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ABSTRACT

As a manpower development program, Training and Technology (TAT) combines the resources of industry, education, and government to offer skill and technical training to the unemployed and underemployed. This follow-up study is an attempt to collect and analyze comprehensive information about the post-placement experiences of TAT graduates during the 1966-1972 period so as to develop an empirical base for suggesting program improvements and indications of actions needed to alleviate work adjustment difficulties. Questionnaires administered to 472 graduates were used to obtain the data. Findings include: (1) On the average, graduates have been employed more than 90 percent of the time since graduation, (2) Starting wages were between $2.84 and $3.53 compared with a pre-training average wage of $1.93, (3) Most of the graduates were highly satisfied with their jobs and received ratings of average to superior, and (4) The majority of graduates felt that the training they received was relevant and profitable. (SN)

Training and Technology Postplacement Follow-up

SURVEY OF POST-PLACEMENT EXPERIENCE OF TAT GRADUATES

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Oak Ridge Associated Universities (ORAU) is a private, nonprofit educational and research corporation sponsored by 43 colleges and universities in the South. Under a prime operating contract with the U. S. Atomic Energy Commission, and with support from the AEC and other governmental and private sponsors, ORAU conducts cooperative university-AEC laboratory activities as well as programs of public and professional education, research, and training in the nuclear and related fields.

Training and Technology (TAT) is a manpower development program which combines the resources of industry, education, and government to offer skill and technical training to unemployed and underemployed men and women. The program has two components: the Industrial Skill and Technical Training program and the Manpower Research and Development staff.

The Industrial Skill and Technical Training program is operated jointly by Oak Ridge Associated Universities (ORAU) and Nuclear Division, Union Carbide Corporation (ND,UCC). Training is conducted in the Atomic Energy Commission's Y-12 Plant in Oak Ridge, Tennessee. TAT serves as the Industrial Training Center for the AEC and its contractors.

ORAU is responsible for overall coordination of the training program, trade-related instruction in mathematics and sciences, counseling and supportive services, and program reporting requirements. Union Carbide supervisors and skilled craftsmen provide classroom, shop, and laboratory instruction in the skill areas of occupational training.

The Manpower Research and Development staff has three major functions: (1) to develop and extend innovative approaches to manpower development through new combinations of industrial, educational, and governmental training resources, (2) to conduct research and experimentation designed to improve training program operations, and (3) to document and disseminate experimentation results.

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Chapter I

FINDINGS

Training and Technology (TAT) conducted a post-placement survey of its graduates during the summer of 1972. The purpose of the survey was to determine the success of TAT's graduates and to identify problems encountered by graduates. The survey was conducted by college students hired as interns. The measure of TAT's success must rest on its graduates' success.

The results of the survey of a random sample of 472 graduates are outlined below.

TAT Graduate Employment

Stability

On the average, graduates were employed more than 90% of the time since graduation, and 10% were unemployed at the time of the survey. A total of 421 graduates were employed for an average of 24.6 of a possible 27 months after training.

Wages

Graduates reported an average starting wage of $2.84 and $3.53 at the time of the survey. The pre-training average wage for those employed was $1.93.

Satisfaction

The majority of graduates reported satisfaction with all aspects of their jobs—pay, the company, co-workers, unions, supervisors, and the job as a whole. Of these aspects, co-workers and supervisors were most satisfactory.

Job Performance

Most employers (87%) rated TAT graduates as average to superior.

Training Related Positions

Asked about training relatedness of jobs, 64% of the graduates reported related or somewhat training related duties on their first job. Duties tend to become more training related with time (67% by the time of the survey).

Job and Community Adjustment

Post-Placement Adjustment Period

With the exception of the graduates who relocated (26%), the majority of the graduates reported few problems in adjusting to job and community settings.

Relocation

Two-thirds of the graduates who relocated had problems. Three severe problem areas were reported—housing, relocation expenses, and homesickness. Relocation problems tended to last an average of four months.

Job Adjustment

A third of the graduates had job adjustment problems. The more severe problems included transportation, job difficulty, and conflicts with co-workers and supervisors. Even these problems lasted for only the first three or four months. Employers reported a different set of problems—absenteeism, tardiness, and excessive sick leave; however, supervisors considered these minor.

Personal Development

TAT graduates continued to work toward a better standard of living by moving to better housing; securing transportation to work; managing money responsibly; insuring their homes, cars and lives; and working toward greater job competence.

Minority and Disadvantaged Graduates

An important aspect of the survey results was the relative success of black and white and disadvantaged and nondisadvantaged (at the time of training) graduates. In two areas there was little difference between blacks and whites—hourly wages and training relatedness of duties. Blacks did report less job satisfaction, more job adjustment problems, and higher unemployment. Supervisors also rated blacks lower on job performance. The differences reported, however, are not so surprising as the rather minor nature of the differences.

Disadvantaged graduates reported less job satisfaction and slightly lower wages. However, they also received higher job performance ratings, had less unemployment, and reported the same degree of training relatedness of duties.

The success of the TAT graduates seems to validate the industry-education model which TAT has developed as a successful manpower development effort with potential for much wider application.

Chapter II

INTRODUCTION AND PURPOSE

Manpower development and utilization must be a shared responsibility if it is to be accomplished. Since the sixties, a variety of attempts have been made to specify the degree to which that responsibility should be shared by individuals, public and private institutions.

Although governmental acceptance of the responsibility for manpower development has guided the greatest number of efforts since the enactment of the 1962 Manpower Development and Training Act, incentives and sanctions have been used to create more private sector involvement in this national effort. The current political climate reinforces the position that public and private institutions should share that responsibility equally.

This report evaluates some of the results of a six-year demonstration project in which private enterprise and public institutions have shared the responsibility for manpower development and utilization. The conclusions provide strong evidence that such a joint effort is appropriate, workable and successful.

Training and Technology (TAT) is a manpower development project which demonstrates the feasibility of sharing responsibility and resources in human development activities. The TAT model combines industrial and educational resources, skills, and technology to produce a training environment that is responsive to employer demands, trainee needs, and economic realities of efficiency and accountability. To ensure project responsiveness and the most effective use of available resources, the Office of Research and Development, U. S. Department of Labor has supported experimentation and assessment activities during TAT's existence.

TAT's Industrial Skill and Technical Training program has graduated over 1,600 students in a period of six years (1966 to 1972). Through continued experimentation and demonstration activities, comprehensive training programs in nine occupational areas have been developed. Training has been conducted with special emphasis on technical skill acquisition, remedial education, trade-related instruction, trainee supportive services, and placement. Results of research, evaluation, and demonstration efforts, directed at program improvement, have been constantly funneled into this program in order to build and maintain quality training. TAT applies existing resources of many agencies, organizations and industries to ensure thoroughness and

efficiency of operation. The main philosophical underpinning of the program is an effective partnership of industry, government, and education. TAT is jointly operated by Oak Ridge Associated Universities (ORAU) and Nuclear Division, Union Carbide Corporation (ND,UCC). Training, averaging six months in duration, is conducted in the Atomic Energy Commission (AEC) owned and ND,UCC operated Y-12 facility and is funded by the U. S. Department of Labor; U. S. Department of Health, Education and Welfare; U. S. Atomic Energy Commission; private industry; and others.

An average placement rate of 96% demonstrated the success of TAT, but little was known about the post-graduate experiences and needs of graduates. Mailed questionnaires have usually been found to be inadequate as a source of followup information. TAT's routine followup procedures produced a limited amount of information through mailed questionnaires. These questionnaires mailed at six, eighteen, and thirty month intervals after graduation had certain inherent limitations. Of necessity they had to be brief, and questionnaire return rate declined markedly after the first six months. The declining response rates are typical of experience with mailed questionnaires.[1]

An early attempt to gather additional followup data was made by Dr. Louis Levine in 1970. He interviewed a small number of TAT graduates to determine their employment status, earnings, and post-placement adjustment problems.[2] Briefly, the Levine study noted three subperiods within the local TAT training period:

1. 1966-1968, a period of highly localized recruitment, more stringent selection standards resulting in larger proportions of higher formal school training and smaller proportions of nonwhite trainees. Training was substantially longer during this period—up to one year as compared to six months currently.

2. 1969, a year of transition, introducing HRD disadvantaged criteria in training selection and extending the geographic range of trainee recruitment and placement.

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[1]Champion, Dean and Sear, Alan, "Questionnaire Response Rate: A Methodological Analysis," Social Forces, Vol. 47, 1968-69, pps. 335-339: found percentage of response rates for mailed surveys between 15.4% for low socio-economic group (such as many TAT graduates) and 61.2%. Apparently, TAT response rates are better than could be expected; compare W. J. Goode and P. K. Hatt, Methods in Social Research, N.Y., McGraw-Hill Book Co., 1952, p. 172, and C. Sellitz et al, Research Methods in Social Relations, N.Y., Holt, Rinehart and Winston, 1959.

[2]Levine, Louis, Assessment of Training and Technology List "Current Employment Status of Training and Technology Trainees, April-August, September and October," November 30, 1971.

3. 1970-1972, a period characterized by important factors such as increased numbers trained away from home locations and placed in jobs located away from home, and looser labor markets and surpluses of experienced workers. The main problems encountered by graduates, reported in the Levine survey, seemed to be associated with interpersonal relations, absenteeism, general economic conditions causing layoffs and various off-the-job living conditions.

The Levine study served primarily to identify general problem areas and the need for more thorough investigation and research.

Purpose

The purpose of this study is to collect and analyze comprehensive information about the post-placement experiences of TAT graduates during the 1966-1972 period which would permit an assessment of TAT's program and yield in-depth information concerning the problems faced by TAT graduates in adjusting to regular employment and related community life. Once obtained and analyzed, this information would provide an empirical basis for suggesting program improvements and indications of actions needed to remove or alleviate adjustment difficulties. More specific goals are to:

1. Define and describe the post-placement period in terms of its duration and types of trainee problems.

2. Catalog the problems associated with the post-placement period in terms of both frequency of occurrence and severity.

3. Identify problem areas and needed improvements in TAT and supportive services.

4. Provide information to develop recommendations regarding the nature of the post-placement supportive services for disadvantaged and minority workers.

5. Describe the employment records of these graduates; the areas in which they are employed; and how their employment was related to the training received.

6. Determine how well these graduates are doing in the occupations for which they were trained or others in which they might be employed, in comparison with other workers on the same types of jobs, as rated by their employers.

7. Validate some of the rating scales and selection criteria currently used by TAT during the course of its training programs.

8. Compare the various types of TAT graduates and economic conditions at graduation to determine the types of problems associated with different graduates at different times under different economic conditions.

9. Develop generalizations about graduates, employees, and community characteristics related to the post-placement experiences of graduates of MDTA training programs.

A stratified random sample of 472 TAT graduates was constructed and data were collected through personal interviews conducted by college students. Full details of study methodology are given in Appendix A.

Chapter III

DESCRIPTION AND REPRESENTATIVENESS OF SAMPLED TAT GRADUATES

This chapter has three purposes. The first purpose is to describe the sampled TAT graduates at the time of their participation in the program in order that the user of this report may judge whether the program has served appropriate people and whether they were changed as a result of the program.

The second purpose is to compare the sampled TAT graduates to other MDTA trainees. Were TAT's graduates typical of MDTA beneficiaries, or were they the superior products of a more intensive selection and recruitment process? This must be considered if one is to compare the outcomes of TAT training with the outcomes of similar kinds of training.

The third purpose is to compare the sample graduates with the population of TAT graduates in order to determine the extent to which selective factors operated in locating graduates to interview. Appendix A explains the procedures that were used to locate graduates. These procedures encompassed an attempt to find a representative sample. The third part of this chapter will evaluate the outcome of this attempt.

Description of Sampled TAT Graduates

At the time of their entry into the TAT training program, graduates were mostly male, young, and unemployed or underemployed.

The ages of the sampled graduates at the time of their application to TAT ranged from 17 to 53 years with an average age of 22.[1] (Figure 3-1 details the age information.) Although efforts to recruit women have been made routinely, and more recently special efforts have been made, only 5.3% of the trainees were female.

Graduates were mostly from Tennessee (88.4%), a few were from Illinois (9.4%), and a smattering (2.2%) were from other states. The racial composition of the program has been similar to that of the Southeast in that 34.3% of the graduates were black, and a miniscule proportion, .8%, represented other racial minorities.

High school graduates comprised 81.9% of the sampled graduates. However, the average grade equivalent score on the California Achievement Test in reading was 7.6, and 58.9% scored below the eighth grade level. In the

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[1]As would be expected, this distribution is highly positively skewed, with a mode of 18.

arithmetic section of this same test, the average grade equivalent score was 7.7, and 51% of the graduates scored below the eighth grade level. These scores are available only on individuals who entered TAT since October 1, 1970. These scores are shown in Figures 3-2 and 3-3.

Since 1969, TAT has had a supplementary GED program available which provides diagnostic service, tutorial help, and study space and materials for trainees willing to pursue it. Of the individuals who did not have high school diplomas or GED's and entered when TAT offered the GED program, 53.8% obtained them. An indefinite number of trainees made some progress toward the GED but did not obtain it.

Immediately before entry to TAT, 59.9% of the sampled graduates were not employed. The average wage of those who were employed and who reported their wages at entry was $1.93, and 66.4% of these were employed for wages of $2.00 or less. These statistics are calculated on the 147 cases for whom this information is available, and all these people attended TAT since October 1, 1970.

TAT Graduates Compared to National MDTA Trainees

Comparison of TAT graduates with those of other programs is limited by the lack of comparable information. The March 1972 Manpower Report of the President gives some statistics on national MDTA enrollees in 1971. Although this report is about the graduates of the TAT program, rather than enrollees, the Manpower Report information is the best available for comparative data because of its recency and comprehensiveness in covering all MDTA institutional trainees. It should be noted and expected that certain differences would be found between enrollees and graduates of any program. For example, one would expect a higher frequency of high school graduates among training program graduates than among enrollees because high school dropouts would be less able to perform functions demanded by the program.

Table 3-1 indicates the distribution of certain characteristics among MDTA trainees of 1971 and the comparable statistics for TAT graduates.

Certain obvious differences appear in Table 3-1 between TAT graduates and MDTA enrollees. The largest difference, in percentage of women enrolled, is undoubtedly largely a result of the fact that TAT trains in occupations traditionally pursued by males. Although women are recruited for the program, they are obviously reluctant to apply.

The difference in years of education is also probably due in part to the social context of the occupations for which TAT trains. The highly

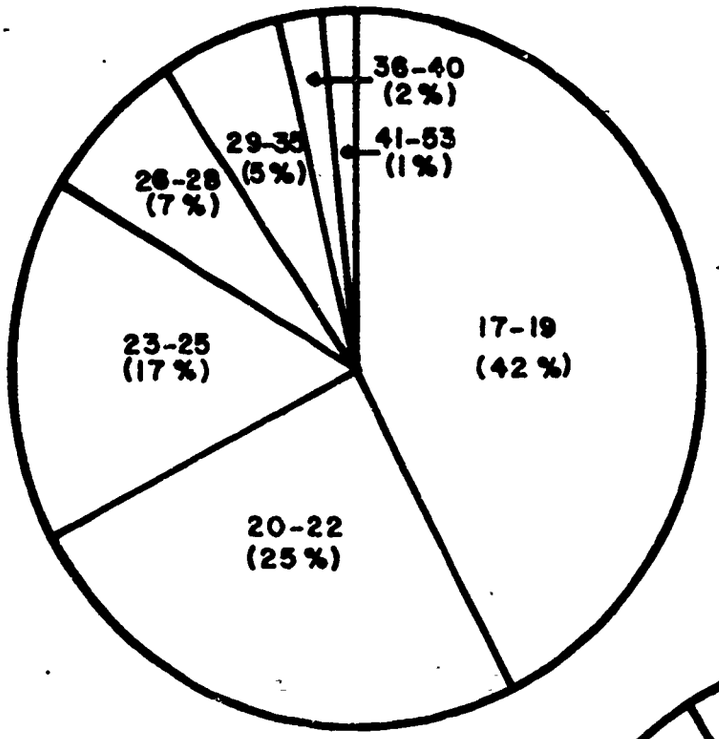

FIGURE 3-1

Age Distribution of TAT Graduates
At Entry Into Training (N = 397)

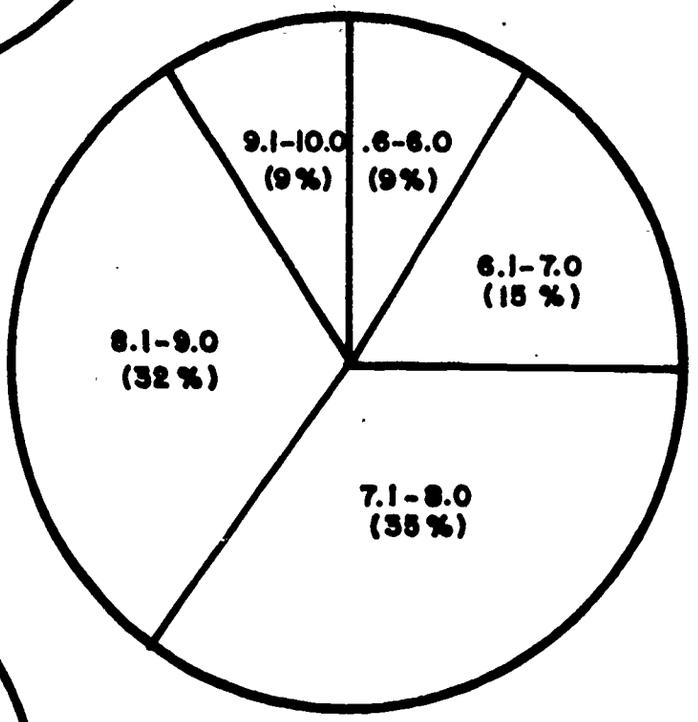

FIGURE 3-2

Pretraining California Achievement
Test Reading Grade Equivalent Scores
(N = 157)

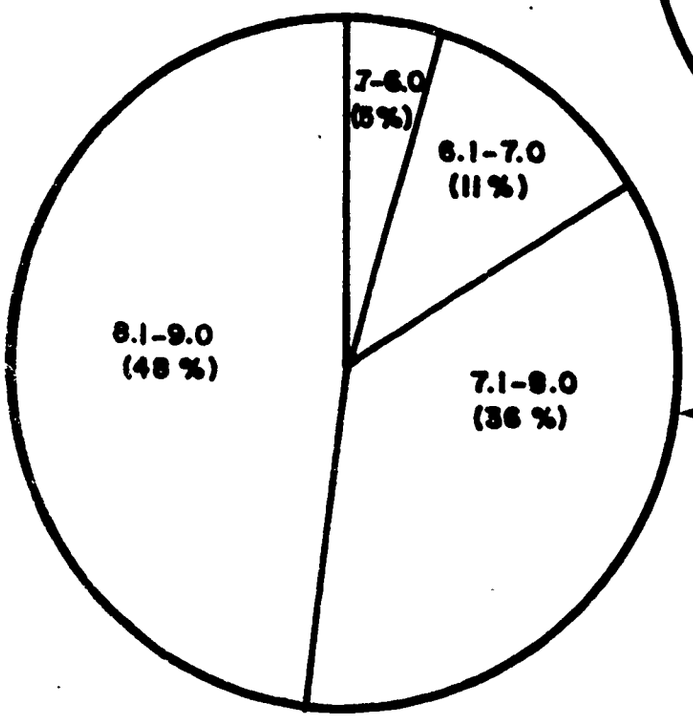

FIGURE 3-3

Pretraining California Achievement
Test Math Grade Equivalent Scores
(N = 157)

Table 3-1. Characteristics of TAT Graduates and Enrollees in National MDTA Programs in 1971

			Age		Years of School	
	Women	Negro	Under 22	45 & Over	8 or Less	9 to 11
National MDTA Institutional Enrollees	42%	39%	40%	9%	12%	36%
TAT Graduates	5%	34%	59%	1%	1%	17%

paid craft positions make the program attractive to more highly educated persons because the wages are more competitive with their other alternatives, and craft training avoids or reduces the stigma sometimes associated with public assistance programs.

