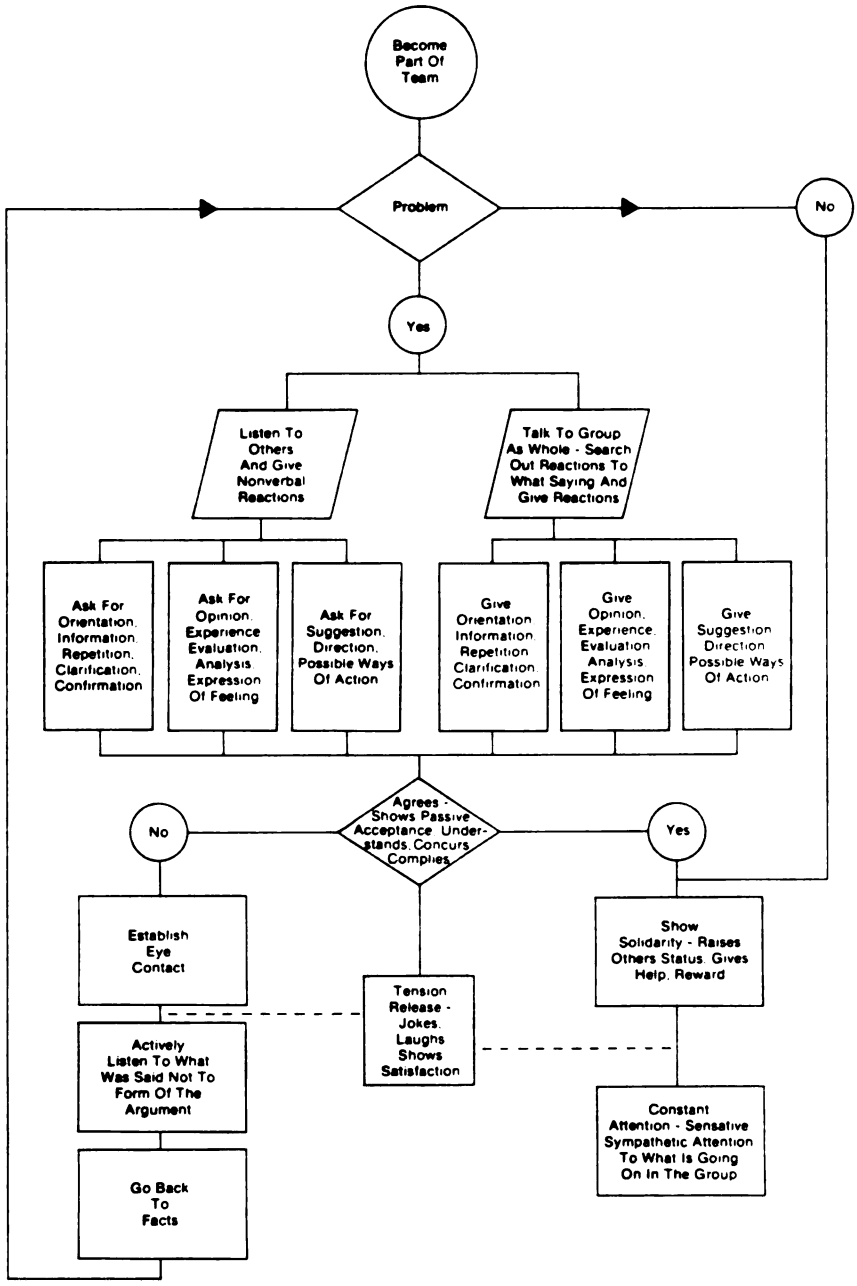
APPENDIX J

TASK SKILL TASK DESCRIPTION



APPENDIX K

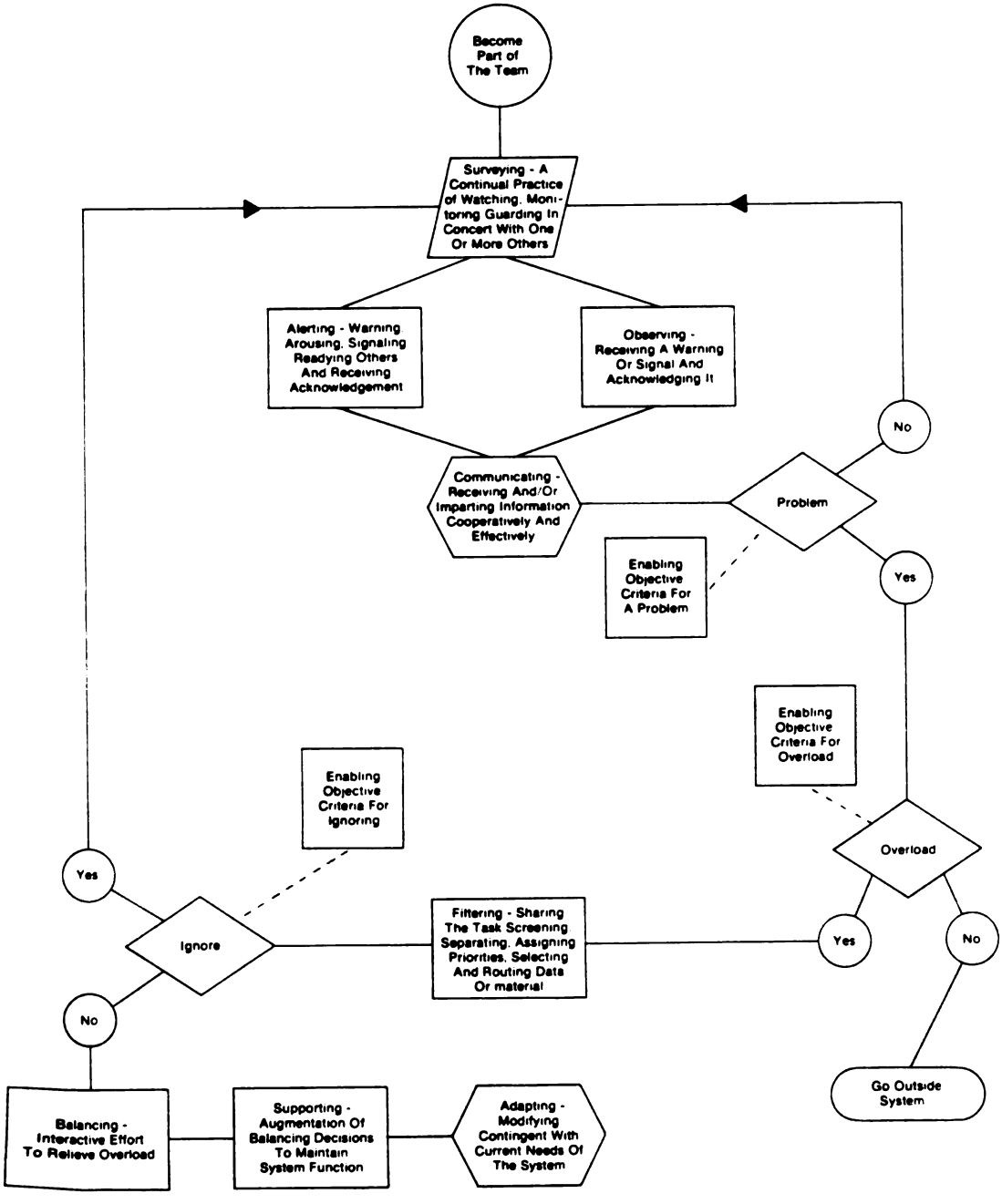
GROUP DYNAMICS SKILL TASK DESCRIPTION



Adapted From: **Bales (1950) INTERACTION PROCESS ANALYSIS**

APPENDIX L

LOAD SHARING SKILL TASK DESCRIPTION



APPENDIX M

CALL DEFINITIONS

A combination call is recorded as the highest call value. Breaking and entering with forcible rape is recorded as a Type Three call only.

Call Type

3 — PERSONAL OR VIOLENT CRIMES
- Murder or nonnegligent manslaughter
  gun, club, knife, fist
- Manslaughter by negligence
  traffic accident, hunting accident
- Forcible rape
- Kidnapping
- Robbery (in presence of victim)
  through force or threat of force
- Assault
  gun, knife, other dangerous weapon, hands
- Carrying concealed weapons

2 — PROPERTY CRIMES
- Breaking and entering (burglary)
  house breaking, safe cracking
- Larceny (theft)
  pickpocket, purse snatch, from auto, bicycle, auto accessories, shop lifting, from building, from coin-operated devices
- Arson
- Embezzlement
- Fraud (bad checks)
- Vandalism
- Stolen property
  buying, receiving, possessing

1 — VICTIMLESS CRIMES
- Prostitution
- Gambling
- Drugs
- Drunkenness
- Vagrancy

STATUS OFFENSES
- Smoking as a minor
- Running away from home

Call Type	
	NUISANCE CALLS Loud music or noise Barking dog
	SERVICE CALLS Change tire Get into a car
0	NOISE CALLS Call for information Personal calls to staff Agency administrative procedure Agency business calls

APPENDIX N

DAILY LOG

_____
Team Code

_____
Simulation Number

_____
Car

Your Call	Classified As	Your Time Block	Call Assigned
1	_____	1	
2	_____	2	
3	_____	3	
4	_____	4	
5	_____	5	
6	_____	6	
7	_____	7	
8	_____	8	
9	_____	9	
10	_____	10	

APPENDIX O

SIMULATION SET 1

