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ABSTRACT

A study to determine the impact of adult basic education programs on the upward mobility of disadvantaged workers is presented. The paper industry was chosen for case analysis because of the nature of the upgrading problems, the vast adjustments required by the Civil Rights Act of 1964, and the fact that these ABE programs have been operational for several years. The programs studied were utilized by companies in an attempt to increase the potential for promotion of Negroes who were originally employed for unskilled jobs and consigned to permanent occupation of those jobs. The objective was to improve the educational qualifications of such employees so that they could nandle jobs on progression lines or in maintenance. Results were: (1) The ABE programs promised more than they could deliver; and (2) The relation of training to promotion was neither brought out carefully beforehand nor demonstrated after the programs were in effect. The following points were also brought out: (1) Relatively few Negro disadvantaged workers completed the courses; (2) Those who completed the courses showed little improvement in arithmetic and virtually none in reading; (3) There was no relationship between the taking of courses, improvement in test scores, and job advancement; (4) The packaged courses disregarded the cultural characteristics of the trainees; (5) Programmed teaching methods were largely unsuccessful; and (6) The particular conditions and incentives were not such as to produce successful literacy training. (Author/CK)

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RICHARD L. ROWAN

and

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UNIVERSITY OF PENNSYLVANIA

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INDUSTRIAL RESEARCH UNIT

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Associate Director, Industrial Research Unit
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HERBERT R. NORTHRUP
Director, Industrial Research Unit
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FOREWORD

This study is an attempt to determine the impact of adult basic education programs on the upward mobility of disadvantaged workers. It grew out of research on Negro employment, and particularly our studies of racial policies in southern based industries reported in a prior publication, *Negro Employment in Southern Industry.** The paper industry was chosen for case analysis because of the nature of the upgrading problems, the vast adjustments required by the Civil Rights Act of 1964, and the fact that these adult basic education programs have been operational therein for several years. Our hope was, and remains, that the experience and findings relating to this industry will have wider interest and application.

Those not familiar with the paper industry, its practices and its racial policies prior to the Civil Rights Act of 1964, are urged to read Part I of *Negro Employment in Southern Industry*. We have assumed knowledge of the study and have summarized only briefly pertinent parts for introduction and background purposes.

The programs studied here were utilized by companies in an attempt to increase the potential for promotion of Negroes who were originally employed for unskilled jobs and consigned to permanent occupation of those jobs. The objective was to improve the educational qualifications of such employees so that they could handle jobs on progression lines or in maintenance. In other words, the objective was to prepare the employees *for* upgrading. (Once placed on the progression line, an employee advances by seniority, provided he can do the job.)

Unfortunately, the results were not impressive. We found that a) the adult basic education programs examined promised more than they could deliver; and b) the relation of training to promotion was neither brought out carefully beforehand nor demonstrated after the programs were in effect. In addition, this study makes the following points:

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* Herbert R. Northrup and Richard L. Rowan, *Negro Employment in Southern Industry*, Vol. IV, Studies in Negro Employment (Philadelphia: Industrial Research Unit, Wharton School of Finance and Commerce, University of Pennsylvania, 1970).

1. Relatively few Negro disadvantaged workers completed the courses.
2. Those who completed the courses showed little improvement in arithmetic and virtually none in reading.
3. There was no relationship between the taking of courses, improvement in test scores, and job advancement.
4. The packaged courses disregarded the cultural characteristics of the trainees.
5. Programmed teaching methods were largely unsuccessful, particularly with adults who lacked literacy. Even more intensive training was of minor additional help.
6. The particular conditions and incentives were not such as to produce successful literacy training.

Anyone reading this study will know that it could not have been accomplished without cooperation of the companies involved. We appreciate their help in providing access to knowledgeable people, supplying data, and answering many questions. Special thanks go to William B. Gittens, former Vice-President of the American Paper Institute; to officials of several companies whose programs are not discussed in this study but who gave us counsel and information nonetheless; and to Dr. Howard Rosen, Director, Office of Research and Development, Manpower Administration, U.S. Department of Labor, and members of his staff, especially Mr. William Paschell and Mr. Ronald Jones, for helpful assistance and keen suggestions throughout the course of this study. We have also been aided by discussions with Major Milledge J. Mosby, formerly vice president of MIND, Inc., Mr. William Haddad, USR&D, and Dr. R. Lee Henney, Vice President of Economic and Manpower Corporation. Initial evaluation concerning the Georgia Kraft program, described in Chapter V, was initiated by Dr. Northrup pursuant to a grant from the Ford Foundation to the American Paper Institute.

Within the Industrial Research Unit, the study has been aided by discussion with Dr. Bernard E. Anderson and Messrs. John E. Abodeely and Lester Rubin. Mr. Michael E. Johns assisted with the data processing and statistical analysis. Miss Elsa Klemp and Messrs. John B. Morse, Jr. and Mitchell W. Williams researched background statistics and constructed and checked tables. Mrs. Marie Keeney edited the manuscript and offered many suggestions for its improvement, Mrs. Veronica Kent, Mrs. Marsha Mueller, and Miss Mary McCutcheon typed the manuscript. Mrs. Margaret E. Doyle handled the administrative and office management load. The authors did all the field work and writing and assume full responsibility for the results.

Philadelphia
March 1972

RICHARD L. ROWAN
HERBERT R. NORTHRUP

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CHAPTER I.

Introduction

Passage of the Civil Rights Act of 1964, subsequent court cases, and the enforcement of equal rights pursuant to the procurement policies of the federal government brought about massive changes in the employment practices of southern paper mills during the second half of the 1960's and early 1970's. Efforts to employ and upgrade Negroes in jobs other than those traditionally segregated have included mergers of local unions and seniority lines and the development of various company affirmative action programs. Establishment of the "rightful place" doctrine discussed below, and the mandate to eliminate the present effects of past discrimination followed litigations involving a major paper company.

Against this background, various southern paper companies have instituted adult basic education programs. In some cases, the programs have been open to all employees and in others, they have been directed especially to the disadvantaged Negro employee. These programs were generally introduced during the transition period, before major steps had been taken to eliminate discrimination and its past effects, but definitely after the awareness of the need for change, and its inevitability, had been established. Since the late 1960's, there has been a proliferation throughout American industry of company-sponsored education programs and of the educational corporations which produce and market them.

The major concern of this study is to examine several adult basic education programs in a selected number of southern paper companies where programs have been in operation for some time and where specific pressures for upgrading of disadvantaged employees were present. Two questions are central to the analysis: (1) what effect did the programs have on the educational achievement levels of trainees? and (2) what major job improvements resulted from such training, particularly for the disadvantaged employee? Although a number of previous studies have been made of educational upgrading programs, it appears that very few, if any, have given attention to the crucial matter of the relation of basic education to inplant job advancement.