In all, the differences between the national MDTA trainees and TAT graduates in Table 3-1 seem to represent the normal variations expected among different geographical regions and different administrative elements of similar programs.

Representativeness of the Survey Sample

To determine whether the sample of TAT graduates interviewed was representative of the TAT graduate population, these two groups were compared on the eight variables in Figure 3-4.

The only statistically significant[2] difference between the graduate sample and population was with respect to training area. The sample included a slightly larger proportion of mechanical operators and machinists, and a smaller proportion of welders and electricians. In terms of the success criteria this difference had no effect.

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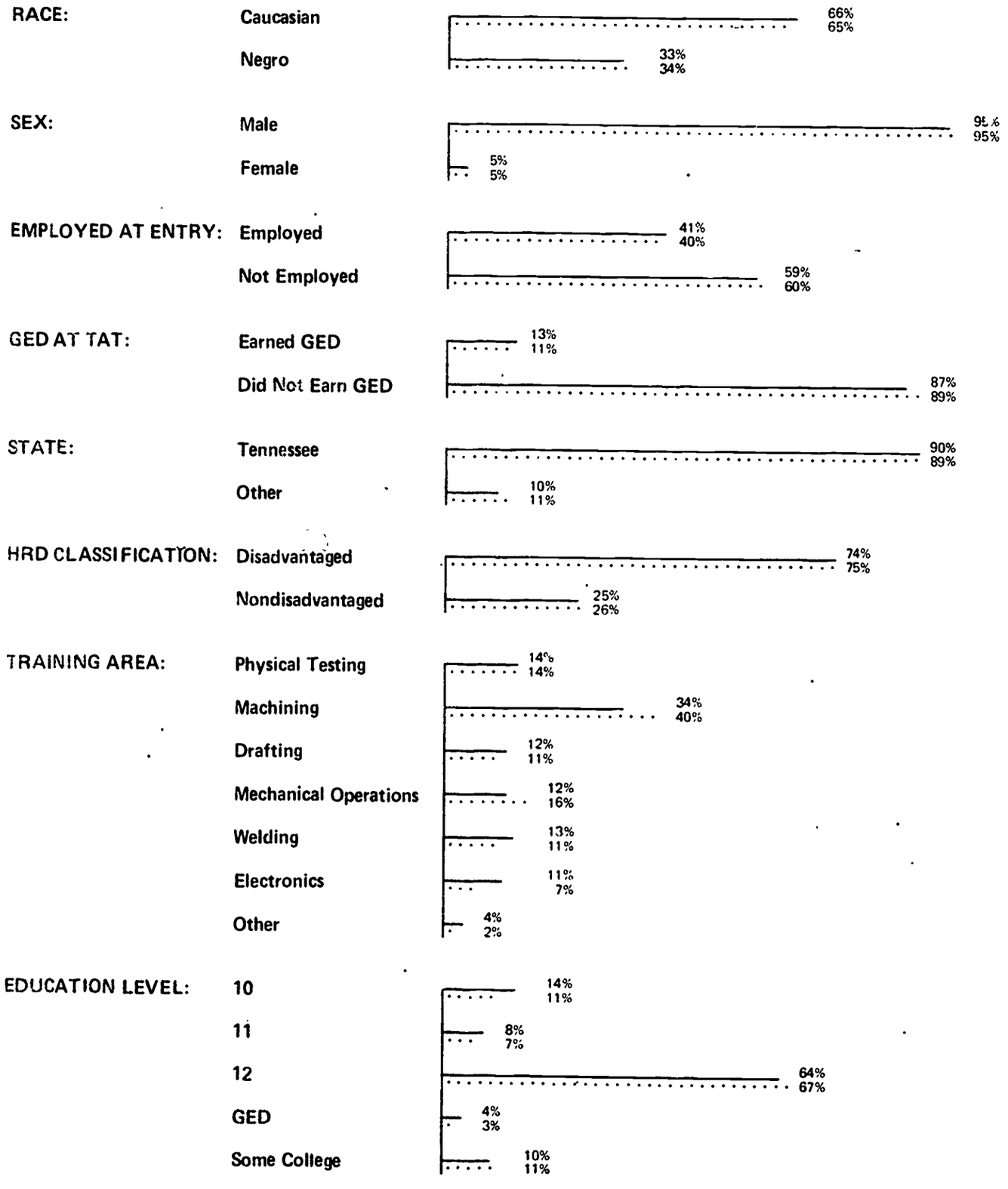
[2]Significant at the .05 level, it is possible that this chi-square is an unlikely chance occurrence, and this is lent credibility by the fact that five of the seven other chi-squares are smaller than their associated degrees of freedom, which suggests no relationship between trainee characteristics and sample selection. Alternatively, it is also possible that training area did affect availability of potential interviewees through its effect on placement and occupation of the graduates. Conservative interpretations of the data presented in this report would take into account the possible influence of the training area of the graduate, but since the variances from the population to sample proportions are a minor fraction of the proportions, the effect would necessarily be slight. Fortunately, in respects other than training area, the evidence indicates a very close match of the sample characteristics to the population characteristics.

FIGURE 3-4

COMPARISONS OF TAT GRADUATE POPULATION AND SURVEY SAMPLE



Chapter IV

POST-TRAINING OCCUPATIONAL SUCCESS OF GRADUATES

The operational goals and objectives of a manpower development program provide a set of criteria against which the graduates of the program and by inference the program itself can be measured. Drawing from the TAT program goals, there were a number of possible criteria which could be used in judging training success. Graduates' starting salaries, the relevance of skills acquired in training to skills needed on the job—training related jobs—job satisfaction, supervisory ratings and job adjustment problems were chosen as appropriate measures of graduate success. These criteria were applied to the first job on the basis that the effects of training should be most evident immediately after training. One long-term criterion measure, employment stability, was also chosen. These criteria and their interrelationships will be examined in this chapter.

Post-Training Starting Wage

Pay is a complex criterion measure of success, influenced by a large number of factors such as length of employment, level of skill required, sex, and economic conditions. Despite its complex nature, pay rates are generally used as indicators of success. Starting and termination or current (if still employed on the first job) pay rates were determined for each job which a trainee had held since graduation.[1] If training has an effect on the earnings of individuals, it may logically be expected to be demonstrated most strongly on the wages of the graduates on their first job.

In view of TAT's mission to serve many disadvantaged persons, wage rates take on added importance. All manpower development programs similar to TAT attempt to raise the income level of participants above the standard poverty index set by the Social Security Administration. The poverty index, of course, has changed during the period covered by this study from $3,000 (for a married couple) as set by the President's Council of Economic Advisors in 1964, to a graduated scale varying according to size of family.

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[1]The correlation of starting pay on the first job with the termination or current (if still employed on the first job) pay was .85 (significant beyond the .001 level). Thus, starting pay on the first job is highly related to termination or current salary and the starting salary will serve as well as a composite of starting and final salaries for defining pay success on the first job.

Figure 4-1 presents wage statistics of TAT graduates across the six-year period covered by this study and a composite of all six years. For comparison, the national average wages of all nonfarm workers in private industry are also shown. More than one third of all graduates reported no wages immediately prior to training. Although slightly above the poverty level index, the average wages of graduates employed prior to training would still be considered marginal at best. Across years, some variations occurred in the number of graduates employed prior to training, however, the average was 39%.

The average post-training starting wages are substantially above the poverty level and almost equal to the national averages in four of the five comparisons, the disparity increasing slightly each year since 1969. The largest difference is reflected in the 1971-72 comparison. This difference of $ .37 per hour, as well as the gradually growing difference since 1969 may be explained by the increase in unemployment which occurred in Tennessee during the same period from 3.5% to 4.7% and similar economic conditions in other states where graduates are placed.

The 1966-1968 comparisons reflect an early developmental stage of the program and should be considered separately because training during those years was of greater duration and no disadvantagement criteria were established. This is partially reflected in the statistic of average starting wage which exceeded the national average during that period.

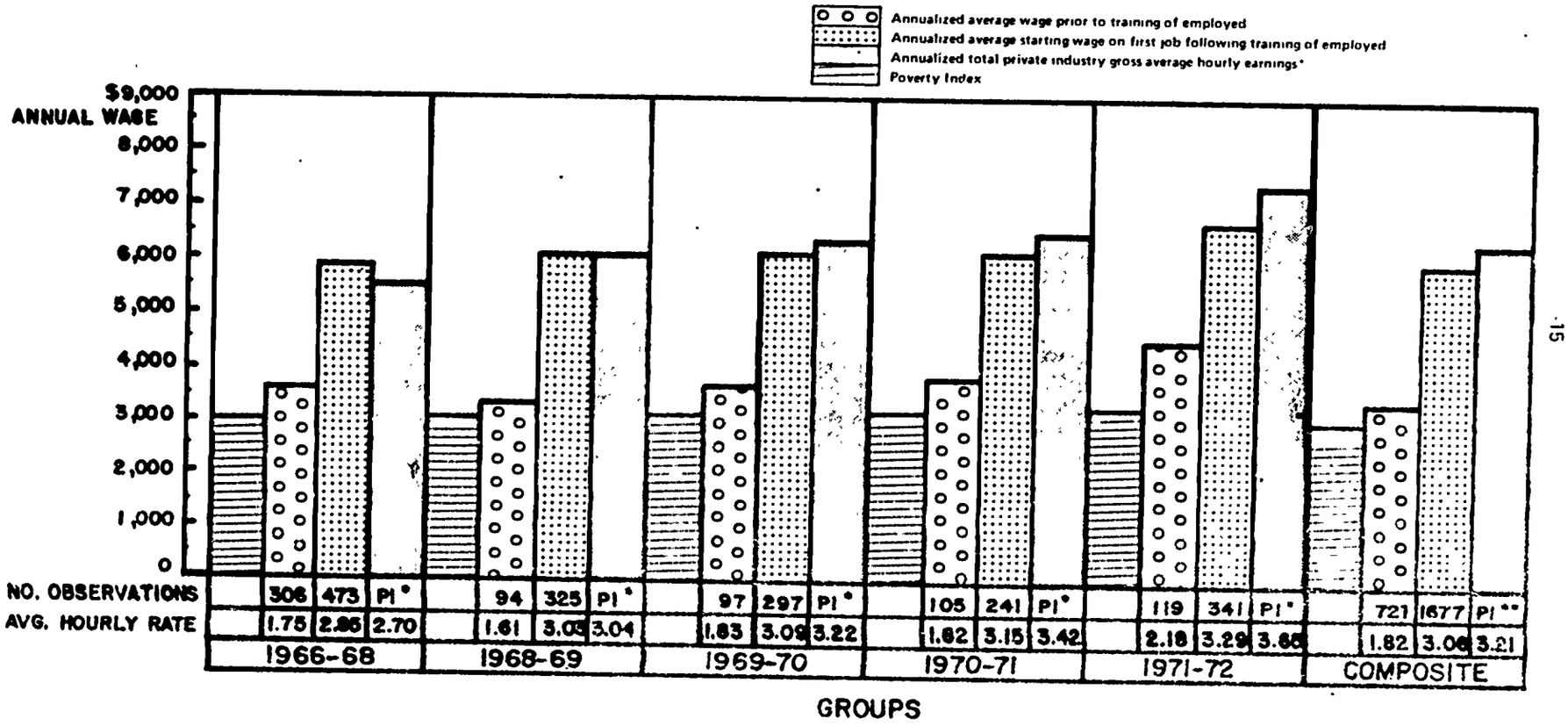
In Figure 4-2, comparisons are shown between other national MDTA institutional programs and TAT. The striking differences appear in post-training median wages where TAT graduates are substantially higher. There is one confounding element which should be noted—the income reported for MDTA programs includes the wages of women who constitute approximately 50% of the trainees. TAT's program, which trains in industrial occupations, has never attracted such a high percentage of women. Thus, the income levels of its graduates are not reduced by the disparity normally found between male and female wages. However, TAT's post-training wages are still higher than even the men's national norms for either 1971 or 1972 ($2.49 and $2.68), and the relative gain of men and women, nationally, is about the same.

Training Relevance of the First Post-Training Job

Training relatedness of the first job is important as a criterion of success for several reasons. First, the extent of training related placement

FIGURE 4-1

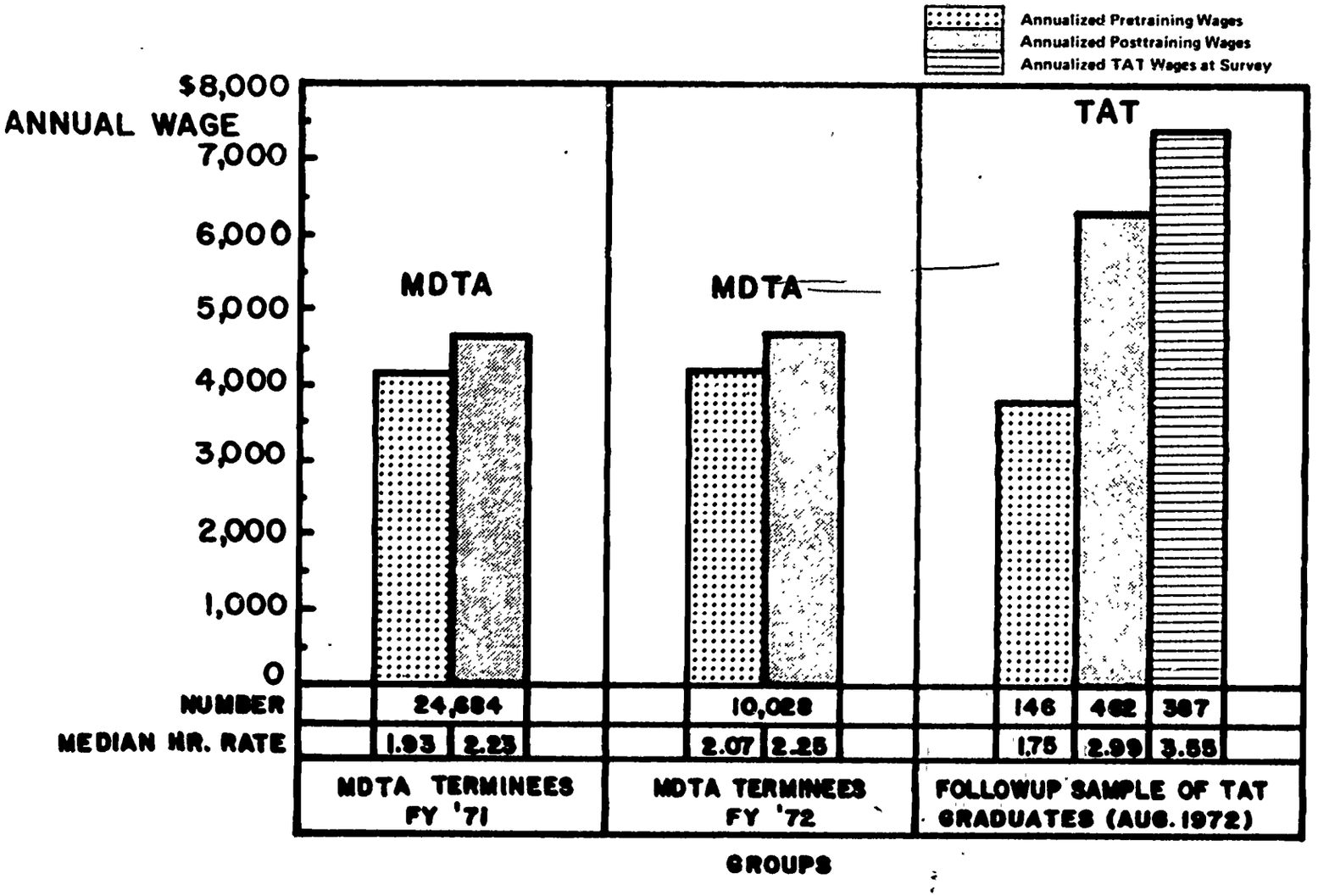
WAGE COMPARISON STATISTICS OF TAT GRADUATES



*National average wages of all nonfarm workers in private industries. Manpower Report of the President, U.S. Department of Labor, March 1972. **Estimated

FIGURE 4-2

MEDIAN WAGES OF NATIONAL INSTITUTIONAL MDTA TRAINEES* AND TAT GRADUATES



*MANPOWER INFORMATION SERVICE (VOL. 4, NO. 2, OCT. 1972)

reflects both the quality of training and responsiveness of training to employer needs. In other words, if graduates cannot be placed in training related jobs the question arises as to the quality of training or the need for skilled graduates in a given occupation. However, this simple explanation is not sufficient. Many industrial firms hire persons into temporary positions in order to later place them in higher level positions. Some even have "labor pools" in which to hold new hires until higher level positions open. Thus, any time-specific measure of training relatedness will be an underestimate. Second, directing the trainee into an occupational career based on a newly acquired skill may have long-range implications for job earnings that are not revealed in the short period covered by this post-placement survey. In addition to the possible long-range implications for earnings, the training relevance of a job is important as a way of evaluating the meaning of the earnings criterion. If graduates hold training related jobs, it indicates that their relatively high earnings are a result of the training program.

Since measures of training related duties were obtained by asking the graduates, rather than through some other method, there are some inherent unreliabilities (e.g., a job which one graduate feels is training related might not be so reported by another graduate, or a job, such as in a labor pool, which could lead to a training related job may not be viewed as training related by a graduate). Graduates' reports of training related duties are given for the first job starting duties and current or termination duties in Table 4-1, since it was expected that some graduates' job duties would become more training related as they moved from labor pools to jobs more similar to their training specialty.

Table 4-1. Percentage of Graduates With Training Related Jobs

	Percentage When Hired	Percentage Current or at Termination
Duties related	53.0	55.2
Duties somewhat related	10.5	12.1
Duties not related	36.5	32.7

The shift toward more training related duties over time was not statistically significant; however, a trend does seem apparent. While the number in training related jobs is not as high as might be hoped, it is very similar

to the findings of London[2] who reported 47.7%, 15.6% and 36.7% in the three respective categories in a survey of Missouri MDTA graduates.