"The mission of your team is to classify all calls which you receive and assign cars as quickly as possible so that no important call goes unclassified or unassigned. At the tone you may begin turning over the call cards in front of you as the call number is announced. A new call will be announced each sixty seconds."

Ring, Call One:

A-1 *This is Mrs. Ralph McKay at 745 Waverly Road. I dislike having to call you. I never have been one to complain; but I just can't take any more. The Beasley's across the street in 742 are having a party. They have a band there playing music loud enough to wake the dead. Do you suppose you could go over there and do something about it? Ralph and I would certainly appreciate it.*

B-1 *Hello, this is Mary Jefferies. I work at State Discount and we just caught a little boy trying to leave the store without paying for some albums he had. We don't want to press charges, but we believe the police should know about it and take the boy to his parents.*

C-1 *Police Department? This is Kenneth Overcamp of 2315 East Ridgewood Drive. I headed for my car this morning to go to work and found that all four of my tires were gone! I can't believe this. Somebody put my car on blocks and stole my tires! How am I supposed to get to work? My boss is not an understanding man. I'll probably lose my job too! It would be just my luck; Can you get somebody out here right away to check this out, take fingerprints, or whatever?*

D-1 *This is Bailiff Nielson over at District Court. We need a prisoner picked up here and transported back to County Jail. Do you have someone available to make the trip?*

Ring, Call Two:

Yes, my name is June Conly. I live at 672 Burton Avenue and I just heard some strange noise near my back door. The dog is
A-2 *growling as if someone is there. I'm afraid somebody is trying to break into my house. My husband is out of town so I'm all alone here and I just don't know what to do. Can you send an officer at once?*

