FURTHER EVIDENCE OF THE CONSTANCY

AND VALIDITY OF PEER RATINGS

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CHAPTER I

INTRODUCTION

Leader identification is a continuous problem in this complex society. Leaders are required, but it is not always possible to wait on the long process of natural selection of the fittest. In times of national emergency many leaders are required in a relatively short period of time, time that is prohibitively expensive in the nuclear, jet-powered age. The Armed Forces are the prime purchasers of leaders, but civilian industry also requires prompt identification of potential leaders in a rapidly expanding economy (9, pp. 8-10, 23-25).

During "peace," the gradual attrition of the veteran leaders due to natural processes means that replacement leaders are required on a continuing basis. The Armed Forces are primarily interested in the product, yet civilian industry actively competes with the Armed Forces for the potential leaders. Personnel with supervisory ability are in such demand that executive and management trainees are a common sight on many campuses and in civilian industry.

Due to the lengthy time period involved and the expense of the leadership training programs, it is desirable that identification of leaders and non-leaders be made as early as possible. This would allow extra concentration on those individuals who are fully qualified in mental and personality attributes but who may be slightly undeveloped

in leadership. Moreover, early identification of the weakest in potential could lead to elimination from the program with resultant saving of time and money.

Any method of enhancing the accuracy of selection or of subsequent evaluation of the potential leader can be highly significant, not only as far as quality of product is concerned but also in terms of economy of effort. Enhanced selection devices mean fewer failures, fewer individuals in training, smaller staffs and greater success in producing the final product with the required level of quality. The result is that less emphasis is placed on leadership development and more emphasis on technical competence or on broader educational background in the curricula of the schools concerned.

The primary advantage of enhanced evaluation devices would be in the quality of the product. Subjective judgments by instructors and by one or two other individuals tend to place too much faith on the reliability of such judgments. Research has shown that evaluations made by one or two individuals are not as reliable or valid as are judgments made by several individuals (23, pp. 101-121). The responsibility for making the pass/fail judgment is especially taxing when borderline cases are involved and individual prejudices may sway the decision. Usually the combined opinion of a group of instructors is required before an individual can be discharged from the leadership training program as being inept or lacking in the qualities desired in a leader. Even so, this group must rely on the judgment of a few other

individuals who are personally acquainted with the trainee, placing heavy reliance on subjective impressions of a few individuals.

The significance of the problem is made quite apparent when the number of subjects in leadership training programs of various types is recognized. The Armed Forces are deeply involved in the production of leaders with three Service Academies, the various Reserve Officer Training Programs, and many other officer training activities. Because of the magnitude of the problem, the Armed Forces have conducted extensive research into the problem of leader identification for many years.

Approaches to Leader Identification

During World War II, several programs were used to screen potential leaders; these selection devices ranged from the elaborate, expensive, individual-attention type exemplified by the Office of Strategic Services' approach to the widely used military school type exemplified by the Officer Candidate School. The OSS evaluation group used a series of individual and group problems in which each subject was observed on a variety of tasks (15). Since the teamwork approach was used, the number of candidates had to be limited by the number of observers available and by the limitations of the physical facilities used. It has been estimated that the screening involved three and one half days, a hundred-acre farm and fifteen professional staff members for a group of eighteen candidates (18, p. 20). The Officer Candidate School approach followed the familiar pattern of the military school,

concentrating on technical subjects while devoting as much time as was possible to the screening and training of the potential leaders.

After World War II, much research was devoted to the leadership identification problem both in the military and in civilian industry. Effort was devoted toward a more realistic appraisal of the individual through redesigned evaluation devices (17), further use of the individualized situational problem as an evaluation method (2), and increasing emphasis on sociometry and interpersonal relationships such as through role-playing, et cetera (19).

Rating Devices

The rating device has been used for many years in the Armed Forces as the traditional Effictiveness Report for Officers. Much research has gone into the present Effectiveness Report but not all defects have been corrected (23, pp. 112-113). One of the major defects of rating devices is the tendency of the rater to use an over-all impression of the subject for the basis of the rating. Vernon has called this over-all impression the schema or picture of the personality as a whole (23, pp. 101-121). Once the schema has been formed, the rater tends to interpret what he sees of the subject to fit in with the schema, and the schema become not an "objective" portrait but involves emotional attitudes or sentiments . . . a generalization from the total impression of the individual. The subject is placed into a stereotyped niche, the rater ignores actions or behaviors conflicting with the stereotyped behavior and interprets the behavior of the

subject in accord with the stereotype personality; the result is "halo phenomena."

In attempting to decrease the effects of halo, some effort has been concentrated on improving the rating scales and the raters themselves. Vernon lists several approaches, among which are: substitution of phrases for letters or numbers on linear scales; breaking a general trait down into more specific components; increasing the rating time interval; making the ratings from direct observation rather than from generalized recollection; obtaining judgments from a diversity of judges; training raters on the use of the scale; and increasing opportunities for rater to observe subjects (23, pp. 115-118).

A study on officer rating methodology in the United States Army (17) concluded that the average of a number of ratings per ratee was more valid than was a single rating per ratee, and that the more effective method for increasing validity of ratings remains the averaging of ratings made by a number of equally competent raters rather than using a different technique.

The significance of these two studies in the problem of assessing leadership potential lies in the fact that both included among the conclusions that more than one or two raters are necessary for the accurate evaluation of the subject.

Situational Problems

Ansbacher summarizes the work that has gone into the use of the leaderless group discussion method, a type of situational problem, and points out that this technique had been used successfully by the Germans for years before being adopted by the Anglo-Saxon countries (2). A study by Vernon (23, p. 99) found that good results were obtained in the use of the leaderless group discussion method in combination with other selection devices in selecting civil servants for positions of responsibility in the administrative class and foreign service.

In this technique, two observers usually do the rating of the subject during his interactions with the group. In this respect, the leaderless group discussion score is a type of rating and suffers from some of the defects of the rating devices mentioned above.

> . . . it depends enormously on the skill and experience of the observers. Other weaknesses . . . [include] the obvious dependence of the candidate's behavior on <u>his</u> interpretation of the procedure and his preconceived notions of the sort of personality he should try to display (23, p. 98).

A modification of the technique calls for all the group members to rate each member, with the average score being used as the individual's score (5).

The individual situational problem was utilized by Tupes and associates in establishing a screening device for Officer Candidate School (22). A leaderless group discussion problem and a five-minute impromptu speech were examined, along with other variables,

in regard to predicting pass/fail in Officer Candidate School. The leaderless group discussion score, in which each participant was rated by two observers, correlated with the pass/fail criterion at .06. The impromptu speech score derived from the combined rating of two observers correlated with the pass/fail criterion at .05. (Both correlations are product moment.) When these two devices were included in a fourteen-item selection battery, the resultant "unit-weighted composite" correlation was .23 with the graduation/elimination criterion. Despite the low correlations, the authors concluded that using the composite as a screening device would have increased the selection efficiency of an Air Force officer program with respect to later officer effectiveness of those selected (22, p. 10).

The leaderless group discussion and other types of the individual situational problem have been somewhat successful in leader identification, not only because of the technique of placing the individual in a tense problem situation and observing his behavior, but because the process relies on recognizing the interpersonal relationships of the individual and the group. Data on these relationships can often be obtained from the group members themselves in the form of rating sheets (5). This utilization of interpersonal relationships exemplifies the third approach to leader identification.

Interpersonal Relationships

The third approach to leader identification is through sociometry. This has been used extensively for many years as a means of

identifying interpersonal relationships in groups. Emphasis has been placed, since World War II, on using sociometry in leader identification. These sociometric tests usually require an individual of a specific group to select one or more individuals in that group on the basis of a stipulated criterion of choice (7). The sum total of choices (or nominations) received by an individual then reflects his status in that group on the stipulated criterion. An individual receiving many choices is considered a "star" or a leader, while one receiving very few or none is considered an isolate or "unchosen" (14, pp. 27, 32).

A logical extension of this nominating technique is to require each group member to list all of his fellow members in relative order of rank or merit on the criterion. A composite score is thus obtained which may be related to the criterion, or used as a criterion against which other factors are validated (10). This method, as well as other sociometric techniques, rests on the proposition that members of the group are familiar with each other;

> . . . it is most satisfactory for groups with defined boundaries, in which the individuals know each other at least by name and continue with some cohesion over a reasonable period of time; it is less satisfactory for very large groups and for ill-defined groups . . . . (14, p. 1).

The specific criterion used in obtaining the nominations may range from something very concrete to something quite abstract--from proficiency in a well-known task to success in a future endeavor in which behavior and characteristics observed at the present time in a

known situation must be extrapolated in order to estimate behavior in an unfamiliar situation in the future.

The nominations (peer ratings, "buddy ratings") have been shown not only to have validity in predicting success in the immediate situation but also in predicting success in the indefinite future in a rather nebulous situation--at least unfamiliar to the group members (1, additional references cited in Chapter Bibliography). At West Point, peer ratings on "aptitude for service" had a marked positive relationship with success as a regular army officer during the first eighteen months of service. This relationship was significantly higher than with any other predictor (4; 8). Williams and Leavitt (26) found that peer ratings were highly valid for predicting later success in combat of Marine Officer candidates, although the peer ratings were taken while the candidates were still in training (26, p. 291). Another study found that peer ratings taken at Pre-Flight level significantly predicted the pass/fail criterion for the total flight program, a program extending fourteen months beyond pre-flight training (11).

Peer ratings have been found so successful that the technique has been adopted by many Armed Forces Schools and by civilian industry (24). The United States Air Force Academy uses peer ratings to develop an "aptitude for commissioned service rating" (27). The Air University uses various types of peer ratings in the schools under its jurisdiction (28). The Air Training Command uses the technique in the Pre-Flight, Officer Candidate School and other courses at Lackland Air

Force Base (29); the Wright Air Development Center has used peer ratings in research studies made at Lackland Air Force Base (30). The wide use of peer ratings is undoubtedly due, to some extent, to the ease with which such ratings are gathered and the ease of analysis. There is, however, considerable opinion in support of peer ratings arising from the technique itself. The feeling is that no one is more capable of judging group members than are the members themselves; ". . . group members have more time to observe each other than do the superior officers, they know each other in a realistic contact and react more directly to each other's social behavior" (10, p. 387). Group opinion, taken as a composite, may yield information about an individual which is not topped by other measures; such group evaluations are based on "informed judgments" (26, p. 291).

Leadership Measurements on the College Campus

The studies show that the "informed judgments" are useful for identifying leaders and predicting success in military groups. One factor in common in the studies cited above is that the data has been gathered from group members who have had very close contact with each other. The studies have been made on Naval Cadets, Officer Candidates, Pre-Flight students, Cadets at West Point and other personnel, all of whom have been living, eating, studying, reciting, working and relaxing together over some period of time. Little research has been made on predicting leadership potential on groups wherein contact is relatively limited.

On the modern, large college campus with students numbering several thousands, the knowledge that students have of each other is largely derived from classroom observation and from the contact they have with their immediate circle of acquaintances. If the individuals are drawn from the many college departments or major fields of study, and placed in classes with each other, their contact is often limited to these classes, and any evaluations made by the class members are based on these relatively short contacts. This situation is further compounded on the large campus since student make-up of the classes within a major field changes from semester to semester, even though all the students of the same graduating class may be required to take the same subjects in the same sequence.

The Air Force Reserve Officer Training Corps (henceforth the Air Force ROTC) is one of the agents in the development of potential leaders for the United States Air Force. As the Department of Air Science, the Air Force ROTC is one of those few activities on the college campus which draw individuals from all corners of the campus. Some may be well acquainted, others may not see their fellow Air Force ROTC students except in the Air Science classroom. It would be possible for a student to complete the four-year Air Force ROTC program and never be in a class section with a fellow cadet completing the program at the same time. It is quite common, for example, for two students to complete the program and have had only one or two semesters' work together during the four years.

The lack of close contact among Air Force ROTC students would seem to deny any chance of obtaining peer ratings which would be useful in identifying leaders among the cadets. The changing class structure would also seem to deny the possibility of obtaining ratings possessing any degree of constancy. The very uncohesiveness of the typical Air Force ROTC group would seem to deny the possibility of obtaining any valid measurement of leadership ability or potential as an officer.

This study reports on an investigation to determine the applicability of the peer rating technique to Air Force ROTC cadets at North Texas State College which has an enrollment of approximately 7000 students. The specific problem investigated was whether or not the peer rating would be useful in solving the leader identification problem in Air Force ROTC.

The Air Force ROTC Leader Identification Problem

In the Air Force ROTC program, cadets are screened for entry into the advanced-course portion of the program and subsequent commissioning with two pass/fail criteria--the physical examination and the Air Force Officer Qualifying Test, a type of personality-intelligence-aptitude examination. In addition to these relatively objective screening devices, the cadet must meet a board of officers and pass a subjective screening; this is based on over-all impression, on academic grades, on Air Science grades, activity on the campus, potential as an officer and other factors deemed important by the

board. Once past this initial screening, the cadet is evaluated during the subsequent two years on the basis of grades, leadership, activity and other more or less tangible factors. These evaluations are made by the instructors and by the Professor of Air Science.

The main difficulties in this rather straightforward selection and evaluation process are that college students mature considerably during their last two and a half years, and that the sophomore Air Science student is relatively unknown--buried in the great mass of his contemporaries. These facts compound the selection board's difficulties in evaluating the sophomore Air Science student's potential of becoming a successful Air Force Officer some three years in the future, and in selecting those who have the most potential.

Another aspect of the leader identification problem is that one of the criteria for judging the effectiveness of the selection and training program of an Air Force ROTC detachment is the quality of the products. Quality of the product can be measured in several ways: by effectiveness reports, by supervisors' judgments and by success in Pilot Training or Technical Schools--all of which require extended periods of observation. To provide a means of observation and judgment of the product within a period of time in which elimination action can be taken if required, the Air Force requires all Air Force ROTC cadets to attend Summer Training Units, normally between their Junior and Senior years. At this summer camp, the young men are placed in various leadership roles and are subjected to a certain

amount of stress. Performance under these conditions is evaluated by a Tactical Officer and an effectiveness report is submitted to the school from which the cadet came. These effectiveness reports indicate quality of product and are indications of the effectiveness of the program at the college.

If the weaker cadets were identified before attending Summer Training, and given increased opportunities to learn and apply leadership and other officer attributes, they would have better chances of succeeding at summer camp and as commissioned officers on active duty.

Peer ratings appear to be one method of identifying the cadets low in the required attributes early in the Junior year, early enough to allow increased training and increased opportunities for helping the cadet become a better leader and eventually a better officer. This implies that the peer ratings will have a degree of constancy over the rating period which could be mistaken for reliability. Reliability, in the sense used in tests and measurements, is not entirely applicable in measurements of interpersonal relations due to the changing interpersonal responses in the group (6, p. 6). This study investigates the applicability of peer ratings to a rather heterogeneous group of young men as a means of identifying the potentially strong as well as potentially weak leaders and officers.

The hypotheses presented are that:

(1) Peer ratings taken in the Junior year will identify those cadets who will be considered weak in leadership potential in their

Senior year, as determined by such evidences of validity as instructors' ratings, by Summer Camp ratings and by status in the Air Force ROTC Cadet Corps.

