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16. Abstract This report covers the two aspects of an agency-wide assessment of the FAA Management Training School (MIS) program. The first part of the report considers the evaluation of MIS by approximately 10 percent of the Supervisory and Managerial Training Course graduates. Detailed questionnaires for evaluating the MIS experience in terms of the usefulness and the quality of specific and general aspects of the course were presented to graduates at various FAA field offices and facilities across the Nation. It was found that supervisors and managers held similar views of MIS: Most felt that the program had been useful in helping them to meet the demands of their supervisory/managerial positions. The responses of the graduates indicated areas in which improvement could be effected within the MIS framework. The second part of the report presents the findings concerning the impact of MIS on the behavior of course graduates. Questionnaires concerning specific types of behavior desired of supervisors and managers were completed by graduates of MIS, their immediate supervisors, and their employees and also by supervisors and managers not yet trained at MIS. It was found that MIS training resulted in an increase in desirable on-the-job activities of MIS graduates, as judged by the graduates themselves, their supervisors, and their employees. Those who had attended MIS entered training with supervisory/managerial skills somewhat below the level of those of the individuals who had not yet attended (i.e., supervisors and managers given lower priority for attendance because of their greater experience and training), and they returned to perform at a somewhat higher level than those without the MIS experience.					
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AN EVALUATION OF THE EFFECTIVENESS OF THE FAA MANAGEMENT TRAINING SCHOOL

I. Introduction.

At the request of the Office of the Secretary of Transportation, an assessment of the effectiveness of the FAA Management Training School (MTS) was undertaken during 1973. This report is concerned with the two major aspects of that assessment: First, an evaluation of MTS by graduates of the program; and second, an assessment of the impact of the school on the behavior of its graduates, as seen by the graduates themselves, their employees, and their immediate supervisors. The report is organized around these two major facets of the evaluation.

A. *Certain Issues in Management Training Research.* A look at the research conducted on the effectiveness of management training programs suggests a number of problems that must be confronted in conducting such studies. In the most extensive published consideration of managerial training, Campbell, Dunnette, Lawler, and Weick¹ indicate that the two major issues in research on the effectiveness of such training are criteria for change and controls for training effects.

According to Martin,² criteria employed in studies of training effectiveness fall into two categories. One, designated "internal criteria," is concerned with demonstrating some change relevant to the training itself, such as attitude change, evaluations of the "success" of the training, and improvement in before/after test scores. The second category concerns changes occurring in job behavior and is designated "external criteria." Such criteria include objective measures of unit performance, ratings of job performance by superiors or subordinates, and employee turnover. Most studies reported by the Campbell *et al.*¹ review employed internal criteria; only about 30 percent of the studies measured effectiveness through the preferable use of external criteria.

The second issue of importance is control for training effects. Controls are generally of two

types, either comparison of trained and untrained groups or before- and after-training comparisons within a trained group. Campbell *et al.*¹ point out that without such control the link between the training activity and the criteria, be these internal or external, must remain extremely ambiguous.

B. *Approach of the Present Evaluation.* The present study generally is organized around the concepts of internal and external criteria. As noted by Campbell *et al.*,¹ both types of criteria are necessary in determining the effectiveness of management training: The first is aimed at evaluating what is learned; the second, at what is transferred to the work setting. The first major section of this report, which is an evaluation of the MTS training by graduates of the program, is based primarily on internal criteria. The second major section of this study, which is an assessment of the effects of the MTS training on the performance of the graduates as judged by the graduates themselves, their immediate superiors, and their employees, is primarily concerned with external criteria. In addition, this portion of the study addresses the issue of control for training effects by considering the supervisory/managerial performance of those FAA supervisors and managers who had not yet attended MTS.

II. An Evaluation of the MTS Program by Supervisory and Managerial Course Graduates.

The focus of this section is on the evaluation of the MTS program by those who have graduated from it. Considered herein will be their attitudes about their MTS experience, the judged usefulness of the course content, and appraisals of the overall utility of the program.

A. *Procedure.* A structured questionnaire was used to systematically gather data about the effectiveness of MTS. The questionnaire was designed (a) to thoroughly cover the scope of

the MTS courses, (b) to develop a complete picture of the positive and negative attributes of the program, (c) to emphasize utility of course content in actual supervisory/managerial settings, and (d) to give graduates the opportunity to provide specific feedback in a manner that would indicate directions for constructive course development. The questionnaire used in this part of the survey is presented in sections III.A., III.B., IV., V., VI.A., VI.B., and VII. of the Appendix.

The specific content of the questionnaire was developed from an analysis of the various content areas of the MTS course and incorporated, in addition, several general evaluative dimensions.

The survey questionnaires were administered by teams of FAA supervisory/managerial personnel who visited offices and facilities in and around 17 major metropolitan areas. Each team member was from either FAA Headquarters or the Academy, but none had any direct connection with the MTS program. The teams, composed of three persons each, administered questionnaires to a total of 616 Supervisory Course and 128 Managerial Course graduates located at a total of 254 field offices and facilities, five regional offices, the National Aviation Facilities Experimental Center (NAFEC), the Aeronautical Center, and FAA Headquarters. This sample represents approximately 10 percent of the MTS graduates as of July 1973. The general age and experience characteristics of these respondents, all of whom were volunteers, are shown in Table 1. Table 2 shows the distribution of respondents by sex, GS or WB grade level, FAA service, and facility location. It is readily apparent that the respondents were predominantly males at the upper grade levels, were proportionally distributed across FAA services

TABLE 1. Age and Experience of MTS Graduate Participants^a

Variable	Supervisory		Managerial	
	Average	Range	Average	Range
Age	46.2	28-66	48.2	34-62
FAA Experience	16.8	0.6-34	20.0	0.2-34.5
Total Supervisory/Managerial Experience	7.5	0.1-28	12.4	0.2-31.5
Time in Present Position	4.2	0.1-17	3.4	0.2-13
Time Since MTS Attendance	1.2	0.1-2.5	1.3	0.1-2.4

^a All values are in yearly units.

in terms of total personnel in the services, and represented the spectrum of types of facilities.

TABLE 2. Distribution of Participants on Background Variables Considered in Survey

Variable	Supervisory ^a	Managerial ^a
Sex		
Male	587	126
Female	29	2
Grade Level		
GS 5-11	38	0
12	67	1
13	122	4
14	209	45
15	23	40
WB All Levels	8	0
FAA Services		
Air Traffic	258	42
Airway Facilities	135	34
Flight Standards	92	11
Other (e.g., Airports, Logistics, Research)	128	38
Location		
Washington Headquarters	27	7
Regional Offices	84	26
NAFEC	24	10
Aeronautical Center	89	14
Tower/TRACON/RAPCON	90	12
ARTCC	99	10
AF Sectors	35	15
FS Stations	34	3
Other	135	28

^aTotals for the variables do not match because of occasional missing data on demographic forms.

B. Results. The results presented below are summaries of the analyses conducted on each of the sections of the evaluation questionnaire. In general, chi square procedures were used to determine the significance of differences of distributions of responses on the variables considered in the survey. Those differences discussed in the text are based on chi square analyses significant at the .05 level or better; all nonsignificant trends are omitted from the discussion.

The first section focuses on general evaluative attitudes toward MTS; the second, on the utility of the various areas covered by the Supervisory and Managerial Courses. The remaining sections examine the areas in which MTS was helpful to the graduate, those in which the program was not of benefit, and the judged effect of MTS on the units being supervised by MTS graduates.

1. Attitudes toward MTS.

a. Likes-dislikes questionnaire. The responses to the open-ended questions concerning what was liked best and least about MTS (Appendix, IV.) gave considerable insight into the evaluation of MTS by its graduates. From an examination of the number of statements made about the best and least liked aspects of MTS (Table 3), it is

apparent that both supervisors and managers made more statements about what they liked best than about what they liked least at MTS. This measure of the overall evaluation of MTS indicates that the program is positively regarded. It is important because it is an indirect measure of attitudes toward the school and thus is less directly influenced by any motivations to make the program "look good."

TABLE 3. Summary of Statements Made by MTS Graduates Concerning Best Liked and Least Liked Aspects of the MTS Program

Subject Category	Liked Best About MTS		Liked Least About MTS	
	Supervisors	Managers	Supervisors	Managers
I. Course Content	33.6% ^a	36.9%	34.8%	29.0%
II. Instructors	17.5%	14.2%	8.6%	8.1%
XIII. Location/Accommodations	12.3%	13.4%	13.5%	11.6%
IV. Course Approach	10.0%	10.6%	12.3%	11.3%
V. Group Interactions	9.6%	10.1%	0.2%	-----
VI. Participants	7.0%	7.8%	1.7%	2.6%
VII. Results	5.9%	4.7%	0.9%	-----
VIII. General Evaluation	2.7%	1.1%	0.6%	-----
IX. Course Requirements	0.7%	0.8%	25.6%	35.8%
X. Miscellaneous	0.5%	0.3%	1.9%	1.6%
	100.0%	100.0%	100.0%	100.0%
Number of Statements	1,661	358	1,384	310

^a Percentages refer to proportion of "liked best" or "liked least" statements related to each subject category for supervisors or managers.

The statements made by each supervisor and manager were read by two raters and coded into 10 different categories. These categories were derived by examining the statements to determine logical groupings. Each statement was assigned to only one category. It should be emphasized that the assignment of statements to categories was completely independent for the liked-best and liked-least portions of the questionnaire; in other words, it is possible to have a large number of statements about what graduates liked best at MTS in a category that also contains a large number of liked-least responses.

From an examination of the tabulations for each part (liked best and liked least) of the questionnaire (Table 3), it is readily apparent that supervisors and managers closely agree in their general attitudes. Clearly, the category with the most statements about what is liked best about MTS is *Course Content*. Many of the statements assigned to this category were general; however, specific areas often mentioned in a positive light are Labor-Management Relations

(LMR), Human Relations, Workshops and Role Play, Management Theory, Equal Employment Opportunity (EEO) (supervisors only), and Management by Objectives (MBO) (managers only).

The subject category mentioned next most often was *Instructors*. Statements in this category usually referred to what were seen as the good qualifications and preparation of the instructors, their beneficial teaching style and teaching competence, and their helpful attitudes.