THE INDUSTRIAL SETTING

When the paper industry moved South in the 1930's, it followed the lumber industry in employing large numbers of Negroes. The paper industry confined Negroes largely to outdoor, mostly woodyard, jobs and to work in the timber areas. Negroes were used also in various laboring jobs and in a few other jobs that whites did not want. The natural in-plant progression systems were perverted to accommodate segregation and discrimination. Negroes were not employed in the better jobs, especially on the paper machines or in mechanical pursuits. Moreover, as automation and mechanization progressed, particularly in the 1950's, the proportion of Negroes in the industry declined because the automated equipment eliminated a larger percentage of those jobs for which Negroes were traditionally hired.

As the equipment became more sophisticated after World War II, employment standards for whites were consistently raised. Soon after World War II, most mills began requiring a high school education and the passage of a battery of tests as conditions of employment. The mills could do this because they are usually the highest paying employer in the area. Many of the mills are located in woodland or other rural areas where the mill is also often the only major employer.

The new, more rigid employment standards were not applied to Negroes. Until the 1960's, companies continued to seek Negroes who were hard working, stable, and whose prime qualification for the job was strength rather than education or mechanical ability. Indeed, blacks with a high school education, advanced training, or aptitude were more likely to be passed over for fear that they would be trouble-makers in a system which denied them opportunities beyond laboring jobs.

On the other hand, as noted below, those Negroes who were employed received substantially higher wages than were available to them in most other pursuits. The paper industry is traditionally a high wage industry. Wages in the mills are geared to machine size and productivity, and since the South has the largest most productive machines, wages there are among the highest in the industry. Negroes who are employed as laborers receive between $2.75 and $3.20 per hour. Prior to the Civil Rights Act of 1964, they were among the highest wage employees of their race in many towns of the South.

Unlike many other southern-based industries, paper mills are highly unionized. Most plants are jointly unionized by the United Papermakers and Paperworkers and the International Brotherhood of Pulp, Sulphite and Paper Mill Workers. These unions, whose jurisdictions overlap each other,

generally cooperate in organizing a mill. Nevertheless, there are some mills which have only the Papermakers and others which have only the Pulp Workers. In addition to these two paper unions, it is quite common for various craft unions to be recognized as bargaining agents for maintenance workers. The International Brotherhood of Electrical Workers, the International Association of Machinists, and other craft unions are found in many mills.

When the mills were organized, the unions usually set up separate locals for black workers, and in effect institutionalized the discriminatory system which the companies had followed. Thus, when the Civil Rights Act of 1964 was passed, the bars to Negroes included not only the traditional employment and seniority practices, but also separate black locals with jurisdiction over particular black jobs only.

PAPER INDUSTRY SENIORITY SYSTEM

Seniority did not originate with unionism. Companies, whether unionized, require a system of promoting persons to more complicated, sophisticated, or skilled jobs which also insures that promoted persons are qualified to handle such jobs. The paper industry, like many others, has approached this problem through in-plant, on-the-job training. A person in a lower rated job learns the one above his by working therein when the regular occupant of that job is absent and by observation, and at the same time, he acts as the instructor to the person in the job below his. The job progression systems are not only seniority systems, they are on-the-job training systems. In our earlier study of the racial policies of the paper industry, the seniority system and the distribution of the white and Negro work forces typical of most southern paper mills was described as follows:[1]

Essentially what happened in the paper industry was that on-the-job training programs by which men progressed up the occupational hierarchy were incorporated into union agreements, modified and institutionalized. This was typical of industry generally. Because of the nature of the industry, the seniority lines in pulp and paper mills tend to be "long and narrow"—that is, employees work up one functional line without acquiring skill or seniority rights in another. Thus a person who is employed on the bottom job of a paper machine, for

[1] Herbert R. Northrup and Richard L. Rowan, *Negro Employment in Southern Industry*, Vol. IV, Studies of Negro Employment (Philadelphia: Industrial Research Unit, Wharton School of Finance and Commerce, University of Pennsylvania, 1970), Part One, pp. 40-44.

example, No. 7 hand, or utility man, works up over the years toward the top position of machine tender, but he acquires no knowledge of, or seniority rights to, jobs in the pulp mill, or elsewhere in the facility.

If an employee in the pulp mill under this system desires to transfer to the paper mill, he must start at the lowest job on the paper mill seniority list, and his seniority for promotion or layoff commences when he starts there. Moreover, in most union contracts in the industry, such a transferee gives up his pulp mill seniority. Thus few such transfers occur.

Given the expensive equipment and its intricacies, such a seniority system is well-suited to the needs of the industry. Moreover, there is nothing about it which is discriminatory per se. Unfortunately, combined with employer hiring practices and with modifications which were obviously dictated by race, the seniority system became an invidiously discriminatory instrument. The following series of diagrams depicting a typical pre-1960 seniority progression in a southern pulp and paper plant illustrate this fact.

Figure 1 shows the typical seniority progression system of a southern paper mill and associated work departments of the type that prevailed in the period up to the mid-1960's. The progressions of the paper machine crews and of the finishing crews exhibit no break. The reason is that only whites are employed in these jobs. (Janitors are not in the progression but this is not necessarily racially motivated nor unusual.)

On the other hand, the shipping crew and beater room progressions have "breaks." Thus, in the shipping crew list, the lift truck operator and car loader should be worked in either the production weigher or shipping clerk progression in a nondiscriminatory system, and the laborer would progress to utility man in the beater room; the brokeman, who is Negro, has no rights to progress to first helper and then to beaterman, although these would be the logical steps in a nondiscriminatory system.

Figure 2 presents a similar progression system for a pulp mill, of the same period. Here again, artificial blocks have been created to prevent Negroes from advancing up the occupational hierarchy. In the pulp mill, the tube lancer has been taken out of its natural progression slot where it would be under either the recovery fireman or second helper bark burner. In the boiler room, Figure 3, the firemen are frozen instead of progressing to operator; and the key jobs in the power plant, like those in the pulp mill, are reserved for whites.

Figure 4 shows the same seniority pattern for the woodyard, the area in which most southern Negro pulp and paper workers have been employed. Here Negroes were traditionally barred from operating the largest, and best paying equipment although they always have operated a lot of expensive yard equipment. A nonsegregated seniority system would integrate these jobs into one or two progressions concerned with chip and log unloading, stacking, cutting, and movement to the pulp mill, and with other necessary yard functions.

Maintenance crew seniority is not presented in a diagram. General practice, however, has been to confine mechanics' jobs to whites and to use Negroes only as laborers, or occasionally as helpers. Lack of opportunity in the South for Negroes to learn these trades, plus lack of opportunity to work therein, provided a closed circle against Negro opportunity.