Training related jobs are associated with much higher wage rates than are non-training related jobs. This relationship may be accounted for by the fact that TAT trains exclusively for industrial level jobs, thus a graduate in a non-training related job is far less likely to be working in an industrial setting than a graduate with a related job. (Naturally some graduates with non-training related duties are in industry with high-paying jobs, but many are not and have low-paying jobs—dishwasher, gas station attendant, etc. This explains the greater pay variance of those who do not have training related jobs.) Results are given in Table 4-2 of graduates with related jobs who made slightly more than graduates in partly related jobs who made substantially more than graduates in non-training related jobs.

Table 4-2. Starting Pay by Training Relatedness of Job[3]

	Average Pay	Standard Deviation
Duties related	$3.03	.74
Duties somewhat related	$2.95	.46
Duties not related	$2.51	.88

Of major importance to the interpretation of the differences between earnings of those reported to hold training related jobs and those with non-training related jobs, the substantial difference of $ .52/hour—an average annual difference of over $1,000. In contrast, the $ .08/hour disparity between graduates reported to hold somewhat training related jobs and those holding training related jobs is almost negligible. Based on the wage information, it seems justifiable to consider training related jobs and partly training related jobs in the same category, in which case, 63.5% of graduates as a conservative estimate were placed in training related jobs.

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[2]London, H. H., How Fare MDTA Ex-Trainees, Contract No. 81-24-25 from the Office of Manpower Evaluation and Research, U. S. DOL, December 1967.

[3]The correlation between pay and training relevant job duties is .25, significant at the $p < .001$ level, indicating the presence of a fairly strong association between the two variables.

Satisfaction

An effective training program should develop realistic expectations and job knowledge which would enhance the graduates' satisfaction with their occupations. Job satisfaction is commonly interpreted as indicating the strength of commitment to the job. Subsequent job satisfaction, then, should be considered in the evaluation of any training program.

As job satisfaction, in general, appears to be declining, it might be expected that TAT graduates would reflect similar degrees of dissatisfaction.[4,5] The combined responses of surveyed graduates reporting their attitudes toward various facets of their jobs and their jobs as a whole are summarized in the Figure 4-3.

The largest percentage of graduates (98%) reported average or above satisfaction with co-workers. If the categories of average, like and like very much are combined across all dimensions, the following rank order based on frequency of responses emerges:

Co-Workers	98%
Most Recent Supervisor	93%
First Supervisor	92%
Company	90%
Duties	87%
Job as a Whole	86%
Union	83%
Starting Pay	78%
Current or Final Pay	76%

Interpersonal dimensions of the jobs appear to produce a greater degree of satisfaction for most graduates than do the others; however, less than 25% disliked any facet of their job which was considered.

The general indication from Figure 4-3 is one of satisfaction with all aspects of the job. The frequency of reported satisfaction with facets of the job is universally greater than the frequency of dissatisfaction. The relative infrequency of negative reports is particularly encouraging.

The intercorrelation matrix of first job satisfaction measures is presented in Appendix F. Most intercorrelations are statistically significant and show a high degree of association. Aside from the correlation of satisfaction with starting pay and current pay (.82), the highest correlation is

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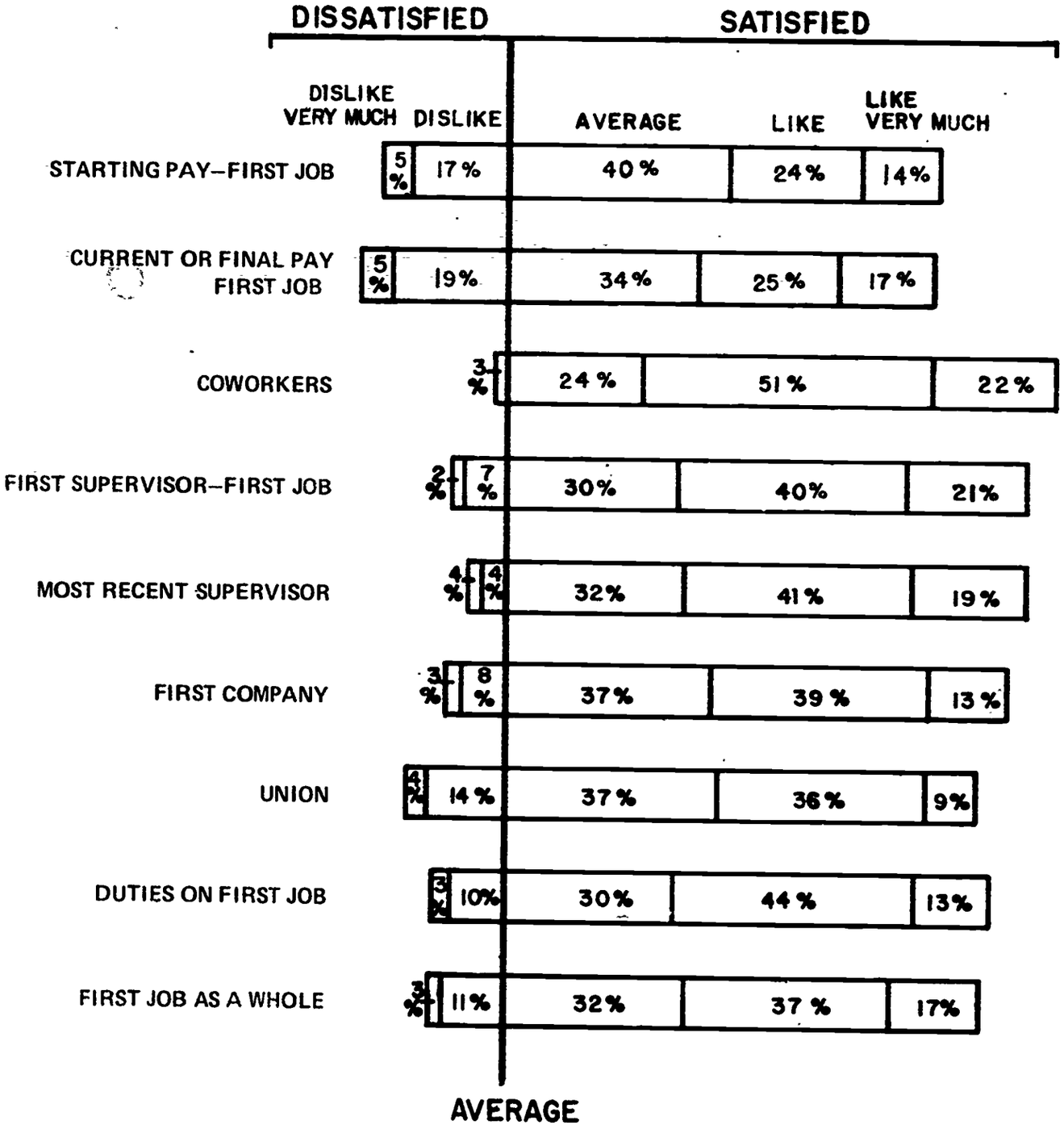
[4]HEW study of "Work in America," Manpower Information Service, Vol. 4, No. 8, p. 172.

[5]"What Do Workers Think of Their Jobs?", Occupational Outlook Quarterly, Vol. 16, No. 4, 1972.

FIGURE 4-3

DEGREE OF FIRST JOB SATISFACTION



between satisfaction with job duties and overall job satisfaction (r = .66). This lends support to the theory that job content is the major factor in determining overall job satisfaction.

Overall job satisfaction and pay satisfaction increase concomitantly with the training relatedness of the job. Graduates in training related jobs were the most satisfied; graduates in non-training related jobs were the least satisfied (Tables 4-3 and 4-4).

Table 4-3. Training Related Duties by Overall Job Satisfaction

	Dislike Very Much	Dislike	Average	Like	Like Very Much
Duties related	0.0%	2.6%	14.3%	25.1%	10.6%
Duties somewhat related	0.2%	0.7%	3.5%	3.5%	2.6%
Duties not related	2.9%	7.3%	14.3%	8.4%	4.0%

N = 463
Chi square = 68.46 d.f. = 8 p < .001
Contingency coefficient = .36

Table 4-4. Training Related Duties by Pay Satisfaction[6]

	Dislike Very Much	Dislike	Average	Like	Like Very Much
Duties related	2.4%	5.2%	19.9%	16.4%	8.9%
Duties somewhat related	0.4%	2.6%	4.1%	1.7%	1.7%
Duties not related	2.4%	9.1%	16.2%	5.4%	3.7%

N = 463
Chi square = 33.11 d.f. = 8 p < .001
Contingency coefficient = .26

Supervisory Ratings

Ratings of graduate work performance were collected from both supervisors and personnel officers. Personnel ratings were usually based on

[6]The chi-square test of independence was computed and the two variables are highly dependent. Contingency coefficients were computed for the two relationships. These showed a strong positive significant relationship between the satisfaction measures. The contingency coefficient is similar to the correlation coefficient but has lower limits of 0.0 and upper limits somewhat less than 1.0, depending on the number of cells in the contingency table. Thus, the contingency coefficient is an underestimate of the possible correlation coefficient. The correlation would have been considerably higher.

supervisory ratings, consequently the correlation between these two measures is so high (.92) that only the supervisory ratings need to be shown. These were chosen because supervisory ratings were based on direct observation of the graduates' performance. Supervisors were asked, "How does this employee compare to other employees in the same type of job with the same experience?" Results are presented in Table 4-5. By and large, supervisors reported TAT graduates to be slightly above average in job performance.

Table 4-5. Supervisor Ratings of Graduate Job Performance

Rating	Number	Percent
5 = superior	8	4.4
4 = above average	68	37.2
3 = average	83	45.4
2 = below average	17	9.3
1 = poor	7	3.8
TOTAL	183	

Average graduate rating = 3.3 on a five-point scale.

Supervisory ratings showed no significant association with salary. This probably reflects the inability of most organizations to tie salaries directly to job performance. As will be discussed in a later chapter, there is a strong interaction between race and supervisory ratings, which may partially explain the lack of association between salary and supervisory ratings. Supervisory ratings were not significantly related to training related job duties but personnel ratings were. This finding is inexplicable considering the high correlation between supervisory and personnel ratings.

Supervisory ratings were associated with overall job satisfaction and supervision satisfaction. Correlation coefficients of .34 and .33 were found, respectively, for supervisory ratings with these two variables, both are significant at the $p < .001$ level.

Job Adjustment

This criterion was chosen because it was expected that if training effectively simulates the industrial experience then the problem of transfer of training should be minimal. Job adjustment problems were reported from two sources. Supervisors were asked whether the graduate had problems adjusting to the job and the graduate was also asked the same question. The responses are given in Table 4-6. Adjustment problems reported by graduates were scaled using severity as a dimension. As Table 4-6 indicates, less

than one of three graduates had a serious job adjustment problem and only one in five had an adjustment problem serious enough to warrant supervisory notice. The correlations of the other criterion measures with job adjustment problems are presented in Table 4-7.

Table 4-6. Supervisors' and Graduates' Reports of Job Adjustment Problems

	No Problems	Problems
Supervisors' reports of graduates' job adjustment problems	77.6%	22.4%
Graduates' reports of any job adjustment problems	61.7%	38.3%
Graduates' reports of moderately severe or very severe job adjustment problems	70.8%	29.2%

Table 4-7. Correlates of Job Adjustment Problems

	Supervisors' Reports	Graduates' Reports
Starting salary	.01	.05
Training related job duties	-.06	-.01
Overall job satisfaction	-.33**	-.06
Supervisory ratings	-.56**	-.22*

*p < .005
**p < .001

Employment Stability

Given the purpose of making trainees self-supporting, employment stability logically follows a criterion of trainee and program success. There are three possible indicators of employment stability: (1) the percentage of time spent unemployed since graduation, (2) the number currently unemployed at the time of the survey, and (3) the number of jobs since graduation. Table 4-8 presents time spent employed for surveyed graduates by years. The fluctuation from year to year is small with the graduates in later phases (more disadvantaged and minority) showing almost equal employment stability to graduates in the early phase (1967-1968). The relatively poor standing of 1971-1972 graduates is probably the result of the economic conditions during those years, and having a shorter total period of possible employment during which short periods of unemployment constitute a greater proportion.

National statistics reported in Employment and Earnings[7] show the average yearly duration of unemployment for blue collar workers to be 13.2, 12.2, and 9.0 weeks for years 1972, 1971, and 1970, respectively. Although not directly comparable to the way in which the study data are reported—average cumulative percent of time employed since graduation—the average duration of unemployment for graduates during the 1970-1972 period, which ran from a high of eight weeks in 1972 to a low of three weeks in 1970, is considerably below the national yearly average in any given year.

Table 4-8. Graduate Employment Duration by Year

		Percent of Time Employed Since Graduation	Average Number Months Unemployed Since Graduation
1972	N = 61	86.5	.54
1971	N = 84	85.7	1.86
1970	N = 112	94.4	1.40
1969	N = 100	92.8	2.68
1968	N = 36	89.5	5.25
1967	N = 32	93.1	4.22
	425 Average	90.4	2.66

The finding that the average graduate has been employed 90.4% of the time is remarkably similar to the percentage found employed at the time of the survey.

Table 4-9. Employment Status at Time of Survey

	Number	Percent
Employed	421	90.5
Not employed	44	9.5

The number of jobs since training is the simpler and more accurate measure of employment stability. Data on all surveyed graduates is given in Table 4-10. Only 13% of the graduates had three or more jobs. The relationship of the number of jobs to the various other criteria measures is given in Table 4-11.

[7] Employment and Earnings, U. S. Department of Labor, Vol. 19, No. 7, January 1973.

Table 4-10. Number of Jobs

No. Jobs	No. Graduates	Percent
0	8	1.7
1	294	62.3
2	108	22.9
3	50	10.6
4	10	2.1
5	2	0.4
Total	472	

Mean # of jobs since graduation = 1.5 jobs/graduate

Table 4-11. Correlations Between the Number of Jobs and the Criterion Variables

	Number of Jobs
Starting salary, first job	-.16**
Training relevant duties, first job	.06
Overall job satisfaction, first job	-.20**
Supervisory ratings, first job	-.24*
Job adjustment problems, first job, reported by supervisors	.27**
Job adjustment problems, first job, reported by graduate	-.01

*p < .002
**p < .001

The coefficients indicate that a graduate with a greater number of jobs will be less successful (lower pay, fewer training relevant duties, and a greater number of adjustment problems on his first job) than a graduate with only one or two jobs. The starting salary on the first job is presented by the number of jobs in Table 4-12.

Table 4-12. Starting Salary on First Job by Number of Jobs Held Since Training

Job #	No. Graduates	Starting Salary on First Job
1	294	$2.98/hr
2	108	$2.64/hr
3	50	$2.82/hr
4	10	$2.23/hr
5	2	$2.56/hr
Total	464	

Graduates with only one job started their first job at a significantly higher salary than did those who were later to have more than one job. The starting salaries on the first job for those who only had a second or third job were also higher than for those with four or five jobs since graduation.

Conclusion and Discussion

A manpower development program such as TAT can partially be assessed on the basis of what happens to its graduates, and more broadly considered, on the basis of its contributions to the attainment of national MDT objectives:[8]

1. facilitating employment of the unemployed
2. reducing poverty
3. lessening inflationary pressures
4. meeting labor shortages
5. upgrading the labor force
6. revamping traditional institutions

The data presented in this chapter show TAT as having made substantial contributions to individuals which were relevant to national manpower objectives. Sixty percent of all graduates were unemployed prior to entry into TAT and more than 90% were employed in relatively high paying jobs after leaving the program. As a group, TAT graduate pre-training incomes were substantially below the poverty level; whereas post-training incomes compare favorably with national averages in industry. The majority of graduates held jobs for which they were trained, an indication that the training program was meeting labor shortages. More than 75% of the graduates derived satisfaction from all aspects of their jobs. Employers reported graduate job performance to be slightly higher than average and very few problems associated with job adjustment. Graduates demonstrated greater than expected job stability, having had, as a group, less than 1.5 jobs and having been employed an average of 90% of the time since graduation. The unique combination of industrial and educational resources which characterizes TAT in almost every sense appears to offer a tentative solution to some of the problems of manpower development.

[8] Policy Papers in Human Resources and Industrial Relations, No. 5, Garth L. Mangum, December 1967.

Chapter V

ADDITIONAL POST-TRAINING EXPERIENCES OF GRADUATES

This chapter deals with some quality of living indices and economic outcomes for graduates associated with jobs after the first. These measures are separated from the previous success criteria because the influence of the TAT training program on them must be largely indirect.

Occupational Experiences After the First Post-Training Job

Starting and final wages (at termination or the time of the interview) are presented by the number of jobs held in Table 5-1. There is a strong trend in evidence that the greater the number of jobs, the lower the salary would be at the time of the interview. The average hourly starting wage for all employed graduates was $2.84. At the time of the survey the average hourly wage was $3.35, an increase of $ .51 an hour.

Table 5-1. Starting and Final Wages

Graduates Who Had Held:	N	Starting Wage on First Job	Final Wage
1 job	294	$2.98	$3.69
2 jobs	108	$2.64	$3.47
3 jobs	50	$2.82	$2.88
4 jobs	10	$2.23	$2.82
5 jobs	2	NA	NA
All Graduates	464	$2.84	$3.35

Sixty-three and one-half percent of the surveyed graduates reported training related or somewhat related duties on their first job. This percentage declined to 57.5% for graduates who had held three or more jobs.

The declining pay rates and the trend toward more non-training related duties for those few who held successive jobs may result from several circumstances such as: (1) some graduates were dissatisfied with their occupational choice, (2) training was too job-specific, (3) some graduates were not equipped to face problems associated with relocation and returned to their homes where fewer training related jobs existed. With respect to the goal of program improvement, these circumstances merit further investigation.

The satisfaction of graduates with their jobs does not vary greatly with successive jobs. The satisfaction indices were remarkably similar from job to job, and by and large the graduates did not become appreciably more satisfied or dissatisfied by changing jobs.

Nonoccupational Experiences

The TAT graduates' non-occupational post-placement experiences were examined on various dimensions—residential and job mobility, family structure, personal financial management, and community involvement. Since leaving training, the average graduate had lived in 3.5 different residences at the time of the interview. However, considering the age of the graduates and the large number of single graduates (33%), this may not exceed the norms for similar groups.

Table 5-2. Number of Residences

Number of Residences	No. Graduates	Percent
1	36	9.5
2	77	20.3
3	99	26.1
4	73	19.2
5	41	10.8
6	26	6.8
7	13	3.4
8	9	2.4
9	6	1.6
Total	380	

Some of the most promising jobs required graduates to relocate outside the State of Tennessee. One hundred and twenty-five (26.5%) of TAT graduates relocated. An analysis of the problems graduates faced in relocating is given in the following chapter. Interviewed graduates were placed in 60 companies in 13 states. The distribution of graduates is shown below.