Many graduates responded favorably to the school accommodations. The particular emphasis was on the quality of the class facilities and the academic environment away from the demands of the normal work setting. Related to these statements were the frequent favorable comments in the *Course Approach* category concerning the "professional and training atmosphere" of the school, the attempts to encourage student involvement, and the general philosophical orientation of the program.

Anecdotal evidence has suggested that one of the features of MTS that students like best is the chance to associate and interact with FAA personnel from other locations and services. This belief is confirmed by the tabulation of liked-best statements; comments pertaining to Group Interactions, including both class and informal discussions, were frequently mentioned, as was the chance to associate with persons from a wide variety of FAA areas (*Participants*).

The graduates of MTS indicated a number of features in the program that they regarded negatively. Again, the most frequently mentioned subject was *Course Content*. As noted above, the LMR instruction was one of the best liked parts of the program; it was also a focus for specific dislikes about the content of the course. Many graduates felt that too much time had been spent on EEO and not enough time had been allotted to Performance Evaluations. There were also several statements that the workshops were too long and were not well organized.

One feature seen almost entirely in a negative manner was *Course Requirements*. Particular dislike was expressed for the formal testing conducted at the school. The evaluations by instructors and work assignments after class hours were also given critical attention by many respondents. Among the most frequent statements

included in this category were indications that the course was too long.

While MTS graduates usually liked the campus atmosphere and modern facilities at MTS, they were less complimentary about the actual location of the school (Lawton, Oklahoma). Under the *Location/Accommodations* category, many supervisors and managers indicated a dislike for Lawton, the inconvenience of traveling to Lawton, the confining aspects of dormitory living, and group washrooms.

Another relatively common dislike of these graduates was what they viewed as a clear slant toward air traffic control in the presentations. Several individuals indicated that the situations and problems discussed seemed to be set up for air traffic needs and were of little relevance to their own area or service (*Course Approach* category).

As previously noted, the instructors (*Instructors* category) were often mentioned in discussing the features of MTS that were liked best. However, there were some graduates who felt that the instructors were lacking in those qualities that most others had identified as beneficial; i.e., qualifications, teaching style, and attitude toward students.

b. *MTS as a factor in the development of supervisors and managers.* The responses of supervisors and managers to the question as to the importance of various factors in supervisory/managerial development were similar (Appendix, V.A.). Far and away, they gave *Personal Efforts* and *Personal Qualifications* the highest ratings, an indication that they feel their own attributes are the most important contributors to their development as supervisors or managers (Table 4). Rated at a somewhat lower, but still high, level of importance were the organizational variables of supervision, policies, climate, and MTS. It is of interest that supervisors rated MTS relatively higher than did managers. This finding probably reflects the differences in training experience between the two groups. Managers typically have had more advanced educational experiences, previous supervisory and managerial training, and other developmental experiences than have supervisors—experiences that might tend to diminish the perceived importance of MTS. Supporting this fact is the observation that those who had attended the

TABLE 4. Factors Contributing to Supervisory/Managerial Development

Factor	Supervisors		Managers	
	Average Rating ^a	Percentage Rating Important ^b	Average Rating ^c	Percentage Rating Important
Personal Efforts	8.2	97.5	8.4 (8.5)	97.6
Personal Qualifications	7.9	96.5	7.9 (8.2)	97.6
Immediate Supervisors	7.3	88.5	7.7 (7.6)	92.0
FAA Policies	7.3	87.5	7.5 (7.4)	90.4
Organizational Climate	7.3	89.9	7.7 (7.3)	94.4
MTS	7.2	87.8	6.8 (6.3)	85.6

^a Rating scale values: 9 = very important, 8 = quite important, 7 = somewhat important, 6 = slightly important, 5 = neither important nor unimportant, to 1 = very unimportant

^b The percentage of participants who indicated that the factor had at least some degree of importance.

^c The values in parentheses refer to mean ratings for 38 managers who had previously attended Executive School.

FAA Executive School rated the MTS program substantially less important than did those managers who had not had such an experience; it should be noted, however, that the ratings of the former group indicated that the MTS experience has some importance for managers.

There were two population variables that were related to differences in the perception of the importance of MTS for supervisory/managerial development. Managerial graduates from the Aeronautical Center gave proportionally more ratings indicating the MTS program was unimportant than did managerial graduates from other locations, even though the average rating for the Aeronautical Center group was not greatly different from the average rating for the overall managerial group. (Note: As stated previously, reported differences are statistically significant at the .05 level or better.) Finally, the small number of managers from the Airports service showed a considerable tendency to rate MTS as unimportant. Airway Facilities (AF) and Flight Standards (FS) managers, while attaching some importance to MTS, did not rate the program as important as did Air Traffic (AT) graduates or graduates from other FAA activities.

2. Course content evaluation.

a. *General course content.* When supervisors were asked to rank the general course content areas in terms of the usefulness of these subjects in their present position (Appendix, V.B.), the highest ranked area was Human Relations (Table 5). A total of 72.2 percent of the respondents ranked this area either first or second in useful-

ness. Averaging more than a full rank lower was Employee Development (for which 72.3 percent of the rankings were first, second, third, or fourth), followed by Behavior (57.0 percent of the respondents ranked this subject second, third, or fourth). Ranked close to Behavior was Management Theory. The rankings were more diverse for this content area; nonetheless, the second or third rankings included 36.0 percent of the responses. The LMR area was next in rank, and, in this case, the rankings were quite diverse.

TABLE 5. General Supervisory Course Content Areas Ranked in Terms of Usefulness by MTS Supervisory Graduates

Course Content Area	Average Rank
Human Relations	2.18
Employee Development	3.56
Behavior	4.03
Management Theory	4.22
Labor Management Relations	5.16
FAA Organization	5.70
Position Management	6.13
Staffing	6.47
Safety	7.47

In the lower ranks were the areas of FAA Organization, Position Management, Staffing, and Safety. There was no trend in the Organization rankings. The Position Management area was usually given a fifth, sixth, or seventh ranking (55.7 percent); Staffing rankings were usually from sixth to ninth (71.6 percent). At the bottom, and averaging more than a full rank lower in usefulness on the job than any other area, was Safety. A total of 76.8 percent of the rankings for this subject were from seventh to ninth.

The rankings for the content areas in the Managerial Course show that, like supervisors, the managers consider the "people oriented" area (Human Factors) most useful (Table 6). This area was ranked most useful by 52.6 percent of the respondents. Next, averaging nearly a full rank lower, was MBO. Creating a Productive Work Environment and Managerial Decision Making were relatively close to each other and

to MBO, but there was no clear preference as to which ranking should be assigned to these factors; in other words, these areas were assigned a considerable number of each of the possible rankings.

TABLE 6. General Managerial Course Content Areas Ranked in Terms of Usefulness by MTS Managerial Graduates

Course Content Area	Average Rank
Human Factors	1.93
Management by Objectives	2.83
Creating a Productive Work Environment	3.13
Managerial Decision Making	3.36
FAA Management Environment	4.79
Resource Planning	4.91

There was very clear agreement among managers that the areas of FAA Management Environment and Resource Planning ranked lowest. For both of these subject areas, 70.1 percent of the respondents assigned rankings of fifth or sixth.

b. *Specific supervisory course content.* Each of the specific subjects taught at MTS was evaluated in terms of its usefulness in the supervisory work setting (Appendix, V.C.). A 7-point scale with end points of "not at all useful" (1) to "extremely useful" (7) was employed. The results are reported below in terms of the general content areas as ranked in the previous sections.

(1) Human Relations. Each of the specific content areas (topics) covered by Human Relations was judged, on the average, "very useful" for supervisors (Table 7). The lowest rated portion of this general area, Understanding Group Dynamics, was rated higher than all but one (Employee Counseling) of the specific areas under other general headings.

(2) Development. This group of topics was also highly rated in terms of usefulness, particularly Employee Counseling and Performance Evaluation. The lowest rated of these areas, Recognition and Awards, was still seen as "quite useful" on the average and was more highly rated than any topic in the remaining general content areas. There were some differences be-

TABLE 7. Usefulness Ratings of Specific Supervisory Course
Content Areas by MTS Supervisory Course Graduates

Specific Course Content Area	Average Rating ^a
Human Relations	
Understanding Human Behavior	6.0
Understanding Group Dynamics	5.7
Understanding Employee Motivation	5.9
Rules of Communication	5.9
Training to Listen	6.0
Development	
Performance Improvement	5.5
Performance Evaluation	5.6
Recognition and Awards	5.3
Training	5.5
Employee Counseling	5.9
Behavior	
Adverse Actions	3.9
Conduct and Discipline	4.5
Management Theory	
Management Identification	5.0
Management Style	5.1
Management Climate	5.1
LMR	
History of Unionism	3.6
Union Recognition	4.3
Employee and Union Rights	4.9
Unfair Labor Practices	4.7
Executive Orders	4.7
FAA Organization	
Mission	4.6
Organizational Structure	4.2
Line/Staff	4.4
Position Management	
Position Classification	4.3
Pay/Time Administration	4.5
Absence/Leave	4.7
Staffing	
Recruitment	4.0
Placement	4.1
Promotion	4.9
RIF Procedures	4.0
EEO	5.1
Reemployment and Return Rights	3.9
Safety	
Safety Responsibility	4.5
Injury Compensation	4.3

^a Rating scale values: 1 = not at all useful, 2 = slightly useful, 3 = somewhat useful, 4 = moderately useful, 5 = quite useful, 6 = very useful, 7 = extremely useful

tween these ratings in terms of FAA services. Employee Counseling was rated higher by AT graduates than by AF and FS graduates, who in turn rated this subject more useful than did those in the Airports service. The Airports graduates, as well as those from other relatively small activities, also ranked the Training segment lower than did AT, AF, and FS graduates.

(3) Behavior. Of the two areas included in the Behavior segment of the course, Adverse Actions was rated lower—lower, in fact, than any other topic except one. Even though low rated, this topic was still judged “moderately useful” on the average. For both topics under this heading, the participants from FAA Headquarters assigned relatively low usefulness ratings in comparison to those assigned by supervisors from most other facilities. This suggests that these matters are of relatively little consequence in that one location instead of indicating a particular course shortcoming.

(4) Management Theory. Each of the specific subjects under this general content area was considered “quite useful” by the respondents. No substantial differences between ratings for various groups were noted, with the exception that FAA Headquarters personnel rated Management Identification somewhat lower than did graduates from other locations.