FIGURE 1. *Pre-1960 Typical Southern Paper Mill Seniority Progression*

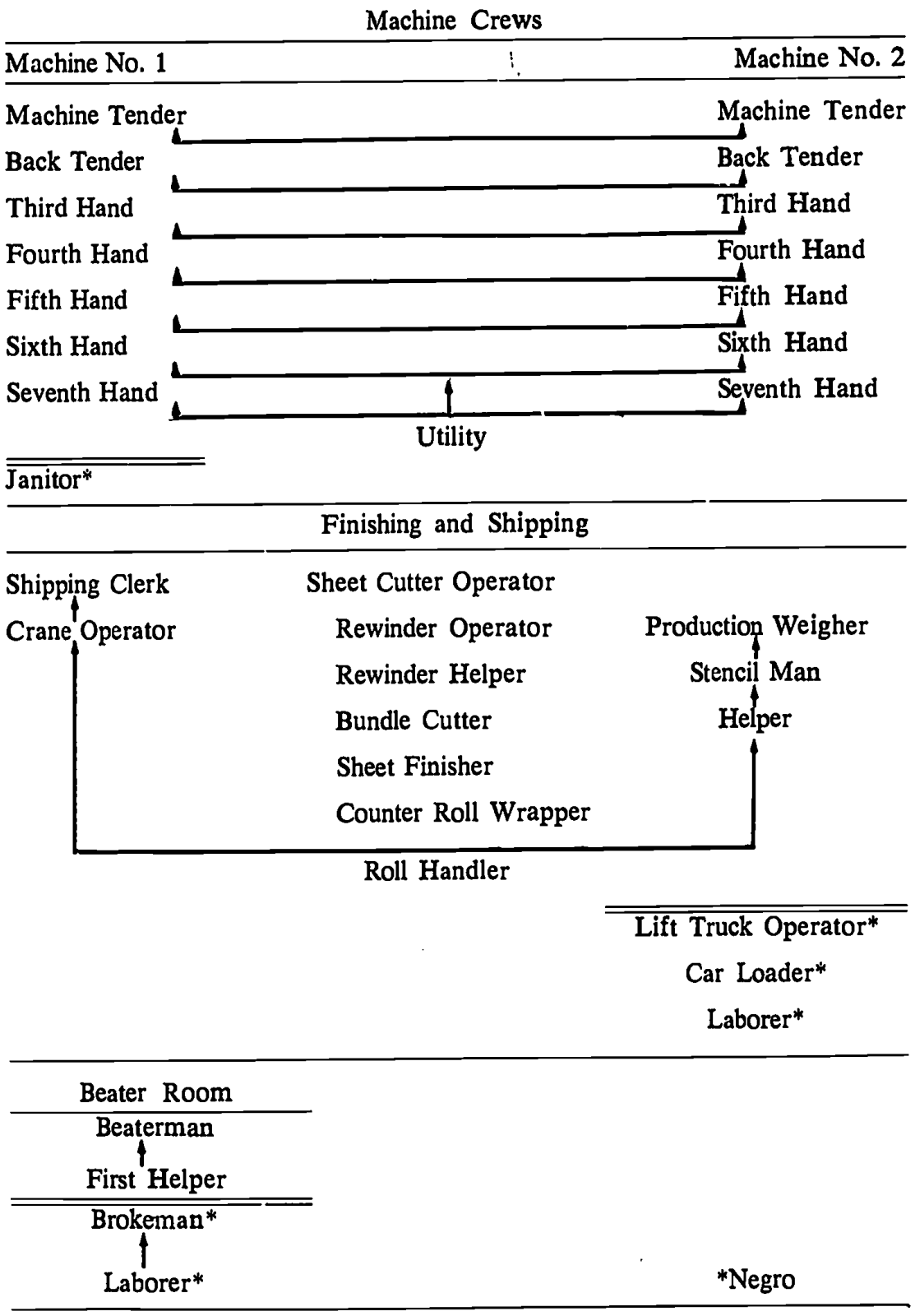


FIGURE 2. *Pre-1960 Typical Southern Pulp Mill Seniority Progression*

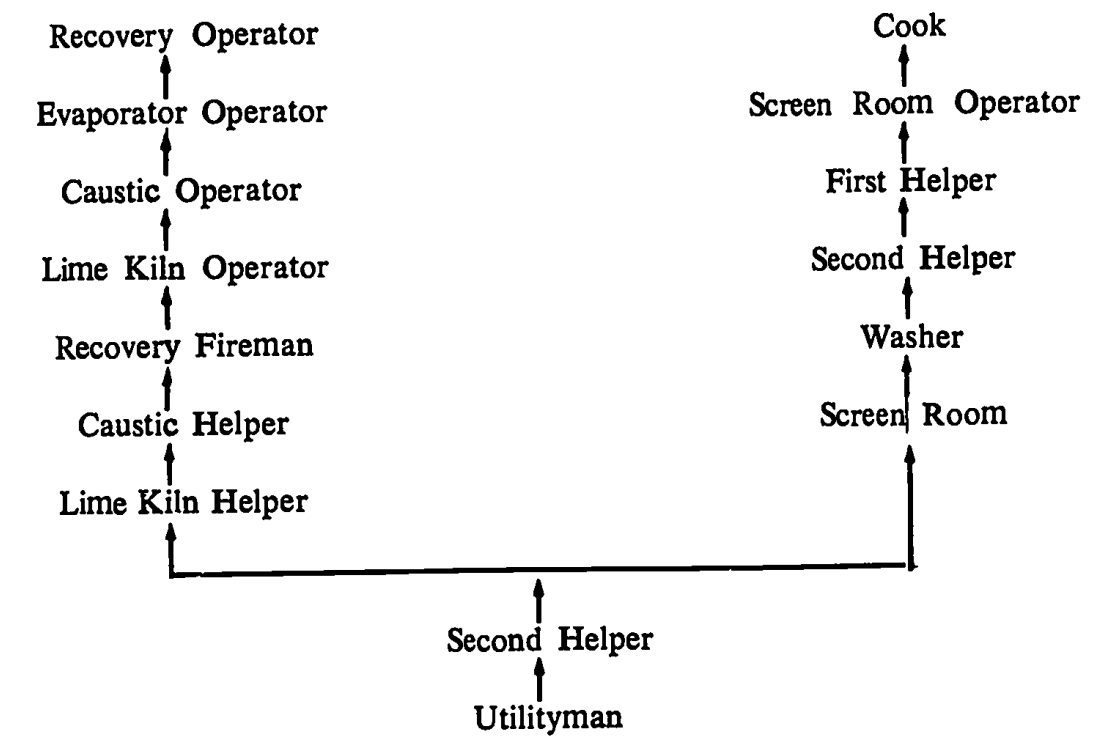
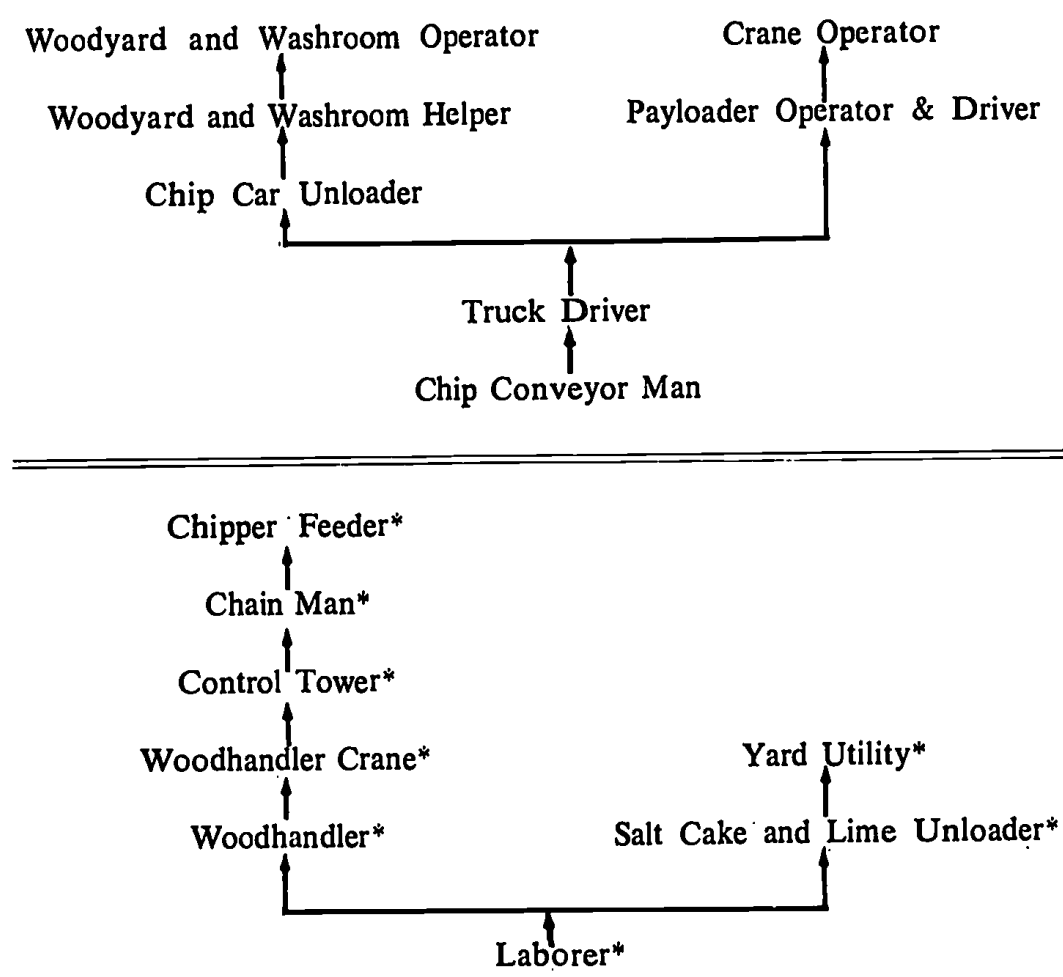


FIGURE 3. *Pre-1960 Typical Southern Power Plant Seniority Progression*

Power Plant
Power Plant Operator ↑ First Helper ↑ Second Helper ↑ Utility Man
Boiler Room
Boiler Operator ↑ Bark Burner Operator (From Pulp Mill Progression)
First Fireman* Second Fireman* Laborers*

*Negro

FIGURE 4. *Pre-1960 Typical Southern Woodyard Seniority Progression*



*Negro

UPGRADING NEGRO WORKERS

Since most of the jobs that had been assigned to Negroes were at the bottom of the occupational hierarchy, merely opening the seniority lines to blacks would require them to start at the bottom and progress up under the ordinary system in which the person who was longest in the particular job received preference for any promotion opportunities. Since Negroes had been denied the right to work in most progressions that led to the better jobs, this would mean that they would continue to be disadvantaged because of the past discrimination.

In the mid-1960's, the courts ruled that *mill* seniority rather than *job* seniority would determine promotion for Negroes in the "affected class," that is, those who were hired under discriminatory conditions. This would permit the Negro to have an opportunity for promotion based on the length of time that he was in the mill instead of the length of time he was in the job, subject, of course, to his ability to do the job and to requirements that he stay on a particular job a certain length of time in order to acquire the necessary experience to perform properly. As a result of the institution of this doctrine, numbers of Negroes have progressed considerably, but many others remain in those jobs formerly reserved for blacks.

Negroes hired at a time when discriminatory employment practices were in effect are particularly disadvantaged because jobs in the occupational progressions previously closed to them have become far more sophisticated, given the nature of the equipment, its cost, size and complexity which mark the modern papermaking operation. White workers with equally long seniority and perhaps little better educational qualifications had the opportunity to learn at a time when the industry was less complex and to break gradually into the complex operating jobs.