My name is Rachel Anderson and I was just given a speeding ticket which I don't think I deserve. Honestly, I don't know what this world is coming to. I didn't see one sign marking the speed limit for Burcham Street and then there was
B-2 *this policeman HIDING at an intersection just waiting to pounce on someone! I just don't think it's fair when they HIDE! Let me talk to your boss, or someone in charge of traffic... <u>anyone</u> that can help me!!!!!*

Hello Officer? I'd like to report an animal theft? My ten thousand dollar thoroughbred is missing from her stable. One of my employees said he saw three men pull up in a trailer and take the horse. At first he thought they had been authorized
C-2 *to transport her to tomorrow's show, but then he began to think they were acting a bit suspicious so he wrote down the license number and says he has a pretty good description of the men. Oh, my name; I almost forgot in all the excitement. It's L. D. Burke of 443 Prospect Drive.*

Hello, this is Louise McComb. Would you please take a message
D-2 *and see that Sgt. Reed gets it? Just ask him to call his sister at 332-8457.*

Ring, Call Three:

Hello, my name is Jerry Thompson and I guess I need some help. I'm sorry to bother you with this and it is a bit embarrassing for me, but I really don't know where else to turn. I need
A-3 *directions to the Michigan State University Campus. I'm obviously not a resident of this community and at this hour of the night there aren't many people around to ask. I'm downtown by the State Capitol, so if you could give me directions from here, I'd sure appreciate it.*

B-3 *Yes, I want to report a theft. I just saw some boys smash my car window and take my CB radio. I wanted to stop them, but I was afraid they might attack me. My husband will be furious when he finds out he's been robbed of his precious CB and insurance never does cover enough. Oh, I know he'll just kill me. Who do I talk to? Where do I report this? Why did this have to happen to me? Oh, my name? Yes, it's Mable Harris. The address is 702 Miriam Drive.*

C-3 *Hello, this is Jennie Baxter. May I please speak with my father, Lt. Baxter?*

D-3 *This is Steve Miller from the County Juvenile Home. I just received a report of an abused child at 7528 Maple Ridge Drive. I'm leaving for the scene now. Can you get someone out there to help me as soon as possible?*

Ring, Call Four:

A-4 *Hello, this is Harold Smith. I'm interested in purchasing some police dogs for my company property. Could you please give me some information as to where I might call or whom I might contact to make this purchase? I hear these dogs can be very effective in reducing break-ins by just being seen on the premises, so I'm eager to give them a try.*

B-4 *Yes, this is Mrs. George Johnson of 2345 River Run Road. My daughter has just been assaulted and almost raped by a man in Riverview Park near our home. Can you get someone out here to help us? I can't believe this happened in our neighborhood! She was only gone for a few minutes; just walking the dog, and now this! I hope your department can put an end to this type of activity. My daughter is a nervous wreck, but does think she could give you a pretty good description. When will you be here?*

C-4 *Hello? My husband just lost $200 in an illegal poker game; his entire paycheck. He's home now, but says the game is still going on. I'm supposed to be happy that he left when he did, as if he made some sacrifice by coming home. Well, anyway, I want these games stopped for good. He says the guys meet in the back room at Mac's Bar on Michigan Avenue. Can you get over there now and catch those crooks red-handed? My name? I can't give you that. I've got to go now before Harry finds out I called the cops.*

My name is Jim O'Connell and I'm a stock boy at the Lake Lansing Road Seven-Eleven Food Store. I was in the back working when I heard all this noise and when I came out the
D-4 *cashier was lying on the floor. I thought she was dead at first. Two guys were running out of the store. They both wore ski masks and one had a shotgun. They took off in a green pick-up truck, heading west on Lake Lansing. I got the license plate number; I hope I remembered it right. Anyway, can you get somebody out here? I think Julie's okay.*

Ring, Call Five:

Yes, this is Joe Davis, manager of the Pin-Ball Haven on Grand River. There are a couple of drunks out here who are beginning to cause some trouble; you know, pushing other
A-5 *customers around, bad language, etc. I can't seem to convince them to leave and I'm afraid I'm going to have a brawl on my hands if they aren't removed soon. If I don't get some help, those jerks are going to push some customer too far and fists are going to fly and I'm going to have more damaged property than I can pay for! That's 775 Grand River.*

Hello, this is Mrs. Peter Hauser and my husband and I need some help with our son. I tell you, it's those rough-necks he hangs around with; I just know it. He doesn't listen to his father
B-5 *anymore. He listens to those awful kids. I swear, if they told him to jump off the Empire State Building, he would! We just don't know where to turn anymore. Is there someone in the juvenile division we could talk to?*

Hello, this is Al Leonard, manager at Roger's Distributing Company. Could you please send an officer to our Grand River store as soon as possible? We're holding a shoplifter. He
C-5 *was caught by one of our employees trying to walk out of the store with a fourteen inch color television. He put up quite a struggle, but was overpowered by this employee. Now he's trying to talk his way out of it, but our store policy is to prosecute. If you could get someone here soon, we'd sure appreciate it.*

My brother, Gene Lehman, is in your jail. It isn't the first time he's been there; but Dad says he's through bailing him out. I don't exactly know how to go about this, but I would like to
D-5 *bail my brother out. Can you tell me how much money it will take and where it should be delivered? Can he go with me as soon as I pay? Will I be held responsible for him when I pay the bail?*

Ring, Call Six:

A-6 *Hello, I'm calling for a friend. I don't have to give my name do I? Okay. Well, what I need to know is if there are any drug addiction clinics in East Lansing. My friend wants something very cheap and very confidential. Can you give me the address and phone number of the local clinic?*

B-6 *Hi, I'd like to report a stranded motorist on US 27 just north of town. It looks like an old woman is having problems with her car. You might want to send somebody out to help her. She is by Howe Road on Highway 27.*