(5) LMR. This course content area showed considerable variability in ratings of the specific subjects included therein. The History of Unionism received the lowest average usefulness rating of any subject area in the MTS program. Employee and Union Rights, Unfair Labor Practices, and Executive Orders were rated at about the “quite useful” level and were highest for the group.

There were substantial differences between FAA services in terms of the ratings of usefulness of LMR topics. Typically, AT and AF supervisors rated each of the five specific content areas as more useful than did Airports or FS supervisors. There was also a considerable tendency for personnel in FAA Headquarters and the regional offices to rate these areas as less useful than did those assigned to field offices and facilities. These are entirely reasonable findings, as supervisors who found these subjects of least utility were those who have the least contact with labor affairs.

(6) FAA Organization. The three topics under this area were typically rated “moderately useful” to “quite useful” by supervisors. The only difference between groups was the tendency for supervisors in the Airports service to rate Organizational Structure and Line/Staff higher than did graduates from other FAA services.

(7) Position Management. The ratings in this area were comparable to those for FAA Organization and were typically in the “moderately useful” to “quite useful” range. There were some differences between groups on the topic of Position Classification; FS and Airports supervisors rated this subject somewhat higher in terms of job usefulness than did other supervisors and in particular gave a very large number of “extremely useful” rankings.

(8) Staffing. There was more variability in the usefulness ratings for the various topics in this course content area than for any other. The instruction in both EEO and Promotion was generally seen as “quite useful.” On the other hand, RIF Procedures and Reemployment and Return Rights averaged somewhat below the “moderately useful” level.

(9) Safety. In this content area, both topics were rated in the “moderately useful” range but were seen as particularly valuable by AF supervisors. Again, this seems a reasonable finding, since the AF working situation will typically present more safety hazards to employees than will the working situations at other types of facilities.

c. Specific managerial course content. Like those for supervisors, each of the subjects taught to managers at MTS was also evaluated on the 7-point scale described above.

(1) Human Factors of Management. The ratings for this area indicated that all but three specific topics were evaluated in the “very useful” range of application to the manager’s setting (Table 8). The three exceptions, Management of Conflict, Managerial Style, and Dynamics of Change, each averaged at about the midpoint between “quite useful” and “very useful.” There were no differences of substance between managers from the various services on these items.

(2) Management by Objectives. The average rating for this content area was “quite useful.” The two topics under this area, Understanding

TABLE 8. Usefulness Rating of Specific Managerial Course
Content Areas by MTS Managerial Course Graduates

Specific Course Content Area	Average Rating ^a
Human Factors of Management	
Human Relations	6.0
Understanding Employee Behavior	6.1
Understanding Group Behavior	6.0
Employee Motivations	6.0
Managerial Style	5.5
Communication	6.2
Management of Conflict	5.6
Dynamics of Change	5.5
Management by Objectives	
Understanding Principles of MBO	5.3
Implementation of MBO	5.2
Creating a Productive Work Environment	
Career Planning	4.5
Training	5.1
Employee Development	5.4
Social/Political Forces Which Influence Management	4.5
LMR	4.6
Employee Counseling	5.4
Managerial Decision Making	
Problem Identification/Analysis	5.6
The Decision-Making Process	5.6
FAA Management Environment	
Role of Management	5.0
FAA Mission	4.7
FAA Organization	4.4
FAA Policies	5.0
Line/Staff	4.6
Resource Planning	
Budget Process	4.7
Logistics Planning	4.5
Position Management and Staffing	5.0

^a Rating scale values: 1 = not at all useful, 2 = slightly useful, 3 = somewhat useful, 4 = moderately useful, 5 = quite useful, 6 = very useful, 7 = extremely useful

Principles of MBO and Implementation of MBO, were rated as essentially of equal usefulness.

(3) Creating a Productive Work Environment. The usefulness ratings of the topics under this course content area varied considerably. Employee Counseling, Employee Development, and Training averaged at and above the "quite useful" level; the remaining areas averaged between "quite useful" and "moderately useful." Managers from the AT program tended to rate LMR higher than did most other managers.

(4) Managerial Decision Making. The two specific topics concerned with decision making were seen as "quite useful" to "very useful," with almost identical ratings. No important differences were noted between managers of the various services.

(5) FAA Management Environment. The topics in this area were generally rated in the "moderately useful" to "quite useful" range.

Again, no differences between services were noted.

(6) Resource Planning. The three topics considered in this portion of the course were rated at the "quite useful" to "moderately useful" level. As with most other areas, there were no major differences in ratings given by managers from differing circumstances and backgrounds.

3. General post-course evaluation.

a. *Benefits and shortcomings of MTS.* The participants in this part of the survey were asked to indicate the specific ways in which MTS had helped them in their day-to-day job functioning and also to indicate those problem areas in which the MTS experience had not been helpful. These data were analyzed by the same procedure used to evaluate the "liked best/liked least" portion of the questionnaire (Appendix, IV.).

As in other parts of the survey, the supervisory and managerial graduates of MTS showed considerable agreement in listing that which they regarded as beneficial and that which they regarded as having been helped little by MTS (Table 9). For both groups, the school was most helpful, as judged by the number of comments, in providing the graduates with a better understanding of the functions of supervisors/managers and with increased skills to meet the requirements of their work. Two course content areas that were mentioned quite often were Human Relations and FAA Organization. That Human Relations should be so cited is not surprising; however, the frequent mention of FAA Organization as a particularly helpful subject area is unexpected in view of the relatively low rating assigned to this topic in the rankings of course usefulness. However, this apparent discrepancy may be due to the differences in the questions asked in these two questionnaire sections. Thus, while the instruction on FAA Organization may not have been as useful, on a continuing basis, as some other content areas, it may have proved to be particularly helpful in solving specific supervisory problems and for this reason received its high frequency of citation as a "helpful" area. Another course content area also mentioned quite often as helpful was LMR; however, an essentially equal number of respondents indicated their LMR training had

not been particularly effective in enabling them to deal with labor problems. Clearly on the "not helpful" side was the course content area of Employee Development, the main issue being that many graduates felt that too little attention had been given to this subject. It was also apparent that many supervisors and managers felt the need for more training on general administrative procedures and practices.

TABLE 9. Summary of Statements Made by MTS Graduates Concerning Helpful and Ineffective Aspects of MTS

Category	MTS Helped		MTS Ineffective	
	Supervisors	Managers	Supervisors	Managers
I. Increased Understanding From Course Content	70.0% ^a	67.2%	86.3%	81.4%
II. Personal Growth	13.8%	15.2%	0.7%	2.5%
III. Working Through Supervisory Problems With Others	6.4%	5.4%	0.3%	2.0%
IV. Increased Awareness of Supervisory/Managerial Role	5.9%	6.1%	2.6%	2.0%
V. General MTS Approach	-----	0.3%	2.8%	6.4%
VI. Applicability to Specific FAA Programs	-----	-----	3.6%	2.0%
VII. Appropriateness of MTS to Training of Supervisors/Managers	-----	-----	1.8%	1.0%
	100.0%	100.0%	100.0%	100.0%
Number of Statements	1,453	296	975	204

^a Percentages refer to proportion of statements which fell in each of the seven listed categories. Note that the columns are independent; it is therefore possible for the same category to have high percentages under both the helped and ineffective headings.

Of the other general aspects of MTS mentioned by the respondents to this portion of the questionnaire, only one—Personal Growth—contained a particularly notable percentage of responses, and these nearly always described some particular self-development benefit of the program. Many graduates (about 160 of the more than 700 surveyed) felt that the course had helped them to understand more about themselves. Others mentioned that their ability to understand others and to cope with personal, interpersonal, and professional problems had increased.

b. *Additional comments by graduates.* As a final area of concern, all respondents were provided an additional questionnaire that simply asked them to add any comments they would care to make about any aspect of MTS (Appendix, VII.). Of 616 supervisors participating in the survey, 277 (45 percent) made 509 statements in this section; this response indicates a rather high degree of involvement in the survey, since this additional task was presented at the end of

a long and detailed questionnaire. Of 128 managers, 48 (37 percent) responded; they contributed a total of 61 statements.

The statements focused on six general topics (Table 10). The most frequent statement was that the MTS should be continued. These statements outnumbered suggestions to discontinue the program by 13 to 1. There were also many comments about specific course content areas that should be modified in some manner (e.g., too long, too short, change focus, etc.). A number of responses suggested that high-level personnel should attend MTS before subordinate managers and supervisors; however, a number of other respondents indicated a belief that the course is really not appropriate for those with considerable experience. They believed that the course should be required only for those who are entering supervisory or managerial positions. The responses to the conduct of the refresher course are interesting in that many of the respondents look with favor on the notion of refresher training. The other types of comments (Table 10) are self-explanatory and relate to matters previously discussed.

TABLE 10. Summary of Statements Made by MTS Supervisory and Managerial Graduates to Open-Ended Comments Question

Topic of Statement	Number of Statements	
	Supervisors	Managers
I. Continuation of MTS		
Continue	116	17
Discontinue	8	2
II. Recommendations for Changes in Various Content Areas	83	5
III. Attendance at MTS		
Higher Level Personnel Should Go First	22	9
Good for Newly Appointed or Potential Supervisors	36	3
Other	8	2
IV. Staff/Facilities/Location		
Staff Caliber		
High	28	3
Inadequate	14	1
Facilities		
Excellent	11	1
Need Improvement	4	--
Location		
Keep in Lawton	6	1
Move from Lawton	7	--
V. Refresher Course		
Valuable Part of Program	36	3
Discontinue or Move to Regions	8	--
VI. Length		
Not Long Enough	16	1
Too Long	25	2
VII. Miscellaneous	88	11

C. *Conclusions.* In this aspect of the MTS evaluation, it was found that supervisors and managers tended to share the same general

views; specifically, that the MTS program was to some degree useful, important, and valuable. They liked much of the course content, the instructors, the campus atmosphere, and group interactions. They did not care for some parts of the course content, the testing and evaluation included in the school, and the geographical location of the school (Lawton). They considered MTS of some importance as a developmental factor for managers and supervisors but somewhat less important than personal or other organizational factors, such as their immediate supervisors and agency policy. The content area judged most useful by the graduates was Human Relations/Human Factors; as a group, graduates did not feel that any of the course content areas were less than "moderately useful." After completing the MTS course, graduates felt MTS had helped them to be better prepared for their supervisory/managerial positions. They desired more help in the areas of labor-management relations and performance evaluation. Finally, the general tenor of the responses suggests that the graduates can best be described as supporting the MTS concept while at the same time indicating areas in which the program could be improved.