Remedial education becomes important because of this question of competence. A person with less than a seventh grade education in a poor, segregated, rural school in the South is likely to find himself unable to cope with the sophisticated controls and complicated requirements of a modern papermill job. The purpose of remedial education is to teach the employee sufficient reading and arithmetic skills so that he can read, communicate, figure and calculate sufficiently to be able to work up the progression line and, through on-the-job training, master the jobs therein.

Employers insist that, although the bottom jobs of the progressions involve little skill, anyone placed there must have the ability to rise to the top of the progression. They point out that an employee who does not possess such capacity would, if permanently settled in a mid-level job,

block the progress of those below, impairing their training and/or requiring them to jump two jobs at one promotion without requisite experience and training. This, they assert, is damaging to efficiency and productivity.

Industry personnel also emphasize that it is not possible to use someone on the job who is not competent because of the great danger to life, property, and equipment. Downtime on a paper machine alone can cost $25.00 a minute. Thumb holes through a fourdrinier screen can cause eight hours downtime plus the replacement of the screen, which might cost as much as $4,000. It was natural therefore that both the government and the companies looked to forms of remedial education in order to overcome a situation where large numbers of long service employees were disqualified from advancement because of their low educational status.

The educational programs examined in this study are thus dealing with Negroes who were hired as laborers, who thought they would always be laborers, and who may have been on the job for as long as twenty years. The purpose of these programs is to upgrade the educational skills of the employees from anywhere between functional illiteracy and sixth or seventh grade to as high as is needed to perform more advanced work than heretofore they had been allowed to do. We repeat that these are employees who have been disadvantaged in terms of promotion and educational status, but who nonetheless are employed at good wages and have stable, steady jobs. They are not disadvantaged in the sense as are the inner city dwellers, but in fact are in a superior position in relation to most of their peer group, despite the discrimination which has been practiced against them. Our analysis and conclusions therefore relate to this special group.