(2) Peer ratings taken in the Junior year will identify those cadets who will be considered strong in leadership potential in their Senior year, as determined by various evidences of validity.

The null hypotheses presented are that:

(1) Peer ratings taken early in the Junior year will not change substantially during the Junior year and into the Senior year. This implies a degree of constancy of group status as indicated by the peer ratings.

(2) Friendships among the cadets will not unduly influence the peer ratings.

(3) Peer ratings are not influenced by personality traits but are based on the criteria specified to the raters.

CHAPTER BIBLIOGRAPHY

1. Anderhalter, O. F., Wilkins, W. L. and Rigby, M. K., Peer Ratings Relationships between Officer and Peer-Candidate Predictions of Effectiveness as a Company Grade Officer in the U. S. Marine Corps and the Ability to Predict Estimated Officer Effectiveness of Peers, St. Louis, Department of Psychology, St. Louis University, 1952. (For other references see 3, 5, 7, 10, 12, 13, 16 and 24 below.)

2. Ansbacher, H. L., "The History of the Leaderless Group Discussion Technique," Psychological Bulletin, XLVIII (September, 1951), 383-390.

3. Baier, D. E., "Note on a Review of Leadership Studies with Particular Reference to Military Problems," Psychological Bulletin, XLIV (September, 1947), 466-467.

4. Baier, D. E., "Selection and Evaluation of West Point Cadets," American Psychologist, II (August, 1947), 325-326.

5. Bell, G. B. and French, R. L., "Constancy of Individual Leadership Positions in Small Groups of Varying Membership," Journal of Abnormal and Social Psychology, XLV (October, 1950), 764-767.

6. Bonney, M. E. and Fessenden, S. A., Manual Bonney-Fessenden Sociograph, Los Angeles, California Text Bureau, 1955.

7. Byrd, E., Validity and Constancy of Choices in a Sociometric Test, in Small Groups, edited by A. Paul Hare, Edgar F. Borgatha, and Robert F. Bales, New York, Alfred A. Knopf and Co., 1955.

8. Gaylord, R. H. and Russel, E., "West Point Evaluative Measures in Prediction of Officer Efficiency," Educational and Psychological Measurements, II (Winter, 1951), 606-611.

9. Ginsberg, Eli, The Lost Division, New York, Columbia University Press, 1959.

10. Hollander, E. P., "Buddy Ratings: Military Research and Industrial Implications," Personnel Psychology, VII (Autumn, 1954), 385-393.

11. Hollander, E. P., "Peer Nominations on Leadership as a Predictor of the Pass-Fail Criterion in Naval Air Training," Journal of Applied Psychology, XXXVIII (June, 1954), 150-153.

12. Hollander, E. P., "The Friendship Factor in Peer Nominations," Personnel Psychology, IX (Winter, 1956), 435-447.

13. Hollander, E. P. and Webb, W. B., "Leadership, Followership and Friendship," Journal of Abnormal and Social Psychology, L (March, 1955), 163-167.

14. Northway, Mary K., A Primer of Sociometry, Toronto, University of Toronto Press, 1952.

15. O. S. S. Assessment Staff, Assessment of Men, New York, Rinehart and Co., Inc., 1948.

16. Rigby, Marilyn K., Hoffman, E. Lee, Rohrer, John H. and Wilkins, W. L., "Three Approaches to Peer Evaluation," American Psychologist, VIII (August, 1953), 421.

17. Sisson, E. D., "Forced Choice - the New Army Rating," Personnel Psychology, I (Autumn, 1948), 365-381.

18. Super, Donald E., Appraising Vocational Fitness, New York, Harper and Brothers, 1949.

19. Tupes, E. C., Carp, A. and Borg, W. R., "Performance in Role-Playing Situations as Related to Leadership and Personality Measures," Sociometry, XXI (September, 1958), 165-179.

20. Tupes, Earnest C., Relationships between Behavior Trait Ratings by Peers and Later Officer Performance of USAF Officer Candidate School Graduates, Lackland Air Force Base, Texas, Personnel Laboratory, Air Force Personnel and Training Research Center, October, 1957.

21. Tupes, Earnest C., Relationships between Measures Obtained During AFROTC Training and Later Officer Effectiveness Reports, Lackland Air Force Base, Texas, Personnel Laboratory, Air Force Personnel and Training Research Center, February, 1957.

22. Tupes, Earnest C., Carp, A. and Borg, W. R., Validation of a Proposed Officer Effectiveness Selection Battery, Lackland Air Force Base, Texas, Personnel Laboratory, Air Force Personnel and Training Research Center, December, 1957.

23. Vernon, Phillip E., Personality Tests and Measurements, New York, Henry Holg and Company, 1953.

24. Weitz, Joseph, "Selecting Supervisors with Peer Ratings," Personnel Psychology, II (Spring, 1958), 25-35.

25. Wherry, R. J. and Fryer, D. H., "Buddy Ratings: Popularity Contest or Leadership Criteria?" Personnel Psychology, II (Summer, 1949), 147-149.

26. Williams, S. B. and Leavitt, H. J., "Group Opinion as a Predictor of Military Leadership," Journal of Consulting Psychology, XI (November-December, 1947), 283-291.

27. Air Force Cadet Manual 30-2, Operation and Administration of the Aptitude for Commissioned Service Rating System, the Air Force Cadet Wing, USAF Academy, July, 1957.

28. Letter, Subject: Leader Identification Studies, 19 October, 1958, Air Command and Staff College, Maxwell Air Force Base, Alabama.

29. Letter, Subject: Leader Identification Studies, 2 October 1958, Headquarters 3700th Military Training Wing, Lackland Air Force Base, Texas.

30. Letter, Subject: Leader Identification Studies, 8 October 1958, Wright Air Development Center, Lackland Air Force Base, Texas.

CHAPTER II

PROCEDURE

Testing the hypotheses required as extended an interval between ratings as could be obtained considering the normal progression of the cadets towards graduation. Since the cadets are grouped by graduating class and attend Air Science lectures in these groups, observation of the Junior class of Fall, 1958 would provide data on a fairly stable group of cadets over a period in excess of one academic year. This would allow a test of the constancy of peer status over that extended period by the test-retest method. The peer status would be determined by a rating early in the Junior year and confirmed by retests during that year and the Senior year.

Once the peer status had been determined by the initial ratings, investigations would be made into the influence of friendship, of job knowledge and of "leadership" on these peer ratings. Validity of the ratings would be examined in terms of instructors' evaluations, status in the cadet corps and Summer Training Unit ratings.

Selection of Subjects

The members of the Junior class of Air Science cadets at North Texas State College, in the fall semester of 1958, were the primary subjects of the investigation. To increase the scope of the study and

to provide a check on the findings, the members of the Senior class of Fall, 1958 were also included.

The Junior class and the Senior class are divided into two sections for Air Science lectures. During the Fall semesters, 1958 and 1959, lectures were given one hour per day, four days a week for each section. During the Spring semester, the Juniors maintained the same schedule while the Seniors attended one lecture section in Air Science one hour per week and also attended a substitute lecture class three hours a week with other college students. Both Junior and Senior cadets were required to attend Leadership Laboratory (drill) for two hours per week. Some of the cadets were involved in staff meetings once a week, and others were involved in other extracurricular activities. Some cadets may have been together in other classes on the campus.

In general, most of the cadets used in this study had been in the Air Science program at North Texas State College since they were freshmen. It is significant that some had not; in fact, the transferees and veterans complicated the personal relationships within both classes.

Inasmuch as the cadets were pre-screened before entry into the advanced course of the Air Science program, no claim for random selection is made. In fact, the cadets were more homogeneous than would be a group of randomly selected college males of the same class standing. The Air Force Officer Qualifying Test, which is one of the pass/fail criteria for selection, ensures that only individuals of at

least a certain minimum intelligence are accepted into the advanced course. Physical standards, aptitudes, interests and desire for an Air Force commission, increase the homogeneity of the group.

The fact that the group was not randomly selected is not significant to this study, since it is the usefulness of the peer rating technique in an Air Force ROTC program which is being studied. Advanced course students on all campuses must meet the minimum selection standards specified by higher headquarters, which causes a degree of homogeneity among the cadets.

The group members differed in some aspects, especially age. Minimum and maximum ages are specified for selection into the program, but the age variation can be quite large within the allowable range. The actual age differences in the group were caused primarily by the inclusion of several veterans. Ages in the Junior class ranged from nineteen to twenty-five, average age being 21.2; ages in the Senior class ranged from nineteen to twenty-five, average age being 21.9.

Among the factors increasing the heterogeneity of the classes were: representation of different academic majors, inclusion of fraternity members and non-members and the inclusion of one Negro in the Junior class. At the beginning of the Junior year, the group is relatively uncohesive, consisting as it does of transfer students, newly enrolled veterans and ex-sophomores unacquainted with each other.

A deliberate attempt was made to increase the socialization within the classes by various techniques. Small group work was used, including discussion groups, "brainstorming sessions," problem solving groups. Extracurricular activities such as dances, parades, intramural sports and parties also contributed to integrating the groups. The Juniors were required to give speeches to their own sections and to other Air Science classes. This work helped the members get to know each other.

Collection of Data

Peer Ratings

The United States Air Force Academy has developed the "aptitude for commissioned service rating system" for use in the cadet corps at the Academy (11). This system, modified to make it more applicable to the situation in Air Force ROTC at North Texas State College, requires cadets to rate other cadets on relative order of merit for "aptitude for commissioned service." If all the cadets in one class were in one section, this would be a fairly straightforward task--that is, the cadets could place the names of their classmates in order of merit and assign the corresponding rank number. When there are two sections in the class, the task becomes somewhat more difficult, especially if an over-all class-wide rank order is desired. The Air Force Academy solved this problem by allowing the cadets to spread out the ratings within their own section, leaving some rank positions

vacant, thus indicating that they felt other classmates of theirs, in another section, would fit into these spaces.

The same method was utilized in this study. Each cadet was provided a form which listed, in alphabetic order, all the cadets in his own section. (See "Work Sheet-Aptitude Rating" in Appendix.) In another column were spaces for writing in the names of these cadets in order of merit. Enough spaces were provided (one and one half times the number of names) to enable the cadets to skip one or two spaces between individuals. It was explained to them that they may have knowledge of someone in their class in the other section whom they felt ranked higher than, or between, individuals in their own section; they could indicate this by leaving an empty space between names. They could also indicate a wider disparity in rank between adjacent cadets within the section by leaving several lines blank.

The instructions given to each cadet (see "Instructions" in Appendix) made it clear that he was to consider carefully each member in his section on the basis of the four criteria for the aptitude for commissioned service. These were:

a. Attitude

b. Bearing and Dress

c. Performance of Duty

d. Leadership

Bearing in mind these criteria, he was to select the one individual in his section whom he felt was the top man in order of merit. This

man's name was to be written on the first line. Then he was to consider the one individual whom he felt was the bottom man in order of merit. This man's name was to be written on the last line. If he felt that there was a cadet in the other section, who was either higher or lower in order of merit than anyone in his own section, he was to indicate this by leaving one or two of the lines blank and placing the next ranking cadet in his section in the proper space.

Following this, he was to write in the names of the next to the top man and the next to the bottom man, and so on, until he had the top and bottom quarters of his section placed in order of merit. The remaining cadets were to be listed in order of merit in the middle half of the form.

Since the Senior class was much smaller than the Junior class and the members had been together for the extra year, they were asked to rank their whole class-not just their own sections. In order to spread the distribution, they too were asked to leave blank spaces if they felt that such spacing was required.

The two individuals placed in the lowest two ranks were to have a critique form prepared on them, indicating why the rater placed them that low. (See "Form for Remarks" in Appendix.)

The mean peer rating for each individual in each section of the Junior class and for each individual in the whole Senior class was computed. Class rankings for the Juniors were computed by the standard score method, as explained later.

Leadership Scale

A "leadership scale" was developed from a scale described by Howell (5). The scale was checked for differentiation between traits by asking each member of the Air Science staff to sort the traits in order of significance ("Q-sort technique"). Four were eliminated as being confusing and failing to differentiate clearly.

The cadets were asked to rate each individual in their section in the Junior class, and each cadet in the whole Senior class, on the leadership scale. (See "Leadership Scale" in Appendix.) This was a free choice rating, as opposed to the forced choice previously used, and the cadets could assign any degree of leadership to any cadet or cadets. The mean score for each individual became this leadership rating score, and it was possible to arrange the cadets into rank order on leadership.

Friendship Choices

In order to determine the influence of friendship on the peer ratings, the cadets were asked to list the three cadets they would prefer to accompany on a field trip scheduled in the near future. This nomination technique is used extensively in evaluation of group dynamics and provides insight into the socio-psychological characteristics of the groups. The nominations (choices) received by one individual may be totaled to give the status of the individual in the group. Individuals receiving many choices may be considered as having characteristics valued by their contemporaries, while the

individual receiving none or few choices may be considered as lacking those characteristics. Friendship choices can also indicate cliques or isolation of some of the members. This information can be quite significant in a military or quasi-military organization.

The question asked the group must have significance to its members, relate to real conditions and to an event which can be carried through (1, p. 13). The specific question asked the Air Science cadets did have significance since the cadets had been on field trips, were well aware that another field trip was being set up and that division of cadets among automobiles was a logical approach to the transportation problem.

The choices received by each cadet were plotted on the Bonney-Fessenden Sociograph (1). The total choices received became the "friendship score" and the rank order of the cadets in terms of social desirability in their group could be computed. Sociograms were drawn to show the choice of friends and the general pattern of first and second level choices in each section.

Personality Traits

Part of the technique of taking the peer ratings was to require each cadet to complete a "Form for Remarks" for each of the bottom two cadets on his list, indicating why he placed them on the bottom. In reviewing these comments it was found that the descriptive terms seemed to be indicative of the personality of the rated individual.

There are two theories regarding personality: the internal construct theory and the social-stimulus theory. They differ in that the internal construct theory defines personality as the individual's self-concept, or way of interpreting the world in which he lives (4), while the social-stimulus theory defines personality as the reaction which the individual arouses in others (8). The reaction of others to the individual may well be measured through ratings. If the peer ratings are primarily measuring reactions to personality rather than the four criteria designated (attitude, performance of duty, bearing and dress, leadership), then the validity of these ratings is open to question.

A problem common to most rating techniques is that of halo error; the ratee is rated high if the rater has a generally favorable impression of him, while the rating is low if the rater has a generally unfavorable impression (9, p. 481). Halo error might be found in rating situations wherein the criterion is quite abstract or unfamiliar, since the rater may rely on his over-all impression rather than on the criteria selected for measurement. While the actual performance of the ratee may be observed, thus satisfying one of the basic requirements for accurate ratings, the judge "may not have an adequate understanding of the response being assessed, or if he has an adequate understanding he may not have had an opportunity to observe the individual being rated in the appropriate situations reflecting these responses" (9, p. 482).

The possibility that the cadets had rated on the basis of personality rather than on the specified criteria was examined by testing the personality constructs among the cadets and the relationship of personality to peer status as determined by the ratings.

In a study of predictors of success as commissioned officers, (Tupes (10) used thirty bi-polar personality traits (obstructiveness, submissiveness, boorishness, et cetera) which had previously been proposed by Cattell as descriptive of personality. Officer Candidate School candidates were used in a validation study and Tupes found that nineteen traits had substantial validity against the criterion of later success as officers.