What does all this mean? Certainly it is clear that MTS graduates tend to believe that MTS is a good and useful program, particularly for new supervisors and managers. Recognizing that the school is not perfect, they believe the programs should be improved but not abolished.

At this point, it should be emphasized that this part of the survey is not, nor was it designed to be, a measure of supervisory/managerial performance. The focus has been entirely on the evaluative judgments of those who have participated in the program; the concern up to this point has been with the essentially internal criteria of determining the degree to which graduates of the Supervisory and Managerial Courses felt the training experience at MTS was useful to them on the job.

III. Supervisory and Managerial Performance as a Function of MTS Training.

It is now appropriate to consider to what extent the MTS program, given that it was seen as valuable by its graduates, resulted in improved supervisory/managerial performance. To accomplish this assessment, supervisory and man-

agerial graduates of MTS, their employees, and their immediate superiors were asked to indicate the extent to which these graduates engaged in desirable supervisory/managerial behavior prior to, and following, MTS training. The emphasis was on specific and explicitly defined types of behavior desirable in supervisors and managers on the job. As a control to further clarify the contribution of MTS in furthering appropriate supervisory/managerial behavior, a similar assessment was made of the performance of supervisors and managers who had not yet attended MTS.

A. *Procedure.* The portion of the survey concerned with job performance was composed of questionnaires (see Appendix, III.C. and VI.C.) designed to query the respondents about the specific types of behavior expected of supervisors and managers. The types of behavior sampled were taken from the topics covered within the MTS courses and were supplemented by consultations with management personnel concerned with supervisory/managerial behavior. The items for employees and superiors of the supervisors and managers surveyed are parallel to those in the supervisory and managerial questionnaires, with wording changes as appropriate for the particular group in question.

The administration of the questionnaire has already been described (see paragraph II.A.). However, in addition to graduates of the Supervisory and Managerial Courses, several additional groups of FAA personnel were asked to participate in this portion of the survey. These various groups and the number of participants in each are presented in Table 11.

It should also be noted that for the items that concerned before- and after-training assessments, the orders were counterbalanced so that one-half of the respondents answered in terms of post-course conditions first and vice versa.

The employees asked to participate in the survey were chosen at random from the persons

TABLE 11. MTS Survey Groups and Number of Participants

Group	MTS Graduates	No MTS Training
Supervisors	616	226
Superiors to Supervisors	403	166
Employees of Supervisors	605	210
Managers	128	75
Superiors to Managers	104	59
Employees of Managers	111	71

working directly under the supervision of each of the supervisors and managers who responded to the questionnaire; however, employee participation was entirely voluntary. If an employee declined when asked to be part of the survey, another was asked to complete the questionnaire.

As with employees, the superior of each of the supervisory/managerial respondents was invited to rate the supervisory/managerial performance of his subordinate supervisor or manager.

The age and experience characteristics of the various groups of participants are shown in Table 12. It is of interest that those supervisors and managers who had not yet attended MTS were somewhat older, had more time in their present positions, and, at least in the case of supervisors, had more supervisory experience

than did MTS graduates but tended to have somewhat less total FAA experience. These differences may have been due to the priority for MTS training given to new and untrained supervisors and managers. In addition, there may have been some tendency for those who had not yet attended MTS to be a little more reluctant to participate in this type of training, perhaps because of some longer period of experience and less-felt need for learning opportunities in this area. The data on employees and superiors are about as expected; employees tended to be younger and superiors, slightly older than the supervisors and managers they were rating. Both groups typically had substantial FAA experience and were well acquainted with the persons they rated.

TABLE 12. Average Age and Experience of Survey Participants

Variable	Supervisors		Managers		Employees	Superiors
	Graduates	No MTS Training	Graduates	No MTS Training		
Age	46.2 ^a	49.0	48.2	50.7	41.7	49.3
FAA Experience	16.8	16.6	20.0	18.2	11.9	20.1
Supervisory/Managerial Experience	7.5	9.1	12.4	11.4	----	----
Time in Present Position	4.2	4.6	3.4	4.2	4.4	3.7
Time Worked for Supervisor/Manager	----	----	----	----	3.0	----
Time Supervisor/Manager Has Worked For	----	----	----	----	----	3.1

^a All values are in yearly units.

As in the previous section of the report, all differences discussed below are statistically significant at the .05 level or better according to chi square analyses of the data.

B. Results.

1. Supervisory/managerial behavior.

a. *General trends.* The overall comparisons shown in Table 13 of ratings of supervisory/managerial behavior for MTS graduates before and after MTS training indicate that the graduates themselves, their superiors, and their employees tend, as groups, to report an increase in

the occurrence of desirable behavior after attendance at MTS.

The item ratings were usually close to, or just above, point 4 on the 5-point rating scale, which indicates that the particular behavior "usually" occurred. This was true both before and after MTS training, and the ratings tended to be slightly higher when the graduates rated themselves than when they were rated by their superiors and employees. The behavior ratings for graduates of MTS averaged one- to two-tenths of a scale point lower before attending MTS than the mean ratings for supervisors and

TABLE 13. Average Ratings of the Frequency of Desirable Supervisory/Managerial Behavior

Group	Average Rating ^a Before MTS	Average Rating After MTS	Number of Items Showing ^b		
			Increase	No Change	Decrease
MTS Graduates					
Supervisors	4.1	4.3	25	0	0
Superiors	3.9	4.2	25	0	0
Employees	3.9	4.1	22	0	0
Managers	4.2	4.3	26	5	0
Superiors	4.0	4.2	31	0	0
Employees	4.2	4.3	23	4	1
Not MTS Trained					
Supervisors	4.2	---	--	-	-
Superiors	4.0	---	--	-	-
Employees	4.0	---	--	-	-
Managers	4.2	---	--	-	-
Superiors	4.1	---	--	-	-
Employees	4.2	---	--	-	-

^a Rating scale values: 1 = occurs not at all, 2 = occurs rarely, 3 = occurs occasionally, 4 = occurs usually, 5 = occurs almost always

^b Supervisors and their superiors answered 25 behavioral items; employees of supervisors answered 22 items. Managers and their superiors answered 31 items; the employees of managers answered 28 items.

managers not yet trained at MTS, while the ratings for graduates after MTS attendance tended to be higher than those for the nonattendees by approximately the same amount.

Table 14 provides detailed data on each of the items concerning behavior common to both supervisors and managers. The types of supervisory/managerial behavior that were consistently associated with the highest ratings, in many cases close to the "almost always" level, were those that dealt with the fair and equal treatment of employees. These items (12, 13, 14, and 15 in Table 14) received the highest ratings by all the groups surveyed: both graduates and nonattendees, superiors and employees. There was also a very high degree of consistency in the behavior area rated lowest; supervisors and managers—both graduates of MTS and those who had not yet attended—and their superiors indicated that the effective administration of the paperwork associated with the awards program was a problem (item 24). The employees were also highly consistent in giving their lowest ratings to the item concerning the frequency with which their supervisors provided them with information about needed areas of improvement in their job performance (item 7).

In terms of the amount of change in supervisory behavior, the graduates of MTS, their superiors, and their employees tended to agree that there was an increase in the occurrence of

performance counseling by supervisors (item 6) following training at MTS. Supervisors and their superiors also agreed that there tended to be an increase in the occurrence of desirable behavior related to the development and training of employees (items 18 and 19). As a group, the supervisors themselves also tended to feel that they were able to indicate areas of improvement to their employees more often than they did before attending MTS (item 7). Moreover, their superiors indicated that an improvement in administration of the awards program had occurred (items 23 and 25). The employees indicated that the greatest changes had occurred in opportunities to freely discuss work problems with their supervisors (item 31) and in their understanding of their supervisors' positions on work-related matters (item 39).

For managers, the areas of greatest change were somewhat different from those for supervisors (Table 15). Managerial graduates of MTS and their superiors agreed that application of "management by objectives" (item 26), assessment of performance in terms of objectives (item 27), and systematic definition of work problems (item 28) occurred more often after MTS attendance. The group of managerial graduates also reported that there was an increase in the frequency with which they found ways of recognizing excellence in their employees (item 23). The superiors of the managers also indicated that MTS had had an effect on the ability of their subordinate managers to appropriately judge the quality of the work of their (the managers') employees (item 8). According to the employees of managerial MTS graduates, the development of an understanding of other FAA programs (item 17) improved most.

b. *Comparisons between groups.* In comparing the various groups (MTS graduates, superiors, employees, etc.) on the specific items in Table 14, several consistent trends in ratings were noted. First, most of the individual items for supervisors were rated higher by the supervisors than by their superiors or employees. This was also true for managers, except that the number of items for which significant differences were noted were fewer for managers than for supervisors. However, superiors consistently rated their subordinate supervisors and managers higher on the item concerning freedom to discuss

TABLE 14. Average Ratings^a by Group for Items Common to Supervisory/Managerial Behavior Surveys