C-6 *Hello, this is Albert Stone. Is my brother, Lt. Stone anywhere in the station or can he be reached in his car? I'd like to talk with him if you could locate him for me, please.*

D-6 *This is Dr. Waller's receptionist calling. I'd like to leave a message for Captain Pulanski to call the Doctor at Sparrow Hospital as soon as possible. The number to call is 487-1299.*

Ring, Call Seven:

A-7 *Hello, my name is Mildred Smith. I'm calling about the dogs that live behind my house. They are always barking and making noise. I can never get any sleep at night. Those dogs are a real nuisance!!!! I live at 203 Grover Street. I want something done about those dogs tonight or I'll call the Mayor's office in the morning!!! Taxpaying citizens should not have to put up with this!*

B-7 *Yes, this is Andrew Bates. I'm at a phone booth at the corner of Abbott and West Saginaw. I need to talk to a police officer about this weird old man who drew a gun on me. All I did was try to park my car in front of this house on Charles Street and this guy told me that if I didn't leave, he'd blow my head off. I think it was a shotgun. Whatever it was, I split fast.*

C-7 *This is Mrs. Raymond Becker at 378 West 33rd Street. Could you please send some officers to 377 W 33rd as soon as possible. I can't believe this is happening. My neighbors are out of town; I told them I'd keep an eye on their place, but I never dreamed I'd have to call the police. Two men have pulled a trailer up to the back door of the Radcliff's house and they are actually hauling out goods (their T.V., stereo, etc.) and putting them in the trailer. If you hurry, you may be able to catch them.*

Hello, my name is Miss Hilda Williams and I live in Cedar Village Apartments, 6237 River Street, #412. Children outside my building have been shooting off firecrackers all day. These brats are not only making a nervous wreck out of me, but they
D-7 *are driving my poor dog, FIFI, up the wall. He runs around in circles, whines and wets the floor (something he hasn't done in years). I'd sure like to know where the parents are of these unruly children. Can you get a policeman to come and send them away from my building?*

Ring, Call Eight:

A-8 *A burglar alarm is ringing at Roth Jewelers on Sycamore... 328 Sycamore!*

Hello, this is Geoffrey Hamilton of 1212 Park Road. I'm usually not one to make trouble for anyone, especially a neighbor, but I just can't ignore this situation any longer. Albert
B-8 *King, my neighbor, has ten black labs in one dog run with only one dog house. At first I thought it was only a temporary thing, but they've been there for four weeks now and I think the Animal Shelter or Humane Society should know about this! Can you put me in touch with them?*

Yes, this is Bill Fergusen, manager of Durgan's Drug on Grand River. A group of students are setting up a booth outside my store. I have no idea what they plan to do, but they are
C-8 *attracting a crowd of curious passersby and beginning to congest the entrance to my store. I did ask them to move and if they had a permit, but got no response. Could you send some officers over here to look into this?*

My name is Henry Dawes. Just bought a house over on Ashburn Street. The wife and I moved here from Kentucky two months ago when I retired. Well, the reason I'm calling is this: You see, I've been a gun buff for most of my life; have quite a
D-8 *collection if I do say so myself. Now that I'm getting on in years and not as able to defend myself physically, I'd like to be able to carry one of my guns with me at all times. With the rising crime rate, especially attacks on the elderly, I want a license to carry a concealed weapon. Can you give me some information?*

Ring, Call Nine:

A-9 *Yes, this is Jeff Green. I just saw three men go through the back window of the Sears store at Frandor. They used a crowbar to get in. You had better get a patrol car out there to check the situation! Oh, by-the-way, there is also a blue and white Chevy van parked nearby with a guy sitting behind the wheel; maybe waiting for the other three, I can't be sure. I didn't see them drive up.*

B-9 *Hello, this is Captain Webber's wife. Is he free to come to the phone? I'd like to talk with him, please.*

C-9 *Sid Morris here, from Sid's Service Station on Abbott and Lake Lansing Road. I've been in the garage with maintenance work all night; you know, flat on my back under cars or with my head under the hood and my P.M. help called in sick, so I've been here all alone and have no idea when this happened. My vending machines have been broken into. The money is gone from all three. I'd like to make a report so my insurance will cover the loss. Is there a car in the area that could stop by?*

D-9 *This is Ruth Kahill over at District Court. Do you have an officer available to come over here and pick up the evidence submitted for the Jackson case? It needs to be returned to the property room for storage.*

Ring, Call Ten:

A-10 *Hello, this is Fred Watson. I'm from Jackson; just here in town for the Real Estate Dealers convention and I evidently have illegally parked my car and as a result have this ticket to pay. I'd like to get this taken care of before I leave town, but I'm not sure where to present my ticket and pay the fine. Can you help me out with some information and directions to the station?*

B-10 *Hi, this is Vince Webb at 201 South Charles and I'm calling for two reasons: One reason is to help out the local police and the other is to help clean up my own neighborhood. I'm convinced the house across the street, 203, is a dope den. It's filled with hippies and there are people going in and out of there all hours of the day and night. I don't like to see this type of thing happening anywhere, but I refuse to sit back and let this go on in <u>my</u> neighborhood!! Can you check this out?*

C-10 *Where are you officers when you're needed? There is a real traffic mess at the corner of Harrison and Grand River. The stop lights have been out for who knows how long and you're just lucky there hasn't been a serious accident or is that what it takes to get you people to show up these days? As a taxpayer contributing to your salary, I think you're overpayed. Now do you plan to take care of the situation or shall I call the Mayor to come out and direct traffic?*

D-10 *Good Afternoon, Sir. This is Patrick Murphy, Principal at the High School calling. As you may be aware, the High School Homecoming is only two weeks away. As usual, there will be the traditional parade and we would like to request the services of your department once again this year. The parade is scheduled for the 14th at ten A.M. In the past, a couple of motorcycle escorts were sufficient. Will you be able to spare the personnel on the 14th?*

APPENDIX P

SIMULATION SET 2

"The mission of your team is to classify all calls which you receive and assign cars as quickly as possible so that no important call goes unclassified or unassigned. At the tone you may begin turning over the call cards in front of you as the call number is announced. A new call will be announced each sixty seconds."