COMPANIES AND PROGRAMS STUDIED

The following five companies and three programs were selected for study during the period December 1970 through October 1971:

Company	Location	Program
Crown Zellerbach	Bogalusa and St. Francisville, La.	Methods of Intellectual Development (MIND)
Continental Can	Hodge, Louisiana	Methods of Intellectual Development (MIND)
Union Camp	Savannah, Georgia	Methods of Intellectual Development (MIND)
Georgia Kraft	Rome and Macon, Georgia	U.S. Research and Development Corporation (USR&D)
Boise Southern	DeRidder, Louisiana	Economic and Manpower Corporation (EMC)

All of the companies are located in the Deep South states of Georgia and Louisiana in predominantly rural areas where relatively low income and educational levels exist among both the white and black populations. The plants studied, with the exception of Boise Southern, which began operations in 1967, have been important sources of employment for many years; Boise Southern was included in this study because it offers an interesting contrast to older and more established plants in problems associated with integrating the work force.

The three adult basic education programs will be individually described in connection with the companies where each was implemented, and they will be compared in the final chapter.

CHAPTER II.

The MIND Program at Crown Zellerbach Facilities in Louisiana

Crown Zellerbach, the largest producer of pulp and paper on the West Coast, and probably the second largest such concern in the United States, expanded into the South in 1955 when it acquired the Gaylord Container Company. Gaylord had previously purchased the Great Southern Lumber Company, headquartered in Bogalusa, Louisiana.[2] Crown built a mill at St. Francisville, Louisiana in 1959 in cooperation with Time, Inc. for the production of glossy papers which are used in *Time* and *Life* magazines. Crown also has timber operations headquartered in Bogalusa which are a separate division with distinct problems from those of the basic mill.

In the 1960's, Crown was faced with the need to deal constructively with a group of long service Negro laborers and other unskilled workers to enable those who so desired to move into progression lines leading to highly skilled occupations in the complex papermaking operations. The MIND program was selected as a means to help solve this problem and classes were instituted at the Bogalusa mill in September 1967. Subsequently, MIND has been utilized at the Southern Timber operation and at the St. Francisville, Louisiana plant.

BOGALUSA PAPER OPERATIONS

Bogalusa was founded by the Great Southern Lumber Company in the early 1900's. A mill town developed around what was for many years the largest lumber and associated business operation in the world. The paper mill was begun at an early date in order to use the scraps from the lumber mill. When the lumber was exhausted in the 1930's, the company became exclusively a paper operation. In addition to the basic

[2] The background of the Bogalusa situation is summarized from Herbert R. Northrup, Richard L. Rowan, *et al.*, *Negro Employment in Southern Industry*, Studies of Negro Employment, Vol. IV (Philadelphia: Industrial Research Unit, Wharton School of Finance and Commerce, University of Pennsylvania, 1970), Part One, pp. 95-104.

pulp and paper mill, there is now a multiwall bag plant, a grocery bag plant, and a corrugated box plant associated with Crown's Bogalusa works.

SOCIOECONOMIC AND NEGRO EMPLOYMENT BACKGROUND

Negroes constituted about 33 percent of the Bogalusa population (6,109 of 18,412), according to the 1970 Census. The population, both white and black, is characterized by low education levels (a median level of about ninth grade for whites and sixth grade for nonwhites in 1960), and relatively low income (a median income of $4,574 for whites and $2,231 for blacks in 1960). Manufacturing is the major employment industry in Bogalusa, accounting for about one-third of the labor force over the past few decades.[3] Crown Zellerbach is a leading employer and contributes greatly to the economic well-being of the community.

Traditional southern employment practices were followed at Bogalusa. Negroes were confined to laboring and yard jobs and denied access to most progression lines and skilled jobs. The mill was unionized exclusively by the United Papermakers and Paperworkers except for a craft local of the International Brotherhood of Electrical Workers. Three converting plants, however, were organized by the International Brotherhood of Pulp, Sulphite and Paper Mill Workers. Negroes were confined to separate locals in all facilities except at the multiwall plant which was exclusively white except for a few Negro porters. Southern timber operations, headquartered at Bogalusa, likewise had separate white and black locals of the Pulp and Sulphite Workers. The entire operations employed about 3,000 people, of whom approximately 15 percent were black.

In the early 1960's, Bogalusa became a focal point for the drive of Negro pulp and paper workers to improve their employment opportunities and to eliminate the invidiously discriminatory seniority system which had been characteristic of the industry. Bogalusa's situation was made difficult by the fact that plant facilities were inefficient and obsolete. A modernization program, begun in the late 1950's and extending into the early 1960's, resulted in layoffs, downgradings, and a severe strike. Reduced employment opportunities made white employees especially unwilling to alter their favored positions just as Negro demands for change were

[3] See Appendix A, Tables A-1—A-4 for these and other socioeconomic data on Bogalusa and Washington Parish.

rising. During the period, both the Ku Klux Klan and the Congress of Racial Equality paraded and agitated, and some violence ensued.

Since 1963 the Bogalusa plant has been subjected to a variety of government pressures and litigation beginning with the President's Committee on Equal Employment Opportunity, and furthered by the Equal Employment Opportunity Commission and the Office of Federal Contract Compliance. In January 1966, the company agreed to merge eleven progression lines, but Negroes remained severely disadvantaged since they were attached to the bottom of existing lines of progression and below those white employees with less mill-wide seniority who had previously gained some experience in these lines on a temporary basis. An additional difficulty for blacks occurred when the lines were merged because ten white employees were on layoff status with recall rights to their old entry level jobs. Black employees became quite concerned and restless when they discovered that it would take about three years for all of the whites to be recalled since no black employee could be moved up in the line of progression until all whites were recalled.

Company response to the foregoing problems was constrained by existing union contracts which would have had to be unilaterally violated for Crown to alter the seniority system. The matter was settled and a remedy devised by a pathbreaking court decision resulting from a "pattern of discrimination" case instituted by the U.S. Attorney General pursuant to Title VII of the Civil Rights Act of 1964.[4] Mill-wide seniority, instead of job seniority, was to be applied in all job movement situations involving previously disadvantaged workers, designated as the "affected class," who had been hired under the discriminatory conditions prevailing prior to January 16, 1966. In April 1968, these provisions were extended to cover the box plant as well as the paper mill at Bogalusa. In 1969, this plan, contested by the union, was upheld in the Fifth Circuit Court, and the case finally came to rest in 1970 when the Supreme Court denied certiorari.