Item		Spvr/Mngr		Superior		Employees		Item		Spvr/Mngr		Superior		Employees	
		Before	After	Before	After	Before	After			Before	After	Before	After		
1. Employees free to discuss work problems	Spvr-Grad	4.4	4.5	4.0	4.3	3.8	4.2	14. Support EEO	Spvr-Grad	4.4	4.7	4.4	4.6	4.4	4.5
	Spvr-No MTS	4.9	---	4.2	---	4.1	---		Spvr-No MTS	4.7	---	4.5	---	4.4	---
	Mngr-Grad	4.4	4.4	3.8	4.1	4.2	4.3		Mngr-Grad	4.6	4.8	4.6	4.7	4.7	4.8
	Mngr-No MTS	4.5	---	4.1	---	4.3	---	Mngr-No MTS	4.8	---	4.6	---	4.5	---	
2. Discuss work problems with supervisors ^b	Spvr-Grad	3.7	3.8	4.0	4.1	---	---	15. Discrimination avoided	Spvr-Grad	4.7	4.8	4.5	4.7	4.5	4.6
	Spvr-No MTS	3.5	---	4.0	---	---	---		Spvr-No MTS	4.7	---	4.7	---	4.6	---
	Mngr-Grad	3.6	3.6	4.0	4.1	---	---		Mngr-Grad	4.9	4.9	4.6	4.8	4.8	4.8
	Mngr-No MTS	3.5	---	4.1	---	---	---	Mngr-No MTS	4.7	---	4.6	---	4.6	---	
3. Offer unsolicited suggestions to supervisors	Spvr-Grad	4.0	4.1	4.1	4.3	3.9	4.1	16. FAA policies, plans, goals understood	Spvr-Grad	3.7	4.0	3.8	4.1	4.0	4.2
	Spvr-No MTS	4.1	---	4.2	---	4.1	---		Spvr-No MTS	4.0	---	3.9	---	4.2	---
	Mngr-Grad	4.1	4.1	4.1	4.3	4.2	4.3		Mngr-Grad	4.1	4.1	3.9	4.1	4.4	4.6
	Mngr-No MTS	4.0	---	4.2	---	4.4	---	Mngr-No MTS	4.7	---	4.2	---	4.5	---	
4. Positions on work matters clear to supervisors	Spvr-Grad	4.2	4.4	4.1	4.4	---	---	17. Understood other major programs	Spvr-Grad	3.6	3.9	3.7	4.0	3.9	4.1
	Spvr-No MTS	4.4	---	4.3	---	---	---		Spvr-No MTS	3.9	---	3.8	---	4.1	---
	Mngr-Grad	4.4	4.5	4.1	4.4	---	---		Mngr-Grad	4.0	4.1	3.7	4.0	4.2	4.5
	Mngr-No MTS	4.5	---	4.4	---	---	---	Mngr-No MTS	4.2	---	4.0	---	4.3	---	
5. Understood superior's position on work matters	Spvr-Grad	4.0	4.2	4.1	4.3	4.0	4.3	18. Responsibility for training and development	Spvr-Grad	4.2	4.6	3.9	4.3	3.7	3.9
	Spvr-No MTS	4.1	---	4.1	---	4.2	---		Spvr-No MTS	4.3	---	3.9	---	3.7	---
	Mngr-Grad	4.1	4.3	4.1	4.3	4.1	4.3		Mngr-Grad	4.3	4.6	4.0	4.3	3.9	4.1
	Mngr-No MTS	4.3	---	4.4	---	4.3	---	Mngr-No MTS	4.3	---	4.1	---	4.0	---	
6. Comfortably counsel employees on performance	Spvr-Grad	3.7	4.1	3.6	4.0	3.5	3.8	19. Plans for employee training established	Spvr-Grad	3.9	4.3	3.8	4.1	3.5	3.7
	Spvr-No MTS	4.1	---	3.8	---	3.7	---		Spvr-No MTS	4.0	---	3.8	---	3.6	---
	Mngr-Grad	3.9	4.2	3.8	4.0	3.8	4.0		Mngr-Grad	4.0	4.3	3.7	4.1	3.8	4.0
	Mngr-No MTS	4.0	---	4.0	---	3.8	---	Mngr-No MTS	4.1	---	3.8	---	3.7	---	
7. Areas of improvement indicated to employees	Spvr-Grad	3.9	4.2	3.7	4.0	3.2	3.4	20. Fair on grievances	Spvr-Grad	4.3	4.6	4.1	4.4	4.0	4.2
	Spvr-No MTS	4.0	---	3.7	---	3.3	---		Spvr-No MTS	4.5	---	4.2	---	4.1	---
	Mngr-Grad	4.0	4.2	3.8	4.0	3.5	3.5		Mngr-Grad	4.5	4.6	4.2	4.4	4.5	4.5
	Mngr-No MTS	4.1	---	4.0	---	3.3	---	Mngr-No MTS	4.6	---	4.3	---	4.4	---	
8. Appropriately judge quality of employee performance	Spvr-Grad	4.1	4.3	3.9	4.2	3.7	3.9	21. Satisfactorily resolve employee complaints	Spvr-Grad	4.1	4.3	3.9	4.2	3.8	4.0
	Spvr-No MTS	4.3	---	4.1	---	3.9	---		Spvr-No MTS	4.2	---	4.0	---	3.9	---
	Mngr-Grad	4.1	4.3	3.8	4.2	4.1	4.2		Mngr-Grad	4.2	4.3	3.9	4.1	4.2	4.2
	Mngr-No MTS	4.3	---	4.0	---	4.0	---	Mngr-No MTS	4.2	---	4.1	---	4.1	---	
9. Employee conduct appropriate	Spvr-Grad	4.3	4.4	4.2	4.4	4.1	4.2	22. Administrative actions accomplished effectively	Spvr-Grad	4.0	4.2	3.9	4.1	4.2	4.4
	Spvr-No MTS	4.4	---	4.3	---	4.2	---		Spvr-No MTS	4.3	---	4.1	---	4.3	---
	Mngr-Grad	4.4	4.5	4.2	4.4	4.3	4.4		Mngr-Grad	4.3	4.4	4.1	4.4	4.5	4.5
	Mngr-No MTS	4.4	---	4.3	---	4.4	---	Mngr-No MTS	4.3	---	4.3	---	4.5	---	
10. Employees motivated	Spvr-Grad	4.0	4.2	3.9	4.2	3.6	3.8	23. Seeks ways of recognizing special achievement	Spvr-Grad	4.0	4.4	3.8	4.2	3.4	3.6
	Spvr-No MTS	4.2	---	4.1	---	3.7	---		Spvr-No MTS	4.2	---	3.9	---	3.5	---
	Mngr-Grad	4.1	4.3	3.9	4.2	4.0	4.1		Mngr-Grad	4.2	4.6	4.0	4.3	3.9	4.0
	Mngr-No MTS	4.3	---	4.3	---	3.8	---	Mngr-No MTS	4.3	---	4.2	---	3.8	---	
11. Employees committed to "first class" job	Spvr-Grad	4.3	4.4	4.1	4.3	4.0	4.1	24. Awards paperwork confusing	Spvr-Grad	3.0	3.3	3.5	3.6	---	---
	Spvr-No MTS	4.4	---	4.3	---	4.1	---		Spvr-No MTS	3.3	---	3.5	---	---	---
	Mngr-Grad	4.4	4.5	4.1	4.3	4.2	4.3		Mngr-Grad	3.7	3.9	3.0	3.6	---	---
	Mngr-No MTS	4.5	---	4.3	---	4.4	---	Mngr-No MTS	3.6	---	4.1	---	---	---	
12. Fair and objective with employees	Spvr-Grad	4.5	4.7	4.3	4.5	4.1	4.3	25. Appropriately justified awards	Spvr-Grad	3.8	4.0	3.8	4.2	3.5	3.8
	Spvr-No MTS	4.6	---	4.4	---	4.2	---		Spvr-No MTS	4.0	---	4.0	---	3.7	---
	Mngr-Grad	4.5	4.7	4.3	4.5	4.5	4.4		Mngr-Grad	4.3	4.5	4.0	4.3	4.2	4.4
	Mngr-No MTS	4.6	---	4.4	---	4.2	---	Mngr-No MTS	4.3	---	4.4	---	4.1	---	
13. Equal treatment given all	Spvr-Grad	4.7	4.8	4.5	4.7	4.2	4.6								
	Spvr-No MTS	4.9	---	4.5	---	4.2	---								
	Mngr-Grad	4.7	4.8	4.5	4.7	4.6	4.7								
	Mngr-No MTS	4.8	---	4.6	---	4.3	---								

^a Rating scale values: 1 = occurs not at all, 2 = occurs rarely, 3 = occurs occasionally, 4 = occurs usually, 5 = occurs almost always

^b Items omitted for employees.

^c Inverse score reported; i.e., higher score means less occurrence of confusion in awards paperwork.

work problems (item 2) than the supervisors and managers rated themselves. Also remarkably consistent was the tendency of employees to rate their supervisors and managers higher with respect to developing an understanding of FAA plans and goals and programs than the supervisors and managers rated themselves (items 16 and 17).

There were relatively few items for which there were significant differences between MTS graduates and those who had not yet attended MTS. However, when differences did occur, the

outcome was always in favor of the MTS graduates. This was particularly true with respect to the development and training area (items 18 and 19), as the ratings for these items were higher for the graduates and their superiors and employees on each comparison with the corresponding group for those without MTS training. Other differences were found in relation to the awards program, equality of treatment, and openness to discussion.

c. Sex, location, and program effects. Analysis of responses covering supervisory behavior

TABLE 15. Average Ratings^a by Managers and Superiors on Six Behavior Items Concerning Only Managerial Performance

Item		Spvr/Mngr		Superior	
		Before	After	Before	After
26. Objectives established for unit	Mngr-Grad	3.8	4.2	3.7	4.1
	Mngr-No MTS	4.0	---	3.9	---
27. Assess results in terms of objectives	Mngr-Grad	3.7	4.2	3.6	3.9
	Mngr-No MTS	4.1	---	3.7	---
28. Systematically defines work problems	Mngr-Grad	3.9	4.3	3.6	4.1
	Mngr-No MTS	4.1	---	3.9	---
29. Systematically collects information on problems	Mngr-Grad	4.0	4.3	3.9	4.2
	Mngr-No MTS	4.2	---	4.0	---
30. Alternatives are considered in solving problems	Mngr-Grad	4.2	4.5	3.9	4.1
	Mngr-No MTS	4.3	---	4.0	---
31. Budgets are accurate and timely	Mngr-Grad	4.2	4.4	4.1	4.3
	Mngr-No MTS	4.2	---	4.3	---

^a Rating scale values: 1 = occurs not at all, 2 = occurs rarely, 3 = occurs occasionally, 4 = occurs usually, 5 = occurs almost always

in terms of the respondent's sex, location (e.g., FAA Headquarters, regional office, field facility), or FAA service (AT, AF, FS, etc.) revealed few statistically significant effects. However, no pattern was apparent in these trends nor were there any consistencies that would merit presentation and discussion.