Table 5-3. Distribution of Interviewed Graduates' Jobs by States

	Number	Percent
Tennessee, Georgia, Alabama, Mississippi	408	86
Illinois, Indiana, Ohio, Kentucky	51	11
Maryland, Virginia, West Virginia, North Carolina, South Carolina	7	2
Other	6	1
Total	472	

The high level of residential mobility is substantiated by the percentage of graduates who reported plans to move in the foreseeable future (see Table 5-4). The reasons underlying the plans to move are shown in Table 5-5.

While relatively few graduates were planning to move for better jobs or to be closer to relatives, a very sizable number were planning to

Table 5-4. Graduates' Reports of Their Plans to Move in Foreseeable Future

	Number	Percent
Plan to move	182	38.6
Do not plan to move	282	59.7
No response	8	1.7
Total	472	

Table 5-5. Reasons Stated by Graduates for Moving in Foreseeable Future

Reason*	Number	Percent
Family desires move	18	9.9
Closer to relatives	9	4.9
Higher paying job	11	6.0
Nicer neighborhood	9	4.9
To get job in training field	10	5.5
Higher level job	5	2.7
Better residence	101	55.5
Other	61	33.5

*Some graduates mentioned more than one reason for moving.

move to better homes or neighborhoods. These reasons seem to reflect a higher level of upward residential mobility as a result of occupational success. Part of the residential mobility may be explained by changes in the graduate's marital status and number of children. Tables 5-6 and 5-7 give the marital status and number of children at the time of the survey. The average number of children per couple with children was 1.86.

Table 5-6. Marital Status

	N	Percent
Single	158	33.5
Married	286	60.6
Divorced	23	4.9
Separated	4	0.8
Widowed	1	.2
Total	472	

Table 5-7. Distribution of Children

No. Children	N	Percent
1	117	48.0
2	78	32.0
3	29	11.9
4	13	5.3
5-8	7	2.8
Total	244	

As expected, the number of graduates owning cars had increased dramatically at the time of the survey as compared with the time of training.

Table 5-8. Car Ownership at Time of Graduation and Survey

	Graduation		Survey	
Did not own car	330	70.1%	415	88.9%
Owned car	141	29.9%	52	11.1%

This increase is partly attributable to the increase in age of the graduates from the time of graduation until the time of the survey. It may also be attributable to financial success as a result of occupational training. Primarily graduates drove their own cars to work immediately after training and had continued to do so at the time of the survey.

Table 5-9. Mode of Transportation to Work

	Graduation		Survey	
	N	Percent	N	Percent
Drive self	288	62.5	318	73.3
Bus	22	4.8	13	3.0
Walk	24	5.2	9	2.1
Car pool	97	21.0	73	16.8
Other	30	6.5	21	4.8
Total	461		434	

While the study was not specifically aimed at checking all aspects of the graduates' financial status, some measures were taken of the types of accounts and insurance which graduates had. Survey data relating to financial problems are presented in the following chapter. It is encouraging that the majority of graduates participate in the methods of money management which are associated with financial stability and responsibility.

Table 5-10. Graduates With Checking, Savings and Charge Accounts

	Yes		No		Average Length of Time Held
	N	Percent	N	Percent	
Checking accounts	290	63.3	168	36.7	23.8 months
Savings accounts	308	66.0	159	34.0	39.3 months
Credit accounts	255	55.9	201	44.1	Average no. of accounts per graduates responding yes = 3.03

Most graduates carried various kinds of insurance with the largest number having life insurance. Table 5-11 presents this data.

Graduates had had relatively few contacts with community assistance agencies since graduation, as indicated by Table 5-12. Only 25.9% of all surveyed graduates reported having contacts with any community assistance agency. Perhaps the most interesting finding is that 5.7% (N = 27) of all graduates contacted manpower training agencies after participating in the TAT program. The reasons for this were not revealed by the survey but are probably best explained by the substantial number of graduates who were unwilling to relocate to new communities for training related jobs and who would need different training if there were no locally available jobs in the field for which they were trained at TAT. An alternative explanation may be that veterans in a tight labor market capitalize on their V.A. benefits to receive training in a second field. A third possibility is that of a "training syndrome," people capitalizing on government training programs for support. This phenomenon deserves further investigation to determine its cause.

Forty-five percent of the surveyed graduates participated in non-occupational organizations such as clubs and churches. Of the 211 graduates who did participate in these organizations, 24 (11.4%) held offices, not surprising considering the age group involved. Table 5-13 shows the major types and average attendance. The predominant activity was related to churches and affiliated church groups.

A large number of TAT graduates work for corporations with extensive, well-organized recreational activities which are apparently little utilized by the graduates. An informal poll of 73 graduates conducted by one of the interviewers during the interviewing in the Oak Ridge area indicated that,

Table 5-11. Types of Insurance Held by TAT Graduates

	Number With Policies	Percent of All Surveyed Graduates (472)	Group Policy N	Group Policy Percent	Personal Policy N	Personal Policy Percent
Life insurance	412	87.3	277	68.9	125	31.1
Car insurance	369	78.2	81	22.3	282	77.7
Health insurance	401	85.0	266	79.6	68	20.4
Major medical	311	65.9	NA	NA	NA	NA
Hospitalization	368	78.0	NA	NA	NA	NA
Disability income	193	40.9	NA	NA	NA	NA
Sickness and accident	219	46.4	NA	NA	NA	NA

Table 5-12. Community Assistance Agencies Contacted by Graduates

	N	Percent of Graduates	Training	Financial Aid	Job Placement	Services	Other
Employment service	42	8.9	0.0	14.6	78.0	0.0	7.3
Manpower training	27	5.7	7.7	0.0	65.4	0.0	26.9
Welfare organizations	23	4.9	0.0	9.5	0.0	76.2	14.3
Assistance organizations (Red Cross, Day Care Centers, etc.)	16	3.4	0.0	6.7	0.0	40.0	53.3
Other	14	3.0	0.0	9.1	9.1	36.4	45.5
	122	25.9	1.8	8.8	43.9	22.8	22.8

while very few TAT graduates utilized local or corporate recreational facilities, 91% felt that local facilities were adequate.

Table 5-13. Organization Membership of TAT Graduates

	N	Percent	Average % Attendance
Church or religious group	115	59.6	60.7
Lodge, club or fraternity	30	15.5	52.1
Company sponsored team or club	11	5.7	85.1
Any civic type organization	15	7.8	68.9
Hobby club	7	3.6	62.0
Other	15	7.8	96.8
	211		

A number (33.9%, N = 160) of TAT graduates reported further educational experiences after training. The majority of these graduates received job related instruction from their employers for the purpose of increasing their job skills. The data are shown in Table 5-14. The majority of these graduates (62.8%) reported that they did not believe that the additional skills should have been taught at TAT.

Table 5-14. Post-Training Education Received by TAT Graduates

	N	Percent
Trainer		
Company	87	54.3
Public school	61	38.1
Private school	12	7.5
Subject		
Academic	44	28.9
Job related	108	71.1
Teaching method		
Lecture	53	35.6
Text	21	14.1
Practice	75	50.3
Purpose		
Further education	38	29.7
Increase job skills	90	70.3

Conclusions and Discussion

In this chapter, certain quality of life indices have been presented. Three important conclusions can be drawn. First, TAT graduates who leave their first or second post-training job, for whatever reason, derive no

economic advantage from doing so, nor do they obtain jobs more nearly aligned with their training specialty. Over 60% remained in their first job. Secondly, the jobs into which graduates were placed provided them with access to benefits not always available to the disadvantaged such as life and health insurance. In addition, employers provided opportunities for additional job training. Thirdly, many TAT graduates appear to be taking the initiative in self-development activities. A high percentage strive to improve their residential status, and more than half participate in non-work related organizations. In general, the experiences of TAT graduates reflect a strong trend toward self-sufficiency and productive participation in the world of work.

Chapter VI

POST-PLACEMENT ADJUSTMENT

Among the major purposes of this research was the definition and description of the post-placement adjustment period. Answers to specific and open-ended questions were collected from graduates, their supervisors and their personnel officers, regarding various types of problems encountered. Questions dealt with relocation problems, family problems, social problems, job adjustment problems, and problems associated with finances. Although fewer problems were reported than expected, it may be definitely stated that there is a post-placement adjustment period with related problems. From the data collected, a cluster of problems associated with relocation emerged as being particularly important to graduates. Remembering the "horror stories" which everyone has to tell about moving, the experiences of the TAT graduates do not seem particularly unusual. Given the absence of normative statistics, the only practical approach is to talk about the magnitude of the problems encountered by the surveyed graduates and to indicate whether the problems warrant attention in the training process. The descriptions of problems encountered following training are given below.

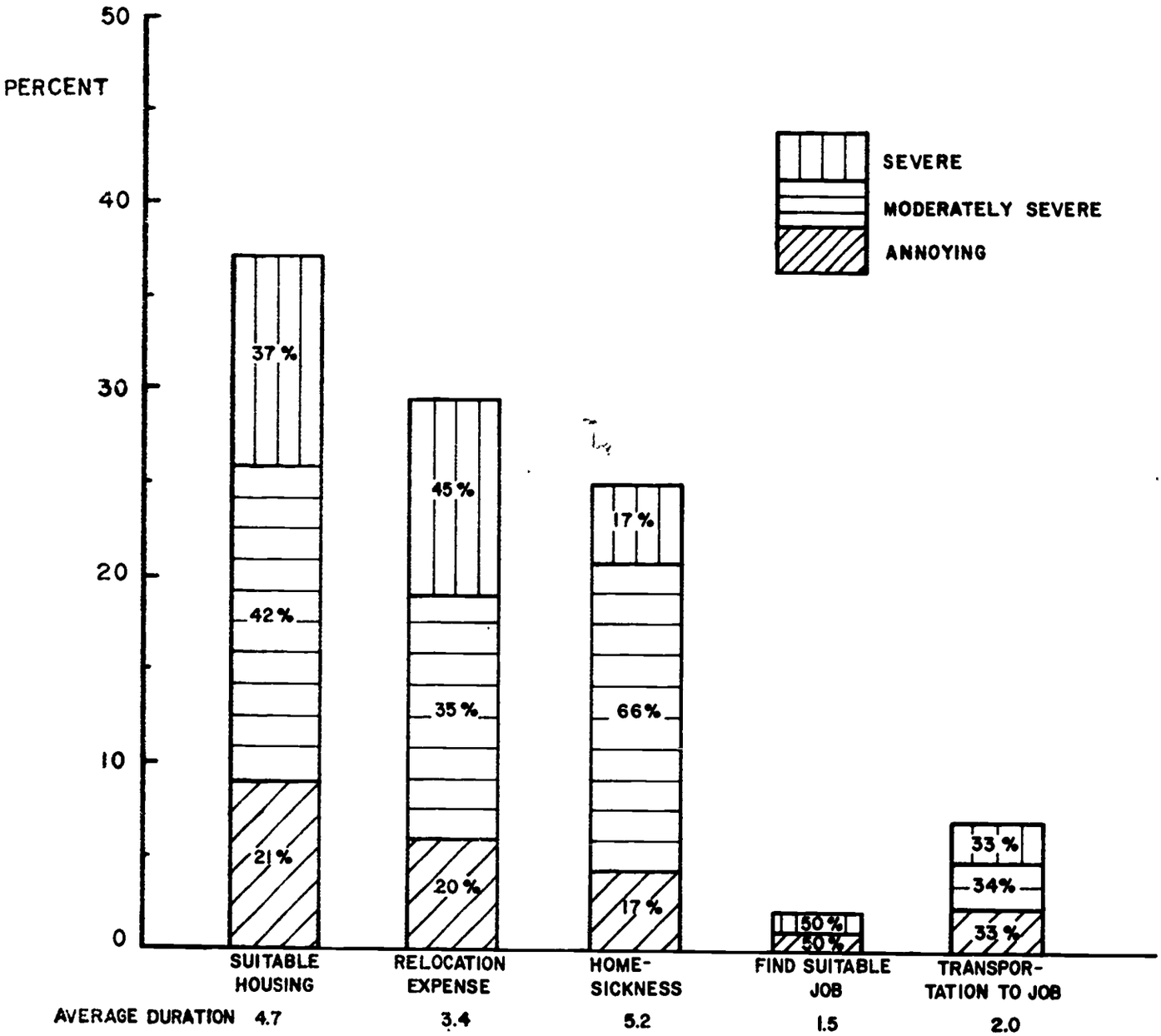
Relocation

One hundred and twenty-five of the surveyed TAT graduates were required to relocate various distances for their first job. Those who relocated, while a relatively small part of the graduate sample (26.5%), experienced the problems presented in Figure 6-1. The types of problems, the reported severity of the problem to the graduates, and average duration of the problem are also given. Many graduates were unable to provide a severity scale value for their problems or to remember the duration of the problem. Of those who relocated, 66.4% (83) reported 127 problems.

About one-quarter of the problems are related to homesickness or feelings of uneasiness in a new community. While the other problems can probably be dealt with by training intervention (housing lists, money, placement, and arranging car pools) the problem of homesickness reflects on the psychological orientation of the graduates who relocated. It seems unlikely that any intervention in training can substantially alleviate this problem without incurring prohibitive costs. The percentage who reported homesickness is probably an underestimate of the actual incident rate, since people are often reticent about admitting homesickness and prefer to ascribe their problems to other sources.

FIGURE 6-1

RELOCATION PROBLEMS



NOTE: Only 125 (26.5%) of surveyed graduates were required to relocate for their first job.

While the rate of problems associated with relocation, other than homesickness, was high, it does not seem reasonable to recommend changes in the training program to alleviate these problems since those with problems represented only 17.6% of the graduates. Training activities involving the total trainee group would apply to less than one of five graduates and would incur an undue cost. However, if the graduates who will relocate can be identified during training, appropriate actions can be taken to aid them.

The average duration of relocation problems, 4.15 months, is a bit longer than we expected. The relationship between the severity of the problems and the duration of the problems is given below. There was no correlation found between duration and severity.

Table 6-1. Duration and Severity of Relocation Problems

	Frequency	Percent	Average Duration in Months
Minor, annoying	21	21.4	3.8
Moderately severe	44	44.9	5.4
Very severe	33	33.7	2.0
Total	98		4.1

The number and severity of relocation problems appears to be affected by several factors such as the graduate's familiarity with the new location and his family's familiarity with the new location. Neither the graduate's nor his family's willingness was related to the occurrence of relocation problems. The relationships are given in Table 6-2.

Related Problems After Graduation

Two open-ended questions were asked in an attempt to discover the general types of problems encountered by graduates in the post-placement period. The first question asked the respondent to portray the problems he faced immediately after graduation (within the first month or two); the second asked for problems which occurred or lasted during the subsequent few months until the time of the interview. The response rate to these questions was remarkably low, only 29.7% of the surveyed graduates reported problems immediately after graduation and only 20.3% reported problems in the later period. The problems are given in Table 6-3.

It is interesting to note that as the time passes after graduation, the number of different problems and the total amount of problems declines as

Table 6-2. Relocation Problems Related to Willingness to Relocate and Familiarity with New Location

	Problems Occurred	No Problems Occurred	Chi Square
Graduate wanted to move	43 (58.9%)	34 (56.7%)	χ^2 = .007
Graduate did not want to move	30 (41.1%)	26 (43.3%)	d.f. = 2
Family wanted to move	24 (36.9%)	22 (44.9%)	χ^2 = .757
Family did not want to move	28 (43.1%)	18 (36.7%)	d.f. = 2
Graduate did not know	13 (20.0%)	9 (18.4%)	
Graduate was familiar with new location	14 (19.4%)	24 (40.7%)	χ^2 = 6.106*
Graduate was not familiar with new location	58 (80.6%)	35 (50.3%)	d.f. = 1
Family was familiar with new location	6 (12.2%)	9 (50.0%)	χ^2 = 8.736**
Family was not familiar with new location	43 (87.8%)	9 (50.0%)	d.f. = 1

*p < .02
**p < .01

Table 6-3. Problems Encountered Immediately After Graduation and Their Severity*

	Problems Immediately After Graduation		Later Problems	
	#	Average Severity	#	Average Severity
Periods of no income, strikes, layoffs, unemployment	28	2.3	29	2.3
Low salary, couldn't maintain budget	47	2.2	34	2.2
Survival money between jobs	23	2.3	-	-
Expensive relocation costs	19	2.4	1	-
Car and/or insurance payments	11	2.4	10	2.0
Transportation money for commuting	4	2.0	-	-
Tools for job expensive	3	2.3	-	-
High housing costs	3	3.0	15	2.5
Hospital bills	1	2.0	7	2.3
Sum	139	2.3	96	2.3

*1 = annoying, 2 = moderately severe, 3 = very severe.

does the severity of these problems. In view of generally depressed economic conditions at the time of the survey, the slight increase in the problem of periods of no income is to be expected. For those, however, not affected

by strikes and layoffs the problem of low salary declined. Overtime, survival and relocation expenses were absorbed. As was previously mentioned, graduates strove to improve their housing conditions which along with inflationary circumstances probably explains the increase in the numbers who reported high cost of housing as a problem. Overall, the problems of getting established decreased while the problems of being established increased.

Job Adjustment Problems

This was numerically the largest area of post-placement difficulties. Two hundred and nine reported job adjustment problems (44.3%) with 66.0% of these being reported as moderately severe to severe. In other words, approximately 30% of the surveyed graduates reported serious job adjustment problems. These problems fell into a number of categories which are presented below.

Table 6-4. Job Adjustment Problems and Average Duration and Severity*

	Frequency	Percent	Average Severity	Average Duration in Months
1. Shiftwork	49	23.4	1.8	6.8
2. Job too difficult	36	17.2	1.8	3.3
3. Inadequate finances	31	14.8	2.3	3.5
4. Finding affordable housing	25	12.0	2.3	4.2
5. Transportation to work	20	9.6	2.2	4.6
6. Personnel conflicts	20	9.6	2.2	2.2
7. Finding a job	12	5.7	2.1	6.2
8. Company giving misleading information	9	4.3	2.4	8.2
9. Racism, discrimination	7	3.3	2.5	6.5
	209		2.2	4.7

*1 = annoying, 2 = moderately severe, 3 = very severe.

The problems directly related to the job and its performance (1, 2, 5, 6, 8 and 9) are slightly less than two-thirds of the total.

When the reports of supervisors on the type and number of job adjustment problems are considered, a somewhat different pattern emerges. Of the 161 graduates for whom supervisory reports were available, 73 (45.3%) graduates were reported to have had one or more specific job adjustment problems. The total number of problems reported for these 73 cases was 136 (see Table 6-5).