These nineteen traits were selected for administration to the Senior class of Air Force ROTC cadets. In addition, five traits which Tupes had found to be not too valid were included in the scale; these traits were similar to traits the cadets had mentioned in their remarks accompanying the ratings of low ranking cadets. Three traits (glum, not so enthusiastic, overly critical), which seemed to have face validity in the Air Force ROTC situation, were added to the list. The twenty-seven traits consisted of pairs of a socially approved trait and its opposite; for example, trustful-suspicious, emotional-calm. A rating sheet was prepared with the traits distributed randomly so that the socially approved trait would not always be at the left-hand side ("A" pole) nor at the right-hand side ("B" pole). In between the pairs of traits were enough empty squares to allow each member of the class to be rated. (See "Long Form" in Appendix.)

The names of the cadets in the section were on a piece of paper which was placed across the top of the personality trait rating form. The cadets were instructed to pick five cadets (approximately one third "N") who were best described by the first "A" pole trait, and to indicate this with check marks in the appropriate squares in the blank. They were then to pick five cadets best described by the "B" pole version of the same trait and to indicate this with circles in the proper squares. The remainder of the names were to be left unmarked. After completely rating their classmates on one trait, cadets were to judge the next trait, and so on.

Scoring was a difficult task since there could be one of three responses made for each cadet on each trait; these had to be summarized to obtain the "pooled" judgments. Each response was scored three points for the positive (socially approved) trait, two points for the neutral rating and one point for the negative (socially disapproved) trait. The sum of the ratings was used to determine individual rank.

The Senior class was used in a preliminary study to determine the feasibility and practicality of the technique. After analyzing the Senior class ratings, a new form containing the fourteen most discriminating traits was prepared and administered to the Senior class and to the Junior class. (See "Short Form" and "Instructions, Personality Traits" in Appendix.) Administration, rating and scoring was simplified with the shorter version. In each section the cadets were asked to select one third for the "A" pole, one third for the "B" pole and to leave one third out.

In an effort to reduce halo, the rating form was designed so that a pattern of rating could not be established. The traits were placed randomly (drawn from a hat) on the form so that the socially approved trait was not always at the same pole. This forced the raters to evaluate each trait-pair separately in making their judgments. They were also instructed to slip the name sheet down the rating sheet as they proceeded from trait to trait. This concealed their previous ratings from them which also tended to minimize halo. A definition sheet was distributed with the rating forms so that all raters understood the terms used. (See "Definitions, Personality Traits" in Appendix.)

Other Evaluation Devices

Job proficiency.--A "job proficiency" examination was administered to all Juniors and Seniors in the Fall, 1959, classes. This test consisted of items relating to knowledge of drill field subjects. If the cadets had a high regard for class members with a good knowledge of drill field procedures, the peer ratings should correlate with scores on this examination. Drill field procedures have a very small part in the program of the cadets and are, in fact, not studied in the Air Science classes. Knowledge of these procedures would indicate good motivation, since it would represent off-duty study. Izard found proficient cadets were ranked higher sociometrically than were the less proficient cadets, and also assumed that this meant higher motivation in the higher ranked cadets (6).

Instructor's evaluation.--Instructors' evaluations were used as one of the means of establishing the validity of the peer ratings. The instructor was asked to rank all the cadets in order of merit according to the criteria proposed.

As another check on the validity, the Senior class cadets in Air Force ROTC at Southern Methodist University in the Fall of 1959 were asked to rate their classmates with the peer rating technique using the same criteria. While these cadets were rating each other, three staff members also rated them: their instructor, the Professor of Air Science and the Commandant of Cadets.

Summer training effectiveness reports.--Summer Training Unit is a four-week period of instruction at an Air Force Base, required of all advanced course cadets. At the end of this period, the Tactical Officer rates each cadet in his flight of approximately twenty-five cadets on various aspects of performance. This Effectiveness Report provides some useful information on how the cadet reacts to stress in a relatively unfamiliar situation. Since different Summer Training Units have different standards of evaluation, as do the different Tactical Officers, it is necessary to transfer the ratings into standard scores before ratings from different Summer Training Units can be compared. Within the limitations normally encountered in rating devices of this type, Effectiveness Reports may provide some indication of the validity of peer ratings.

Analytical Treatment

Peer Rating

The mean rating for the cadet became his peer rating score, which reflected his classmates' opinion of how high he stood in order of merit on the four criteria. Rank order of the mean scores established his rank in the section. Ties were given the mid-rank (that is, two individuals tying for fourth were ranked at 4.5 each).

When it was desired to combine the sections to derive an overall class rank, the individual scores were transformed into standard scores by the formula (7, p. 34):

$$Z = \frac{X - M}{S.D.}$$

where Z is the standard score, X the raw score, M the mean and S.D. the standard deviation. The standard scores for each section were then combined in relative order to give the class-wide rank order.

Rank order correlations (rho) between the various peer ratings were computed by the formula (7, p. 209):

$$\text{rho} = 1 - \frac{6 \Sigma D^2}{N(N^2-1)}$$

where D is the difference between an individual's two ranks, and N is the number of individuals.

Product moment correlations, when required, were computed with the formula (7, p. 118):

$$r = \frac{N \Sigma XY - (\Sigma X)(\Sigma Y)}{\sqrt{[N \Sigma X^2 - (\Sigma X)^2][N \Sigma Y^2 - (\Sigma Y)^2}}$$

where X is the score on one distribution and Y the corresponding score on the other distribution.

The standard deviations of the peer rating distributions were computed by the formula (7, p. 25):

$$S.D. = \frac{1}{N}\sqrt{N(\Sigma X^2) - (\Sigma X)^2}\ .$$

When two ratings were compared, the problem of changes in the personnel being rated complicated the computation. For example, the first peer rating was made with forty cadets, but several of these had dropped by the time the third peer rating was made. In order to compute the rank order of the cadets remaining, it was necessary to drop those cadets who were not on both ratings from the computation of rank order. Whenever rank order is compared, therefore, it is based only on those cadets common to both ratings.

Significances of rho correlations were computed with the formula (7, p. 210):

$$t = \text{rho}\sqrt{\frac{N - 2}{1 - (\text{rho})^2}}\ .$$

The "t" values were converted to probability value by means of the Fisher and Yates conversion table as given by McNemar (7, p. 388). Probability values for all correlations are indicated in the test and are summarized in the Appendix.

The peer ratings were examined for "unrealistic ratings" wherein it appeared that some factor other than "aptitude for commissioned service" was being measured. "Unrealistic ratings" were arbitrarily defined as those ratings which were two (or more) standard deviations

above or below the mean rating for the individual. For example, if the mean rating was 15 and the S. D. was 5.0, unrealistic ratings would be lower than 25.0 or higher than 5.0.

Personality Traits

The total score and the mean score were computed for each cadet using weighted values for the positive, neutral and negative traits attributed to the cadet by his fellow cadets. The rank of an individual could be determined from his total score in relation to the other scores in his section. When two sections were combined to form the class rank order, S scores were computed and used as described above (Peer Ratings). Rank order correlations (rho) were computed between the rank on personality traits and the rank on the peer ratings.

Other Devices

In the Friendship choices, the total of the choices received became the score for the individual. Weighting of first, second and third choices was not considered desirable. Gronlund (3) points out that ". . . there is no experimental evidence to justify any particular system of weights and assigning arbitrary weights is, therefore, a dubious practice" (3, p. 64).

In the Leadership Scale, the phrases describing leadership ability were numbered one through eight, with number one indicating the highest degree of leadership ability. The sum of the ratings attributed to an individual indicated his rank on the leadership ability scale, with the lowest sum indicating the top individual in the section. Combined

scores for the class were computed by the standard score method, and rank order correlations were computed with peer rating rank order. (See formulas under Peer Rating.)

The Summer Training Unit effectiveness reports are made on a standardized form containing fourteen items. This includes initiative, courtesy, effectiveness in communicating, knowledge of drill and ceremonies, neatness, et cetera. Each of the items is rated on a zero to five point basis; zero is "not observed," three is "neither strong nor weak" and five is "very strong." The mean score becomes the individual's Summer Training Unit effectiveness score. Each instructor at the summer unit rates twenty-five cadets once during the entire camp.

Due to the wide variation between camps, it was necessary to convert each cadet's Summer Training Unit score to a standard score. These standard scores were used as raw scores in computing correlations with standard scores made on peer ratings, and were also used to develop the rank order of the cadets attending Summer Training Units for correlation with rank order on the peer ratings.

The scores made by the cadets with other evaluation devices used in this study were converted to rank order for the purpose of computing rank order correlations.

CHAPTER BIBLIOGRAPHY

1. Bonney, M. E. and Fessenden, S. A., Manual Bonney-Fessenden Sociograph, Los Angeles, California Test Bureau, 1955.

2. Brown, C. W. and Ghiselli, E. E., Scientific Method in Psychology, New York, McGraw-Hill Book Company, Inc., 1955.

3. Gronlund, Norman E., Sociometry in the Classroom, New York, Harper and Brothers, 1959.

4. Guilford, J. P., Personality, New York, McGraw-Hill Book Company, Inc., 1959.

5. Howell, C. F., "The Measurement of Leadership," Sociometry, V (March, 1942), 163-168.

6. Izard, C. E., "Personality Correlates of Sociometric Status," Journal of Applied Psychology, XLIII (April, 1959), 89-95.

7. McNemar, Quinn, Psychological Statistics, New York, John Wiley and Sons, Inc., 1955.

8. Rotter, J. B., Social Learning and Clinical Psychology, New York, Prentice-Hall, Inc., 1954.

9. Super, Donald E., Appraising Vocational Fitness, New York, Harper and Brothers, 1949.

10. Tupes, Earnest C., Relationships between Behavior Trait Ratings by Peers and Later Officer Performance of USAF Officer Candidate School Graduates, Lackland Air Force Base, Texas, Personnel Laboratory, Air Force Personnel and Training Research Center, February, 1957.

11. Air Force Cadet Manual 30-2, Operation and Administration of the Aptitude for Commissioned Service Rating System, the Air Force Cadet Wing, USAF Academy, July, 1957.

CHAPTER III

RESULTS

The data gathered from the various ratings were analyzed to determine the constancy and validity of the peer ratings. The most striking results were obtained in those computations relating to constancy of ratings.

Peer Ratings

The peer ratings were correlated with each other. This gave a means of comparing changes in group status over a fifty-seven week period.

TABLE I

RANK ORDER CORRELATIONS (rho)*
JUNIOR CLASS (1958)

Ratings	Interval	1st	2nd	3rd	4th	5th	6th
1st			.87	.67	.71	.63	.63
2nd	10th week	.87		.77	.78	.77	.74
3rd	22nd week	.67	.77		.91	.80	.79
4th	28th week	.71	.78	.91		.81	.75
5th	49th week	.63	.77	.80	.81		.90
6th	57th week	.63	.74	.79	.75	.90	

*P $\leq$ .001 for all correlations

A gradual decrease in the rank order correlation is apparent as the rating interval becomes longer. The first peer rating correlated with the second rating taken ten weeks later at .87, but the correlation between rank order on the first rating and on the sixth rating taken fifty-seven weeks later dropped to .63. The second peer rating, taken in the tenth week when the cadets should have been very well acquainted, correlated at .74 with the sixth, taken forty-seven weeks later. It was evident that the ratings became more stable when a longer period of observation was allowed the cadets, as is shown by the larger coefficients between ratings made later in the Junior year.

By the time the third rating was made, in the twenty-second week of observation, the cadets were able to rank each other with such stability that the rank order correlation dropped only from .91 between the third and the fourth to .79 between the third and sixth (thirty-five weeks later).

A significant factor in the measurement of peer status is the changing composition of the sections. The sections in the Junior class were re-formed between the second and third ratings, and again between the fourth and fifth ratings. In addition to this mixing of cadets between sections, there were several changes in the Junior class population itself. In the second semester, the class dropped nine members (of forty) for various reasons and gained thirteen new members. In the third semester (Fall, 1959), the class dropped fifteen members and gained three. The fifteen dropped in the third semester included the thirteen gained in the second semester. These are

"out-of-phase" cadets who entered Air Science one semester behind their fellow Juniors and who complete Air Science in the midterm graduation. The net effect of the changing class structure is that the first rating of the semester would appear to be not as stable as the second rating, taken after the cadets had become better acquainted.

The Senior class peer ratings showed much the same pattern as the Junior class:

TABLE II

RANK ORDER CORRELATIONS (rho)*
SENIOR CLASS (1958)

Rating	Interval	1st	2nd	3rd	4th
1st			.97	.85	.86
2nd	10th week	.97		.87	.86
3rd	22nd week	.85	.87		.94
4th	28th week	.86	.86	.84	

*P $\leq$ .001 for all correlations

The higher correlation obtained with the Senior class is evidently reflecting the fact that this class had been together for one extra year before making the initial rating. In the interval between the first and the fourth rating, twenty-eight weeks later, the rank order of the cadets changed so slightly that the correlation between the two ratings was .86.

Correlations were computed on the two sections of the Junior class for the first semester. The rank order correlation between the

first and second ratings was .71 for Section 01 ($P < .01$) and .89 for Section 02 ($P < .001$), which is similar to the correlation for the class as a whole, reported above.

The peer ratings were examined for "unrealistic ratings" wherein it appeared that some factor other than the specified criteria was being measured. "Unrealistic ratings" were defined arbitrarily as those which were two (or more) standard deviations above or below the individual's mean rating. The first peer rating in the Junior class reflected the newness of some of the members of the group in that there were fifty-nine unrealistic ratings. These dropped to sixteen on the second rating. Section 01 dropped from forty-three to nine, while Section 02 dropped from sixteen to seven. The senior class also reflected this trend by dropping from fourteen unrealistic ratings to seven. When considered in terms of percentages of total ratings, the drop becomes clearer:

TABLE III

UNREALISTIC RATINGS

Section	1st	2nd
Junior Section 01	16.9%	3.6%
Junior Section 02	3.2%	1.4%
Seniors	3.7%	1.1%

Section 01, Junior class, happened to have six entirely new members (transferees or veterans) of seventeen total, while Section 02 had only three new members of twenty-three total.

The socializing influences of small group work was used in the Air Science class to increase the integration of the group. The increased integration is reflected in the drop in unrealistic ratings.

A re-check on unrealistic ratings in the same class (Junior) in the Fall, 1959, semester (one academic year later) showed a different picture. On the first rating of that semester there were six unrealistic ratings (.68%) which dropped to three (.34%) on the second rating. The group evidently had become well integrated during the previous year and the unrealistic ratings were approaching the minimum expected in a social group with dynamic tensions which lend to changes in individual relationships.

The socializing influences not only contributed to a more integrated group, but also caused a marked sociodynamic effect to be noted in the first semester 1958 ratings. There was a tendency for the lower-ranking students (lower status) to be ranked still lower on the second peer rating, while the higher status cadets received even higher rankings. In the case of the four lowest ranking juniors, more of their classmates changed the second rating of them downward than raised the rating. In three of the top four juniors, more of their classmates changed the second rating upward than changed the rating downward. The net effect was that the lower status students had even lower mean

ratings in the second peer rating, while the upper status students scored even higher on the second rating. In the Senior class, the sociodynamic effect was not as marked in the top three cadets as in the bottom three. The three lower cadets were each ranked even lower on the second peer rating, the change to a lower rating being made by more individuals than a change to a higher rating.