2. Comparing attitudes toward MTS.

a. *General evaluation.* Most supervisors and managers approached MTS with fairly high expectations (Table 16 and Appendix, III.A. and VI.A.). They came away from MTS with evaluations of the course that were essentially consistent with those high expectations; in fact, for many, the experience seems to have been slightly better than they had expected. Between 30 and 40 percent of the graduates evaluated the school more positively after they finished the course than before they attended, 35 to 40 percent showed no change in their evaluations, and 20 to 25 percent felt the school was less beneficial than they had expected. However, it should be emphasized that in most cases in which the school was not what had been expected, the decrease in rating was usually only one step on the rating scale (for example, from "very useful" to "quite useful").

Neither facility location nor sex of the graduates had an effect on their overall ratings of MTS. There was, however, some tendency for graduates from the Airports service, both super-

visory and managerial, to consider the school less valuable or important than did participants from other major FAA services (AT, AF, FS). Thus, although the supervisors and managers in Airports still tended to give an overall evaluation that was to the positive side of the evaluative scales, their ratings of MTS were somewhat low in comparison to the other groups.

In a comparison of the ratings of supervisory/managerial graduates to those of supervisors and managers who had not yet attended MTS, it can be seen that, on all the scales, the graduates reported more positive feelings about MTS before attending than did those who had not yet been trained at MTS. In addition, the average ratings made by graduates on each of the five scales after attending MTS were higher than the corresponding ratings made before attending MTS.

The ratings of MTS by the superiors of the supervisors and managers were generally positive and were similar for the graduates of MTS and those without MTS training. In other words, superiors expected the course to be beneficial to their subordinates. Therefore, the differences in attitudes toward the program between graduates and those yet to attend MTS appear to be a function of the attitudes of the individuals themselves to this type of training experience rather than a reflection of the underlying attitudes of their superiors.

It is of interest that before managers and supervisors attend MTS, superiors of managers tend to give slightly higher ratings to MTS than do superiors of supervisors. However, following MTS graduation by managers and supervisors, all superiors evaluated the program at about an equal level. This trend was also observed in the supervisory and managerial graduates themselves. Such a finding may reflect a greater belief in the general efficacy of such training by managerial personnel (many or most of whom have probably had some sort of managerial training experience) in comparison to supervisory personnel and their superiors, along with a somewhat less positive reaction to the specific training experience, again perhaps because of redundancy with other training experiences for managers.

b. *Effect on the organizational unit.* When graduates of MTS were asked to rate conditions in their units along the three dimensions of

TABLE 16. Average Ratings of MTS on Five Evaluative Dimensions

Dimension	Group	Average Rating ^a Before MTS	Average Rating After MTS	Percent Reporting		
				Higher	No Change	Lower
Useless/Useful						
	Spvr-Grad	7.5	7.7	37	36	27
	Superior	7.4	7.3	28	51	21
	Spvr-No MTS	6.9	---	---	---	---
	Superior	7.5	---	---	---	---
	Mngr-Grad	7.5	7.7	33	42	25
	Superior	7.6	7.3	22	52	26
	Mngr-No MTS	7.0	---	---	---	---
	Superior	7.7	---	---	---	---
Unimportant/Important						
	Spvr-Grad	7.3	7.7	40	36	24
	Superior	7.4	7.6	21	51	28
	Spvr-No MTS	6.9	---	---	---	---
	Superior	7.5	---	---	---	---
	Mngr-Grad	7.3	7.7	39	41	20
	Superior	7.4	7.6	30	42	28
	Mngr-No MTS	7.3	---	---	---	---
	Superior	7.8	---	---	---	---
Bad/Good						
	Spvr-Grad	7.4	7.9	42	35	23
	Superior	7.5	7.6	18	60	22
	Spvr-No MTS	7.0	---	---	---	---
	Superior	7.5	---	---	---	---
	Mngr-Grad	7.4	7.8	39	40	21
	Superior	7.6	7.6	30	53	17
	Mngr-No MTS	7.4	---	---	---	---
	Superior	7.7	---	---	---	---
Worthless/Valuable						
	Spvr-Grad	7.4	7.7	36	40	24
	Superior	7.4	7.6	26	53	21
	Spvr-No MTS	7.0	---	---	---	---
	Superior	7.7	---	---	---	---
	Mngr-Grad	7.6	7.7	31	48	21
	Superior	7.4	7.5	23	49	28
	Mngr-No MTS	7.2	---	---	---	---
	Superior	7.8	---	---	---	---
Undesirable/Desirable						
	Spvr-Grad	7.4	7.8	36	41	23
	Superior	7.5	7.5	25	49	26
	Spvr-No MTS	6.4	---	---	---	---
	Superior	7.2	---	---	---	---
	Mngr-Grad	7.4	7.6	35	42	23
	Superior	7.7	7.6	18	55	27
	Mngr-No MTS	6.9	---	---	---	---
	Superior	7.6	---	---	---	---

^a Rating scale values: 1 = very useless (unimportant, bad, worthless, undesirable), 2 = quite useless, 3 = somewhat useless, 4 = slightly useless, 5 = neither useless nor useful, 6 = slightly useful, 7 = somewhat useful, 8 = quite useful, 9 = very useful

TABLE 17. Average Ratings of Organizational Unit Efficiency, Morale,
and Employee Satisfaction Before and After Attending MTS

Factor	Group	Average Rating ^a Before MTS	Average Rating After MTS	Percent Reporting		
				Higher	No Change	Lower
Efficiency	Spvr-Grad	3.5	3.8	32	60	8
	Superior	3.5	3.7	25	70	5
	Employees	3.3	3.5	25	60	15
	Spvr-No MTS	3.8	---	--	--	--
	Superior	3.6	---	--	--	--
	Employees	3.5	---	--	--	--
	Mngr-Grad	3.6	3.9	32	62	6
	Superior	3.5	3.7	30	59	11
	Employees	3.5	3.6	26	55	19
	Mngr-No MTS	3.8	---	--	--	--
	Superior	3.7	---	--	--	--
	Employees	3.6	---	--	--	--
Employee Satisfaction	Spvr-Grad	3.2	3.4	30	58	12
	Superior	3.2	3.5	28	64	8
	Employees	3.0	3.0	25	50	25
	Spvr-No MTS	3.4	---	--	--	--
	Superior	3.5	---	--	--	--
	Employees	3.0	---	--	--	--
	Mngr-Grad	3.3	3.5	26	65	9
	Superior	3.3	3.5	30	57	13
	Employees	3.4	3.4	23	58	19
	Mngr-No MTS	3.4	---	--	--	--
	Superior	3.5	---	--	--	--
	Employees	3.0	---	--	--	--
Morale	Spvr-Grad	3.1	3.4	30	58	12
	Superior	3.3	3.5	26	66	8
	Employees	2.9	2.8	19	56	25
	Spvr-No MTS	3.3	---	--	--	--
	Superior	3.4	---	--	--	--
	Employees	2.8	---	--	--	--
	Mngr-Grad	3.3	3.6	30	59	11
	Superior	3.3	3.5	29	57	14
	Employees	3.4	3.4	24	57	19
	Mngr-No MTS	3.4	---	--	--	--
	Superior	3.4	---	--	--	--
	Employees	3.1	---	--	--	--

^a Rating scale values: 1 = minimal, 2 = acceptable, 3 = good, 4 = very good

efficiency, morale, and employee satisfaction (Appendix, III.B. and VI.B.), they usually reported them to be from "good" to "very good," both before and after their MTS training; however, after MTS attendance, the ratings tended more toward "very good." About 30 percent of the graduates reported improvements in their units on these factors, about 60 percent reported unchanged ratings, and only about 10 percent felt that some decrease had occurred across the interval. These results are perhaps about what would be expected, given that MTS has usually been seen as a beneficial experience by these graduates. Supervisors and managers who had not yet attended MTS (Table 17) tended to give somewhat higher ratings when compared to the "before MTS" ratings of graduates. The ratings for both groups were at about the same level when the "after MTS" ratings of graduates were used in the comparison.

The same trends appeared for the superiors and employees of the groups of supervisors and managers surveyed. Typically, the ratings were in the "good" to "very good" range, with the superiors giving higher ratings than did employees on these three factors. The only average ratings that fell below the "good" level were those made by employees of supervisors, both graduates and nonattendees, on the "morale" scale; however, even in these instances, the means were very close to the "good" level and certainly well above the "acceptable" level.

In terms of change, both the MTS graduates and their superiors indicated some degree of improved unit functioning. For employees, this was true only on the "efficiency" factor. Superiors, like the graduates, tended to report improvement in the efficiency, morale, and employee satisfaction of their subordinate units approximately 25 to 30 percent of the time. For employees, these values ranged between 20 and 25 percent. The percentages of superiors and graduates who reported decrements in efficiency were very similar, generally close to the 10 percent value. Employees indicated a decrease in efficiency in approximately 20 percent of the ratings.

IV. Conclusions.

The evidence presented in this study indicates that some constructive changes occurred in grad-

uates as a function of supervisory/managerial training at MTS. These findings are consistent with the trend of the research literature on the evaluation of such training.³ As Miner has noted, the consistency of results is more than a trivial indication that such training programs can lead to certain changes in supervisors and managers, particularly in their human relations attitudes and problem-solving skills. In addition, the findings from this study indicate that attendance at MTS is associated with some increase in desirable on-the-job activities of graduates, as seen by the graduates themselves, their immediate superiors, and their employees.

It is of particular interest that while those who attended MTS entered training with levels of supervisory/managerial skills judged to be somewhat below those of the supervisors and managers who had not attended MTS, the graduates returned to perform at a somewhat higher level than the supervisors and managers without MTS experience. Thus, even though the non-attendees tended to have more on-the-job supervisory managerial experience and to have had more training opportunities than those who had attended MTS, their levels of performance were equalled or somewhat surpassed, on the average, by the MTS graduates. In other words, it appears that the MTS training program was successful in upgrading performance in supervisors and managers up to and somewhat beyond the level that would be gained from experience.

It should be noted that the ratings by all three levels of personnel (supervisors/managers, superiors, and employees) indicate that FAA supervisors and managers perform in an appropriate fashion most of the time, whether or not they have attended MTS. Thus, it appears that MTS serves to somewhat sharpen the effectiveness of its graduates rather than radically alter their on-the-job behavior. The behavioral areas most distinctly influenced by this training are employee counseling, performance evaluation, and planning for training and development of employees. There were no areas in which lessened effectiveness resulted from MTS attendance.