Ring, Call One:

A-1 *Some kids just set my garage on fire. I've called the fire department, but I've had it with these kids. They're always causing trouble in the neighborhood and I want them arrested. Their pranks are getting out of hand. I, for one, am through accepting apologies from their parents. I can give you names. Can you send an officer to 3399 Albert Street. My name? Yes, of course, this is Richard Stone.*

B-1 *Hi, Al Anderson from Al's Sporting Goods Store here. I'd like to report a vagrant outside my store. He's been here all afternoon, sitting on the steps near my entrance. This fella doesn't look too well; I think he could use some help. Right; I'm located on Beach Street... 657 Beach.*

C-1 *Hello, this is Elizabeth Scott. I'm at the A & P Food Store on Grand River Avenue and I'm afraid I've locked myself out of my car. Here I am with all these groceries and wouldn't you know it would be the hottest day of the year. Can you imagine what is happening to the frozen food I purchased? With the price of groceries these days, I certainly can't afford to replace any of it. Is there anyone there that can help me?*

D-1 *This is Edith Lindsey calling. My husband and I are frantic. We just found a note from our fifteen year old daughter saying she has run away from home. She is heading for California with a friend... she didn't give a name, but it's probably that no-good boyfriend of hers. Anyway, how can we find her? How can we stop her? We live at 4893 Culver Street. We want her back home! We're sure <u>he</u> talked her into it; this just isn't like our daughter.*

Ring, Call Two:

A-2 *Hello? Yes, uh... there's been a terrible accident. I don't know what to do. My brother and I were hunting and my gun went off when I tripped over a log. Well, uh... I think I hurt him real bad. He needs help. Could you call an ambulance and send it to Bryan Road? He's near the Blakey place about a mile south on Bryan... in a wooded area. Mr. Blakey says he'll wait for you on the road. He'll show you the way.*

B-2 *I'm from out of town and I'm afraid I'm a bit lost. I've been looking for Probate Court for nearly an hour now and I seem to be driving in circles. I'm making this call from the Post Office. Can you give me directions from here?*

C-2 *Yes, this is Robert Jacobs from Sears Department Store at Frandor. We have a man here who is trying to purchase a television set with a credit card we believe is stolen. He refuses to show us any additional identification, verifying that he is the owner of the card. The cashier is stalling him. Anyway, she's trying to. Can you get somebody down here to see what's going on?*

D-2 *Yes, this is Interstate Security Systems and we are getting a night alarm at the Pier One Import store downtown. Could one of your men meet with a representative from our firm to help with the investigation?*

Ring, Call Three:

A-3 *This is George Prescott. My son is gone; what can we do? A man just called and said he's holding Aaron. What shall I do? I called the school and it's true, he's gone. His teacher says he didn't come in from recess. She thought he had walked home. She said she meant to call us; but was distracted and then forgot. Please help us. The caller said he'd phone again in an hour with instructions. Can you send someone to help us get Aaron back? We live at 1173 Prospect Drive.*

B-3 *Hello, is this Glen? How are you doing, buddy? This is Norris over at the County Jail. I need to speak to Detective Adams of the Burglary Division. Is he around?*

C-3 *Hi, this is Jim from Jim's Gun and Rifle Shop on 9th and Park Avenue. We've had a pretty busy week, but we did manage to finish the work on the service revolvers. They are repaired and ready for pick-up. If you should have any problems with any of them, feel free to let us know. That's what we're here for.*

D-3 *Hello, this is Sgt. Shearer from the State Crime Lab. Would you please tell Lt. Blackburn that the ballistics report on that Tompkins shooting is ready to be released. If you can send someone over here to pick it up, it's all yours.*

Ring, Call Four:

A-4 *My name is Margaret Burke. I live on Ann Street, next to the High School. There are some cars racing up and down my street. Students, I suppose. They're always up to something: walking through my yard, tramping down my grass, scaring the birds off my bird feeder and even picking my roses now and then. Well, this racing is more than I care to take. Would you please send an officer out here to stop them?*

B-4 *Yes, this is Lieutenant Sanders from the State Police calling. We need a little assistance from your fine department today. Could you put me in touch with Captain Wagner in records? Thanks. I need a fingerprint check.*

C-4 *Hello, my husband and I just moved to East Lansing from the state of Florida. We've always been quite avid bicyclists and would like to continue to enjoy cycling in your city. Are there any special licensing procedures we should be aware of? How about laws unique to your community concerning bicycle travel, etc.?*

D-4 *Hello, I'm Mrs. Evans and I live at 403 Capitol Avenue. My son just brought home a radio he bought from a boy at his school. It's a real nice radio... worth much more than my son paid. Jason, my son, says that this boy goes out at night and steals these radios from cars. I don't want my son to get in trouble with a "hot" radio, but I thought you should know about this situation.*

Ring, Call Five:

A-5 *May I speak with someone concerning crowd control? This is Art Burns, manager of Capitol City Airport. We'll be needing some help on Friday of next week when the MSU Basketball team returns from the big ten championships. We're anticipating quite a large group of fans awaiting their arrival and I'm sure we'll be needing your help. Yes, that's Friday of next week.*