Since each cadet was asked to guess his own rating, it was possible to gauge individual empathy with the group. The top quarter of the Junior class missed their actual ranks by only 1.8 places (direction of error not considered); the bottom quarter of the Junior class overestimated their actual ranks by an average of 14.4 places. The top quarter of the Senior class underestimated their actual ranks by -2.2 places; the bottom quarter overestimated their actual ranks by +3.4 places. It should be noted that each individual had been told how he ranked on the first peer rating prior to the second peer ratings.

Leadership Scale

The eight-item Leadership Scale was completed by the cadets six days after the initial peer rating. Since the cadets had free choice on this scale and were not required to force their classmates into a certain pattern, the results were indicative of the actual leadership status of the cadets.

The leadership scale rank order in the Junior class correlated at .77 ($P < .001$) with the rank order on the peer rating closest to it in

time. The Senior class leadership rank correlated with the closest peer rating at .76 ($P < .001$).

When the Junior class leadership rank order was correlated with the fifth peer rating, made forty-eight weeks later, the correlation was a surprising .80 ($P < .001$), a slight increase over the correlation with the first peer rating. The correlation dropped to .75 between leadership and the sixth rating, but this is still higher than that between the first peer rating and the sixth ($P < .001$).

Friendship Scale

The nominations received on the friendship scale provided an opportunity to identify the influences of friendship on the peer ratings. On the surface there appears to be some relationship; rank on the peer ratings correlated positively with rank in popularity (based on total choices received). In Section 01 of the Junior class, the rank order on the peer rating and rank order on friendship correlated at .34 (significance less than .10); in Section 03, the coefficient was .52 ($P < .01$). The correlation for the Junior class as a whole was .44 ($P < .01$); for the Senior class it was .60 ($P < .01$).

Investigation of ratings assigned to reciprocated choices (mutuals; friends) showed that there was a tendency for a friend to rank his mutual friends higher on the scale than did the rest of the class. In Section 01 of the Junior class, the lower status individuals ranked their higher status mutual friends higher than the class mean rank for the friend in eight of ten cases, but in only two cases was the

rating more than one standard deviation higher than the mean rating. In Section 02, the lower status individuals ranked their higher status mutual friends higher than the mean rating in eight of twelve cases, but in only one case was this rating more than one standard deviation higher than the mean rating.

When a higher status friend rated a lower status friend, the tendency was to overrate him. In Section 01 of the Junior class, this happened in five out of ten cases, with three of these five being rated more than one standard deviation higher than the mean. In Section 02, the friend overrated his mutual friend in ten of twelve cases; in seven cases, the rating given was more than one standard deviation above the individual's mean rating. The overrating was not so clearly defined in the Senior class wherein the lower ranked individual overranked his higher status friend in five of ten cases; in no case did this exceed one standard deviation from the mean. The higher status individual overrated his lower status friend in nine of ten cases, but in only three of the nine cases did this rating exceed one standard deviation.

The closely knit friendship pattern was made evident by the choice of mutual friends among closely ranked individuals. In the Senior class, the reciprocals were individuals ranking within one half standard deviation of each other in rank order in six of ten cases. In the Junior class, friends ranked within one standard deviation of each other in five of ten cases in Section 01 and in eight of twelve cases in Section 02. Among the five cases in Section 01, there was one case where friends were ranked within one half standard deviation of each

other; of the eight cases in Section 02, friends were chosen in four cases within one half standard deviation of each other.

The sociogram (see Sociograms in Appendix) drawn from the first level choices made in the Junior class showed four distinct groups in Section 01. When mutual choices, regardless of level, were added to the diagram, the section showed interpersonnel relationships which tended to tie the group together. Section 02 showed much of the same loose relationship on first level choices, but tied together with mutual choices. On the Bonney-Fessenden Sociograph three "stars" were identified and five "unchosen" with zero choices received were evident. One of the stars was a veteran in his first semester in Air Force ROTC; the other two had been in the Corps since freshmen. Two of the unchosen were veterans new to the Corps; one of the unchosen was a Negro, the other two had been with the Corps since freshmen.

The sociogram for the Senior class illustrated even more clearly the isolation of three groups of cadets, if first level choices were the only criteria; the group tied together with second and third level reciprocated choices. Two of the cadets, who were status leaders in the Corps, were isolated in one group on the sociogram. The sociograph identified one "star" and four "unchosen." One unchosen was new to the group that semester; one was a veteran who had joined the group a year earlier; one was not with the group the previous semester; and one had been with the class since freshman Air Science.

Personality Traits

Each response was scored three points for the positive (socially approved) trait, two points for the neutral trait and one point for the negative (socially disapproved) trait. The sum of the ratings was used to determine individual rank. The rank order of cadets in the Senior class on the first personality trait rating agreed closely with a peer rating made a week later (rho = .92, $P < .001$).

The personality trait ratings for the top five cadets and the bottom five cadets were analyzed to determine the most discriminating traits; discrimination was defined as the net difference between the total number of positive ratings and the total number of negative ratings given to the five individuals on each trait. Discrimination was also defined as the difference between the number of negative ratings and the number of positive ratings given to the five individuals on one trait for the lowest ranking cadets. The most discriminating traits were those that had the "largest" discrimination index.

The following table lists the most discriminating traits:

TABLE IV

DISCRIMINATING TRAITS IN RANK ORDER

Top 5 Cadets		Bottom 5 Cadets	
	Postive Trait		Negative Trait
11	Not so hypochondriacal	11	Hypochondriacal
2	Absence of neurotic fatigue	1	Quitting
27	Enthusiastic	19	Boorish
1	Persevering	13	Easily upset
13	Unshakable poise	14	Dependent
15	Trustful	27	Not so enthusiastic
7	Responsible	26	Overly critical
9	Polished	2	Neurotic fatigue
14	Independent-minded	15	Suspicious
18	Emotionally stable	5	Submissive
10	Readiness to cooperate	7	Frivolous
19	Intellectual	3	Unconventional

The most discriminating traits were extracted and used to prepare a new rating form of fourteen traits. This short form was used for the Junior class and was also administered to the Senior class in a reliability check. Test-retest correlation on rank order between first administration and the short form was rho = .96 ($P < .001$) for the Senior class, indicating that the selection of the most discriminating traits had been quite successful. The rank on the short form also correlated at rho = .89 ($P < .001$) with peer rating rank on the third peer rating taken earlier in the same semester.

The trait descriptions of the top-rated and bottom-rated cadets were examined for halo effect. It was felt that if similar descriptions were found, it would mean that a conscious effort had been made to rate individuals high or low. The three top cadets were described (in order of most frequently chosen trait description:

TABLE V

TRAIT DESCRIPTIONS OF TOP THREE CADETS

Top Cadet	Second Cadet	Third Cadet
Unshakable poise, tough	Persevering, determined	Emotionally stable
Enthusiastic	Absence of neurotic fatigue	Absence of neurotic fatigue
Assertive, self-assured	Hard, stern	Readiness to cooperate
Hard, stern	Adventurous, bold	Trustful
Responsible	Assertive, self-assured	Receptive, constructive

Not one trait was represented in all three cadets' descriptions, which indicates that efforts to eliminate halo were probably successful.

The three lowest ranking cadets were described as follows:

TABLE VI

TRAIT DESCRIPTIONS OF LOWEST THREE CADETS

Lowest	Next Lowest	Third Lowest
Boorish	Suspicious	Unconventional
Worrying	Clumsy	Frivolous
Quitting, fickle	Hypochondriacal	Hypochondriacal
Clumsy	Neurotic fatigue	Easily upset
Easily upset	Lacking artistic feeling	Neurotic

Of interest is the prominence of "Hypochondriacal" in describing the lower ranking cadets. A similar term, Hypochondriasis, is measured by the Minnesota Multi-Phasic Personality Inventory. "Conventional" was found to be not as discriminating as "unconventional." Evidently "conventionality" connoted something undesirable to the cadets, even though it is the antonym of "unconventional" which obviously should be the less desirable trait.

The Junior class was also asked to complete the short form personality test. The correlation of rank order on the personality trait test and rank order on the fourth peer rating was .95. The correlation dropped with successive peer ratings; with the fifth, the correlation was .78 and with the sixth, .76 ($P < .001$ for all correlations).

The cadet rank on leadership characteristics correlated at .86 with rank on the personality trait scale, while the rank on the

friendship scale correlated at .65 with rank on the personality scale ($P < .001$ for both).

Other Evaluation Devices

Job proficiency.--The "job proficiency" examination was administered to all Junior and Senior cadets in the Fall semester, 1959. The rank order of the Senior cadets on this examination correlated at .29 with the rank order of the cadets on the fifth peer rating, taken approximately at the same time (significance less than .10).

CHAPTER IV

DISCUSSION

Peer Ratings

Peer ratings taken in the sixth week of the Junior class compare favorably with those taken ten weeks later. The coefficient of rank order correlation of the two peer ratings is of such magnitude (.87) that it can be assumed that a peer rating taken early in the semester will agree with one taken much later in the semester. The agreement between ratings taken in one semester, as found in the first two ratings, was also shown in the peer ratings taken in the two succeeding semesters; rho = .91 between third and fourth (six weeks apart), and rho = .90 between fifth and sixth (eight weeks apart).

The peer ratings show a high level of constancy on test-retest during the same semester. This level of constancy drops as the rating interval increases and as the class composition changes; the rank order correlation between the first and sixth rating (fifty-seven weeks later) was .63.

The results for the Senior class of Fall, 1958, confirm the pattern observed in the Junior class. Test-retest during the same semester shows high correlation which drops as the testing interval increases. The rank order correlation dropped from .97 between first and second peer ratings made in the same semester to .86 between

first and fourth peer ratings made in different semesters, twenty-eight weeks apart. The degree of correlation is higher in the Senior class, which is evidently a reflection of two factors: (a) the class had been together for one year longer than had the Junior class before making the first rating, and (b) the class was smaller than the Junior class, which would permit better integration and more accurate ratings.

These findings are consistent with those of others on the atability of peer status. Bonney found that median differences in rank ranged from 1.7 to 4.5 in a study of seventy-two cases during a two-year period. He concludes that ". . . a person's choice-status in regard to a particular kind of criterion is something which is, in most instances, quite characteristic of him as an individual and is not something which is primarily due to the particular situation or group he is in" (1, p. 279). Gronlund (5) summarizes several studies on college students as follows:

> The consistent drop in stability coefficients from over .90 for a two day interval is similar to the drop in coefficients reported for high school students. . . . The consistency of these results points to the possibility that the variability of sociometric results reflects real changes in sociometric preferences to a greater degree than it indicates random instability in the choice process (5, pp. 123-130).

Although different criteria were used in the college studies, the results are strikingly similar to those obtained with the peer ratings in this study.

The constancy of rank order of the cadets in the Junior class over a fifty-seven week interval is consistent with the results of a study by Northway (8). Sociometric status of nineteen college students

in a group of eighty was measured and then remeasured a year later in a group of twenty-nine. Northway found that the rank order obtained on the two measurements correlated at .58. A similar measurement was made with the Sophomore class of Air Science cadets in this study. The cadets who were going ahead into the advanced course of Air Science were rated by their classmates and themselves. A rank order correlation of .53 ($P < .02$) was found between this rating made on eighteen cadets in a class of sixty-seven sophomore, and the rank order of the same cadets in a group of thirty-four Juniors approximately twenty-seven weeks later. As Gronlund observes on the Northway study: "Thus there was a tendency for the students to maintain the same relative degree of acceptance in different sized groups, despite the fact that there was a one year interval between tests" (5, p. 141).

It will be noted that the level of significance is reported with all correlations. A level of significance of .05 or better was desired, but the correlations with less than that level are also reported so that a proper interpretation may be made of the relationships.

The groups in this study showed signs of newness when the first peer rating was taken; this newness or inability to size each other up was shown by the high number of "unrealistic ratings." "Unrealistic ratings," as defined in Chapter III, were those ratings which were more than two standard deviation units higher or lower than the mean score for the individual. As the groups matured the "unrealistic ratings" dropped. Even though the groups were not closely integrated at first, the peer ratings did not change appreciably, showing that the

cadets were able to size up their classmates in a short period of time. The wildly erratic ratings decreased but the rank order remained fairly consistent. Initial impressions of the strong and of the weak were confirmed as the weeks went by. The high ranking cadets became more firmly entrenched while the lower ranking cadets lost even more ground.

The sociodynamic effect was to be expected as deliberate socialization of the groups was attempted. For example, the Junior class (1958) was divided into problem solving groups of five to seven each; they were placed once in five-man groups and four times in seven-man groups. Group membership was rotated. Each group elected a leader, "solved" the problem and made a group report. There were two section-wide discussion problems given during the semester, along with several "brainstorming" sessions. Each individual gave several short speeches to his section. Numerous outside activities also contributed to socialization--committee work on parades, dances, intramural sports and honorary society membership meetings. While these activities may not have led to stronger friendship bonds, they did provide for increased opportunities for judging and evaluating cadets.

The evaluation form (Form for Remarks) confirmed the fact that the cadets were able to rate each other realistically. Some penetrating comments were made which were useful in the counseling of the rated cadet. Of primary benefit was the identification of personality problems in the weaker cadets and the resultant clue to the guidance

needed for improvement in status or at least to a reduction in conflict with their classmates.

Subsequently, it was found that the "unrealistic ratings" had dropped to such an extent that it would appear the few that were found were the result of a temporary clash between personalities. The Junior class of 1958, which had fifty-nine unrealistic ratings in the first rating (3.8%), had only three on the sixth rating (.34%) a year later. Without having a control group, not subject to deliberate socializing influences, it cannot be claimed that the reduction in "unrealistic ratings" is the result of the socializing attempts. It appears probable, however, that the normal integration processes in the group would be enhanced by increased opportunities to observe and evaluate each other and that the reduction in erratic ratings was assisted by the group processes the cadets underwent.

The findings that the higher status individuals have more ability to estimate their own rank than do the lower ranked individuals, even though all had been told their rank on the previous peer rating, is an interesting revelation of leader empathy. Chowdry (3) found that sociometrically identified leaders showed a better ability to estimate group opinion than the lower status individuals. Parker (9) believes that empathy is a cause more than an effect of good interaction with people; this implies that an individual with empathy will have good interaction with the group, which in turn will consider him higher in valued status (and award him a higher peer status).

Leadership Scale

The free choice leadership scale provided the cadets the opportunity to indicate how they felt about their classmates in terms of fairly specific criteria as opposed to the more remote criteria used in the peer ratings. The correlation between rank order on the peer rating and rank order in leadership was surprising. Either the concept of leadership was given more emphasis than the other three criteria in making the peer rating or some other facet of the individual was being rated.