It was against this background that Crown Zellerbach instituted the MIND Adult Basic Education training at its Bogalusa plant in September 1967 and continued the program until 1971. The educational training was to be one of several affirmative action activities agreed to by the company and the Office of Federal Contract Compliance. Even before the affected class doctrine was enunciated, it was clear to the company

[4] *United States v. Local 189, United Papermakers and Paperworkers, et al.*, 282 F. Supp. 39 (E.D. La., 1968); affirmed 416 F. 2d 980 (5th Cir., 1969); cert. denied, 397 U.S. 919 (1970).

that something was needed to provide Negro employees better opportunities for promotion, given their generally low educational status in Bogalusa and the complex technology which characterizes modern papermaking activities. The program was made available to all employees, rather than only Negro employees, in order to avoid exacerbation of the delicate race relations in the plant.

THE MIND PROGRAM

MIND (Methods of Intellectual Development), Inc. began in mid-1964 as a pilot research study of the National Association of Manufacturers to determine the feasibility of developing human resource programs in private industry. The pilot study, extending over eighteen months, was financed by a grant of $30,000 from the Stern Family Fund and $150,000 from the National Association of Manufacturers. In February 1967, CPC International (formerly Corn Products, Inc.) of Argo, Illinois undertook operation of MIND as a wholly owned subsidiary with headquarters in Stamford, Connecticut. Recently MIND was sold to private interests in New York City. Offices have been established in New York City, Washington, D.C., Chicago, and Los Angeles to service a growing number of clients in the private and public sectors of the economy in the United States and Canada. MIND, Inc. currently operates a variety of programs, teaching occupational skills such as typing and stenography and various "interpersonal skills," but we are concerned only with its Adult Basic Education program, as implemented at Continental Can, Crown Zellerbach, and Union Camp. Fundamental philosophy and training methods are similar for all MIND programs.

The two basic components of the Adult Basic Education program, reading and math, are part of a carefully structured course. The materials provided to each client company, while undergoing revisions from time to time, are not specifically tailored to a given company or group of trainees, even though there are wide variations both in the uses to which the program is put and in the background of trainees.

Program Fundamentals

The philosophy of the MIND program places emphasis on the idea that "the learner is in the driver's seat." Participants study in an informal atmosphere with an effort being made to change the learning environment from the traditional formal schoolroom setting to one where each person is able to proceed at his or her own pace In this arrangement, the trainee determines his own rate of progress.

MIND, Inc. does not employ professional teachers but rather trains "monitors," chosen from among current employees at the plant or company site, to work with the trainees. An effort is made to differentiate between an instructor or teacher and one who simply can administer the program once it is adopted and relate meaningfully to the trainees. Since many of the trainees may have left the formal schoolroom at an early age with dislike for a teacher, MIND stresses the importance of putting "the learner" first and introducing the instructor/monitor as a friendly administrator, assistant, or counselor.

The MIND trainee works with his own text-workbook and program tapes which accompany the lessons. He is free to progress as quickly as he is able, to go back for review lessons, and to spend as much time as he needs on each lesson. The company has indicated that a student functioning initially between grade levels 4.5 and 8.5 should be able to progress 3 to 5 grade levels in the standard course of 160 hours of training. Trainees are generally given the Stanford Achievement Test at the beginning of the program to determine reading and math grade levels, and these tests are readministered at the end of the course to establish progress. MIND claims that adults who initially score below 4.5 initially have participated with varying degrees of success, although it advises that these individuals be given additional tutoring. A special language program has been developed for those who score below fourth grade; however, MIND admits limited success with this program.

Reading

The reading and vocabulary program for those who have tested below grade level 4.5 consists of the following:

1. *Basic Word Attack Skills.* This is a text-workbook containing word lists and reading selections intended to improve the trainee's ability to recognize words and comprehend what he has read.
2. *Basic Prose.* This consists of two audio tapes containing reading selections from *Basic Word Attack Skills.* The recordings contain words, phrases, and paragraphs that the student listens to and later writes answers to questions to determine comprehension.

Trainees whose testing indicates that they are functioning above grade level 4.5 enter a language program with the following components:

1. *Language Skills Development with Six Communication Skills Levels.* The trainees move through the six graduated levels at their own rate of progress. Each level contains about 1,000 of the 5,000 most frequently used words in the adult vocabulary. Each level gives training

in the following areas: word attack skills (i.e., how to build words with vowels and how to build words with consonants); vocabulary skills (listing of words, their meaning, and sentence usage); reading skills (short paragraphs); comprehension and analysis skills (questions on language and content analysis, and vocabulary usage); and vocabulary drill.
2. *Reading Audio.* The students have six tapes (casettes) containing reading material from *Language Skills Development.* The student listens to the tape and follows the reading in the textbook. Vocabulary drill is strengthened by four tapes which contain timed recordings of the material in a *Vocabulary Drill Pad.*

Math

The math training program, which consists of the following elements, attempts to acquaint the student with basic numbers and to develop computation skills:

1. *Basic/Advanced Math Facts.* This is a text-workbook that gives the trainee practice in addition, subtraction, multiplication, and division of whole numbers.
2. *Math Facts Audio Program.* A series of taped lessons which gives the student practice in mental computation. Each trainee has a MINDmaster casette player on which he can listen to the math lessons.
3. *Power Math.* This is a text which offers lessons in decimals, fractions, weights and measures, and other advanced concepts. Trainees are expected to move into *Power Math* after they have mastered *Math Facts.* The trainee works independently with *Power Math* and at his own rate of progress. A trainee who is not able to read fairly well would not be able to use *Power Math,* since it contains many word problems and written instructions.

Additional Material

In addition to the reading and math programs, MIND offers training in *Environmental Survival Skills.* It is expected that trainees who use this program will have at least a fourth grade achievement in reading and mathematical computation. Various topics such as personal data, personal economics, banking, credit, consumer economics, and business economics are covered in the program. A trainee who is able to complete *Environmental Survival Skills* would be able to fill out a job application form, write a check, understand discount terms, and generally handle everyday affairs in a more efficient manner.

Several important aspects of the MIND program deserve emphasis as background for the following analysis: MIND is designed primarily for trainees who are functioning between grade levels 4.5 and 8.5; there appears to be a major gap between the basic materials used in the program for those under grade level 4.5 and the program for those functioning above the fourth grade; MIND reading material does not have a rural, nonfarm southern outlook, nor is it slanted toward any particular industry such as paper; and the monitors are usually white, middle-aged women, who are company employees with little or no teaching or administrative experience.

MIND AT BOGALUSA

The MIND program was begun at Crown's Bogalusa plant in September 1967. All employees, regardless of race or affected class status, were encouraged to enter the program as a means of upgrading their reading and math skills.

The following steps were used in putting the MIND program into operation:

1. A training room was established in the main office building.
2. MIND assisted in the determination of who the instructors would be at Bogalusa resulting in the selection of two females. The Company later changed this and selected a Negro male to monitor the program.
3. Recruitment for trainees was conducted throughout the Bogalusa operation and contacts were made in the plant, in the home, and through union officers and supervisors.
4. Once recruited, the trainee was tested by the SAT and Lorge-Thorndike mechanisms and the scores were used in grouping participants for the program.
5. Trainees were offered 160 hours of classroom training. A trainee was expected, but not required, to attend class two hours a day, five days a week, on his or her own time. Unlike other MIND programs reported on herein, trainees were provided a monetary incentive to complete 160 hours; upon such completion, the trainee was given $100.00.