B-5 *Hello? Police Department? I just saw a man hit another guy with a baseball bat over here in the 4th Street parking ramp. I tried to help the victim, but he won't come around. He looks like he's hurt really bad... still breathing though. Can you get some medical help over here fast? Oh yes, he's on the fourth level near a blue Ford. Sure, I'll wait. I think I can give a pretty good description of the other guy.*

C-5 *This is Keith Hanson over at the Mayor's office. I'd like to speak with someone regarding an escort for the Governor. He'll be breaking ground for the new children's hospital next Tuesday. A motorcycle escort would be fine. We would like at least a half dozen officers.*

D-5 *This is Cora Seeley. I live above the Black Bull Bar and Grill on Michigan Avenue. It's not much but it's better than an old folks home and that's where most of my friends are. Anyway, lately I've noticed a lot of ladies parading up and down the sidewalk... I tell you, they aren't out there selling poppies. Different cars stop, they get in with the man and are brought right back to this spot a few hours later. It's disgusting! Can't you put a stop to it?*

Ring, Call Six:

A-6 *Yes, this is Captain Smith from the Fire Department. That fire last week on North Logan is beginning to look a bit suspicious. We're afraid it was arson afterall. Is there someone available from your department to come over here and help us with this investigation? We do have some pretty good leads; but we will definitely need your assistance. Right; that was the fire at 870 North Logan.*

B-6 *Yes, this is Lansing Uniform Supply Company calling. I'm afraid we have a real problem over here and I wish I could think of a solution, but unfortunately I have no control over the situation. You see, we just received a call from the manufacturer and he tells us that the hats you requested will not be available until mid-August. I know I promised they'd be in by April, but the manufacturing company has been on strike and you know how that goes.*

C-6 *Hello, my name is Althea Jorgansen and I live out here on Cherry Lane... 234 Cherry. You know, the land behind my house has been graded for that new apartment complex. I'm not particularly pleased with the idea of apartments in my back yard; but, I'm even less pleased with what's going on out there right now. Some kids on motorcycles are racing around out there, making a lot of noise and stirring up all that dirt, creating a real dust bowl. Can you do something about them?*

D-6 *This is Leonard Billings of 1319 West Division Street... right next to Hoover Junior High. I wish I'd never bought this house. These young kids have no respect for private property. I've chased them off my grass many times. Well, today I told a bunch to move away from my magnolia tree and do you know what they did? They came right back and threw a brick through my picture window. Now, who's going to pay for this? I want to make a report; I want to press charges.*

Ring, Call Seven:

A-7 *Hello, this is Mr. Feldman's secretary from Feldman's Furniture Store. I'm calling to request the presence of one of your men at the upcoming Merchant's Association meeting. The merchants are concerned about the security of their businesses during the evening hours, the patrol schedule, etc. Could you please send a delegate on May 23rd at 7:30 PM to the third floor conference room at City Hall? Yes, that's a week from tomorrow.*

B-7 *This is Gary Griffin from Griffin Insurance Company. One of our clients is being hit with a five hundred thousand dollar law suit as a result of a traffic accident that occurred in October of 1976. We'd like to take a look at that traffic report. Could you please send a Xerox copy to 899 North Claton Street, Suite 340? The names involved were McBride and Stapelton.*

C-7 *Yes, this is H & H Block calling. The income tax forms for Sgt. Allen have been completed and are ready for his review. Would you please give him that message?*

D-7 *Hello, I'm an employee at the Hi-Fi Shop on Grand River. I just caught a woman trying to steal a box of tapes from our store. How soon can a police officer be here?*

Ring, Call Eight:

A-8 *Yes, Police Department? I don't want to give you my name; but I do want to give you some information. I just discovered a bag of white powder in the pocket of my son's jeans. I was doing the laundry and I always check the pockets for change, combs and the like. You know, that stuff is hard on the machine. Well anyway, here was this powdery substance. I'm not so naive that I don't know what it is. I've heard drugs are passed freely about the high school, but I never dreamed our Tommy would be involved. Can't you stop that?*

B-8 *Hello, my name is Don Lindaman, branch manager at First State Savings and Loan on Northridge Blvd. I have reason to believe that one of our employees is taking unauthorized funds from one of our accounts. I'd like to report this and get an investigation under way. I've never had this concern before and I'm not sure of all the legal procedures. I sure hope I'm wrong about this employee.*

C-8 *I am sick and tired of calling your department about this, but the problem persists. Everytime we get a good snow, people seem to come from miles around just to trespass on my property! These snowmobilers have no respect for my signs and they even go around my fences. What nerve! I think it's about time your officers came out here and caught them in the act. I live at 675 Chandler Road. Harvey Wood is the name.*

D-8 *This is Lt. Stone. Yes, I'm still down with this flu, but do seem to be improving. Have you seen Officer Morrison around today? Is he on duty? I've been doing some thinking about that bank robbery of last week and have a few questions about Morrison's report. Have him give me a call at home if you should locate him.*

Ring, Call Nine:

A-9 *Good morning, Officer. This is Erma Lockhart, Principal at Valleyview Elementary School. I'm calling to request your services again this year. We're beginning to prepare for our bicycle safety program and would certainly appreciate it if a couple of your men could come to the school and present a portion of the program. The program is scheduled to begin one week from Monday.*

B-9 *Hello, Sam? How are you today? This is Alice Wright calling. Having a busy day at the station? Well, I won't take much of your time, but do need a small favor. I'm planning a surprise birthday party for Chief Wright and would certainly appreciate it if you would pass the word among the men. The party will be on the 16th of next month at 8 o'clock PM in our home. Thanks for all your help.*