The high level of constancy of the leadership rank order over the fifty-seven week period lends emphasis to the latter. The rank order as determined by the leadership scale correlated at .80 with rank order on a peer rating taken forty-eight weeks later. In fact, the correlation between peer rating and leadership increased slightly over the period. This may mean that the cadets placed more value on leadership in their fifth peer rating than they did on the first rating. Since they had undergone a course of instruction in Leadership, this possibility cannot be ruled out. The correlation between the leadership scale and the sixth peer rating dropped slightly from that with the fifth peer rating. The level of correlation was still higher, however, than was the correlation between first and sixth peer ratings representing practically the same time interval.

Friendship Scale

The sociograms (see Appendix) revealed distinct friendship groupings, probably not strong enough to be called cliques, but with the possibility of becoming cliques with a little encouragement. Two strongly knit sub-groups were identified in the Senior class, but reciprocated choices going outside these sub-groups indicated that the members were strongly attracted away from the potential cliques. Of interest was the fringe location of the status leader in the Corps, ranked number one on the peer rating but ranked tenth in friendship in the group of nineteen cadets. The individual ranked fortieth of forty cadets in the Junior class on the peer rating tied for seventh in friendship rank. Two highly "ranked" cadets in Section 02 of the Junior class were practically "unchosen"; a relatively popular individual, third in friendship choice, was peer ranked at eight in the section of twenty cadets. The most popular individual in the Senior class, with eight choices received, was ranked at fifth in the peer rating by the same cadets. A Negro in the Junior class, unchosen in friendship, was peer ranked at eighth in his section of seventeen cadets.

The rank order correlations were of moderate order of magnitude between friendship rank and peer rating rank, ranging from .44 ($P < .01$) in the Junior class to .60 ($P < .01$) for the Senior class.

A world of caution must be interposed at this time; it is problematic that real friendship ties are shown, since the group is so heterogeneous in many ways: academic major, fraternity status, marital status and other factors. The main tie is the fact that they

are taking Air Force ROTC; outside of that there may not be any personal ties between individuals.

The relationships expressed in the sociogram may be sociotele, since the group members are asked whom they would want to travel with of all their fellow Air Science classmates. Psychetele choices may not be represented in these classes. As Jennings says: "Within the sociogroup, there may be many members chosen by others as sociogroup members who at the same time are rejected or unchosen by these same individuals in the latter's several psychegroups" (7, p. 13). This could be clarified by further inquiry into the psychetele relationships in these groups. It may explain why some of the first level choices were ex-section in the Junior class.

The influence of friendship on peer rating appears to be rather low. Although a positive relationship exists between peer rank and friendship rank, there is sufficient evidence that a factor beside friendship enters the evaluation. In the Junior class, among first level friendship choices, eighteen choosers rated their "chosen" lower than actual section rank, fourteen rated them higher, while four rated them at actual rank. In the Senior class, eight choosers rated their first level friends lower than actual rank, while seven choosers rated the chosen at actual rank and five rated them higher than actual rank. The following chart illustrates rank on the peer ratings and friendship rank.

TABLE VII

COMPARISON OF PEER RANK AND FRIENDSHIP RANK

Section 02		Seniors		Section 01	
Peer Rank	Friendship Rank	Peer Rank	Friendship Rank	Peer Rank	Friendship Rank
1	7	1	10	1	1
2	14	2	7.5	2	3
3	1.5	3	4.0	3	8
21	4.5	18	7.5	15	11.5
22	20	19	18.5	16	8
23	20	20	14.5	17	4.5

The comment of Hollander (6) that the apparent favoring of friends did not create status so much as it reflected a desire to have as friends those who are already high in status would certainly seem to apply here. The high-ranking friend may be deserving of this status. The "overranking" of reciprocated friends as found in this study may be due to natural self-esteem being reflected in the ratings. The individual who is low in status would tend to overemphasize his friend's status (and thus indirectly his own), while the higher ranking individual would tend to pull his friends up to his own level.

When the Junior class cadets were asked to rate their classmates on the leadership scale, the results correlated at .77 ($P < .001$) with rank on the peer rating. This may be compared with

the correlation between friendship rank and rank on peer ratings (rho = .44, $P < .01$).

It appears doubtful that if liking an individual causes a person to rate him high on "aptitude for commissioned service" that this same liking would influence the assignment of a favored leadership role to him. Suci, Vallence and Glickman (10) found that the reliability of peer ratings taken on both immediate and future potential were not influenced by level of friendship; the question of leadership as asked in this study had an immediate meaning to the cadets as opposed to the remote "aptitude for commissioned service" criteria. The agreement between rank on peer rating and rank on the leadership survey confirms Suci's findings that friendship is probably not influencing the peer rating unduly.

Similar results were found by Bonney (2) in a study of ninety-nine sixth grade pupils. He found that choices of play companions correlated at only .42 with choices of fellow participants on a quiz program --the criterion on the latter clearly indicated the need of a knowledge for successful participation. Similarly, when cadets express their choice of a leader, or rank their classmates in order of future potential, or express their choice of a friend, they are evidently not considering the same criteria; the correlation would be higher if they were. The fact that there is positive relationship between the factors indicated the necessity for further study of the rating procedure, specifically the study of personality influences.

Personality Scale

The most significant finding in the study of personality trait ratings is that rank order on a peer rating, in which the four criteria--Leadership, Bearing and Dress, Attitude and Performance of Duty--are rated, agrees closely with rank order determined by the personality trait rating made by the same cadets. The correlation is of such magnitude, rho = .92 ($P < .001$) for the long form and rho = .89 ($P < .001$) for the short form, that it would appear that similar things are being measured. This must be given special emphasis when it is realized that rank order on personality traits was not rated; only the five individuals most like one pole and the five individuals most like the opposite pole were picked for each trait. It would be most difficult to try consciously to rank individuals on the personality trait form due to its complexity and the speed with which the cadets were required to work.

Of immediate benefit is the fact that it is apparently unnecessary to go through the long, complex personality trait ratings system when the relatively simple peer ratings seemingly provide the same results.

The Seniors were asked to indicate what they thought of their own personality traits--whether they were more toward the A pole or B pole, or in the middle. The results are indicated below:

TABLE VIII

TOTAL SCORE-PERSONALITY RATINGS

Rank	Self-Concept Rating*	Class Average Rating
1	38.0	35.3
2	36.0	35.7
3	38.0	34.1
15	34.0	24.1
16	35.0	21.3
17	30.0	18.3

*Maximum score is 42

It would appear that those individuals who are ranked high by their classmates have a very good opinion of themselves, and this opinion does not differ too much from their classmates. On the other hand, those cadets rated low by their fellow cadets also have a good opinion of themselves--not shared by their classmates! This is probably a reflection of lack of empathy with group--as had been noted above when low rated individuals were asked to guess their peer rank and consistently overguessed.

The implications of the close agreement between peer ratings and personality trait ratings requires a closer scrutiny at the peer rating technique. If the cadets are unable to judge their fellow cadets in terms of the rather remote criteria used in the peer rating, then they may fall back on a more global impression of the individual. This

global impression may not be halo but could well be the impact of that individual's personality--whether it be an "unique pattern of traits" or "characteristic modes of behavior" or "the reaction which the individual arouses in others." Whatever it may be, it is evidently unique and different for each individual, since the descriptive variables were different for each person rated.

Gronlund points out a similar concept:

> The consistency of sociometric status over criteria points toward the presence of a general social acceptability factor in the sociometric results. The factor seems to be greatest where general sociometric criteria are used and lowest where specific skills and knowledge enter into the Sociometric responses (5, p. 139).

It has been pointed out elsewhere that personality is essential to success, more important than proficiency in the task (11, p. 483). This study indicates that personality has an important influence on peer ratings--more than was found for friendship or even leadership. Perhaps the criterion for the peer ratings could have been (and may well have been, in the minds of the cadets): the "overall impression this individual gives you which you feel will contribute to his success in later life . . . ;" a <u>success</u> peer rating, or a measurement of the social acceptability as proposed by Gronlund.

The correlation between rank on leadership and rank on personality (rho = .86, $P < .001$) indicates that the cadets choose as leaders or assign leadership status to those individuals who possess most of the desirable (socially approved) traits of personality. These same

individuals are valued as friends and are ranked highly on the friendship scale.

Other Evaluation Devices

Job Proficiency

The low correlation (rho = .29) between rank in "job proficiency" (as measured by an examination) and rank on peer rating indicates a low but positive relationship between knowledge as measured by the examination and peer rank. Further testing of this relationship is necessary since all facets of job knowledge were not included in the test, and the relationship between peer rank and job proficiency was not measured satisfactorily ($P > .10$). Others have investigated the relationship between job proficiency and peer status; Dugan (4) found a high correlation between proficiency scores in training and peer ratings of proficiency in combat among twenty-nine B-29 crews. The difference between Dugan's work and this study may lie in the measurement of job knowledge, or the importance of "drill" knowledge in the cadets' viewpoint.

Instructor's Evaluations

The high correlation between instructor's evaluations, staff evaluations and the peer ratings implies that the cadets are able to evaluate their fellow cadets' potential as commissioned officers. This is made more evident by the increase in correlation coefficients when several instructors' ratings or staff ratings are combined. Other

studies have found that peer ratings are more valid than staff ratings for predicting certain criteria (13; 14), but the results obtained here indicate good agreement between the two types of ratings. The fact that higher correlations result from combining ratings is in line with the conclusions reached by Vernon who recommended averaging or combining ratings made by several individuals (12).

Summer Training Effectiveness Reports

The low correlation between rank on peer ratings and rank in scores obtained from Summer Training Effectiveness Reports is not too important, inasmuch as two possible sources of error are introduced into the correlations. The effectiveness reports and peer ratings are made against different criteria and the effectiveness report is only one individual's opinion of the cadet. As shown above when considering one instructor's evaluation, the correlation is relatively low even though the same criteria are considered. More than one rater is required to increase the accuracy of the ratings.

Status in the Air Force ROTC

The initial peer rating had good predictive value as far as indicating those individuals who had potential of becoming status leaders in the Air Force ROTC program. The correlation was lower than among other factors but was of such magnitude that a definite relationship is shown between peer status and future success; success being status in the Air Force ROTC Corps.

CHAPTER BIBLIOGRAPHY

1. Bonney, M. R., "A Study of Constancy of Sociometric Ranks Among College Students over a Two Year Period," Sociometry, XVIII (December, 1955), 275-286.

2. Bonney, M. E., " A Study of the Sociometric Process Among Sixth Grade Children," Journal of Educational Psychology, XXXVII (September, 1946), 359-371.

3. Chowdry, K. and Newcomb, T. M., The Relative Abilities of Leaders and Non-Leaders to Estimate Opinions of Their Own Groups, in Small Groups, edited by A. Paul Hare, Edgar F. Borgatha, Robert F. Bales, New York, Alfred A. Knopf, Inc., 1955.

4. Dugan, R. D., "Comparison of Evaluation of B-29 Crews in Training and in Combat," American Psychologist, VIII (August, 1953), 343-344.

5. Gronlund, Norman E., Sociometry in the Classroom, New York, Harper and Brothers, 1959.

6. Hollander, E. P., "The Friendship Factor in Peer Nominations," Personnel Psychology, IX (Winter, 1956), 435-447.

7. Jennings, Helen L., Sociometry of Leadership, New York, Beacon House, 1947.

8. Northway, Mary L., Frankel, E. B. and Potashin, R., "Personality and Sociometric Status," Sociometry Monograph No. 11, New York, Beacon House, 1947, as quoted in Gronlund, Norman E., Sociometry in the Classroom, New York, Harper and Brothers, 1959.

9. Parker, Clyde A., "Empathy," Personnel and Guidance Journal, XXXIV (October, 1955), 89-93.

10. Suci, G., Vallance, T. R. and Gleckman, A. S., "A Study of the Effects of 'Likingness' and Level of Objectivity on Peer Ratings Reliabilities," Educational and Psychological Measurements, XVI (Spring, 1956), 147-152.

11. Super, Donald E., Appraising Vocational Fitness, New York, Harper and Brothers, 1949.

12. Vernon, Phillip E., Personality Tests and Measurements, New York, Henry Holt and Company, 1953.

13. Wilkins, W. L., "Selection of Marine Corps Platoon Leaders," U. S. Armed Forces Medical Journal, V (August, 1954), 1184-1191.

14. Williams, S. B. and Leavitt, H. J., "Group Opinion as a Predictor of Military Leadership," Journal of Consulting Psychology, XI (November-December, 1947), 283-291. (See also references for Chapter I.)

CHAPTER V

CONCLUSIONS

The hypothesis that peer ratings taken in the Junior year will identify those cadets who will be considered weak in leadership potential in their Senior year was tested. The peer ratings taken in the sixth week of the Junior year predicted the status of the cadets over a year later with good accuracy. Cadets weak in leadership potential were identified by instructor's evaluations, status in the Air Force ROTC cadet corps and by Summer Camp ratings. Most of these cadets were ranked low in the initial peer rating made fifty-seven weeks earlier. Since the initial ratings predicted this status, the hypothesis is accepted.

The corollary hypothesis that peer ratings taken in the Junior year will identify those cadets who will be considered strong in leadership potential in their Senior year was also tested. Those cadets rated high in peer status on the initial rating were also rated high on other devices designed to measure leadership potential. The hypothesis is accepted to the extent indicated by the level of correlation found in this study.

The null hypothesis that peer ratings taken early in the Junior year will not change substantially during the remainder of that year and during the first part of the Senior year was tested. The peer ratings

taken in the sixth week of the Junior year showed good constancy over the rating interval of fifty-seven weeks and in fact, the last rating correlated with the first at rho = .63. Despite the relative uncohesiveness of the group at the beginning of the period, the members were still able to rate each other so successfully that these ratings did not change too much during a year's further observation. The hypothesis is accepted.

The null hypothesis that friendships among the cadets would not unduly influence the peer ratings was tested. It was found that there was moderate positive correlation between rank on friendship scale and rank on the peer ratings. It was also found that such correlations did not indicate any influence of friendship on the ratings but did indicate that there was a desire to have as friends those individuals possessing status in the group. Enough evidence was found in examining ratings made by mutual choice friends to deny the influence of friendship on the ratings.

Insofar as this study went, the findings confirm previous studies that friendship is not a factor reducing the constancy or validity of peer ratings and the hypothesis is accepted.

The null hypothesis that peer ratings are not influenced by personality traits but are based on criteria specified to the raters was tested indirectly by relating peer rating status to status on personality traits. A high positive correlation was found between rank on peer rating and rank on personality traits. The indications of this finding

are that the cadets are unable to use the more remote criteria proposed in the peer rating and are using instead a more global impression of their fellow cadets. Whether this global impression is wholly personality or is actually an impression of "possibility for success" is not clear. It has been proposed that the consistency of sociometric status over criteria points toward the presence of a "general social acceptability factor" in sociometric responses. This factor may be the "global impression" found in this study--the possibility for success.

This same factor may be the reason for the high correlation between the leadership scale rank and the peer ratings taken a year later.

Because of the high correlation between peer ratings and personality trait ratings, and between peer and leadership ratings, the null hypothesis that personality traits do not influence the peer ratings is rejected.

It was found that the longer the group has been together before the rating is made, and the smaller the group is when the rating is made, influences the constancy of the peer ratings. Ratings made by Sophomores in a large class correlated much lower on successive ratings than did ratings made by the smaller Junior class, which in turn were lower than ratings made by the Senior class. Evidently, by the time the cadets are in their Senior year they are so familiar with their fellow classmates that their ratings will not change during the remainder of the year.