As of December 15, 1970, 162 empoyees had been contacted and interviewed for the program but only 20 had completed 160 hours. Those who did not finish the program offered various reasons for not doing so including: sick wife, wife did not want the husband to attend during hours off the job, other job, and overtime. The following discussion per-

tains to the educational and job results of all those who finished the MIND program at Bogalusa.

General Educational Results

Table 1 shows the age, stated education, and SAT scores of all trainees who completed 160 hours in the MIND program. The average age of the trainees was 42, with ages ranging from 22 to 54; and the average stated educational level was 9 (ranging from grade 5 to 12), compared to the average SAT math score of 5.0 and reading score of 5.8 before the trainees began MIND.

TABLE 1. *Crown Zellerbach, Bogalusa MIND Program Educational and Age Data All Program Graduates*

Trainee	Age	Stated Education	Math Grade Level			Reading Grade Level		
			Before	After	Change	Before	After	Change
1	49	7	7.1	8.8	1.7	5.5	10.0	4.5
2[a]	54	8	3.3	8.2	4.9	7.5	7.3	–0.2
3	50	12	3.8	8.5	4.7	11.8	11.0	–0.8
4[a]	28	12	6.6	12.9	6.3	4.6	4.9	0.3
5	29	12	5.4	10.5	5.1	8.0	8.5	0.5
6[a]	40	7	3.8	4.7	0.9	4.6	5.2	0.6
7[a]	48	8	2.9	4.8	1.9	5.2	5.7	0.5
8	23	12	4.1	6.1	2.0	6.4	5.7	–0.7
9	22	12	3.7	6.8	3.1	5.2	5.1	–0.1
10[a, b]	42	5	3.5	3.2	–0.3	[c]	[c]	—
"			[c]	3.5	—	[c]	[c]	—
11	41	7	5.6	6.2	0.6	2.9	3.6	0.7
12	44	7	4.6	5.6	1.0	3.0	3.4	0.4
13	51	8	6.2	6.2	0.0	5.7	6.9	1.2
14	49	6	2.6	5.4	2.8	5.5	5.9	0.4
15[a]	39	8	3.5	4.6	1.1	3.3	4.2	0.9
16[a]	41	9	4.4	5.6	1.2	3.5	4.4	0.9
17	52	11	8.0	10.6	2.6	5.4	7.6	2.2
18	54	12	11.2	11.7	0.5	11.0	11.5	0.5
19	36	6	4.1	4.4	0.3			—
Mean	42	9	5.0	7.1	2.1	5.8	6.5	0.7

Source: Company records.

[a] Affected class member.

[b] Completed two sessions.

[c] Not tested.

The average grade level increase in math was 2.1 years with a range from no increase to 6.3 grades; in reading skills, the average increase was 0.7 years with a range from no improvement to 4.5 years. Even though the grade changes in both math and reading were small, it will be noticed that the improvement in reading skills was considerably smaller than in math skills. Only three of the trainees improved their reading skill by more than one grade level after 160 hours of training, and four trainees scored slightly less after the program than they did before entering it.

Educational and Job Results—Affected Class

The affected class at Bogalusa includes all blacks employed before January 16, 1966 under a discriminatory employment system. Under a consent decree of June 26, 1969, the affected class was enlarged by 13 members to include those hired before February 14, 1968, provided certain conditions are met.[5] In February 1971, there were 186 members in the affected class, 44 of whom participated in MIND—7 completed the program and 37 dropped out. A poor retention rate was experienced in the program. Table 2 presents educational and age data on the trainees in the affected class who completed the MIND program.

Educational Status. Characteristics of the MIND trainees in the affected class who completed the program, and the results of the training are as follows:

1. A total of 7 affected class trainees completed the program; one individual, number 10, completed two sessions.
2. The average age of the trainees in this group was 42. Ages ranged from 28 to 54.
3. Six of the candidates reported an educational level between grades 7 and 12; however, only one candidate attained a score of seventh grade on the SAT in reading or math.
4. The average increase in math grade levels was 2.3 compared to an average increase of 0.5 in reading.

[5] The consent decree defines the affected class in the following manner:

(1) All Negro employees hired prior to January 16, 1966, shall have all rights contained in this Decree.

(2) All Negro employees hired after January 16, 1966, and prior to February 14, 1968, except such of those employees whose initial permanent positions were in job classifications formerly within the exclusive jurisdiction of Local 189, shall have the rights set forth in paragraphs II, III, IV, V, VI and VII . . . [of the consent decree] . . . while such employee remains in the line of progression, if any, in which he permanently held a permanent position as of the date of this Decree or while he is in the first line of progression to which he voluntarily transfers or, if currently a member of the Extra Board (labor pool), to which he bids within three years from the date of this Decree. . . .

TABLE 2. *Crown Zellerbach, Bogalusa MIND Program Educational and Age Data Affected Class Graduates*

Trainee	Age	Stated Education	Math Grade Level			Reading Grade Level		
			Before	After	Change	Before	After	Change
2	54	8	3.3	8.2	4.9	7.5	7.3	–0.2
4	28	12	6.6	12.9	6.3	4.6	4.9	0.3
6	40	7	3.8	4.7	0.9	4.6	5.2	0.6
7	48	8	2.9	4.8	1.9	5.2	5.7	0.5
10[a]	42	5	3.5	3.2	–0.3	[b]	[b]	—
"			[b]	3.5	—	[b]	[b]	—
15	39	8	3.5	4.6	1.1	3.3	4.2	0.9
16	41	9	4.4	5.6	1.2	3.5	4.4	0.9
Mean	42	8	4.0	6.3	2.3	4.8	5.3	0.5

Source: Company records.

Note: The negative figures can be expained, in large measure, by the fact that the trainees missed one problem in math or one word in reading; a different form of the same sub-test may also contribute to the result stated.

[a] Completed 2 sessions. (Trainee number corresponds to basic data in Table 1.)

[b] Not tested.

From an educational point of view, the above indicates that the MIND program has been only moderately successful. In the reading area there was practically no advancement. In fact, one trainee had a slightly lower SAT score in reading after the program. All reading changes were too small to be meaningful within the limits of the testing mechanism.

In the math area, more improvement was evident. Two students made major gains, with increases of 4.9 and 6.3 grade levels. Of the remainder, however, all experienced less than 2.0 grade level improvement. Thus, in terms of MIND's stated objectives of raising grade levels 3 to 5 years, the course failed with at least 6 of 7 in reading (one participant was not tested) and 5 of 7 in math.