C-9 *Hello? I won't give you my name because I don't want to get involved, but every Friday night after second shift, there is a guy outside the Old's Plant selling real nice tape players and radios. He sells them dirt cheap and he is always trying to get me to buy something. He takes only cash from the people who buy the goods. My bet is, it's stolen property. You see for yourself.*

D-9 *Hello, I need some help. I'm out on Kent Circle and I have a very flat tire. My husband told me I should learn how to take care of this sort of thing, but of course I didn't take him seriously. Now he's out of town and the only service station I can see from here is closed. Do you suppose you could spare an officer to come out and help me? I'm on Kent near the stadium in an orange Datsun.*

Ring, Call Ten:

A-10 *Hello, my name is Martha Harrington. I live in the Woodland Tower Apartment complex... 444-A, 4th floor. I've been noticing something strange about the resident, a young single gal, in 445-B across the hall from me. Now, I was told this was a respectable building. That's why I felt it a suitable home for my three children. Well, I'm beginning to have my doubts. That young girl has more gentlemen friends than I can count. Even my children are beginning to ask me why all those different men visit her. Can you check it out?*

B-10 *This is Captain Booth. Is Officer Dixon scheduled for duty today? If so, would you please locate him and ask him to call my office when he's free?*

C-10 *I'm sorry to bother you at three in the morning, but we have a real problem in this neighborhood. Those Iversons across the way have been a problem since the day they moved in. I could give you quite a list of complaints, but for tonight shall try to confine myself to the problem of the howling dog. He's been at it all night. I don't know how they manage to sleep through it, but they obviously are immune to it. Can you put a stop to that awful howling?*

D-10 *Hello, this is Jack Appleby at Jack's Tap and I could sure use some help tonight. There is a big guy here creating a real disturbance. My bouncer usually handles this type of thing, but he's off for the night and I'm not one to get involved with the big, violent type. He's pretty drunk; it might take a couple of officers. When can you get here?*

Ring, this concludes this simulation. Your team must now stop work immediately.

APPENDIX Q

SIMULATION SET Ø CALL DISTRIBUTION

Call	Adam	Boy	Charles	David
1	2	1	2	1
2	0	0	2	2
3	0	0	2	3
4	0	2	2	0
5	0	2	0	0
6	1	1	3	0
7	1	1	0	2
8	1	0	0	3
9	1	1	0	2
10	0	1	1	0
Load Total	6	9	12	13	40
Utilization Score if the Load is not Distributed	-4	-1	+2	+3	/10/

Load Total: Number of time blocks necessary to deal with the calls assigned to the station

Utilization Score: Difference by the number of time blocks utilized and the number of available time blocks.

APPENDIX R

SIMULATION SET 1 CALL DISTRIBUTION

Call	Car: Adam	Boy	Charles	David	
1	1	2	2	1	
2	2	0	2	0	
3	0	2	0	1	
4	0	3	1	3	
5	1	0	2	0	
6	0	1	0	0	
7	1	3	2	1	
8	2	0	1	0	
9	2	0	2	0	
10	0	1	1	0	
Load TOTAL	9	12	13	6	40
Utilization Score if the Load is not Distributed	-1	+2	+3	-4	/10/

APPENDIX S

SIMULATION SET 2 CALL DISTRIBUTION

Call	Car: Adam	Boy	Charles	David	
1	2	1	1	1	
2	3	0	2	2	
3	3	0	0	0	
4	1	0	0	2	
5	0	3	0	1	
6	2	0	1	2	
7	0	0	0	2	
8	1	2	2	0	
9	0	0	2	1	
10	1	0	1	1	
Load TOTAL	13	6	9	12	40
Utilization Score if the Load is not Distributed	+ 3	-4	- 1	+ 2	/ 10 /

APPENDIX T

SIMULATION SETS Ø, 1, 2 CRIME LOAD DISTRIBUTION

Crime Type	Frequency
0	16
1	11
2	10
3	3
Total	40

APPENDIX U

SIMULATION SET Ø ONE POSSIBLE ZERO SUM SOLUTION

Call	Car: Pink / Adam	Green / Boy	Orange / Charles	Blue / David
1	A-1	B-1	C-1	D-1
2	A-1	C-2	C-1	D-2
3	D-3	C-2	C-3	D-2
4	D-3	B-4	C-3	C-4
5	D-3	B-4	B-5	C-4
6	A-6	B-6	B-5	C-6
7	A-7	B-7	D-7	C-6
8	A-8	D-8	D-7	C-6
9	A-9	D-8	B-9	D-9
10	B-10	D-8	C-10	D-9

APPENDIX V

SIMULATION SET 1 ONE POSSIBLE ZERO SUM SOLUTION

Call	Car: Adam	Boy	Charles	David
1	A-1	B-1	C-1	D-1
2	A-2	B-1	C-1	C-2
3	A-2	B-3	D-3	C-2
4	B-4	B-3	C-4	D-4
5	B-4	A-5	C-5	D-4
6	B-4	B-6	C-5	D-4
7	A-7	B-7	C-7	D-7
8	A-8	B-7	C-7	C-8
9	A-8	B-7	C-9	A-9
10	C-10	B-10	C-9	A-9

APPENDIX W

SIMULATION SET 2 ONE POSSIBLE ZERO SUM SOLUTION

Call	Car: Adam	Boy	Charles	David
1	A-1	B-1	C-1	D-1
2	A-1	A-2	C-2	D-2
3	A-3	A-2	C-2	D-2
4	A-3	A-2	A-4	D-4
5	A-3	B-5	D-5	D-4
6	A-6	B-5	C-6	D-6
7	A-6	B-5	D-7	D-6
8	A-8	B-8	D-7	C-8
9	D-9	B-8	C-9	C-8
10	A-10	C-10	C-9	D-10

APPENDIX X

TRAINING EVALUATION

Refer to the following rating scale when answering the items on the questionnaire concerning the value of specific skills in accomplishing your team mission of classifying calls and assigning them to time blocks as quickly as possible so that no call goes unclassified or unanswered.