Those individuals high on peer rank order had a greater empathy with their group than those individuals ranked low in peer status. This was found to be true in both the peer ratings and the personality trait ratings.

It was found that fourteen of the twenty-seven pairs of personality traits were as predictive as all twenty-seven. Inclusion of all twenty-seven pairs in a rating form is considered unnecessary, which simplifies scoring and administration of the test. The personality trait ratings did provide useful descriptions of the high and low ranked cadets. These descriptions were significantly different to subsume the absence of halo. The pattern of trait selection is significant for counseling purposes since predominantly negative ratings on one trait for an otherwise highly ranked individual is invaluable information for assisting that individual to improve.

The correlation between peer ratings and personality trait ratings indicates that it is unnecessary to require the cadets to rate each other on the complicated personality trait form. It may be useful to do once each academic year to check on peer ratings and to provide more data for counseling purposes.

The over-all conclusion which may be drawn from this study is that peer ratings are useful tools for the Air Force ROTC staff to use in identifying strong and weak leaders among the Air Science cadets. The technique will have its greatest value in evaluating the Junior class but it may also prove useful with the Sophomore class, although the size of the class may limit the application of a rating system to

them. At the least, the Sophomore class peer rating may be used as additional information for the Advance Course Selection Board to consider before accepting or rejecting an applicant for the advanced course.

The remarkable correlation between rank on peer ratings and rank on other devices is attributed to the global impression the members of a group seem to make on each other; this global impression may be the manifestation of a "social acceptability factor" as has been proposed by others. Whether or not this global impression will lead to success as a commissioned officer remains to be seen. The instructors, the staff and other individuals evidently feel almost the same way about the cadets as do their peers. The mass of evidence available on peer ratings made in training situations indicates that these peer ratings will be the best predictor of success, better than any other predictor available.

For this reason, it is recommended that the peer rating technique be used wherever possible in the Air Force ROTC program for the prompt identification of those cadets who are apt to be the weaklings in the program. Prompt identification of the stronger cadet will enable the staff to increase his development in leadership. Prompt identification of the weaker cadet, the non-leader, will lead to the quality of product so essential for the security of the nation.

APPENDIX

CORRELATIONS AND LEVEL OF SIGNIFICANCE SUMMARY SHEET

Peer Ratings

Rating	Rho	Number	Level of Significance
Junior Class, 1958			
1st and 2nd	.86	40	.001 or better
1st and 3rd	.67	31	.001 or better
1st and 4th	.71	31	.001 or better
1st and 5th	.63	28	.001 or better
1st and 6th	.63	28	.001 or better
2nd and 3rd	.77	31	.001 or better
2nd and 4th	.78	31	.001 or better
2nd and 5th	.77	28	.001 or better
2nd and 6th	.74	28	.001 or better
3rd and 4th	.91	44	.001 or better
3rd and 5th	.80	28	.001 or better
3rd and 6th	.79	28	.001 or better
4th and 5th	.81	28	.001 or better
4th and 6th	.75	28	.001 or better
5th and 6th	.90	30	.001 or better
1st and 2nd (Section 01)	.71	17	.01 or better
1st and 2nd (Section 02)	.89	23	.001 or better
Senior Class, 1958			
1st and 2nd	.97	20	.001 or better
1st and 3rd	.85	16	.001 or better
1st and 4th	.86	16	.001 or better
2nd and 3rd	.87	16	.001 or better
2nd and 4th	.86	16	.001 or better
3rd and 4th	.95	17	.001 or better
Junior Class, 1959			
1st and 3rd	.53	19	.02 or better
2nd and 3rd	.77	37	.001 or better

CORRELATIONS AND LEVEL OF SIGNIFICANCE SUMMARY SHEET

Peer Ratings and Other Ratings

Rating	Rho	Number	Level of Significance
Junior Class, 1958			
1st and Summer Training Reports	.25	27	.10 or better
4th and Summer Training Reports	.26	27	.10 or better
5th and Summer Training Reports	.42	25	.05 or better
1st and Leadership	.77	40	.001 or better
1st and Leadership (Section 01)	.63	17	.01 or better
1st and Leadership (Section 02)	.89	23	.001 or better
5th and Leadership	.80	28	.001 or better
6th and Leadership	.75	28	.001 or better
4th and Personality	.95	44	.001 or better
5th and Personality	.78	28	.001 or better
6th and Personality	.76	28	.001 or better
1st and Friendship	.26	40	.10 or less
2nd and Friendship	.44	40	.01 or better
2nd and Friendship (Section 01)	.34	17	.10 or less
2nd and Friendship (Section 02)	.52	23	.01 or better
5th and Proficiency Test	.29	31	.10 or less
1st and Corps Status	.50	28	.01 or better
5th and Corps Status	.81	30	.001 or better
6th and Corps Status	.74	30	.001 or better
Senior Class, 1958			
2nd and Friendship	.60	20	.01 or better
3rd and Personality (Long Form)	.92	17	.001 or better
3rd and Personality (Short Form)	.89	17	.001 or better
1st and Leadership	.76	20	.001 or better

CORRELATIONS AND LEVEL OF SIGNIFICANCE
SUMMARY SHEET

Other Ratings

Rating	Rho	Number	Level of Significance
Junior Class, 1958			
Personality and Friendship	.65	31	.001 or better
Personality and Leadership	.86	31	.001 or better
Instructor's Rating and Peer Rating	.69	26	.001 or better
Instructor's Rating and Peer Rating	.82	18	.001 or better
Senior Class, 1958			
Professor of Air Science Rating and Peer Rating	.68	20	.001 or better
Instructor's Rating and Peer Rating	.83	20	.001 or better
Combined Rating and Peer Rating	.91	20	.001 or better
SMO Instructor's and Peer Rating	.86	15	.001 or better

APTITUDE RATING
WORK SHEET

(PRIVATE OFFICIAL)

This work sheet will be completed in accordance with the instructions for accomplishing the Aptitude for Commissioned Service Rating.

Cadet Rank	COLUMN A NAME SECTION 02	Cadet Rank Number	COLUMN B	
_____	CLARK, LARRY H	01	_____	
		02	_____	
_____	COLE, FRANCIS V	03	_____	UPPER
		04	_____	QUARTER
_____	GODBEY, RONALD L	05	_____	
		06	_____	
_____	GOEN, DAVID E	07	_____	
_____	GRANADO, ALFONSO R	08	_____	
		09	_____	
_____	HUGHES, FORREST M	10	_____	
		11	_____	MIDDLE
_____	IVY, DENNIS E	12	_____	HALF
		13	_____	
_____	MC MAHAN, JERRY	14	_____	
		15	_____	
_____	SANBORN, LLOYD F	16	_____	
_____	SHAFER, ARDEAN M	17	_____	
		18	_____	
_____	SMITH, GERALD N	19	_____	
		20	_____	LOWER
_____	TANNER, BILL O	21	_____	QUARTER
		22	_____	
_____	TAYLOR, LARRY C	23	_____	
		24	_____	
_____	TOMPKINS, DAVID T			
_____	WEBB, RANDOL			
_____	WHITINGTON, GEORGE			

Signed _____
Cadet

The Aptitude for Commissioned Service Rating System Instructions

Objectives: The rating system is a planned program for individual guidance, evaluation and improvement of Cadets in Aptitude for Commissioned Service in the United States Air Force. It consists of the following:

1. A series of ratings and performance reports designed to determine how cadets in any one class compare with each other in Aptitude for Commissioned Service.

2. A counseling and guidance system for cadets who have been determined to be relatively low in Aptitude for Commissioned Service.

Specific Objectives: The specific objectives of the ACSR system are to:

1. Identify those cadets who possess outstanding leadership qualities in order to consider them for positions of responsibility in the Cadet Corps.

2. Identify those cadets who are weak in leadership qualities and determine their specific areas of weakness in order to provide them with positive assistance.

3. Provide counsel and guidance for those cadets who are of doubtful proficiency in Aptitude for Commissioned Service.

4. Provide each Cadet with experience in observing human behavior and in evaluating individuals in terms of leadership and other military attributes.

5. Provide the AFROTC Staff with a source of research data on leadership which will enhance the development of officer qualities in the Corps of Cadets.

Rating criteria: In evaluating a cadet's Aptitude for Commissioned Service the following officer qualities will be considered:

1. Attitude - A positive state of mind toward a career as a professional officer, manifested by INTEREST, MOTIVATION and COOPERATION. This to a large extent indicates the willingness of the cadet to contribute toward increasing the effectiveness of the AFROTC Cadet Corps.

2. Performance of Duty - The faculty of completing assignments expeditiously, evidenced by INITIATIVE, ORGANIZATIONAL ABILITY, JUDGEMENT, PERSEVERANCE, RELIABILITY and FORCEFULNESS.

3. Leadership - The faculty for directing, controlling and influenceing others in definite lines of action and for maintaining discipline.

4. Bearing and Dress - The COURTESY, MANNERS, CONDUCT, CORRECTNESS OF DRESS and SMARTNESS OF APPEARANCE, expected of an Air Force Officer and gentleman.

Operation of the Rating System: The operation of the rating system is based upon the following:

1. Extensive observation and evaluation by officers and cadets over a period of several weeks.

2. Periodic ratings in which cadets are ranked in relation to other members of their class.

3. The establishment of standings in Aptitude for Commissioned Service within each class.

Operation of the System:

1. Ratings are made twice each semester. Exact dates will be announced by the instructor. At these times each cadet rates all other cadets in his section in relation to other members of their class. These ratings are sent to the PAS where a mean ranking is computed for each cadet by class. The mean class rankings for each cadet are transposed to standardized scores and averaged. This average is known as the Cadet Aptitude for Commissioned Service (ACSR).

2. The cadets in the lower 10% of their class are considered to be making unsatisfactory progress in developing qualities deemed essential for performance as a Commissioned Officer. Each cadet in the lower 10% of any class is given the benefit of the counseling phase of the Aptitude for Commissioned Service System.

Rating Procedure:

1. Each cadet's ACSR is the result of the combined opinion of all the cadets in the section within which he works. For rating purposes each cadet is compred with his own classmates. In

accordance with the given criteria, he is rated in order of his merit on an expanded scale which contains half again as many spaces as the number of cadets in the section.

2. Cadets are expected to familiarize themselves thoroughly with the rating instructions before making their ratings.

3. Instructions to Cadets: a. Using the Work Sheet, establish in your mind an order of merit for the cadets in your section and form your opinion as to degrees of difference between individuals or groups of individuals. In determining an order of merit, think of the problem in this manner: I am comparing this cadet with all members of his class with respect to his relative Aptitude for Commissioned Service. The officer qualities to be considered are: Attitude, Performance of duty, Leadership ability, and Bearing and Dress.

b. In the roster of names in Column A line out your own name, and any other you are instructed to delete.

c. Select the cadet on the list whom you believe most outstanding in view of the criteria listed above. If he is the most outstanding cadet in his class known to you, print his name opposite 01 in Column B. If he is the most outstanding cadet in his class in your section, but not in the class as a whole, place him one or two slots down from the top. Similarly, select the cadet in your section whom you believe to be the least outstanding in view of the criteria established. Print his name in the bottom slot in Column B if he is the least outstanding in your class. If he is the least outstanding cadet in your section, but not in your class, place his name one or two slots up from the bottom.

d. Select the next most outstanding cadet in your section and place his name an appropriate distance below that of the best, and select the cadet who is next least outstanding and print his name in a position above that of the least outstanding man. Repeat this procedure until exactly 1/4 of the names listed in Column A appear in the top quarter in Column B, and the same number of names appear in the bottom quarter in Column B. Rank assigned must be spread in such a manner to indicate your opinion as to the relative differences among individuals.

e. Arrange the remaining names in that portion of the form marked middle half in the order you believe they should appear. Use blank spaces to indicate degrees of difference among the remaining cadets. Place the name of only one Cadet on each line in Column B.

f. If you do not know a cadet well enough to rate him confidently, you should place him in the middle portion of the scale in Column B.

g. When you have completed your order of merit, write each man's rank number (from Column B) in the space before his printed name in Column A. Each man must have a rank number before his name (except your own name).

h. Sign your name, fold the form once, and turn it into the instructor. You must fill out a "Form for Remarks" for the two bottom individuals on your form. Comments are desired, especially those that may benefit the cadet concerned. Do not attribute defects merely to justify the low rating.

FORM FOR REMARKS (PRIVATE - OFFICIAL) DATE

CADET

CADET PERFORMANCE FACTORS

Compare this cadet with other cadets of the same class. Rate each factor below by selecting phrase most closely describing cadet's actual performance on the job. Place single "X" in whatever box best indicates your evaluation. Avoid "halo effect." Do not allow your evaluation of one factor to influence you on another. The end result should be a profile on the cadet's relative abilities in terms of the separate factors.

	UNSATISFACTORY	SATISFACTORY	GOOD	EXCELLENT	OUTSTANDING
ATTITUDE	Poor attitude; indifferent	Usually displays interest; cooperative	Shows much interest; cooperates fully	Very enthusiastic	Highly motivated; displays keen interest
PERFORMANCE OF DUTY	Not reliable; usually fails to complete assigned work	Usually reliable, does satisfactory work when directed	Can be depended on to do a good job. Resourceful and persevering	Highly forceful, competent & reliable. Has excellent initiative & organizational ability	Extremely forceful, competent & reliable. Works well under pressure. Assumes responsibility
LEADERSHIP	No leadership qualities; tends to antagonize others	Usually gets along with others; sometimes leads in minor affairs	Leads well under most conditions	Has much influence in leading his fellowmen	Displays marked ability to lead his fellowmen. Makes things go.
BEARING AND DRESS	Discourteous; untidy; careless; poor conduct	Usually neat; proper conduct; lacking on occasions	Good appearance; good conduct; mannerly	Clean cut, neat, good posture; courteous; excellent conduct	Wears uniform with great pride, fine bearing & conduct

REMARKS

CADET SIGNATURE

LEADERSHIP SCALE

1. I would prefer to work with this person as leader above all others in the group.

2. I would accept this person as leader without hesitation.

3. I would about as soon work with this person as leader as with any other person in the group.

4. I would hesitate to accept the leadership of this person because I do not know anything about him.

5. I would not work with this person as leader if it could reasonably be avoided.

6. I would work with this person as leader but only under protest.

7. I would not accept the leadership of this person without open action to avoid it.

8. I would not accept the leadership of this person under any circumstances.

FRONT SIDE - "LONG FORM" - PERSONALITY TRAIT RATING

TRAIT A	1	2	3	4	5	6	7	8	9	10	11	12	13
Quitting, fickle													
Absence of neurotic fatigue													
Unconventional, eccentric													
Mild, self-effacing													
Assertive, self-assured													
Hard, stern													
Frivolous													
Esthetically fastidious													
Polished													
Obstructiveness													
Hypochondriacal													
Somewhat unscrupulous													
Unshakable poise, tough													
Dependent, immature													

FRONT SIDE - "LONG FORM"--Continued

14	15	16	17	18	19	20	21	22	23	24	25	26	TRAIT B
													Persevering, determined
													Neurotic fatigue
													Conventional
													Self-willed, egotistic
													Submissive
													Kindly, soft-hearted
													Responsible
													Lacking artistic feeling
													Clumsy, awkward
													Readiness to cooperate
													Not so hypochondriacal
													Conscientuous
													Easily upset
													Independent-minded

BACK SIDE - "LONG FORM" - PERSONALITY TRAIT RATING

TRAIT A	1	2	3	4	5	6	7	8	9	10	11	12	13
Trustful											—		
Relaxed, indolent													
Emotional													
Changeable													
Intellectual, cultured													
Cool, aloof													
Self-contained													
Placid													
Silent, introspective													
Adventurous, bold													
Smiling, elated													
Overly critical													
Enthusiastic													

BACK SIDE - "LONG FORM"--Continued

14	15	16	17	18	19	20	21	22	23	24	25	26	TRAIT B
													Suspicious
													Insistently orderly
													Calm, phlegmatic
													Emotionally stable
													Boorish
													Attentive to people
													Gregarious, sociable
													Worrying, anxious
													Talkative
													Cautious, retiring, timid
													Glum, depressed
													Receptive, constructive
													Not so enthusiastic

"SHORT FORM" - PERSONALITY TRAIT RATING

TRAIT A	1	2	3	4	5	6	7	8	9	10	11	12	13
Trustful													
Changeable													
Intellectual, cultured													
Smiling, elated													
Enthusiastic													
Quitting, fickle													
Absence of neurotic fatigue													
Hard, stern													
Frivolous													
Polished													
Obstructiveness													
Hypochondriacal													
Unshakable poise, tough													
Dependent, immature													

"SHORT FORM"--Continued

14	15	16	17	18	19	20	21	22	23	24	25	26	TRAIT B
													Suspicious
													Emotionally stable
													Boorish
													Glum, depressed
													Not so enthusiastic
													Persevering, determined
													Neurotic fatigue
													Kindly, soft-hearted
													Responsible
													Clumsy, awkward
													Readiness to cooperate
													Not so hypochondriacal
													Easily upset
													Independent-minded

PERSONALITY TRAITS
INSTRUCTIONS

As you learned from experience with peer ratings, it is difficult to determine why some individuals are rated high and some are rated low. This information is needed for counseling purposes. The "Form for Remarks" gives some useful information but in many instances it is difficult to determine what the rater meant by his comments.