Table 6-5. Supervisors' Reports of Graduates' Job Adjustment Problems

	Frequency	Percent	Severity		Occurrence	
			Serious	Minor	Frequently	Infrequently
Absenteeism	31	22.8	48.3%	51.7%	58.3%	41.7%
Illness	17	12.5	33.3%	66.7%	33.3%	66.7%
Tardiness	27	19.9	0.0%	100.0%	28.6%	71.4%
Lacking necessary educational skills (reading, math, job knowledge)	15	11.0	11.1%	88.9%	28.6%	71.4%
Lacking necessary task skills (ability to perform required job tasks)	13	9.6	60.0%	40.0%	100.0%	0.0%
Conflicts with co-workers	6	4.4	33.3%	66.7%	33.3%	66.7%
Union problems	2	1.5	--	--	--	--
Poor attitude toward supervision	5	3.7	--	--	--	--
Poor attitude toward company	2	1.5	--	--	--	--
Poor attitude toward plant and/or work routine	3	2.2	0.0%	100.0%	0.0%	100.0%
Other (specify)	15	11.0	0.0%	100.0%	40.0%	60.0%
	136					

While no graduates reported job adjustment problems related to absenteeism, illness or tardiness, supervisors frequently did. Over 55% of the problems reported by supervisors were related to these dimensions. The frequency with which the problem of absenteeism was mentioned seems relatively high. An informal poll of four major TAT employers indicated that the proportion of employees for whom absenteeism was considered a problem ranged from a low 3% to a high of 40%. Nineteen percent of the 161 graduates for whom these data were available were considered to have absenteeism problems; this is near the middle of the range reported. Furthermore, considering the average graduate's age and marital status (i.e., 22 and single), this problem frequency does not seem unusual.

The relatively low number of supervisory reports of graduates lacking the necessary task skills (13 of 161 or 8.1%) or educational skills (15 of 161 or 9.3%) required for successful job performance is a strong indication of the effectiveness of the TAT training.

The graduates seem to have a different viewpoint regarding their task skill pro ency. One hundred and sixteen (24.6% of the sample) reported one or more skills which they had not developed during their TAT training which were required on their first job. These graduates' responses are recorded in Table 6-6.

Table 6-6. Additional Skills Required to Perform First Job

	Number	TAT Should Teach	TAT Should Not Teach
Highly technical and/or specialized skills	28 (20.1%)	70.8%	29.2%
General laborer, clerical, semi-skilled	20 (14.4%)	21.1%	78.9%
Electronics and electrical skills	8 (5.8%)	80.0%	20.0%
More industrial behavior courses	6 (4.3%)	66.7%	33.3%
Drafting and drawing skills	12 (8.6%)	87.5%	12.5%
Plumbing, pipefitting, pressure work	7 (5.0%)	100.0%	0.0%
Mechanical maintenance repair skills	15 (10.8%)	100.0%	0.0%
Process operation	5 (3.6%)	25.0%	75.0%
Experience w/different tools and machines	9 (6.5%)	75.0%	25.0%
Expand current training	18 (12.9%)	18.8%	81.2%
Machining and machine shop operation	6 (4.3%)	100.0%	0.0%
Metallography	3 (2.2%)	33.3%	66.7%
Welding	2 (1.4%)	100.0%	0.0%
	139		

There is no apparent major deficit in TAT training that is discernable in these reports of skill needs. The underlying implication seems to be a need for somewhat greater diversity in skill training so that graduates may better fit into situations where the tools, techniques and processes are not similar to the ones they encountered in training.

Related Problems

Other questions were asked of the surveyed graduates relating to specific problems associated with automobiles, insurance, and so forth. The results for the questions dealing with these problems is given in Table 6-7, along with the severity of the problems when available. It is an encouraging sign that relatively few graduates had had problems with friends or family. There may be, however, an understatement of the problems involved with relocation and the effect upon relationships with family and friends.

Relatively few graduates had had problems with checking accounts, insurance, and charge accounts. These appear to be normal occurrences which most individuals might encounter at some point in their lives. A somewhat greater number of the surveyed graduates experienced problems in getting to work (12.2%). The major resolution of this problem was to buy a car (21 graduates reported doing so specifically to end problems of getting to work). This problem was resolved by quitting the job only in three of 57 cases.

Conclusions and Discussion

The transition from training to full-time employment for some TAT graduates is complicated by the requirement to relocate. Although affecting only one-quarter of all graduates, relocation creates economic and other stresses that appear to disrupt the normal processes of job and community adjustment. For those who relocate, suitable housing, moving expenses and unfamiliarity with the community are most frequently cited as severe problems. Direct solutions to these problems are not likely to be accomplished by augmenting training; however, in the future, consideration for those who will relocate should be given to provision of more extensive orientations about the new community and in establishing more definite liaison with new community organizations.

Of all graduates surveyed, approximately 30% report job adjustment problems of various kinds. Supervisors report a higher number with job adjustment problems. The differences in what is perceived as a problem by graduates and by supervisors reflect differences in group or organizational

Table 6-7. Related Problems and Severity Reported by Surveyed TAT Graduates

		Reporting Problems		No Problems		Average
		Number	Percent	Number	Percent	Severity*
I.	Problems getting to work	57	12.1	415	87.9	2.0
	A. Problems with public transportation	20	35.1			2.3
	B. Problems in car pool	11	19.3			1.8
	C. Car repairs	18	31.6			1.9
	D. Other	8	14.0			-
II.	Checking accounts	15	3.2	457	96.8	1.7
	A. Balancing checkbook—bounced checks	12	80.0			1.8
	B. Mixups by business firms	3	20.0			1.0
III.	Credit cards and charge accounts	34	7.2	438	92.8	1.8
	A. Used credit too often, couldn't pay bills	13	38.2			1.8
	B. Billing errors—red tape	15	44.1			1.5
	C. Establishing credit in a new city	4	11.8			1.8
	D. Other	2	5.9			2.0
IV.	Insurance problems	32	6.8	440	93.2	NA
	A. Expensive rates	15	46.9			NA
	B. Insurance not paying as much as promised	13	40.6			NA
	C. Trouble choosing policy	4	12.5			NA
V.	Problems with family and friends by problems	33	7.0	439	93.0	2.1
	A. Shiftwork, hours	11	33.3			2.0
	B. Relocation	7	21.2			2.0
	C. Homesickness	5	15.2			1.7
	D. Other	10	30.3			1.6
VI.	Problems with family and friends by relationship	29	6.1	443	93.9	2.1
	A. Parents	9	31.0			1.8
	B. Spouse	13	44.8			2.1
	C. Friends	7	24.2			2.5

*Three point scale - 1 = annoying, 2 = moderately severe, 3 = very severe

identification. Graduates do not view absenteeism or tardiness as problems while management does.

In general, the graduates meet employer expectations both in terms of work habits and job performance. Very few graduates are ill prepared, technically, to perform their jobs satisfactorily. Considered broadly, the graduates are well equipped to cope with the problems encountered in the transition from training to employment.

Chapter VII

DESCRIPTION AND PREDICTION OF POST-PLACEMENT SUCCESS

The Relationship Between Selected Variables and Success

A number of variables such as race, sex, training area, HRD disadvantaged status, educational level, year of graduation, and pre-TAT employment status may influence or be related to the criteria of post-placement success discussed in Chapter IV. A large number of other variables may also affect or moderate post-training success; however, an exhaustive empirical approach (that is, examining all possible variables) is beyond the scope of this project. This chapter describes the relationships between selected variables and the post-training success criteria.

Race

Often, this variable has been shown to be an important moderator of both testing and job performance. The major problem with comparing racial groups on a given criterion is the fact that it is just as likely that the criterion is contaminated as it is that real differences exist.

The available evidence indicates that minority members are slightly less successful in terms of the criterion than are whites. Data on mean differences between the groups are presented in Table 7-1.

Table 7-1. Mean Scores on Criteria by Race

	N	White	N	Black
Starting pay	297	$2.85/hr	156	$2.83/hr
Supervisory rating*	99	3.38	47	2.83
Overall job satisfaction*	292	3.62	153	3.39
No. of jobs	298	1.54	157	1.51

*Five point scale

Blacks earn slightly less pay than whites ($ .02/hr) and have had virtually the same number of jobs since training. However, blacks are somewhat less satisfied with their jobs and tend to receive lower supervisory ratings. These differences may be due in part to discrimination by the supervisors on ratings and to the problems blacks have in a predominantly white industrial environment. Table 7-2 presents additional criteria by race.

Fewer blacks hold training related jobs than whites, but the difference is small.[1] Supervisors report, and black graduates confirm, that blacks

[1]Throughout this chapter comparisons reflect relative proportions.

have more job adjustment problems than whites. This phenomenon deserves more careful investigation as to its cause (e.g., real problems or racial hostility on both sides) and to its remedy. Almost twice as many blacks as whites were found to be unemployed at the time of the survey. Considering the age and socio-economic status, neither group is far from the norms.

Table 7-2. Categorical Criteria by Race

	White	Black	Total (includes 4 unknowns not in either group)
Job duties	(N = 297)	(N = 158)	(N = 459)
Training related	54.2%	49.4%	52.7%
Somewhat related	10.4%	10.1%	10.5%
Nonrelated	35.4%	40.5%	36.8%
Supervisory reports of job adjustment problems	(N = 111)	(N = 149)	(N = 160)
No	88.3%	53.1%	77.5%
Yes	11.7%	46.9%	22.5%
Graduate reported job adjustment problems	(N = 302)	(N = 160)	(N = 466)
No	63.9%	40.0%	55.4%
Yes	36.1%	60.0%	44.6%
Current employment status	(N = 302)	(N = 160)	(N = 466)
Unemployed	7.3%	13.1%	9.2%
Employed	92.7%	86.9%	90.7%

Sex

Relatively few women have been through the TAT program, consequently the sample sizes (24 women were surveyed) on some variables is rather small. Data on pay and satisfaction is shown below.

Table 7-3. Mean Scores on Criteria by Sex

	N	Male	N	Female
Starting pay	433	$2.87	24	$2.44
Supervisory rating*	138	3.20	8	3.38
Overall job satisfaction*	434	3.54	25	3.72
No. of jobs	434	1.54	25	1.40

*Five point scale

Women make substantially less pay than do men. The sample size for supervisory ratings is small but indicates women to be slightly better employees.

Women appear to be more satisfied and occupationally stable than do men. Women were found in training related duties in approximately equal proportions to men and reported virtually identical incidence of job adjustment problems. Supervisors, however, saw women as having fewer job adjustment problems. Because many women have the responsibilities of childrearing and housekeeping, it is not surprising to find that more women were unemployed than men at the time of the survey. Notably, women start with salaries $ .43 an hour below men, most likely reflecting hiring and salary discrimination by employers.

Table 7-4. Categorical Criteria by Sex

	Male	Female	Total
Job duties	(N = 434)	(N = 25)	
Training related	54.1%	49.4%	52.7%
Somewhat related	10.4%	10.1%	10.5%
Nonrelated	35.4%	40.5%	36.8%
Supervisory reports of job adjustment problems	(N = 152)	(N = 8)	
No	77.0%	87.5%	77.5%
Yes	23.0%	12.5%	22.5%
Graduate reported job adjustment problems	(N = 441)	(N = 25)	
No	55.3%	56.0%	55.4%
Yes	44.7%	44.0%	44.6%
Current employment status	(N = 441)	(N = 25)	
Unemployed	8.8%	16.0%	9.2%
Employed	91.2%	84.0%	90.7%

Training Area

Training area has proved to be an important moderator on a number of criterion variables. Welders and chemical technicians were more successful in terms of having training related duties and high pay but reported lower job satisfaction. Electricians, chemical technicians, mechanical operators and draftsmen had a lower number of jobs since training; while welders, who often have seasonal work, had a considerably larger number of jobs on the average (see Table 7-5). Chemical technicians had a very high incidence rate of job adjustment problems both self-perceived and as observed by supervisors (see Table 7-6).[2] This particular group of graduates was

[2]Chemical technicians are a special group recruited and hired by a single private firm, trained to that firm's specifications and placed in the same installation.

Table 7-5. Mean Scores on Criteria by Training Area

	Physical Testing (N = 64)	Drafting (N = 49)	Mechanical Operations (N = 72)	Machining (N = 184)	Welding (N = 49)	Electronics (N = 28)	Chemical Technology (N = 11)
Starting pay	$2.71	$2.72	$2.89	$2.80	$3.09	$3.05	$3.31
Supervisory rating	3.52	3.23	3.17	3.29	2.89	3.00	2.46
Overall job satisfaction	3.64	3.81	3.62	3.51	3.21	3.68	3.10
No. of jobs	1.69	1.33	1.32	1.58	1.90	1.21	1.09

Table 7-6. Categorical Criteria by Training Area

	Physical Testing	Drafting	Mechanical Operations	Machining	Welding	Electronics	Chemical Technology	Total
Job duties	(N = 65)	(N = 49)	(N = 72)	(N = 185)	(N = 49)	(N = 28)	(N = 11)	(N = 459)
Training related	53.8%	59.2%	30.6%	53.0%	63.3%	64.3%	81.8%	52.7%
Somewhat related	6.2%	18.4%	15.3%	9.2%	6.1%	7.1%	18.2%	10.5%
Nonrelated	40.0%	22.4%	54.2%	37.8%	30.6%	28.6%	--	36.8%
Supervisory reports of job adjustment problems	(N = 25)	(N = 15)	(N = 31)	(N = 62)	(N = 11)	(N = 5)	(N = 11)	(N = 160)
No	80.0%	93.3%	74.2%	88.7%	54.5%	80.0%	18.2%	77.5%
Yes	20.0%	6.7%	25.8%	11.3%	45.5%	20.0%	81.8%	22.5%
Graduate reported job adjustment problems	(N = 65)	(N = 49)	(N = 72)	(N = 188)	(N = 50)	(N = 31)	(N = 11)	(N = 466)
No	60.0%	49.0%	52.8%	55.3%	66.0%	58.1%	18.2%	55.4%
Yes	40.0%	51.0%	47.2%	44.7%	34.0%	41.9%	81.8%	44.6%
Current employment status	(N = 65)	(N = 49)	(N = 72)	(N = 188)	(N = 50)	(N = 31)	(N = 11)	(N = 466)
Unemployed	9.2%	2.0%	11.1%	8.5%	12.0%	16.1%	9.1%	9.2%
Employed	90.8%	98.0%	88.9%	91.5%	88.0%	83.9%	90.0%	90.3%

selected and placed differently from the normal TAT procedures. While their adjustment problems are not necessarily attributable to the difference in selection and placement, further investigation may account for this remarkable dissimilarity.

HRD Disadvantaged Status

This variable is related to racial status as defined by the U. S. Department of Labor.[3] However, in the survey sample there are an almost equal number whites who are defined as disadvantaged. This discussion compares graduates who were disadvantaged at time of training with those who were nondisadvantaged.

Table 7-7. Mean Scores on Criteria by Disadvantaged Status

	N	Disadvantaged	N	Non-disadvantaged	N	Unknown
Starting pay	291	$2.86	98	$2.94	68	$2.67
Supervisory ratings*	94	3.15	30	3.00	22	3.73
Overall job satisfaction*	286	3.49	96	3.66	67	3.63
No. of jobs	290	1.47	100	1.54	69	1.74

*Five point scale

By and large, the disadvantaged group was found to be quite similar to the nondisadvantaged. Disadvantaged are slightly lower in pay and overall job satisfaction and slightly higher in supervisory ratings and more stable in terms of the number of jobs held. The surprising finding is that while blacks have a slightly higher unemployment rate than whites, the disadvantaged have a lower unemployment rate than the nondisadvantaged. On almost every other criterion such as training relatedness of job and supervisory reports of job adjustment problems the groups correspond closely.

Educational Level

Three levels of education were defined: (1) less than a high school education, (2) high school diploma or GED (General Equivalency Diploma), (3) some college. The strongest appearing relationship seems to be between education and pay. Graduates with a high school diploma or GED or higher education also appear to be much more likely to have a training related job.

[3]A disadvantaged individual, for manpower program purposes, is one who is poor or a member of a poor family, does not have suitable employment, and is at least one of the following: school dropout, member of a minority, under 22 or over 45 years of age, or handicapped.

Table 7-8. Categorical Criteria by HRD Disadvantaged Status

	Disadvantaged	Non-disadvantaged	Unknown*	Total
Job duties	(N = 291)	(N = 99)	(N = 69)	(N = 459)
Training related	49.1%	50.5%	71.0%	52.7%
Somewhat related	10.3%	10.1%	11.6%	10.5%
Nonrelated	40.5%	39.4%	17.4%	36.8%
Supervisory reports of job adjustment problems	(N = 105)	(N = 33)	(N = 22)	(N = 160)
No	73.3%	75.8%	100.0%	77.5%
Yes	26.7%	24.2%	0.0%	22.5%
Graduate reported job adjustment problems	(N = 295)	(N = 102)	(N = 69)	(N = 466)
No	50.5%	58.8%	71.0%	55.4%
Yes	49.5%	41.2%	29.0%	44.6%
Current employment status	(N = 295)	(N = 102)	(N = 69)	(N = 466)
Unemployed	9.2%	12.7%	7.2%	9.6%
Employed	90.8%	87.3%	92.8%	90.3%

*About 22% of all surveyed TAT graduates' disadvantaged status is unknown. These graduates are from the first two years of TAT's program, 1966-1968, and would probably be about 75+% nondisadvantaged. The time factor is undoubtedly important in explaining differences for this group.

Table 7-9. Mean Scores on Criteria by Educational Level

	N	Less Than H.S.	N	H.S. or GED	N	Some College
Starting pay	69	$2.81	273	$2.86	43	$3.04
Supervisory rating*	23	3.13	86	3.11	15	3.06
Overall job satisfaction*	69	3.63	268	3.50	41	3.59
No. of jobs	70	1.50	273	1.51	43	1.47

*Five point scale

Graduates with some college education report more job adjustment problems. This may be due to these graduates being trained in more complex technical skills such as drafting, electronics and physical testing.

Pre-Training Employment Status

Graduates who were employed immediately before TAT training reported average starting wages which were $ .07 an hour greater than the starting wages for those who were not employed prior to training. Comparing graduates on the basis of pre-training employment status showed few criteria differences with the exception of current employment status (at the time

Table 7-10. Categorical Criteria by Educational Level

	Less Than H.S.	H.S. or GED	Some College	Total (includes unknowns)
Job duties	(N = 70)	(N = 273)	(N = 43)	(N = 464)
Training related	34.9%	50.5%	51.2%	52.8%
Somewhat related	14.0%	8.4%	18.6%	10.6%
Nonrelated	51.1%	41.1%	30.2%	36.6%
Supervisory reports of job adjustment problems	(N = 24)	(N = 98)	(N = 16)	(N = 161)
No	66.7%	77.6%	62.5%	77.6%
Yes	33.3%	22.4%	37.5%	22.4%
Graduate reported job adjustment problems	(N = 71)	(N = 277)	(N = 45)	(N = 472)
No	52.1%	54.5%	42.2%	55.7%
Yes	47.9%	45.5%	57.8%	44.3%
Current employment status	(N = 71)	(N = 277)	(N = 45)	(N = 472)
Unemployed	12.7%	8.7%	13.3%	9.5%
Employed	87.3%	91.3%	86.7%	90.5%

Table 7-11. Mean Scores on Criteria by Pre-TAT Employment Status

	N	Employed Immediately Prior to TAT Training	N	Unemployed Immediately Prior to TAT Training
Starting pay	182	$2.89	272	$2.82
Supervisory rating*	53	3.17	92	3.23
Overall job satisfaction*	179	3.65	267	3.49
No. of jobs	182	1.57	274	1.49

*Five point scale

of survey), where it is found that almost twice as many graduates who were unemployed prior to TAT were unemployed at the time of the survey.[4]

Year of Graduation

The economic conditions at the time of the trainee's graduation were expected to affect a number of success variables. In tight labor markets it was expected that more graduates would get training related jobs, as well

[4]Here "unemployed" includes an indeterminable number of trainees who were not in the job market.