In general terms, supervisors and managers and their superiors appear to believe in the value, importance, and usefulness of the MTS program. This was true whether or not the supervisor or manager had attended MTS, al-

though those who had yet to attend did not rate the program quite as high as did those who had completed the training.

The ratings of efficiency, morale, and employee satisfaction within units were also relatively high and varied little as a function of MTS training, although when changes did occur, they more often reflected improvement in conditions within the unit. As such, these results are not unexpected; attendance at MTS is only one of a great many factors, some or most of which are outside the supervisor's control, that determine morale, efficiency, and worker satisfaction within the work unit.

One question that should be considered is, Are the findings valid? In any survey such as this, it is difficult to prove that the evaluations and ratings of performance made by the respondents are accurate representations of their true feelings. There are, however, several features of the data that indicate the survey is probably a good index of the current assessment of both the evaluation of MTS by its graduates and the evaluation of on-the-job performance by all types of respondents. It was found that a good distribution of responses across possible ratings for each scale was obtained; that is, the respondents did not just nonchalantly mark everything in one column on the various ratings and performance scales. Second, most respondents wrote more

than minimal statements to the open-ended portions of the questionnaire, thus indicating some investment in conscientiously completing the evaluation task. Most important, some ratings were influenced by the variables of facility location and FAA service in a manner that, in each case, was appropriate to the issue being considered; e.g., the relatively higher "usefulness" ratings for the Safety Course content area by AF supervisors. Taken together, this all suggests that the respondents, on the whole, tried to present an accurate picture of their evaluations of MTS and of supervisory/managerial performance within the agency; there is nothing in the data to suggest otherwise. Therefore, it seems reasonable to conclude that these findings are probably a legitimate estimate of the feelings of FAA personnel concerning the worth and behavioral impact of the MTS program.

In sum, these findings support the conclusion that MTS has some beneficial effects on the performance of graduates of the program and that these effects tend to be greater for supervisors than for managers. It appears that the net effect of the program is to encourage some improvements in what is already seen by personnel at all three work levels (supervisory/managerial, superiors, employees) as generally adequate supervisory/managerial functioning.

REFERENCES

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2. Martin, H. O.: The Assessment of Training, *PERSONNEL MANAGEMENT*, 39:88-93, 1957.
3. Miner, J. B.: *Studies in Management Education*, New York, Springer, 1965.

APPENDIX

This appendix contains the questionnaires used in this evaluation of MTS training. Since the forms presented to MTS graduates, other FAA supervisors and managers, superiors, and employees are largely redundant, the only entire questionnaire presented is the one used for the managerial graduates of MTS. Items presented only to managers are noted; otherwise, all items in this questionnaire were presented to supervisors as well. Also noted are those sections deleted for supervisors and managers who had not yet attended MTS. Questionnaires supplied immediate superiors and employees parallel these forms, with wording changes as appropriate.

Instructions
Supervisor/Manager

1. There are three sets of questionnaires in this packet. The first envelope (longest code number) contains the questionnaires for you to complete. As noted by your survey team member, the other two envelopes are for your immediate superior and for one of your subordinates.
2. Do not put your name on your set of questionnaires or on any of the envelopes.
3. The survey, both long (two hours) and short (30-40 minutes) forms, consists primarily of rating scales and several open-ended questions. Work quickly throughout the survey--use your first impression to answer questions. Do not spend a long time on any one question. Answer according to your first impression and proceed to the next question.

When answering rating scale questions, place an X over the mark that corresponds to your rating. Be sure to read each scale carefully before rating the items. If you make an error in marking your answer, cross it out and mark your desired choice.

For the open-ended questions, please be brief and specific. If you cannot think of as many answers as are requested, move on to the other items and come back later to finish if you have time.

4. When you are finished, place your set of questions in the envelope, seal it and return it to the survey team member.
5. If you have any questions, please ask any survey team member for information or assistance.
6. Remember work quickly, but carefully.
7. Thank you for participating.

Information Sheet
Supervisor/Manager

Age _____ M _____ F _____ GS or Wage Grade level (specify which) _____

FAA Program: AT _____ AF _____ FS _____ Airports _____ Other _____

Position title (supervisory ATCS, management analyst, supervisory electronics technician, etc.):

Organizational title (team supervisor, assistant chief, branch chief, etc.):

Present location (check one):

Washington headquarters- - - - - _____

Regional offices - - - - - _____

NAFEC- - - - - _____

Aerocenter - - - - - _____

Field office/facility (specify office/facility type) - - - - - _____

Number of employees supervised- - - - - _____

Number of supervisors directly supervised - - - - _____

Total FAA experience (years and months) - - - - - _____

FAA supervisory/managerial experience (years and months)- - - - - _____

Time in present position (years and months) - - - - - _____

MTS attendance

None _____

Supervisory course (mo/year) _____ Refresher (mo/year) _____

Managerial course (mo/year) _____ Refresher (mo/year) _____

Executive School attendance

Executive School (mo/year) _____

Please indicate your likes and dislikes about supervisory/managerial work in the FAA. List your comments in rank-order, the most important first and so on. Please make your comments BRIEF and LEGIBLE. Answer first for FAA supervisory/managerial work at this office/facility, then for such work in general within the FAA.

----- This Office/Facility -----

A. Cite 3 specific aspects of FAA supervisory/managerial work at this office/facility which you like best.

(1) _____

(2) _____

(3) _____

B. Cite 3 specific aspects of FAA supervisory/managerial work at this office/facility which you like least.

(1) _____

(2) _____

(3) _____

----- In General -----

A. Cite 3 specific aspects of FAA supervisory/managerial work in general which you like best.

(1) _____

(2) _____

(3) _____

B. Cite 3 specific aspects of FAA supervisory/managerial work in general which you like least.

(1) _____

(2) _____

(3) _____

A. Please rate yourself according to the degree to which each of the 3 following items describes you in your current FAA position.

	Not at all	Rarely	Occasionally	Usually	Almost always
Works as an employee (perform technical job tasks)	—	—	—	—	—
Work as a supervisor (accomplish specific tasks through others)	—	—	—	—	—
Work as a manager (decision and policy maker)	—	—	—	—	—

B. On the following items, please describe the current FAA managerial "climate" as it relates to your current position as a supervisor/manager.

	Not at all	Rarely	Occasionally	Usually	Almost always
Helpful	—	—	—	—	—
Tends to protect itself against criticism	—	—	—	—	—
Encourages improvement in supervisor/managerial skills	—	—	—	—	—
Stresses productivity	—	—	—	—	—
Encourages acceptance of responsibility	—	—	—	—	—
Stresses quality	—	—	—	—	—
Encourages new approaches to supervision/management	—	—	—	—	—
Stresses aviation system safety	—	—	—	—	—
Considers you a part of management	—	—	—	—	—

C. Please indicate the degree of satisfaction you have experienced in the FAA on the following items.

	Very Satisfied	Satisfied	Indifferent	Dissatisfied	Very Dissatisfied
Working for FAA					
Being an FAA supervisor/manager					
Your current supervisory/ managerial position					
The FAA as an organization today					
Your satisfaction with working for the FAA three years ago (if you were then employed by the FAA). Specify the type of position you held at that time.					

Answer the items in the next three sections according to how you felt before you attended MTS.

A. I expected MTS to be:

	Very	Quite	Somewhat	Slightly	Neither	Slightly	Somewhat	Quite	Very	
useless	—	—	—	—	—	—	—	—	—	useful
important	—	—	—	—	—	—	—	—	—	unimportant
good	—	—	—	—	—	—	—	—	—	bad
dull	—	—	—	—	—	—	—	—	—	interesting
worthless	—	—	—	—	—	—	—	—	—	valuable
desirable	—	—	—	—	—	—	—	—	—	undesirable

B. If you supervised the unit in which you are presently located prior to attending MTS, please rate the unit on the following scales. If you did not supervise this unit prior to attending MTS, omit these items and go on to III C (page 6).

	Minimal	Acceptable	Good	Very Good	Excellent
Efficiency of work unit	—	—	—	—	—
Employee satisfaction	—	—	—	—	—
Unit morale	—	—	—	—	—

^a The items in this section were omitted from the questionnaires provided supervisors and managers who had not attended MTS.

C. Please rate yourself on the following items as you were before you attended MTS. If you were not a manager before you went to MTS, omit these items and go on to IV (page 9). However, be sure to answer these items if you were a manager before you went to MTS, even if you were in charge of a different unit than you are now.

	Not at all	Rarely	Occasionally	Usually	Almost always
Employees felt free to discuss work problems or other job-related matters with me.	—	—	—	—	—
Discussed work problems or other job-related matters with my superior(s).	—	—	—	—	—
Offered unsolicited suggestions and expressed my own opinions to my superior(s).	—	—	—	—	—
Made my position on work-related questions clear to superior(s).	—	—	—	—	—
Understood my superior's position on work-related questions.	—	—	—	—	—
Comfortably counseled employees on their job performance.	—	—	—	—	—
Indicated areas of needed improvement to employees.	—	—	—	—	—
Appropriately judged the quality of the performance of my employees.	—	—	—	—	—
On-the-job conduct of my employees was appropriate.	—	—	—	—	—
My employees were motivated to work hard.	—	—	—	—	—
My employees were committed to doing a "first-class" job.	—	—	—	—	—

Please indicate what you liked best and liked least about MTS. List your comments in rank-order of importance. Be BRIEF and LEGIBLE.

A. Cite three specific aspects of MTS which you liked best.

- (1) _____

- (2) _____

- (3) _____

B. Cite three specific aspects of MTS which you liked least.

- (1) _____

- (2) _____

- (3) _____

Please indicate the ways in which MTS was effective and ineffective in helping you develop as a manager.

A. Cite three specific ways in which MTS training has helped you as a manager.

- (1) _____

- (2) _____

- (3) _____

B. Cite three specific ways in which MTS training was not effective in helping you as a manager; that is, in what areas did you need more training than was presented and what areas of needed training were absent from the program?

- (1) _____

- (2) _____

- (3) _____

(Supervisors)

A. Please rate the following factors as to how important they have actually been in your development as a supervisor/manager.