This problem has led the Department of Air Science to investigate aspects of personality which are considered by cadets when rating their peers. It is hoped that this research will lead to a more useful "Form for Remarks." In the meantime, the personality trait ratings will be used for counseling you and your classmates. It is therefore essential that you take special care with this rating since the results will be used in the counseling program.

You are to rate all members of your class (section) on all of the traits listed on the rating sheet. Select the proper number (which will be announced by your instructor) who you feel are best described by the first trait in the Trait A column and indicate this by placing a " / " by their name. You must have a " / " by the number of names required. Select the proper number who you feel are best described by the first trait in the Trait B column and indicate this by placing an "O" by their names. Leave the remaining names blank. Go on to the second trait and repeat this process for each trait.

Traits are defined on the attached sheet. Read definitions <u>first</u> so that we all think of the same meaning for the traits.

You may feel that you can't select the proper number for either Trait A or B; however, you <u>must</u> select the number indicated by the instructor. Do the best you can, remember there is <u>no school solution</u>.

PERSONALITY TRAITS
DEFINITIONS

TRAIT A	TRAIT B
Quitting, Fickle	Persevering, Determined
Gives up rather easily. Led astray from main purposes by stray impulses. Slipshod--does not finish a job thoroughly.	Sees a job through in spite of difficulties or temptations. Strong-willed. Persisting in his motives. Painstaking and thorough.
Absence of Neurotic Fatigue	Neurotic Fatigue
	Seems to get tired and overwrought. Is irrationally irritable. Jumps when spoken to. Shows facial tics and other signs of "nervousness" (e.g., fidgeting, tremor, digestive disturbances, poor memory). Constantly complains of fatigue.
Unconventional, Eccentric	Conventional
Breaks conventional rules. Does not mind being different from other people in dress, manners, interests. Has well-marked individual ways (of which he is aware) and even fads and eccentricities.	Conforms to the accepted standards and ways. Seems distressed if he finds he is doing different.
Mild, Self-effacing	Self-willed, Egotistic
Gentle-tempered. Blames himself (or nobody) if things go wrong.	Goes his own way regardless of others. Blames others, not himself, whenever there is conflict or things go wrong. Headstrong. Predatory--tends to use other people for his own ends.
Assertive, Self-assured	Submissive
Assumes he can impose his will on others. Tends to lead or influence his associates. Tends to dominate. Tends to be boastful and assertive. Not held back by doubts. Invulnerable self-esteem.	Tends to let other people have their own way. Tends to back down in a conflict. Humble, quiet, retiring. Not sure he is right. "Embarrassable."

Hard, Stern	Kindly, Soft-hearted
Toughly "realistic" about problems. In extreme instances cynical. Looks at questions in a cold, objective fashion. Unaffected by personal and emotional appeals.	Tender-hearted. Cannot bear to see suffering unalleviated. In extreme instances sentimental and unrealistic. Of a grateful, understanding disposition.
Frivolous	Responsible
Does not seem to take responsibilities seriously. Undependable. Thoughtless. Refuses to accept responsibilities of his age.	Has a sense of responsibility to his parents, community, etc. Can be depended upon to be loyal to agreed standards. Trustworthy.
Esthetically Fastidious	Lacking Artistic Feeling
Artistically sensitive in clothes, surroundings, art. Fastidious, not too easily pleased.	Not showing taste in clothes, etc. Not interested in artistic subjects. Insensitive to esthetic effects.
Polished	Clumsy, Awkward
Polite and charming in social situations. Deals with people gracefully and skillfully. Refined with speech, manner, etc. Familiar with good etiquette.	Clumsy in social situations. Crude in speech, manner, etc.
Obstructiveness	Readiness to Cooperate
Inclined to raise objections to a project, cynical or realistic. "Cannot be done." Uninterested or unfavorable attitude to joining in. Inclined to be "difficult."	Generally tends to say yes when invited to cooperate. Outgoing. Ready to meet people at least halfway. Finds ways of cooperating despite difficulties.
Hypochondriacal	Not so Hypochondriacal
Dwells on illness or hurts a great deal. Is afraid is going to die when has relatively trivial illness. Fusses a good deal over bodily symptoms.	Does not worry about illnesses.
Somewhat Unscrupulous	Conscientious
Inclined to somewhat shady transactions. Not too careful	Careful about principles of conduct. Guided by ideals of truthfulness,

about right and wrong where own wishes are concerned. Not particularly just, honest, or unselfish.

honesty, unselfishness. Scrupulously upright where personal desires conflict with principle.

Unshakable Poise, Tough

Self-possessed, hard. Does not lose composure, e.g., through emotional provocation.

Easily Upset

Easily embarrassed or put off balance in conversation. Gets confused in emergency. Blushes, shows excitability, becomes incoherent. (Not general emotionality, but momentary "nervousness.")

Dependent, Immature

Emotionally and intellectually dependent on others. Generally adopts the opinion of the group or of authority without much thought. Thoughts vague and confused. Rather immature.

Independent-minded

Thinks things out for himself and adopts a clear and definite independent position. Tends to be a leader in discussion. Is interested in public opinion and how to shape it.

Trustful

Free from suspicion.

Suspicious

Believes rather too quickly that he is being unfairly treated. Imagines on insufficient grounds that certain people strongly dislike him. Inclined to brood over his troubles. Interprets things as having reference to himself when none is intended. Feels persecuted.

Relaxed, Indolent

Rather careless of detail. Lazy, careless over expenditures. Has no difficulty in relaxing. Enjoys ease.

Insistently Orderly

Tidy, over-precise, especially over details. Drives other people to be the same. Strict, fussy, pedantic. (In these respects rather uncomfortable to live with.) Seems unable to relax. Miserly.

Emotional

Gets emotional (anger, fear, jollity, sex, sorrow, or disgust) on slight provocation. Frequently emotional and passionately excited. Shows

Calm, Phlegmatic

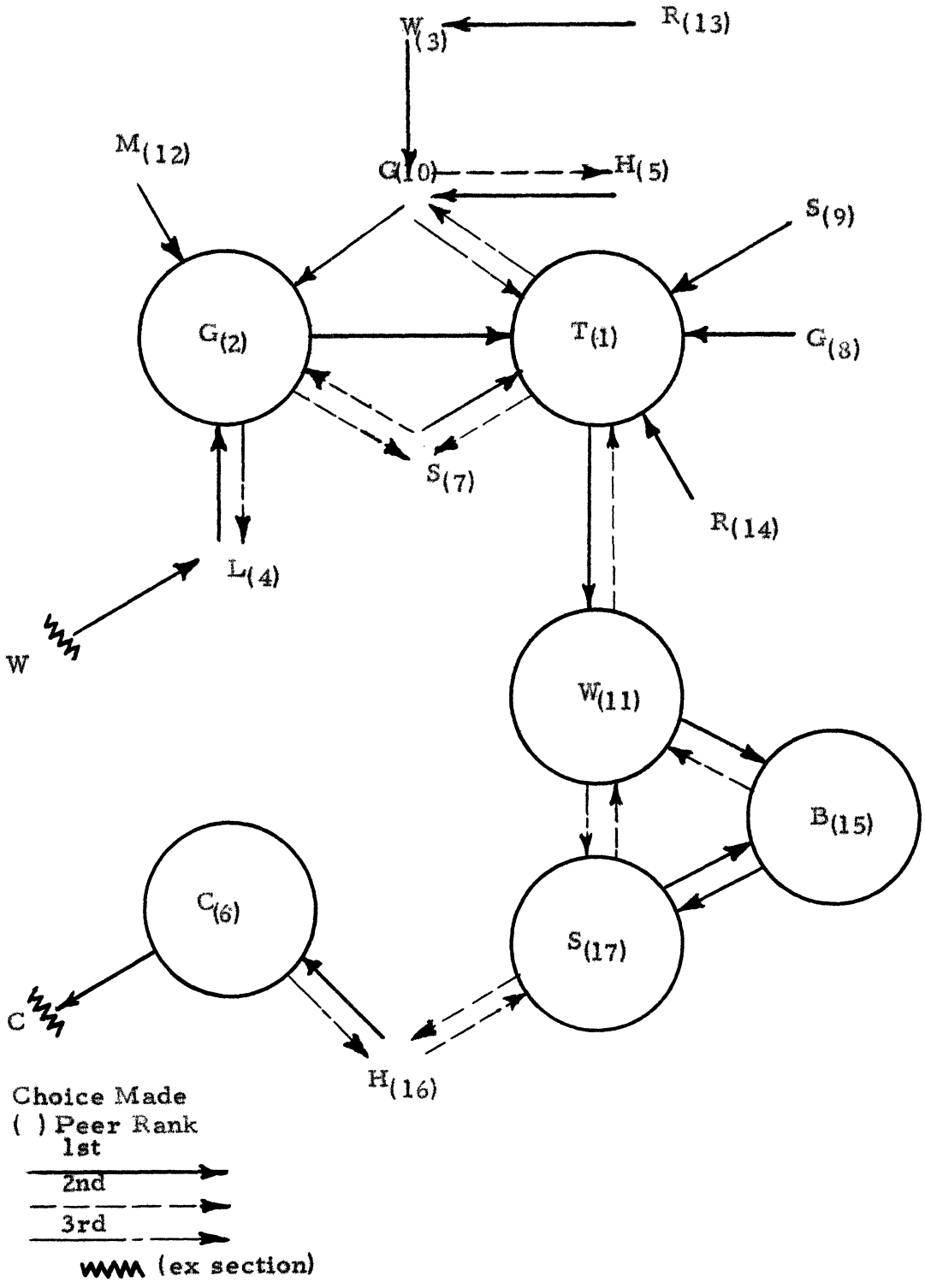
Remains relatively calm in dispute, danger, social hilarity, temptation. Shows few signs of emotional excitement. (Not merely controls impulses, but scarcely to have them.)

marked signs of emotion, even if controlled.

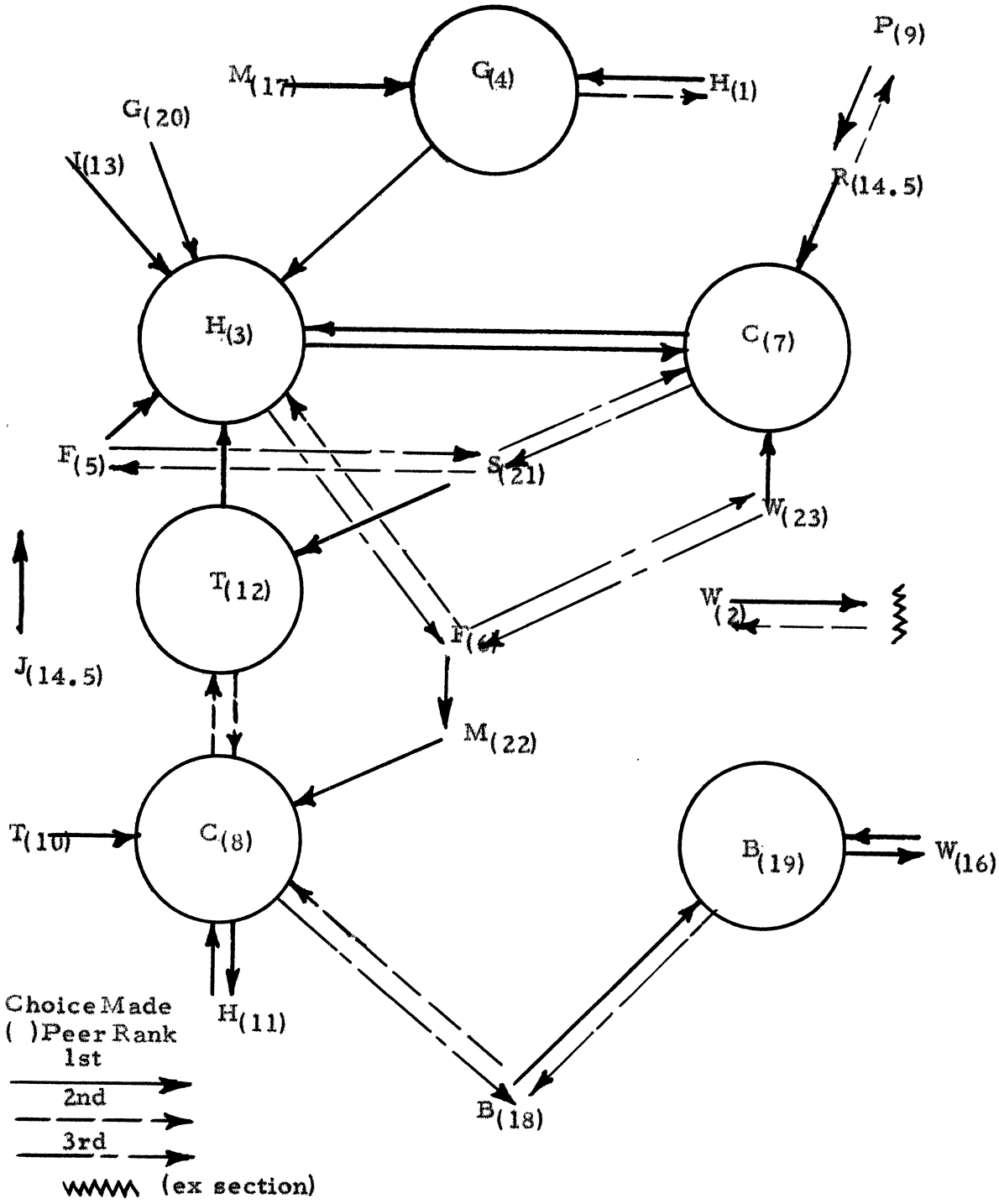
Changeable	Emotionally Stable
Sees things in terms of the emotion of the moment. Emotional bias changes from day to day and place to place. Does not remain the same person from day to day. Undependable.	Can be depended upon to look at question objectively, without emotional prejudice, and in the same constant light from day to day. Above emotion in his judgments. Dependable and realistic.
Intellectual, Cultured	Boorish
Has wide interest and knowledge, especially in intellectual matters. Is thoughtful and introspective about life. Enjoys analytical, penetrating discussions in small groups.	Rather ignorant. Unreflective. Does not read much or enjoy intellectual problems. Narrow, simple interests.
Cool, Aloof	Attentive to People
Tends to be indifferent to, and to ignore people. Gives the impression of brooding on his own thoughts or of being cold and indifferent.	Interested in people, their troubles, their personalities. Makes friends with people and remembers their personal interests. Spends much time in dealing with people.
Self-contained	Gregarious, Sociable
Does not seem to miss company of others. Goes own way.	Likes to be in large groups. Seeks people out for the sake of company. Likes parties as often as possible. Not fond of being alone.
Placid	Worrying, Anxious
Calm, tough. "What's the fuss about?" attitude.	Worries constantly, sensitive, hurried; seems to suffer from anxieties without adequate cause; slight suppressed agitation most of the time.
Silent, Introspective	Talkative
Says very little; give the impression of being introspective and occupied with thoughts.	Talks a lot, to everybody.