Table 7-12. Categorical Criteria by Pre-TAT Employment Status

	Employed Immediately Prior to TAT Training	Unemployed Immediately Prior to TAT Training	Total (includes unknowns)
Job duties	(N = 183)	(N = 273)	(N = 459)
Training related	56.8%	50.2%	52.7%
Somewhat related	10.9%	10.3%	10.5%
Nonrelated	32.2%	39.6%	36.8%
Supervisory reports of job adjustment problems	(N = 59)	(N = 100)	(N = 160)
No	76.3%	78.0%	77.5%
Yes	23.7%	22.0%	22.5%
Graduate reported job adjustment problems	(N = 184)	(N = 279)	(N = 466)
No	53.3%	57.0%	55.4%
Yes	46.7%	43.0%	44.6%
Current employment status	(N = 184)	(N = 279)	(N = 466)
Unemployed	6.0%	11.5%	9.5%
Employed	94.0%	88.5%	90.5%

Table 7-13. Mean Scores on Criteria by Graduation Date

	N	1966-68	N	1968-70	N	1971-72
Starting pay	71	$2.67	221	$2.97	170	$2.77
Supervisory rating*	22	3.73	86	3.22	39	2.90
Overall job satisfaction*	70	3.58	217	3.68	167	3.36
No. of jobs	72	1.75	221	1.56	171	1.40

*Five point scale

as higher salaries. The trainees were divided into three groups according to graduation dates roughly corresponding to the three phases of TAT as outlined by Levine (see Chapter II). The expectation that starting pay would rise with time was partly confirmed; however, the graduates in the last two years have faced looser labor markets associated with the downturn in the national economy. This probably amplified the tendency of industrial firms to hire graduates into "labor pools" and other special entry positions, which accounts for the lower wages and the lower percent who perceived their jobs to be training related.

Table 7-14. Categorical Criteria by Graduation Date

	1966-68	1968-70	1970-72	Total
Job duties	(N = 72)	(N = 221)	(N = 171)	(N = 464)
Training related	70.8%	58.8%	37.4%	52.8%
Somewhat related	11.1%	9.5%	11.7%	10.6%
Nonrelated	18.1%	31.7%	50.9%	36.6%
Supervisory reports of job adjustment problems	(N = 22)	(N = 93)	(N = 46)	(N = 161)
No	100.0%	78.5%	65.2%	77.6%
Yes	0.0%	21.5%	34.8%	22.4%
Graduate reported job adjustment problems	(N = 72)	(N = 222)	(N = 178)	(N = 472)
No	72.2%	53.1%	52.2%	55.7%
Yes	27.8%	46.9%	47.8%	44.3%
Current employment status	(N = 72)	(N = 222)	(N = 178)	(N = 472)
Unemployed	5.6%	8.6%	12.4%	9.5%
Employed	94.4%	81.4%	87.6%	90.5%

Definitions for the next two tables are:

Group I = top 1/2 on salary with training related duties (N = 146)
Group II = lower 1/2 on salary with nonrelated duties (N = 108)
Group III = top 25% on salary with training related duties (N = 72)
Group IV = lowest 25% on salary with nonrelated duties (N = 80)
Group V = total survey sample (N = 472)

The four groups and total sample are presented with selected demographic variables in Table 7-16. The successful graduates are slightly older. Graduates in the chemical technology and welding fields tend to be in the successful groups, which undoubtedly reflects wage differentials between occupational areas. Graduates from the training years of 1968-1970 are more likely to be found in the successful groups. Since the success criteria included starting salary and this group started at least $ .20/hour higher than the other two, the finding was not unexpected. It seems apparent that economic conditions at the time of graduation will affect the post-training success of the graduates. Married graduates were far more likely to be in the successful groups than unmarried ones. The difference is very substantial and probably reflects on a higher motivational state for men with families to support as well as a possible greater level of maturity.

While the training evaluations and pre-training test scores did not predict future job success (see next section) very well, these measures were found to differentiate high from low success graduates to some degree. Not all measures differentiated, but a substantial enough number did to

Table 7-15. Criterion Scores by High-Low Success Groups and Total Survey Sample

	High 50% Group I	Low 50% Group II	High 25% Group III	Low 25% Group IV	Group V
Starting wage on first job	(N = 146)	(N = 107)	(N = 72)	(N = 79)	(N = 462)
Average	$3.40	$2.03	$3.69	$1.81	$2.85
Supervisory reports of job adjustment problems	(N = 57)	(N = 22)	(N = 30)	(N = 9)	(N = 161)
No	77.2%	72.7%	80.0%	66.7%	77.6%
Yes	22.8%	27.3%	20.0%	33.3%	22.4%
Supervisory rating	(N = 55)	(N = 22)	(N = 28)	(N = 6)	(N = 147)
Average	3.22%	3.31%	3.32%	3.67%	3.21%
Graduate reported job adjustment problems	(N = 146)	(N = 108)	(N = 72)	(N = 80)	(N = 472)
No	51.4%	56.5%	58.3%	60.0%	55.7%
Yes	48.6%	43.5%	41.7%	40.0%	44.3%
Overall job satisfaction	(N = 145)	(N = 106)	(N = 72)	(N = 78)	(N = 454)
Average	3.97%	2.82%	4.04%	2.88%	3.55%
No. of jobs since training	(N = 145)	(N = 108)	(N = 72)	(N = 80)	(N = 464)
Average	1.42%	1.79%	1.38%	1.86%	1.53%
Employed at time of survey	(N = 146)	(N = 108)	(N = 72)	(N = 80)	(N = 472)
Percent	93.2%	87.0%	93.1%	88.7%	90.5%
Percent unemployed at time of survey	6.8%	13.0%	6.9%	11.3%	9.5%

suggest that it may be possible to predict future job success during training. Data on these measures for the five groups are shown in Appendix K. The training performance evaluations, obtained four times over each six-month training cycle, indicate that there are differences between the two groups, especially over the first two evaluations. The later evaluations are less differentiating because high success training performers are likely to graduate early and leave.

Several of the General Aptitude Test Battery (GATB)[5] subscales differentiate well between high and low success groups. High success graduates tend to score somewhat higher on almost all of the GATB scales.

[5]Manual for the General Aptitude Test Battery, Government Printing Office, Washington, D. C.

Table 7-16. Demographic Variables by High-Low Success Groups and Total Sample

	High 50% Group I	Low 50% Group II	High 25% Group III	Low 25% Group IV	Group V
Age of trainees (time of entrance to TAT)	(N = 125)	(N = 97)	(N = 66)	(N = 70)	(N = 397)
Average	22.5	21.7	24.0	22.4	22.0
Race	(N = 143)	(N = 107)	(N = 72)	(N = 79)	(N = 466)
White	65.0%	59.8%	78.9%	68.4%	65.4%
Black	35.0%	40.2%	21.1%	31.6%	34.6%
Sex	(N = 143)	(N = 107)	(N = 72)	(N = 79)	(N = 466)
Male	96.5%	89.7%	100.0%	88.6%	94.6%
Female	3.5%	10.3%	0.0%	11.4%	5.4%
Training area	(N = 143)	(N = 107)	(N = 72)	(N = 79)	(N = 466)
Physical testing	9.8%	18.7%	5.6%	20.3%	13.9%
Drafting	7.7%	5.6%	2.8%	6.3%	10.5%
Mechanical operations	9.1%	15.9%	11.1%	13.9%	15.5%
Machining	48.3%	45.8%	50.0%	44.3%	40.3%
Welding	13.3%	12.1%	20.8%	13.9%	10.7%
Electronics	5.6%	1.9%	5.6%	1.3%	6.7%
Chemical technology	6.3%	0.0%	4.2%	0.0%	2.4%
HRD	(N = 143)	(N = 107)	(N = 72)	(N = 79)	(N = 466)
Disadvantaged	76.0%	80.4%	77.3%	74.3%	74.3%
Nondisadvantaged	24.0%	19.6%	22.7%	25.7%	25.7%
Educational level	(N = 122)	(N = 97)	(N = 64)	(N = 70)	(N = 393)
Less than high school	15.6%	19.6%	14.1%	22.9%	18.1%
High school or GED	73.8%	72.2%	75.0%	71.4%	70.4%
Some college	10.7%	8.2%	10.9%	5.7%	11.5%
Years of graduation	(N = 146)	(N = 108)	(N = 72)	(N = 80)	(N = 472)
1966-68	13.7%	10.2%	8.4%	12.5%	15.2%
1968-70	59.6%	31.4%	68.1%	28.7%	47.1%
1970-72	26.7%	58.4%	23.6%	58.8%	37.7%
Pre-training employment status	(N = 143)	(N = 107)	(N = 72)	(N = 79)	(N = 466)
Unemployed	40.9%	30.5%	37.5%	30.8%	39.8%
Employed	59.1%	69.5%	62.5%	69.2%	60.2%
Pay last job prior to training	(N = 29)	(N = 56)	(N = 12)	(N = 41)	(N = 146)
Average	$1.97	$1.74	$2.08	$1.78	$1.92
Marital status	(N = 146)	(N = 108)	(N = 72)	(N = 80)	(N = 472)
Single	29.1%	52.9%	18.6%	52.0%	35.6%
Married	70.9%	47.1%	81.4%	48.0%	64.4%

By and large, the TAT trait ratings showed no discrimination between high and low groups. The Adult Basic Learning Examination (ABLE)[6] and the California Test of Adult Basic Education (TABE)[7] scores did differentiate slightly, but when the TABE grade equivalent scores are examined, the average difference between high-low groups was only one-half year, indicating that these tests would have limited predictive powers.

The Relationship Between Selection Measures, Training Criteria and Post-Placement Success Criteria

The purpose of this section is to describe the relationship between various predictor tests administered to the incoming TAT trainee and measures of success in training and after placement. Although the testing policy and number of standardized tests have changed, information is available on three standardized tests: the GATB, TABE, and ABLE.

The ABLE was designed to overcome some of the problems associated with testing the disadvantaged. It attempts to be "culture fair" by drawing from culturally nonspecific materials, and the general tenor of the test is non-academic. The ABLE was designed to measure educational achievement among adults but may be used to assess achievement as low as the first grade.

The ABLE and GATB tests were used basically as selection devices, while the TABE was used to place trainees in instructional levels. For these tests to be functional, they should show a predictive relationship to training success. However, a clear relationship between test scores and post-placement success measures was not expected, as there have been few cases in the literature where a clear relationship was found.

The measures of training success available from training records were quarterly evaluations (compiled every 45 days) and industrial behavior ratings. The quarterly evaluations represented a weighted composite of grades in three areas—skill training (70%), industrial behavior (20%), and trade-related instruction (10%). The industrial behavior ratings were scores on eight scales such as leadership, mental alertness, industriousness, dependability, etc.

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[6]Karlsen, Bjorn; Madden, Richard; and Gardner, Eric F., ABLE Handbook, Harcourt, Brace and World, Inc., 1967.

[7]Manual for Tests of Adult Basic Education, California Test Bureau, Division of McGraw-Hill, Monterey, Calif., 1957.

The post-placement measures of success used in this analysis were starting pay on first job, training relatedness of job duties, supervisors' ratings, personnel officers' ratings, whether the trainee had adjustment problems as observed by the personnel officer, number of jobs since graduation, whether trainees would relocate to get a training related job, responses to job satisfaction questions on first job, and self-reported job problems.

This analysis is based on Pearson product moment correlations. The main problem in this analysis was the small number of cases for which there was a complete set of information. This poses a limitation on the generalizability of the findings, although significant results certainly point the way for further study. Appendix L contains a discussion of the interrelationships among test and training performance measures.

The relationship between criteria of post-placement success is discussed in an earlier chapter and will not be repeated here. However, it is important to look at the relationship between criteria of training and post-placement success. Starting pay on the first job was not related significantly to any of the training criteria. It was expected that those who received higher evaluations in training would be more likely to have training related duties on the first job. This expectation was partially supported, although the correlation was not high, ranging from .13* to .19.* Absenteeism during training showed no relationship to the training relatedness of the graduates' first job. First supervisor's and personnel officer's overall ratings and perceptions of trainees' problems when available were compared with training criteria. Although only 40 trainees had complete information, the following table generally shows the relationship expected.

Table 7-20. Significant Correlations

	First Supervisor		Personnel Officer	
	Rating	Problems	Rating	Problems
135-day evaluation	--	.30	.47	.56
Industrial behavior	--	.29	.36	.41
Absences	-.43	.43	-.46	.48

Training absences seemed to be a good indicator of the graduate's job performance. Those who had more frequent absences during training continued

*p < .05.

this practice on their jobs. Training criteria were also related to the trainee's reports of job satisfaction and job problems. It was found that 90-day and 135-day evaluations were correlated with amount of satisfaction with respect to duties, supervision, co-workers and the company. Although significant, the correlation was small, about .21;* however, no strong relationship was expected as the evaluations and satisfaction questions are based on different constructs. Job problems on first job were also correlated with 135-day evaluations (.21*). Industrial behavior ratings showed consistent relation with only one of the satisfaction questions; satisfaction with supervision (average r = .24*).. Industrial behavior ratings also showed low but significant correlations with job problems (r = .18*). To sum up, relations between training criteria and post-placement criteria were low but indicative of the fact that the more successful trainees were generally the more successful after placement.

As mentioned earlier, standardized tests given upon entry to TAT were expected to show some relationship to training criteria and less with post-placement criteria. With respect to training criteria, industrial behavior ratings were not related to any of the standardized test scores. Quarterly evaluations did relate to TABE scores, although not to ABLE or GATB scores.

Table 7-21. Significant Correlations

	Evaluations		
	45 Day	90 Day	135 Day
TABE reading	.26	.30	.16
TABE mathematics	.31	.29	.25

Absences from training were not related to any of the test scores.

The TABE also correlated significantly with two post-placement measures—starting pay and supervisor's observation of job problems. The positive correlation between TABE scores and supervisor's observation of job problems is surprising because one would expect that the higher academic ability reflected by high TABE scores help overcome job problems or have no effect at all. However, it corresponds with findings noted earlier that graduates with more formal education reported more job adjustment problems and that supervisors rated graduates with more formal education slightly lower. The

*p < .05.

explanation may be that higher educated people are more verbal about their job problems, or that they have more difficult jobs.

Table 7-22. Significant Correlations

	Starting Pay	Problems
TABE reading	.17	.26
TABE mathematics	.18	.24

Correlations from .40 to .50 were obtained between post-placement ratings and some of the GATB aptitude scales, particularly the verbal and motor coordination scales; however, there were not enough cases to draw definite conclusions. GATB scores also seemed related to willingness to relocate to obtain trade-related work; the people with higher GATB scores, on the "paper and pencil" scales, were more likely to have moved or show willingness to move.

Conclusions

The most definite finding of this analysis was the inadequacy of the ABLE test. The test did not seem to be valid with respect to measuring mathematics and reading achievement or with respect to predicting training performance. The TABE appeared to have more validity, at lease when predicting training and post-placement success; however, its use as a placement device should be evaluated further. The GATB, while not as strong in predicting training and post-placement success as could be desired, does have some usefulness. Its present use should probably be continued in selection. Improvements presently being made in the TAT data retention system will make possible a much more complete analysis of the relation between training performance and post-placement performance than was possible for this study.

Appendix A

SOURCES OF DATA AND STUDY METHOD

SOURCES OF DATA AND STUDY METHOD

I. Mailed Questionnaires

A short mailout questionnaire was prepared and sent to all 1,659 TAT graduates in the spring of 1972. The primary purpose of this questionnaire was to locate graduates and to gather some general information on the kinds of problems graduates faced in the post-placement period (see Appendix B). A second questionnaire and a followup letter were mailed to those who did not respond to the first. Approximately 36% (N = 592) of all TAT graduates responded to the two mailed questionnaires by the time the interviewing process started.

II. Sample Construction

Limited by the constraints of time and money, the project staff extracted a stratified random sample from the total graduate population of 1,659, from which 472 were finally contacted Since TAT needed information about its more recent graduates, a larger proportion of graduates from the 1970-1972 period was included in the sample. This was the only major systematic bias in the sample and was dictated by the need for practical results. Statistics describing the total graduate population and the sample were computed for each of eight variables for which information was available on all trainees—race, sex, training area, HRD disadvantaged status, employment status at time of entry to TAT, entry educational level, state of origin, and whether the General Equivalency Degree (GED) had been obtained while at TAT.

There were <u>no</u> significant differences between the interviewed survey sample and the total population, except distribution according to training area.[1] However, this single difference had no or negligible influence on the results. While there is no <u>absolute</u> way to ascertain if the nonsurveyed group differed from the interviewed group (short of interviewing <u>all</u> graduates), the statistics indicate that there were no critical differences between the sample and the total TAT graduate population.[2]

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[1]The chi-square (χ^2) statistic was computed between the population and sample means on each of the eight variables (see Chapter III, Figure 3-3).

[2]It should not be expected that the 472 graduates are representative of MDTA graduates throughout the country, nor even the region with the possible exception of training centers with the same selection procedures as TAT.

III. Interviewer Selection and Training

College students, advanced undergraduates and graduates, were selected as interviewers for the summer interview period, June-September 1972. Students were used because of their availability for temporary summer employment, their relatively high verbal abilities, and their anticipated ability to establish rapport with the graduates. Because of the valuable learning experience which is derived from involvement in this type of work, students served in a service-learning internship role patterned after the model developed by the Southern Regional Education Board under the sponsorship of the U. S. Department of Labor and other agencies.[3]

From a pool of over 30 applicants, 10 interviewers were selected and assigned to one of three geographic locations in which a sizable number of graduates was expected to reside (Chattanooga, Tennessee; Oak Ridge-Knoxville, Tennessee; and Chicago, Illinois). Each location was established as a home base of operation for two or more students. Selections were based on information gathered during applicant interviews with senior staff members and applicant performance in a simulated TAT graduate interview. The 10 selected interviewers were given one week of orientation and training in Oak Ridge which included familiarization with the interview forms, location techniques, survey research results from similar studies, and practice sessions at interviewing in the field and during video-taped simulated interviews with accompanying feedback sessions. A second training session was held in mid-July to review interviewing performance, to discuss manpower development topics, and to make certain procedural changes which would facilitate the interview process. The project coordinator supervised the interviewers, giving them daily performance feedback and assistance throughout the interview period.