1	2	3	4	5
Little	Limited	Moderate	Above Average	Great

1. Of what value was it to your team to be able to read the crime calls accurately? _____

2. How well did your team accurately read the crime calls? _____

3. Of what value was it to your team to be able to skim the calls readily for essential data? _____

4. How well did your team skim the calls for essential data? _____

5. Of what value was it to your team to be able to properly classify the calls? _____

6. How well did your team properly classify the calls? _____

7. Of what value was it to your team to be able to properly assign calls to blocks of time? _____

8. How well did your team properly assign calls to blocks of time? _____

9. Of what value was it to your team to be able to know when to ignore calls? _____

10. How well did your team ignore irrelevant calls? _____

11. Of what value was it to your team to be able to give non verbal reactions when listening? _____

12. How well did your team give non verbal reactions when listening? _____

13. Of what value was it to your team to have members talk to the group as a whole, searching out opinions? _____

14. How well did members of your team talk to the group as a whole and search out opinions? _____

15. Of what value was it to your team to have members ask for information and clarification or give information and clarification? _____

16. How well did members of your team ask for information and clarification or give information and clarification? _____

17. Of what value was it to your team to have members agree and show they understood when they did? _____

18. How well did your team agree and show they understood when they did? _____

19. Of what value was it to your team to establish eye contact, listen actively and go back to the facts of the problem when a problem existed? _____

20. How well did members of your team establish eye contact, listen actively and go back to the facts of the problem when a problem existed? _____

21. Of what value was it to your team to show solidarity and give constant attention to what was going on if a problem did not exist? _____

22. How well did your team show solidarity and give constant attention to what was going on if a problem did not exist? _____

23. Of what value was it to your team to relieve situations of tension? _____

24. How well did your team relieve situations of tension? _____

25. Of what value was it to your team to watch for and alert others to overload situations that may have existed? _____

26. How well did your team watch for and alert others to overload situations that may have existed? _____

27. Of what value was it to your team to communicate concerning how calls should be classified or how to deal with an overload? _____

28. How well did your team communicate concerning how calls should be classified or how to deal with an overload? _____

29. Of what value was it to your team to balance any overload that might have existed and reassign the call to another station? _____

30. How well did your team balance any overload that might have existed and reassign the call to another station? _____

31. How close did you feel to other members of your team? _____

32. How well did your team get along? _____

33. How well did you get to know the other members of your team during the time that you worked together? _____

34. How successful do you believe your team was in fulfilling its mission? _____

35. Overall, to what extent to you believe the training you received contributed to the accomplishment of your team mission? _____

APPENDIX Y

SIMULATION PERFORMANCE SCORING

1. Accuracy Score

Proper Call Classification - Team Member's Classification = Absolute Value

Type 3 call	-	Type 2	=	1
Total for all team call classifications			=	Accuracy Score

2. Effectiveness Score

Possible Perfect Assignment of Team	-	Number of Calls Assigned	=	Absolute Value
10	-	6	=	4
Absolute Value			=	Effectiveness Score

3. Team Scores

Team Accuracy Score: Accuracy Score at All Four Stations

Team Effectiveness Score: Effectiveness Score at All Four Stations

Team Performance Score: Total of the Team Accuracy and Team Effectiveness Scores for a Given Simulation

APPENDIX Z

CELL SIZES, MEANS, AND STANDARD DEVIATIONS SHOWING THE EFFECTS OF TRAINING, SEX, AND PRETESTING UPON SIMULATION 1, SIMULATION 2, AND COHESIVENESS

INDEPENDENT VARIABLES			DEPENDENT VARIABLES					
Training	Sex	Pretest	Simulation I Performance		Simulation II Performance		Cohesiveness	
			$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.
T + N	M	PT	13.33	4.93	9.33	3.06	47.00	34.77
		NT	12.00	1.73	12.33	7.51	66.67	24.01
	F	PT	6.00	2.65	6.33	3.79	81.00	1.73
		NT	16.67	6.66	15.67	8.96	81.33	2.08
T + G	M	PT	13.33	6.66	10.00	1.73	78.67	5.51
		NT	13.00	7.00	10.00	2.65	71.00	7.00
	F	PT	12.67	3.79	12.00	7.55	74.67	1.53
		NT	15.67	4.16	15.33	2.52	79.67	8.14
T + L	M	PT	10.67	4.62	6.00	2.00	87.00	6.00
		NT	8.00	1.00	5.67	3.79	78.00	4.36
	F	PT	5.67	2.52	6.67	2.89	86.67	10.07
		NT	3.67	1.53	9.33	3.79	53.67	41.35
T + B	M	PT	11.33	6.66	8.67	1.53	80.33	2.89
		NT	6.00	4.58	2.67	3.06	85.33	7.64
	F	PT	8.33	3.51	3.67	2.31	77.67	15.82
		NT	4.00	1.73	3.67	3.06	79.00	4.00

Note. Cell n = 3; total N = 48.

T = Task Skill Training
G = Group Dynamics Skill Training
L = Load Sharing Skill Training
N = No Additional Training
B = Both Group Dynamics Skill and Load Sharing Skill Training
M = Male
F = Female
PT = Pretest
NT = No Pretest

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