	Important	Very	Quite	Somewhat	Slightly	Neither	Slightly	Somewhat	Quite	Very	Unimportant
FAA policies		—	—	—	—	—	—	—	—	—	
Personal efforts		—	—	—	—	—	—	—	—	—	
Organizational climate		—	—	—	—	—	—	—	—	—	
Personal qualifications		—	—	—	—	—	—	—	—	—	
MIS		—	—	—	—	—	—	—	—	—	
Immediate supervisors		—	—	—	—	—	—	—	—	—	
Other (specify)		—	—	—	—	—	—	—	—	—	

B. Please rank-order the following general subject matter areas which were taught at MIS in terms of their usefulness to you in your present supervisory position. Place the number "1" by the most useful, the number "2" by the next most useful and so on (the areas are listed in alphabetical order).

- _____ Behavior (Adverse Actions, Conduct and Discipline)
- _____ Development (PER, PIP, Training, Recognition and Awards)
- _____ FAA Organization (Mission, Organization, Policies, Line/Staff)
- _____ Human Relations (Human Behavior, Small Group Dynamics, Motivation, Communication, Employee Counseling)
- _____ LMR (Labor Movement, Union Recognition, ULP's, Executive Orders)
- _____ Management Theory (Management Identification, Style, Climate, Leadership)
- _____ Position Management (Position Classification, Pay/Time Administration, Absence/Leave)
- _____ Safety (Safety Responsibilities, Injury Compensation)
- _____ Staffing (Recruitment, Placement, Promotion, RIF, EEO)

C. Please rate the following specific subjects in terms of their usefulness to you in your present supervisory position.

	Not at all	Slightly	Somewhat	Moderately	Quite	Very	Extremely
<u>Behavior</u>							
Adverse Actions	—	—	—	—	—	—	—
Conduct and Discipline	—	—	—	—	—	—	—
<u>Development</u>							
Performance Improvement	—	—	—	—	—	—	—
Performance Evaluation	—	—	—	—	—	—	—
Recognition and Awards	—	—	—	—	—	—	—
Training	—	—	—	—	—	—	—
<u>FAA Organization</u>							
Mission	—	—	—	—	—	—	—
Organizational Structure	—	—	—	—	—	—	—
Line/Staff	—	—	—	—	—	—	—
<u>Human Relations</u>							
Understanding Human Behavior	—	—	—	—	—	—	—
Understanding Group Dynamics	—	—	—	—	—	—	—
Understanding Employee Motivation	—	—	—	—	—	—	—
Rules of Communication	—	—	—	—	—	—	—
Training to Listen	—	—	—	—	—	—	—
Employee Counseling	—	—	—	—	—	—	—

<u>LMR</u>	Not at all	Slightly	Somewhat	Moderately	Quite	Very	Extremely
History of Unionism	—	—	—	—	—	—	—
Union Recognition	—	—	—	—	—	—	—
Employee and Union Rights	—	—	—	—	—	—	—
Unfair Labor Practices	—	—	—	—	—	—	—
Executive Orders	—	—	—	—	—	—	—
<u>Management Theory</u>							
Management Identification (Employee vs. management orientation)	—	—	—	—	—	—	—
Management Style	—	—	—	—	—	—	—
<u>Position Management</u>							
Position Classification	—	—	—	—	—	—	—
Pay/Time Administration (overtime, compensatory time, etc.)	—	—	—	—	—	—	—
Absence/Leave	—	—	—	—	—	—	—
<u>Safety</u>							
Safety Responsibility	—	—	—	—	—	—	—
Injury Compensation	—	—	—	—	—	—	—
<u>Staffing</u>							
Recruitment	—	—	—	—	—	—	—
Placement	—	—	—	—	—	—	—
Promotion	—	—	—	—	—	—	—
RIF Procedures	—	—	—	—	—	—	—
EEO	—	—	—	—	—	—	—
Reemployment and Return Rights	—	—	—	—	—	—	—

(Managers)

A. Please rate the following factors as to how important they have actually been in your development as a supervisor/manager.

	Important	Very	Quite	Somewhat	Slightly	Neither	Slightly	Somewhat	Quite	Very	Unimportant
FAA policies	—	—	—	—	—	—	—	—	—	—	—
Personal efforts	—	—	—	—	—	—	—	—	—	—	—
Organizational climate	—	—	—	—	—	—	—	—	—	—	—
Personal qualifications	—	—	—	—	—	—	—	—	—	—	—
MIS	—	—	—	—	—	—	—	—	—	—	—
Immediate supervisors	—	—	—	—	—	—	—	—	—	—	—
Other (specify)	—	—	—	—	—	—	—	—	—	—	—

B. Please rank-order the following general subject matter areas which were taught at MTS in terms of their usefulness to you in your present managerial position. Place the number "1" by the most useful, the number "2" by the next most useful and so on (the areas are listed in alphabetical order).

- _____ Creating a Productive Work Environment (Career Planning, Employee Development, LMR, Counseling, Training)
- _____ FAA Management Environment (Role of FAA Manager, FAA Mission, Organization, Line/Staff)
- _____ Human Factors of Management (Human Relations, Understanding Employee Behavior, Understanding Group Behavior, Employee Motivations, Communication, Managerial Style, Management of Conflict, Dynamics of Change)
- _____ Management by Objectives (Understanding and Implementation)
- _____ Managerial Decision Making (Problem Analysis, Decision-Making Process)
- _____ Resource Planning (Budget, Logistics, Position Management and Staffing)

^c Items in this section were presented graduates of MTS only. Both the sections for managers and supervisors are presented.

C. Please rate the following specific subjects in terms of their usefulness to you in your present managerial position.

	Not at all	Slightly	Somewhat	Moderately	Quite	Very	Extremely
<u>Creating a Productive Work Environment</u>							
Career Planning	—	—	—	—	—	—	—
Training	—	—	—	—	—	—	—
Employee Development	—	—	—	—	—	—	—
Social/Political Forces Which Influence Management	—	—	—	—	—	—	—
LMR	—	—	—	—	—	—	—
Employee Counseling	—	—	—	—	—	—	—
<u>FAA Management Environment</u>							
Role of Management	—	—	—	—	—	—	—
FAA Mission	—	—	—	—	—	—	—
FAA Organization	—	—	—	—	—	—	—
FAA Policies	—	—	—	—	—	—	—
Line/Staff	—	—	—	—	—	—	—
<u>Human Factors of Management</u>							
Human Relations	—	—	—	—	—	—	—
Understanding Employees Behavior	—	—	—	—	—	—	—
Understanding Group Behavior	—	—	—	—	—	—	—

	Not at all	Slightly	Somewhat	Moderately	Quite	Very	Extremely
Employee Motivations	—	—	—	—	—	—	—
Managerial Style	—	—	—	—	—	—	—
Communication	—	—	—	—	—	—	—
Management of Conflict	—	—	—	—	—	—	—
Dynamics of Change	—	—	—	—	—	—	—
<u>Management by Objectives</u>							
Understanding Principles of MBO	—	—	—	—	—	—	—
Implementation of MBO	—	—	—	—	—	—	—
<u>Managerial Decision Making</u>							
Problem Identification/Analysis	—	—	—	—	—	—	—
The Decision-Making Process	—	—	—	—	—	—	—
<u>Resource Planning</u>							
Budget Process	—	—	—	—	—	—	—
Logistics Planning	—	—	—	—	—	—	—
Position Management and Staffing	—	—	—	—	—	—	—

Answer the items in the next three sections according to how you feel now after having attended MTS.

A. I found MTS to be:

	Very	Quite	Somewhat	Slightly	Neither	Slightly	Somewhat	Quite	Very	
useless										useful
desirable										undesirable
good										bad
dull										interesting
important										unimportant
worthless										valuable

B. Please rate the unit you are now supervising on the following scales.

	Minimal	Acceptable	Good	Very Good	Excellent
Efficiency of the work unit					
Employee satisfaction					
Unit morale					

C. Please rate yourself on the following items as you are now after having attended MTS.

	Not at all	Rarely	Occasionally	Usually	Almost always
Employees freely discuss work problems or other job-related matters with me.	—	—	—	—	—
Discuss work problems or other job-related matters with my superior(s).	—	—	—	—	—
Offer unsolicited suggestions and express my own opinions to my superior(s).	—	—	—	—	—
Make my position on work-related questions clear to superior(s).	—	—	—	—	—
Understand my superior's position on work-related questions.	—	—	—	—	—
Comfortably counsel employees on their job performance.	—	—	—	—	—
Indicate areas of needed improvement to employees.	—	—	—	—	—
Appropriately judge the quality of the performance of my employees.	—	—	—	—	—
On-the-job conduct of my employees is appropriate.	—	—	—	—	—
My employees are motivated to work hard.	—	—	—	—	—
My employees are committed to doing a "first-class" job.	—	—	—	—	—
My dealings with employees are fair and objective.	—	—	—	—	—
Equal treatment is given to all employees and associates, including minorities and women.	—	—	—	—	—

After MTS or now

	Not at all	Rarely	Occasionally	Usually	Almost always
Equal employment opportunity programs are supported.					
Discrimination against employees because of race, ethnic background, or sex is avoided.					
Top FAA management policies, plans, and goals are understood.					
Understand major programs of the agency other than my own.					
Employee training and development are considered one of my major responsibilities.					
Definite plans for training and on-the-job development of employees are established.					
Deal with employee grievances fairly and appropriately.					
Resolve employee complaints to the mutual satisfaction of the parties involved.					
Accomplish administrative and paper-work requirements such as budgeting, personnel actions, reports, etc. efficiently and effectively.					
Ways of recognizing the special achievements or excellent work of employees are sought out and used.					

	Not at all	Rarely	Occasionally	Usually	Almost always
Find the paperwork associated with recognition and awards confusing.	—	—	—	—	—
Understand appropriate justification for awards.	—	—	—	—	—
^d Specific and measurable objectives are established for my unit.	—	—	—	—	—
Assess myself and unit by comparing results with objectives.	—	—	—	—	—
Work problems are systematically defined.	—	—	—	—	—
Information to determine problem solutions is systematically collected.	—	—	—	—	—
Several alternative courses of action are considered before choosing a means for solving work problems.	—	—	—	—	—
Budget estimates are prepared in an accurate and timely fashion.	—	—	—	—	—

^d The last six items were presented to managers only.

Are there any other comments that you would like to add about the MTS program?