A spedific set of instructions to be followed in conducting the interview as provided to each interviewer to ensure that the graduate's right to privacy was respected. The interview questions and procedures were reviewed and approved by the Office of Manpower Policy, Evaluation and Research of the Department of Labor, before the interviewing began.

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[3]Student Manpower, Report of the Atlanta Student Manpower Project for the U. S. Department of Labor by the Southern Regional Education Board, March 1970.

IV. Interview Forms

Six interview schedules were prepared to be administered to three different persons—the graduate, his first supervisor, and a personnel representative. These interview forms were prepared by TAT staff using information from the mailed questionnaires, TAT's regular followup procedures, similar surveys' research questionnaires, and experienced staff members' opinions on possible areas of trainee adjustment difficulties. Many of the questions were constructed to obtain open-ended responses in the belief that the most comprehensive cataloging of graduate problems could thus be obtained.

The graduate was administered three forms (see Appendix C):

1. Job Record - Name, interviewer, social security number, current home address, date graduation, training, number of jobs since leaving TAT, current employment status, and brief description of each job since leaving TAT—company name and address, supervisor name, department, termination date and employment status.

2. Personal and Community Data - Marital status, number of dependents and children, residential information, relocation plans, attitudes and problems, transportation used and problems, financial information regarding insurance, banking and credit information and related problems, community assistance agencies utilized, organizations belonged to, family problems, additional training received, evaluation of TAT.

3. Individual Job History (collected for each job which a trainee had following graduation) - Job title, pay, supervisor, and hours worked when hired, the same information currently, duties related to training, periods of unemployment skills added to TAT training, job dimensions ratings (pay, duties, supervision, etc.), critical incidents of job dimensions, reasons for termination and adjustment problems.

The first supervisor on the first job received one form:

4. Supervisor Interview Form - Period of employment, pay and title changes and reasons for each, employee rating form (absenteeism, conflicts, attitudes, etc.), the resolution of problems and an overall rating (see Appendix D).

The personnel officer on the first job received two forms (see Appendix E):

5. Policy and Community Data - Type of business, number of employees, location, economic effects on company, availability of public facilities, supportive services, employee practices (seniority, absenteeism, employee services, etc.), problems with TAT trainees in general, and areas for improvement.

6. Individual Employee Information - Dealing with the specific TAT training graduate—employment status, termination reasons, performance evaluations, job behavior problems, shiftwork, layoffs, title and pay changes and the reasons for each.

These interview forms were pre-tested by TAT staff members during interviews with a small number of local TAT graduates. Changes were made

to ensure comprehension by the graduates and ease of administration by the interviewer.

V. Interview Procedure

Interviewers were given as much information about the graduate to be contacted as was available. Location information was available from a list of graduates who returned the mailed questionnaires, from the training records which usually contained the graduate's home address during training, an emergency address supplied during training, and the name of the firm in which the graduate was placed (when available). The interviewer then contacted the graduate to arrange an interview. Often more extensive steps, such as checking with neighbors, friends, post office, city directories, etc., were necessary to locate the graduate. The ease with which graduates could be contacted depended mainly on having accurate, verified information. A number of graduates could not be contacted because the address information was either recorded incorrectly or spurious. The most useful piece of information, if a graduate could not be located at his last known address, was the address (preferably several) of close relatives (preferably older relatives such as parents or grandparents who tend to be less residentially mobile than the average graduate).

Most interviews were conducted in the evenings after working hours or on weekends. When calling upon a graduate, the interviewer introduced himself, briefly explained the purpose and nature of the study, and read a statement that informed the graduate his responses to the questions would be treated as confidential and his participation was invited but was to be voluntary. No contacted graduate refused to be interviewed or refused to answer any of the questions in the interview forms. During the interview, the graduate's permission was obtained to contact his first employer and supervisor after leaving training.

During some interviews, questions were repeated to verify information; in some cases questions did not apply or the interviewer was unable to obtain relevant answers to one or more questions. This accounts for the unequal number of responses in the results section. Usually a few minutes were spent at the end of the interview clarifying the graduate's answers to certain questions, and additional office time was used to clarify or rewrite the interviewers' notes. Interviews ordinarily took between 20 and 40 minutes depending primarily on the loquacity of the graduate and number of jobs which he had had since graduation.

Following the graduate interview, attempts were made to contact the graduate's first employer (usually through the personnel office) and supervisor. Because of survey time and budgetary constraints, fewer employers and supervisors were interviewed than were trainees. Where the company would not allow direct interview contact with supervisors, interview forms were forwarded to them through the company's personnel office.

VI. Data Tabulation and Analysis

Files of the five or more possible interview forms were compiled for each of the interviewed graduates (depending on the number of jobs a graduate had held and excluding the Policy and Community Information form which was only administered once to the personnel officers where TAT graduates were employed). A complete list of responses to each open-ended question was assembled with each response typed on individual index cards. A number of judges (TAT interviewers and staff members) then sorted all the responses for a given question into the number of categories which they felt would accurately categorize the spectrum of responses. When substantial agreement was reached between judges, definitions for each category of an item were listed. Codes were established for all other responses and a codebook was written.

Data were encoded, keypunched and verified yielding 20 cards per case. Biographical and training performance data were retrieved from TAT's computerized records of the graduates and punched on five additional cards per case. (NOTE: TAT's complete computer records extend back for the past two years of training. Consequently, data from computer records were available for only 38% [177] of the graduates in the survey sample).

The data were processed at the AEC and ND,UCC Statistical Programming Unit. The main statistical analysis is simple and straight forward, including measures of central tendency, variability and frequency distribution. Most statistics were generated from existing programs such as BMD[4] and SPSS.[5] The statistics used to describe relationships have been noted in the appropriate places. The findings of the study have been presented primarily in tables with interpretations, explanations and special notes where necessary.

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[4]Dixon, W. J., ed., Biomedical Computer Programs, University of California Press, 1971.

[5]Nie, Norman H., Bent, Dale H., and Hill, C. Hadlai, Statistical Packages for the Social Sciences, McGraw-Hill, 1970.

Appendix B

MAILOUT LOCATOR QUESTIONNAIRE

Code No. _____

TRAINING AND TECHNOLOGY

Oak Ridge Associated Universities
Union Carbide Corporation

Followup of TAT Graduates

1. Full Name: _____
(Last) (First) (Middle)

2. Present Address: _____
(Street and Number)

_____
(City) (State) (Zip)

3. Telephone Number: _____

4. Marital Status: ☐ Single ☐ Married ☐ Separated ☐ Divorced ☐ Widowed

5. Employment Status: ☐ Full-time ☐ Part-time ☐ Unemployed

6. Did you move to a new location for your first job after graduation? ☐ Yes ☐ No

7. If you are employed, please state:

Present employer _____
Plant, Division, or Department _____
Location _____
(City) (State)
Job Title _____

8. How many jobs have you had since graduating from TAT?

☐ None ☐ One ☐ Two ☐ Three ☐ Four ☐ Five or more

9. What were the biggest problems on your first job after graduation?

☐ Finding a way to get to work
☐ Meeting regular work hours
☐ Not trained for the job
☐ Getting along with your boss
☐ Getting along with other workers
☐ Lack of necessary tools
☐ Boring job
☐ Shift work
☐ Little chance for promotion
☐ No problems
☐ Other _____

10. In what ways could TAT have helped you after you left training?

☐ Helped find a place to live
☐ Provided some form of temporary financial assistance
☐ Provided information about housing, transportation, etc. in your new location
☐ Referred you to community assistance agencies such as Employment Service, health services, or social services
☐ Other _____

11. How useful has your TAT training been?

☐ Very useful ☐ Only moderately useful ☐ Not useful

Please mail no later than May 19. Thank you.

Oak Ridge Associated Universities
P. O. Box 117
Oak Ridge, Tennessee 37830

4/3/72
TAT-F1

Appendix C

GUIDES FOR INTERVIEWS WITH GRADUATES

GRADUATE INTERVIEW SCHEDULE

JOB RECORD

Interviewer_____ Date_____

1. Name_____
(Last) (First) (Middle)

2. Soc. Sec. #_____ 3. Phone_____

4. Home Address _____
(#) (Street) (Apt. #)

_____
(City) (State) (Zip Code)

5. Date Graduation_____ 6. Area Training_____
(Month) (Year)

_____

_____

7. How many jobs have you had since graduating from TAT? _____

8. Are you currently employed? ☐ Yes ☐ No

9. Starting with your first employer after graduation

a. (Company)_____(Address)_____

_____ ☐ Full-time ☐ Part-time

(Date hired - month, year)_____(Date terminated - month, year)_____

(First supervisor)_____(Dept.)_____

(Current or final supervisor)_____(Dept.)_____

_____

b. (Company)_____(Address)_____

_____ ☐ Full-time ☐ Part-time

(Date hired - month, year)_____(Date terminated - month, year)_____

(First supervisor)_____(Dept.)_____

(Current or final supervisor)_____(Dept.)_____

_____

c. (Company)_____(Address)_____

_____ ☐ Full-time ☐ Part-time

(Date hired - month, year)_____ (Date terminated - month, year)_____

(First supervisor)_____(Dept.) _____

(Current or final supervisor)_____(Dept.)_____

_____

d. (Company_____(Address)_____

_____ ☐ Full-time ☐ Part-time

(Date hired - month, year)_____(Date terminated - month, year)_____

(First supervisor)_____(Dept.)_____

(Current or final supervisor)_____(Dept.)_____

_____

e. (Company)_____(Address)_____

_____ ☐ Full-time ☐ Part-time

(Date hired - month, year_____(Date terminated - month, year)_____

(First supervisor)_____(Dept.)_____

(Current or final supervisor)_____(Dept.)_____

_____

f. (Company)_____(Address)_____

_____ ☐ Full-time ☐ Part-time

(Date hired - month, year)_____(Date terminated - month, year)_____

(First supervisor)_____(Dept.)_____

(Current or final supervisor)_____(Dept.)_____

_____

Graduate Interview Schedule

Personal & Community Data

. Marital Status ☐ Single ☐ Married ☐ Divorced ☐ Separated ☐ Widowed

. # of dependents _____ 3. # of children _____.

. Residential Information (Start with first residence after graduation).

	City & State	Type Residence House, Apt., Room, Parents, etc.	Rent or Own	# People in Residence	Date Arrived
1)					
2)					
3)					
4)					
5)					
6)					
7)					

. Do you plan to move in the foreseeable future? ☐ Yes ☐ No Reason:

☐ Family Desires ☐ Job in Field

☐ Closer to Relatives ☐ Higher Level Job

☐ Higher Paying Job ☐ Better Residence

☐ Nicer Neighborhood ☐ Other (specify) _____

_____

6. Did your first job require that you move to a new location? ☐ Yes ☐ No

7. Did you want to make this move? ☐ Yes ☐ No

8. Did your family want to make this move? ☐ Yes ☐ No ☐ I don't know

. Were you familiar with the new location? ☐ Yes ☐ No; Your family? ☐ Yes ☐ No

10. Did any subsequent job require that you move? ☐ Yes ☐ No

1. How many jobs have required moving since graduation? # _____.

12. Did any of these subsequent moves cause difficulties for you? ☐ Yes ☐ No; Your family? ☐ Yes ☐ No

13. Most people experience difficulty in relocating - please list (1) the problems you encountered after leaving TAT; (2) the severeness (1= very severe, caused personal or family anguish, 2 = annoying, inconveniencing, 3= minor problem) of these problems, and

(3) the time these problems began and ended.

	Severity	Began	Ended	Rank

(Probe items after eliciting as many as possible - money to move, finding place to live; locating schools, churches, shopping areas; wife, children, adjusting to neighborhood or neighbors; finding recreational activities, medical help; parents.)

After list completed, give '1' to worst problem, '2' to next worst, etc.

14 a. Did you own a car when you graduated? ☐ Yes ☐ No

14 b. How did you get to work on your first job? ☐ bought car & drove ☐ bus ☐ walk ☐ drove own car ☐ carpool ☐ subway or "L" ☐ Other_____

15 a. Do you now own a car? ☐ Yes ☐ No

15 b. How do you get to work? ☐ drive self ☐ bus ☐ walk ☐ carpool ☐ subway or "L" ☐ Other _____

16. Have you had problems getting to work? ☐ Yes ☐ No

What was the cause?_____

How did you solve it?_____

Was it a ☐ very severe ☐ annoying ☐ minor problem?

17 a. Do you have a checking account? ☐ Yes ☐ No

17 b. How long have you had it? _____

17 c. What problems have you had with it? _____

_____

17 d. Were these problems ☐ Severe ☐ Annoying ☐ Minor

18 a. Do you have a savings account? ☐ Yes ☐ No 18 b. How long? _____

19 a. Do you have any credit cards or charge accounts? ☐ Yes ☐ No How many? _____

19 b. Have you had any problems with credit cards or charge accounts? What were they?

_____

_____

19 c. Were these problems ☐ Severe ☐ Annoying ☐ Minor

20 a. Do you have life insurance? ☐ Yes ☐ No, Is it group ☐ or personal ☐

20 b. Do you have car insurance? ☐ Yes ☐ No, Is is group ☐ or personal ☐

20 c. Do you have health insurance? ☐ Yes ☐ No, Is it group ☐ or personal ☐

20 d. Is your health insurance - ☐ disability income ☐ hospitalization ☐ major medical ☐ sickness & accident ☐ other _____

20 e. Have you had any problems with insurance - what were they: (After obtaining, assign a rank of 1 to worst problem, 2, etc.

Problem	Rank

21 a. Think of the time between graduation and the end of your first full month on your first job, what financial problems did you have, how severe (1= very severe, 2= annoying, 3= minor); when did each problem finally end? (Rank all items after list completed)

Problem	Severity	Ended	Rank

21 b. Since this period, what other financial problems have you had (same data format as 21 a. with addition of when problem began).

Problem	Severity	Began	Ended	Rank

2. What community assistance agencies have you had contact with since graduation; for what purpose; for how long? (After obtaining list have subject rank agencies, with rank '1' assigned to most important.) (Probe items - welfare organizations, YMCA, day-care centers, employment services, Red Cross, police.)

Name	Purpose	Began	Ended	Rank

3. Name the organizations to which you belong, how often you attend meetings(%) and any offices held in each? (Place a rank of '1' by the one which the graduate feels is most important to him; '2', etc.)

Name	% Attendance	Offices held	Rank

24. Many people who get training and jobs have problems with their friends and family? What problems have you encountered, with whom, for what period and how severe was (1 = very severe, 2 = annoying, 3 = minor).

Problem	Relationship	Began	Ended	Severity	Rank

(Rank with '1' for worst problem, '2', etc.)

25 a. If you were unemployed, would you relocate to a new community to get a job?

☐ Yes ☐ No

25 b. If you were not employed in your training area, would you relocate to get a job in your field? ☐ Yes ☐ No

5 c. List the reasons why you would not relocate? (then rank with '1' for most important, '2', etc.).

Reason	Rank

6. Have you had any additional training or education since you left TAT; who gave it, what was the subject, how was it taught (on job, off job simulation, classroom, etc.), what purpose was it for, and do you think TAT should have taught it (yes or no)

Who	
Subject	
Teaching Method	
Purpose	(Yes No) TAT Teach?

27 a. Do you think your TAT training limits you to the one job area for which you were trained? ☐ Yes ☐ No If yes, why: _____

27 b. Do you think TAT officials ever misled or misinformed you? ☐ Yes ☐ No
How or what was done? _____

28 a. Some people have difficulty adjusting to a new job or a new community. What was the worse problem you faced in this situation? How did you handle it?

28 b. Many graduates have developed very good ways of adjusting to new situations. What are some of the ways you have found that tended to make adjusting to a new job or community easier?

GRADUATE INTERVIEW SCHEDULE

Individual Job History

Starting with the first job after graduation, repeat this form for every job listed on Item 8, Job Record Form.

1. Subjects Name_____ Interviewer's Name_____

2. The _____job held after graduation with (firm)_____

firm address_____

3a. Job title when hired_____

3b. Pay rate when hired_____ per _____.

3c. Supervisor & department when hired_____

_____

3d. Average # hours worked per week when hired was_____hours per week.

3e. Were your job duties when hired related to your TAT training? ☐ Yes ☐ No ☐ To some degree

4a. Current or final job title (same or specify _____

4b. Pay rate currently or final _____ per _____

4c. Supervisor & department (current or final)_____

_____

4d. Average # hours worked per week (current or final) _____hours per week.

4e. Were your current or final job duties related to your TAT training?

☐ Yes ☐ No ☐ To some degree

4f. During this job were there any long periods of unemployment caused by strikes, layoffs or the like? ☐ Yes ☐ No (specify cause, dates, and length of time)_____

_____

_____

_____

5. What skills did you have to add to your TAT training to perform this job; and do you think TAT should have taught them?

Skills	TAT should teach (yes, no)
_____	_____
_____	_____
_____	_____

6. On this job, how do (did) you like your:

	Like very much	Like	OK Average	Dislike	Dislike very much
Starting pay	☐	☐	☐	☐	☐
Current final pay	☐	☐	☐	☐	☐
Job duties	☐	☐	☐	☐	☐
First supervisor when hired	☐	☐	☐	☐	☐
Current or final supervisor (check if same) ☐	☐	☐	☐	☐	☐
Co-workers	☐	☐	☐	☐	☐
Company (check if no union) ☐	☐	☐	☐	☐	☐
Union	☐	☐	☐	☐	☐
Job as a whole	☐	☐	☐	☐	☐

7. The tning I dislike(d) most about this job was_____

_____

_____

8. The thing I dislike(d) most about the company was_____

_____

_____

9. The thing I dislike(d) most about my foreman was_____

_____

_____

10. The thing I dislike(d) most about my co-workers was_____

_____

_____

11. The thing I dislike(d) most about my union was_____

_____

_____

12. Specify exactly the reasons for your leaving this job (probes - problems with foreman, co-workers, pay, armed forces, layoffs, school, another job, etc.)

12. (cont.)

Put a '1' by the most important, a '2' by the next most important - etc.

(Reason) (Rank)

13. Most people have problems in adjusting to jobs, we would like you to tell us, first, the problems you had immediately after graduating (or leaving your previous job), second, how severe the problems were (1 = very severe, created very serious problems; 2 = annoying, personally discomforting; 3 = minor problem) third, when it began and when it ended.

Problem	Began	Ended	Severity	Rank
a.				
b.				
c.				
d.				
e.				
f.				
g.				
h.				
i.				
j.				

(Elicit as many as possible w/o probes; then probe - getting a job, pay, lack of experience or training, finding a place to live, cost of relocating, getting to work, family, co-workers, supervisors, racism, company giving misleading information, adjusting to plant or work routine, layoffs, survival money, union, discrimination, shiftwork, favoritism.)