Adventurous, Bold	Cautious, Retiring, Timid
Rushes in carefree fashion into new experiences, situations, emergencies. Ascendant: ready to meet anything. Happy-go-ludky. Has a great appetite for life.	Avoids the strange and new. Looks at all aspects of situation over-cautiously. Keeps clear of difficulties. Uninquiring, lacking in desire to try new things.
Smiling, Elated	Glum, Depressed
Rather cheerful, lighthearted. Optimistic over the future. Generally in very good spirits.	Seems moody or surly. Has difficulty in smiling. Pessimistic. Generally in poor spirits.
Overly Critical	Receptive, Constructive
Always finds fault with instructions. Disparaging. "Tears things apart."	Open minded to all suggestions. Adds valuable comments in discussions. Readily accepts new ideas.
Enthusiastic	Not so enthusiastic
Full of pep on the job. Builds up spirit in his unit. Eager to get going. Wants to do work right now.	Slow to get things going. Seems to want to be elsewhere. Depresses spirits by "wet blanket" statements.

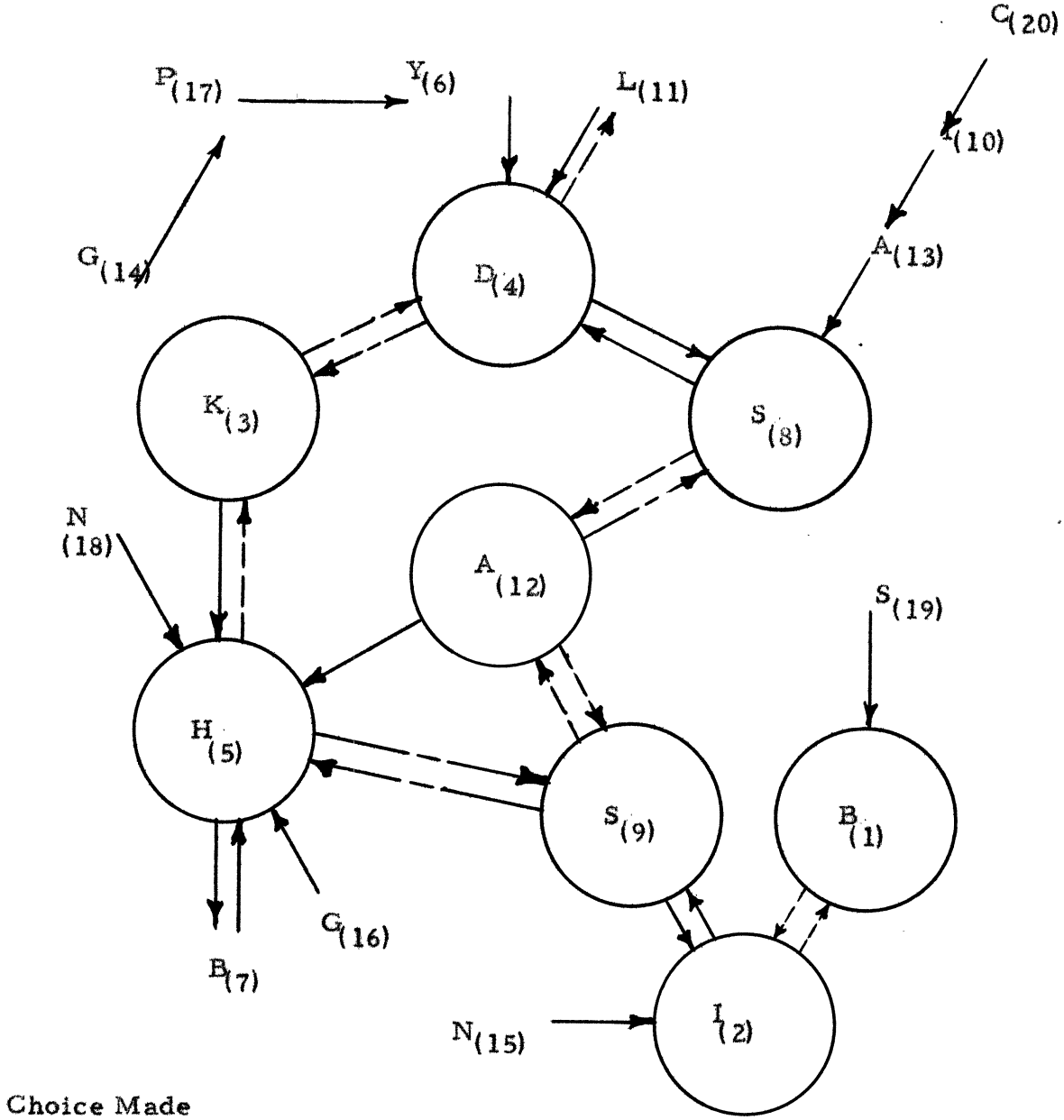
Junior Class (1958) Section 01
Sociogram



Junior Class (1958) Section 02
Sociogram



Senior Class (1958)
Sociogram



BIBLIOGRAPHY

Books

Bonney, M. E. and Fessenden, S. A., Manual Bonney-Fessenden Sociograph, Los Angeles, California Test Bureau, 1955.

Brown, C. W. and Ghiselli, E. E., Scientific Method in Psychology, New York, McGraw-Hill Book Company, Inc., 1955.

Byrd, E., Validity and Constancy of Choices in a Sociometric Test in Small Groups, edited by A. Paul Hare, Edgar F. Borgatha and Robert F. Bales, New York, Alfred A. Knopf and Co., 1955.

Chowdbry, K. and Newcomb, T. M., The Relative Abilities of Leaders and Non-Leaders to Estimate Opinions of Their Own Groups, in Small Groups, edited by A. Paul Hare, Edgar F. Borgatha and Robert F. Bales, New York, Alfred A. Knopf and Co., 1955.

Ginsberg, Eli, The Lost Division, New York, Columbia University Press, 1959.

Gronlund, Norman E., Sociometry in the Classroom, New York, Harper and Brothers, 1959.

Guilford, J. P., Personality, New York, McGraw-Hill Book Company, Inc., 1959.

Jennings, Helen L., Sociometry of Leadership, New York, Beacon House, 1947.

McNemar, Quinn, Psychological Statistics, New York, John Wiley and Sons, Inc., 1955.

Northway, Mary K., A Primer of Sociometry, Toronto, University of Toronto Press, 1952.

Northway, Mary L., Frankel, E. B. and Potashin, R., "Personality and Sociometric Status," Sociometry Monograph, XI (1947), New York, Beacon House, as quoted in Gronlund, Norman E., Sociometry in the Classroom, New York, Harper and Brothers, 1959.

O. S. S. Assessment Staff, Assessment of Men, New York, Rinehart and Co., Inc., 1948.

Rotter, J. B., Social Learning and Clinical Psychology, New York, Prentice-Hall, 1954.

Super, Donald E., Appraising Vocational Fitness, New York, Harper and Brothers, 1949.

Vernon, Philip E., Personality Tests and Measurements, New York, Henry Holt and Company, 1953.

Articles

Ansbacher, H. L., "The History of the Leaderless Group Discussion Technique," Psychological Bulletin, XLVIII (September, 1951), 383-390.

Baier, D. E., "Note on a Review of Leadership Studies with Particular Reference to Military Problems," Psychological Bulletin, XLIV (September, 1947), 466-467.

Baier, D. E., "Selection and Evaluation of West Point Cadets," American Psychologist, II (August, 1947), 325-326.

Baycoff, A. G., Haggerty, Helen and Rundquist, E. A., "Validity of Ratings as Related to Rating Techniques and Conditions," Personnel Psychology, VII (Spring, 1954), 93-113.

Baycoff, A. G. and Machlin, C. T., "Development of Criteria of Leadership in ROTC," American Psychologist, V (July, 1954), 338.

Bell, G. B. and French, R. L., "Consistency of Individual Leadership Position in Small Groups of Varying Membership," Journal of Abnormal and Social Psychology, XLV (October, 1950), 764-767.

Bonney, M. E., "A Study of Constancy of Sociometric Ranks Among College Students Over a Two Year Period," Sociometry, XVIII (December, 1955), 275-286.

Bonney, M. E., "A Study of the Sociometric Process Among Sixth Grade Children," Journal of Educational Psychology, XXXVII (September, 1946), 359-371.

Dugan, R. D., "Comparison of Evaluation of B-29 Crews in Training and in Combat," American Psychologist, VIII (August, 1953), 343-344.

Gaylord, R. H. and Russel, E., "West Point Evaluative Measures in the Prediction of Officer Efficiency," Educational and Psychological Measurements, II (Winter, 1951), 606-611.

Hollander, E. P., "Buddy Ratings: Military Research and Industrial Implications," Personnel Psychology, VII (Autumn, 1954), 385-393.

Hollander, E. P., "Peer Nominations on Leadership as a Predictor of the Pass-Fail Criterion in Naval Air Training," Journal of Applied Psychology, XXXVIII (June, 1954), 150-153.

Hollander, E. P., "The Friendship Factor in Peer Nominations," Personnel Psychology, IX (Winter, 1956), 435-447.

Hollander, E. P. and Webb, W. B., "Leadership, Followership, and Friendship," Journal of Abnormal and Social Psychology, L (March, 1955), 163-167.

Howell, C. F., "The Measurement of Leadership," Sociometry, V (March, 1942), 163-168.

Izard, C. E., "Personality Correlates of Sociometric Status," Journal of Applied Psychology, XLIII (April, 1959), 89-95.

Mayo, G. D., "Peer Ratings and Halo," Educational and Psychological Measurements, XVI (Autumn, 1956), 317-323.

Page, D. P., "Measurement and Prediction of Leadership," American Journal of Sociology, XLI (July, 1935), 31-43.

Parker, Clyde A., "Empathy," Personnel and Guidance Journal, XXXIV (October, 1955), 89-93.

Rigby, Marilyn K., Hoffman, E. Lee, Rohrer, John H. and Wilkins, W. L., "Three Approaches to Peer Evaluation," American Psychologist, VIII (August, 1953), 421.

Sisson, E. D., "Forced Choice - the New Army Rating," Personnel Psychology, I (Autumn, 1948), 365-381.

Stogdill, R. M., "Personal Factors Associated with Leadership: a Survey of the Literature," Journal of Psychology, XXV (1948), 35-71.

Suci, G., Vallance, T. R. and Glickman, A. S., "A Study of the Effects of 'Likingness' and Level of Objectivity on Peer Ratings Reliabilities," Educational and Psychological Measurements, XVI (Spring, 1956), 147-152.

Tupes, E. C., Carp, A. and Borg, W. R., "Performance in Role-Playing Situations as Related to Leadership and Personality Measures," Sociometry, XXI (September, 1958), 165-179.

Theodorson, G. A., "The Relationship Between Leadership and Popularity Roles in Small Groups," American Sociological Review, XXII (February, 1957), 58-67.

Wertz, Joseph, "Selecting Supervisors with Peer Ratings," Personnel Psychology, II (Spring, 1958), 25-35.

Wherry, R. J. and Fryer, D. H., "Buddy Ratings: Popularity Contest or Leadership Criteria?" Personnel Psychology, II (Summer, 1949), 147-159.

Wilkins, W. L., "Selection of Marine Corps Platoon Leaders," U. S. Armed Forces Medical Journal, V (August, 1954), 1184-1191.

Williams, S. B. and Leavitt, H. J., "Group Opinion as a Predictor of Military Leadership," Journal of Consulting Psychology, XI (November-December, 1947), 283-291.

Zeleny, L. D., "Selection of Compatible Flying Partners," American Journal of Sociology, LII (March, 1947), 424-431.

Reports

Anderhalter, O. F., Wilkins, W. L. and Rigby, M. K., Peer Ratings Relationships between Officer and Peer-Candidate Predictions of Effectiveness as a Company Grade Officer in the U. S. Marine Corps and the Ability to Predict Estimated Officer Effectiveness of Peers, St. Louis, Department of Psychology, St. Louis University, 1952.

Tupes, Earnest C., Relationships between Behavior Trait Ratings by Peers and Later Officer Performance of USAF Officer Candidate School Graduates, Lackland Air Force Base, Texas, Personnel and Training Research Center, October, 1957.

Tupes, Earnest C., Relationships between Measures Obtained During AFROTC Training and Latter Officer Effectiveness Reports, Lackland Air Force Base, Texas, Personnel Laboratory, Air Force Personnel and Training Research Center, February, 1957.

Tupes, E. C., Carp, A. and Borg, W. R., Validation of a Proposed Officer Effectiveness Selection Battery, Lackland Air Force Base, Texas, Personnel Laboratory, Air Force Personnel and Training Research Center, December, 1957.

Public Documents

Air Force Cadet Manual 30-2, Operation and Administration of the Aptitude for Commissioned Service Rating System, the Air Force Cadet Wing, USAF Academy, July, 1957.

Unpublished Materials

Letter, subject: Leader Identification Studies, 2 October 1958, Hq. 3700 Military Training Wing, Lackland Air Force Base, Texas.

Letter, subject: Leader Identification Studies, 8 October 1958, Wright Air Development Center, Lackland Air Force Base, Texas.

Letter, subject: Leader Identification Studies, 19 October 1958, Air Command and Staff College, Maxwell Air Force Base, Alabama.