After probing, when list complete - have graduate assign rank of 1 to worst problem, 2 to next worst, etc. until all ranked.

Appendix D

GUIDE FOR INTERVIEWS WITH
FIRST JOB SUPERVISORS

SUPERVISOR INTERVIEW FORM

1. Interviewer_____ Date_____

2. Graduate_____ Title_____

3. Supervisor_____ Title_____

4. Company_____ Address_____

5. What was the time period in which this employee worked for you?

   Began_____(month- year) Ended_____(month- year)

6. Were you the first supervisor this employee had while working for this company? ☐ Yes

   ☐ No If no, can you tell us who was his first supervisor in this company?

   Name_____ Department_____

7. We would like you to try to recall all of this employees pay changes and job title changes during the period when he worked for you.

A. Was the *	Pay increase	No pay change	Pay decrease	Title change, promotion	Title change, transfer	Title change, demotion
First Change						
Second Change						
Third Change						
Fourth Change						
Fifth Change						
Sixth Change						
Seventh Change						
Eighth Change						

B. Why did this change occur? (Record by placing most important letter first, then next most important letter, etc., in the appropriate box)

a) superior performance
b) inferior performance
c) increase in work force
d) decrease in work force
e) pay increase due to job title change
f) seniority or tenure on the job
g) completion of training or apprenticeship program
h) normal advancement due to established company and/or union policy
i) cost of living increase
j) other (specify)_____

*Note: where combinations exist in a change, (eg. promotion & pay increase, or a transfer-demotion & pay decrease, etc.) mark in as many columns as applicable

8. Did this individual have any problems adjusting to his job? ☐ Yes ☐ No

9a. Did he have any problems related to:

	Yes (Blank if No)	In terms of importance to you, were these problems: Serious	Minor	Did they occur: Frequently	Infrequently
a.	☐ Absenteeism	☐	☐	☐	☐
b.	☐ Illness	☐	☐	☐	☐
c.	☐ Tardiness	☐	☐	☐	☐
d.	☐ Lacking necessary educational skills (reading, math, job knowledge)	☐	☐	☐	☐
e.	☐ Lacking necessary task skills (ability to perform required job tasks)	☐	☐	☐	☐
f.	☐ Conflicts with co-workers	☐	☐	☐	☐
g.	☐ Union problems	☐	☐	☐	☐
h.	☐ Poor attitude towards supervision	☐	☐	☐	☐
i.	☐ Poor attitude towards company	☐	☐	☐	☐
j.	☐ Poor attitude towards plant and/or work routine	☐	☐	☐	☐
k.	☐ Other (specify)_____	☐	☐	☐	☐
l.	☐ Other (specify)_____	☐	☐	☐	☐

9b. Did he overcome any of these problems? How? When were they?

Problem letter	Resolution of problem	Problem began month/ year	Problem ended month/ year
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

1 . How would you rate this employee's performance in comparison with his fellow workers:

___ Excellent (as good or better than any employee I ever had)

___ Above Average (better than average employee)

___ Average

___ Below Average (poorer performance than average employee)

___ Poor (as bad or worse than any employee I ever had)

Appendix E

GUIDES FOR INTERVIEWS WITH PERSONNEL REPRESENTATIVES

PERSONNEL INTERVIEW FORM

Policy & Community Information

Interviewer_____ Date_____

1a. Company_____

1b. Name and title of interviewee_____

1c. Plant, division or unit_____

1d. Address_____

1e. What specific type of business is conducted at this location?_____

_____

_____

_____

1f. # employees in this unit?_____

2a. Location of plant or business in -

__ Industrial area
__ Primarily residential
__ Central business area
__ Outlying area
__ Other_____

2b. Population of and distance to the nearest metropolitan area (pop.) _____ (miles) _____

3a. Has the community, in general, been adversely affected by the recent economic downturn of the nation?

__ Extremely __ Moderately __ Little or no effect

3b. What have been the major effects of the recent economic situation upon the community. (Then rank these 1= most important 2= next most etc.)

_____

_____

_____

_____

_____

3c. Has your company, as a whole, been affected by the recent economic downturn of the nation?

__ Extremely __ Moderately __ Little or no effect

d. What have been the major effects of the recent economic situation upon the company, especially upon employment and personnel policy. (Rank '1' for most important, '2', etc.)

_____

_____

_____

_____

_____

3e. Has your unit been affected by the recent economic downturn of the nation? (Omit e & f if the company and unit are the same).

___ Extremely ___ Moderately ___ Little or no effect

3f. What have been the major effects of the recent economic situation upon this unit, especially upon employment and personnel policy. (Rank '1' for most important, '2', etc.)

_____

_____

_____

_____

_____

4a. Is public transportation available in this community? ___ Yes ___ No

4b. (if 'a' is yes) Is the plant accessible by public transportation? ___ Yes ___ No

4c. (if 'a' is yes) Is public transportation available for all shifts? ___ Yes ___ No

4d. (if 'a' is yes) Estimate the percentage of your employees who use public transportation as their primary means of getting to work._____%

5a. Is low income housing available in the community? ___ Yes ___ No ___ Don't know

5b. (if 'a' is yes) How close is the nearest low income housing from your plant? _____ miles

6. What supportive services does your company offer to new employees* (state elegibility requirements, if any)? What % of new employees utilize them?

Service	%	Service	%
_____		_____	
_____		_____	
_____		_____	

*(Note by new employees in this and subsequent questions, we are referring to entry level employees in skilled or technical trades.

7. What supportive community agencies are present in the community and what percentage of your new employees use them? (Probes - employment agencies, community assistance agencies, health departments, welfare agencies, day care centers, Salvation Army, neighborhood houses, etc.

Name	%	Name	%

8. How long is a new employee on probation?_____

9a. When seniority begins, does it start from the date hired ___ or the end of the probationary period ___ ?

9b. How is seniority calculated? ___ Plant-wide ___ Job-wide

10a. Are seniority associated pay increases automatic? ___ Yes ___ No

10b. How frequently do raises occur?_____

10c. Is the amount of a raise set by contract? ___ Yes ___ No

11. Are new employees generally required to work special hours or shifts? ___ Yes ___ No

(specify)_____

_____

12a. When vacancy occurs in a non-entry level position, do you generally hire - ___ from within plant or ___ outside plant?

12b. Are promotions ___ generally automatic or ___ require job bidding?

12c. Are promotions based on ___ qualifications only, ___ seniority only, ___ qualifications with seniority the deciding factor, ___ seniority with qualifications the deciding factor, or ___ other? (specify)_____

_____

12d. Is there a set period for learning a new job? ___ Yes ___ No (specify)_____

_____

_____

13. If layed off, what is the policy for an employee to maintain recall or seniority rights?

_____

_____

_____

14a. What is the company policy on absenteeism?_____

_____

_____

14b. What is the company policy on tardiness?_____

_____

_____

15a. Does the company have any training or apprenticeship programs? ___ Yes ___ No

(specify)_____

_____

_____

_____

15b. What are the eligibility requirements for these programs? Age_____

Experience_____

Educational background_____

Other_____

_____

15c. Does the company provide incentives or assistance for an employee who takes additional training or education outside the plant? ___ Yes ___ No (specify)_____

_____

_____

16a. Does the company provide counselling services for employees? ___ Yes ___ No

(specify)_____

_____

_____

16b. Does the company have a "buddy" system for new employees? ___ Yes ___ No

(specify)_____

_____

_____

16c. Does company provide an orientation program for new employees? ___ Yes ___ No

(specify)_____

_____

_____

16d. Does company refer new employees to community agencies for assistance? ___ Yes ___ No

(specify) _____

_____

_____

16e. Does the company do any of the following:

1) help employees find suitable housing? ___ Yes ___ No (specify)_____

_____

_____

2) help employees find transportation to and from work? ___ Yes ___ No (specify)_____

_____

_____

3) follow up when employee is repeatedly ill or late? ___ Yes ___ No (specify)_____

_____

_____

4) provide relocation pay and for other assistance when an entry level employee is required to move to accept employment? ___ Yes ___ No (specify)_____

_____

_____

17a. **Total number** of TAT graduates company has employed?_____

17b. **Total number** of TAT graduates your unit or plant has employed?_____

17c. **Total number** of TAT graduates currently employed by company?_____

17d. **Total number** of TAT graduates currently employed by your unit or plant?_____

18. Do you **feel** that TAT trainees are well-trained and competent in terms of the average **entry** level employee in the same job.

__ As good or better than any __ Better than average __ Average

__ Less than average __ As bad or worse than any

19a. Do you think the problems TAT trainees have had at the time of entry into your company were primarily due to __ deficient training, or due to __ inadequate adjustment to the normal demands of the work situation due to __ lack of ability or aptitude?

19b. If problems were due to deficient training, did they lie in __ educational training (writing, math, reading, job knowledge, etc.) or __ task training (untrained to perform relevant job tasks).

20. What problems have you had with TAT trainees, how severe are these problems, (1= very severe, possible cause for termination, 2= bothersome, costing the company some money, 3= minor)? How many of the TAT trainees have had this problem (%) and how long have these problems lasted on the average (note if until termination)?

Problem	Severity	Rank Severity	Frequency	Rank Frequency	Time

Probes (tardiness, absences, sickness, garnishees, foreman, alcoholism, drugs, legal, co-workers) Rank most frequent = 1. Rank most severe = 1.

21. In what areas would you like to see TAT entry level employees most improved upon arrival at your plant. [Rank '1' for most important, etc.].

	Area	Rank
a.		
b.		
c.		
d.		
e.		
f.		
g.		
h.		

PERSONNEL INTERVIEW FORM

Individual Employee Information

Firm Name_____

We would like to ask you some specific questions about one particular TAT graduate,

(Name)_____ who is employed was

by_____(Department).

1a. What date was he hired?_____

1b. Is he still employed by you? ☐ Yes, or Date of Termination_____

1c. How did he come to apply for this job?_____

_____

_____

1d. What were the specific reasons for his termination?_____

_____

_____

_____

2. How does this employee compare to other employees in the same type of job with the same experience?

☐ Superior ☐ Above Average ☐ Average ☐ Below Average ☐ Poor

3. Has this employee had problems on this job? ☐ Yes ☐ No

4. Specify each known problem, the time period in which the problem lasted (month-year), and the severity of the problem (1 = very severe, 2 = serious (needed connection), 3 = minor). Then rank with 1 = worst problem, etc.

Problem	began	Ended	Severity	Rank

5. Has this employee had to work different shifts? ☐ Yes. ☐ No During what periods?

Beginning	End	Beginning	Ending	Beginning	Ended

6. Have there been any periods of layoffs or strikes in the period in which this graduate worked for you?

Beginning	Ending	Beginning	Ending	Beginning	Ending

7a. What was this employee's job title when hired?_____

7b. What was this employee's pay rate when hired?_____

7c. We would like to know the job title and pay changes that this employee had while with you.

CHANGE	Pay Change	Title Change	Both Changes	NEW TITLE	NEW PAY RATE	Pay Decrease	Pay Increase	Title Change Promotion	Title Change Demotion	Title Change Transfer
1st										
2nd										
3rd										
4th										
5th										
6th										
7th										
8th										

Why did this change occur (place one or more letters in the appropriate square - most important first, etc.)

a. superior performance

b. inferior performance

c. increase in work force

d. decrease in work force

e. seniority on job

f. pay change due to job title change

g. completion of training or apprenticeship program

h. normal advancement according to established company or union policy

i. cost of living increase

j. "housekeeping" title change, no real change

k. Other_____

l. Other_____

Appendix F

INTERCORRELATION MATRIX OF GRADUATE SATISFACTION MEASURES WITH FIRST JOB

INTERCORRELATION MATRIX OF GRADUATE SATISFACTION MEASURES WITH FIRST JOB

	2	3	4	5	6	7	8	9
1. Satisfaction with starting pay	1.00	.82	.31	.28	.19	.22	.45	.37	.41
2. Satisfaction with current of termination pay		1.00	.36	.31	.22	.24	.47	.38	.42
3. Satisfaction with job duties			1.00	.36	.35	.32	.44	.40	.66
4. Satisfaction with first supervisor				1.00	.52	.41	.43	.28	.43
5. Satisfaction with current or final supervisor, if different from first					1.00	.44	.42	.33	.46
6. Satisfaction with co-workers						1.00	.49	.27	.38
7. Satisfaction with company							1.00	.53	.58
8. Satisfaction with union								1.00	.51
9. Overall job satisfaction									1.00

Starting pay on the first job correlates (.28) with overall job satisfaction and highly with pay satisfaction (.41) which should be expected. Satisfaction with co-workers and supervision did not correlate significantly with pay satisfaction. Overall job satisfaction and pay satisfaction increase concomitantly with training relatedness of the job (Tables 4-13 and 4-14). The chi-square test for independence was computed and the two variables are highly dependent. Contingency coefficients were computed for the two relationships. These showed a strong positive significant relationship between the satisfaction measures. (The contingency coefficient is similar to the correlation coefficient but has lower limits of 0.0 and upper limits somewhat less than 1.0, depending on the number of cells in the contingency table. Thus, the contingency coefficient is an underestimate of the possible correlation coefficient. The correlation would have been considerably higher.)

Appendix G

PRE-TRAINING TEST SCORES AND TRAINING MEASURES BY HIGH-LOW SUCCESS GROUPS

PRE-TRAINING TEST SCORES AND TRAINING MEASURES BY HIGH-LOW SUCCESS GROUPS

	Group I (N=35)	Group II (N=48)	Group III (N=15)	Group IV (N=38)	Total Survey Sample (N=148)
Training performance evaluation*					
45 day	5.86	6.90	5.60	6.60	6.15
90 day	4.91	6.34	4.60	5.83	5.68
135 day	5.97	6.23	5.50	5.66	5.86
180 day	6.30	6.53	3.33	5.52	6.06
General Aptitude Test Battery (GATB)					
Intelligence (GATBG)	103.4	96.6	106.7	95.6	95.7
Verbal aptitude (GATBV)	106.4	97.3	102.9	97.3	97.0
Numerical aptitude (GATBN)	105.2	100.3	111.9	98.6	100.6
Spatial aptitude (GATBS)	107.8	99.6	105.0	99.3	100.7
Form perception (GATBP)	114.0	106.8	122.4	102.9	104.4
Clerical perception (GATBQ)	120.0	111.0	117.4	108.9	107.5
Motor coordination (GATBK)	113.6	102.1	117.3	98.0	103.4
Finger dexterity (GATBF)	99.5	101.5	111.0	100.7	97.3
Manual dexterity (GATBM)	105.1	105.0	118.9	103.1	102.8
TAT trait ratings**					
Ability to get along	3.72	3.51	3.94	3.55	3.62
Dependability	3.08	2.93	3.24	2.93	3.02
Industriousness	3.53	3.27	3.71	3.26	3.44
Leadership	3.39	2.91	3.47	2.86	3.14
Mental alertness	3.54	3.46	3.65	3.40	3.53
Personal appearance	3.50	3.50	3.53	3.50	3.57
Social traits	3.72	3.52	3.94	3.50	3.60
Thoroughness	3.47	3.20	3.65	3.19	3.31
Adult Basic Learning Examination (ABLE)					
Reading	92.2	84.5	92.4	84.2	85.4
Math comprehension	79.0	74.9	80.4	74.4	75.2
Math problems	83.3	79.6	86.7	78.9	81.2
Total math	82.1	77.9	83.6	77.2	78.6
California Test of Adult Basic Education (CTB)					
Reading (raw scores)	108.5	99.9	109.6	99.8	104.2
Reading (grade equivalent)	7.9	7.3	7.9	7.4	7.6
Arithmetic (raw scores)	104.7	95.4	107.6	94.4	100.4
Arithmetic (grade equivalent)	8.0	7.4	8.1	7.4	7.7
Mean no. absences during training	10.5	7.2	10.2	9.2	9.6

*Low score is a high positive performance evaluation. Fifteen point scale.
**Five point scales with five being equal to excellent.

Appendix H

INTERRELATIONSHIPS AMONG TESTS AND TRAINING PERFORMANCE MEASURES

INTERRELATIONSHIPS AMONG TESTS AND TRAINING PERFORMANCE MEASURES

The first question which should be examined to determine the utility of the standardized tests is their interrelationships. The scores for the nine aptitudes measured by the GATB intercorrelated in a pattern consistent with other studies of this test and will not be discussed here. However, both the ABLE and the TABE showed a higher degree of correlation between the skill areas they purported to measure (math and reading) than would be desired. ABLE math scores correlated with ABLE reading scores .73, while a correlation of .88 was obtained between TABE reading and math scores. A table of the intercorrelations between the GATB scores in intelligence, verbal and numerical aptitudes with the ABLE and TABE math and reading scores follows.

Intercorrelation Matrix of Pre-Training Test Scores

	GATB Intell.	GATB Verbal	GATB Numeric	ABLE Math	ABLE Read.	TABE Math	TABE Read.
GATB-intelligence		.91	.81	*	*	.26	.33
GATB-verbal			.64	*	*	.24	.43
GATB-numeric				*	*	.41	.43
ABLE-math					.73	.59	.51
ABLE-reading						.36	.35
TABE-math							.8
TABE-reading							

*Not significantly different from zero.

With respect to the ABLE test this study confirms the results of an earlier study conducted by Dr. Margaret Clarke at TAT.[1] She concluded that the reading portion of the test be discontinued, not only because of low construct validity, but also an item analysis showed that a majority of the items were biased against blacks. Another factor which severely limits the usefulness of both scales of the ABLE test is its low range of possible scores. It is scored in grade equivalents with the highest score being a 9+. This leads to what is known as a "ceiling effect" where the correlation between two tests is limited by the restriction of range on the other. The TABE shows more consistent and higher relations with other tests, although

[1]Clarke, Margaret, An Analysis of the Adult Basic Learning Examination, Report to Training and Technology Project, Oak Ridge, Tenn., 1969.

the high correlation of the TABE reading with GATB numeric, ABLE mathematics and TABE mathematics indicates that ability in mathematics was more critical in differentiating among TAT trainees than reading ability.

With respect to the measures of training success obtained, only one difficulty was encountered. It was found that the scores on the 180-day evaluations were not useful as criterion measures due to the fact that a large number of trainees (the most successful ones in training) had already received a certificate and had left the program, therefore, 180-day evaluations included scores for only those individuals who had not completed or who had not found jobs by the end of the training period. The following matrix shows the interrelations among the remaining measures of training success.

Matrix of Significant Correlations

	45 Day	90 Day	135 Day	Industrial Behavior
45 day evaluation				
90 day evaluation	.59			
135 day evaluation	.46	.59		
Industrial behavior	.27	.35	.47	
Absences	-.18	-.18	-.23	-.13

Measures that were obtained closer together in time correlated highest as would be expected. Industrial behavior ratings were obtained near the end of the training cycle and so could be expected to correlate with 135-day evaluations higher than earlier ones. Similarly, 45-day evaluations correlate higher with 90-day evaluations than with 135-day evaluations.