Crown did not establish educational level goals as minimum indicators of promotion or transfer capability.[6] The MIND program succeeded in bringing one trainee to grade level 12.9 in math alone and a second reached grade level 8.2 in math and 7.3 in reading. Four trainees did not score even at the sixth grade level in math or reading after 160 hours of training, despite the fact that they all entered with reading scores within, or just below, MIND's optimum reading range (4.5 to 8.5).

[6] One educational company set ninth grade as the educational minimum in each subject for promotion capability in the paper industry. See the EMC discussion in Chapter VI.

If members of the affected class have to depend on MIND alone for improvement in functional literacy and job advancement, disappointments are likely to occur. The job status of MIND graduates in the affected class is shown in Table 3.

Job Status. Some job movement among the affected class trainees did occur after completion of the program, but it was apparently unrelated to direct educational improvement. The data in Table 3 indicate that the only significant job change was in the case of trainee number 4, who transferred from the Asphalt Department as a rewinder, first helper, to the Paper Machine Department as a #1 finisher. This trainee made a major gain in math (6.3 grades) but little or no improvement in reading (0.3 grades). Four individuals changed jobs without changing departments despite low or nonexistent educational advancement in the program. The remaining two stayed in the same job they held before MIND in departments which historically have employed large numbers of blacks. It appears that the MIND program had little direct effect on job improvement for the affected class; however, some positive nonquantifiable indirect effects may have been achieved. Those employees who did experience any kind of job change may previously have lacked motivation or self-confidence which they gained by participating in MIND. In addition, supervisors' opinions of these men, who did stay with the program for 160 hours and earn the company's $100 reward, may have been altered enough to lead them to encourage job upgrading for these individuals.

Educational and Job Results—Non-Affected Class

In addition to the affected class members, there were twelve other trainees who finished the MIND program. The age and educational characteristics and job status of these individuals are shown in Tables 4 and 5.

Educational Status. Table 4 presents educational and age data on trainees who completed the MIND program and who were not members of the affected class. Characteristics of these trainees are noted below:

1. A total of twelve trainees, not in the affected class, completed the program.
2. The average age of the trainees in this group was 42. Ages ranged from 22 to 54 and four trainees were 50 years of age or older.
3. The average stated educational level in most cases was several grades above the tested grade level before the program.
4. The average increase in math was 2.1 grades compared to an average increase of 0.8 grades in reading.

TABLE 3. *Crown Zellerbach, Bogalusa MIND Program Pre- and Post-Program Job Status Affected Class Graduates*

Trainee[a]	Mill Date	Former Department	Former Job Title	Present Department	Present Job Title
2	5-28-52	Yard	Laborer	Yard	Laborer
4	8-26-66	Asphalt	Rewinder, 1st Helper	Paper Machines	#1 Finisher
6	7-6-53	Grocery Bag	Porter	Grocery Bag	Porter
7	6-28-49	Stock Prep.	#1 Blend Tank	Stock Prep.	#5 & 6 Blend Tank
10	5-28-52	Utilities	Boiler Room Helper	Utilities	Outside Operator
15	8-14-53	Wood Room	Chip Dispatcher	Wood Room	Chip Unloader
16	6-29-51	Wood Room	Utility Flume	Wood Room	Chip Dispatcher

Source: Company records.

[a] Trainee number corresponds to data in Table 1.

The non-affected class graduates made modest gains in arithmetic skill and practically no improvement in language skill through the MIND program. Five members improved their math level between 2.6 and 5.1 grades, whereas only two members improved reading skill above two grade levels. This suggests a general ineffectiveness of the MIND reading materials for the Bogalusa trainees. The MIND reading content appears to be so far removed from the trainees' real world in southern Louisiana that it is of little value as an educational device.

TABLE 4. *Crown Zellerbach, Bogalusa MIND Program Educational and Age Data Non-Affected Class Graduates*

Trainee[a]	Age	Stated Education	Math Grade Level			Reading Grade Level		
			Before	After	Change	Before	After	Change
1	49	7	7.1	8.8	1.7	5.5	10.0	4.5
3	50	12	3.8	8.5	4.7	11.8	11.0	–0.8
5	29	12	5.4	10.5	5.1	8.0	8.5	0.5
8	23	12	4.1	6.1	2.0	6.4	5.7	–0.7
9	22	12	3.7	6.8	3.1	5.2	5.1	–0.1
11	41	7	5.6	6.2	0.6	2.9	3.6	0.7
12	44	7	4.6	5.6	1.0	3.0	3.4	0.4
13	51	8	6.2	6.2	0.0	5.7	6.9	1.2
14	49	6	2.6	5.4	2.8	5.5	5.9	0.4
17	52	11	8.0	10.6	2.6	5.4	7.6	2.2
18	54	12	11.2	11.7	0.5	11.0	11.5	0.5
19	36	6	4.1	4.4	0.3	[b]	[b]	—
Mean	42	9	5.5	7.6	2.1	6.4	7.2	0.8

Source: Company records.

[a] Trainee number corresponds to basic data in Table 1.

[b] Not tested.

Job status. Job results of graduates from the non-affected class are shown in Table 5. All of the members of this group remained in their original departments after MIND, but several were upgraded slightly in their jobs. The program does not appear to have made a significant impact on the job status of the non-affected class members who finished 160 hours of training.

TABLE 5. *Crown Zellerbach, Bogalusa MIND Program Pre- and Post-Program Job Status Non-Affected Class Graduates*

Trainee [a]	Mill Date	Former Department	Former Job Title	Present Department	Present Job Title
1	10-12-46	Accounting	Mail Clerk	Accounting	Mail Clerk
3	12-21-43	Paper Machines [b]	#1 Back Tender	Paper Machines	#4 3rd Hand
5	8-11-69	Shipping	Baler	Shipping	Baler
8	11-21-68	Multiwall	Starting Finisher	Multiwall	Finisher
9	9-3-69	Grocery Bag	Shipping Laborer	Grocery Bag	Shipping Laborer
11	7-15-48	Box	Die Cutting	Box	Die Cutting
12	6-4-48	Box	Printer Slotter	Box	Unassigned Group #5
13	9-27-42	Box	Relief Oiler	Box	Oiler
14	7-23-51	Digester	Gas Off Man	Digester	#1 Gas Off Man
17	11-15-45	Digester	Pandia Operator	Digester	Cook, New Digester
18	7-5-34	Chemical	Bogol Plt. Operator	Chemical	Bogol Plt. Operator
19	6-24-53	Digester	Pandia Hpr. T.	Digester	Pandia Hpr. P.

Source: Company records.

[a] Trainee number corresponds to data in Table 1.

[b] Movement within a department from a smaller to a larger machine carries a higher rate.

COSTS

An estimate of the costs of conducting the MIND program at Bogalusa includes the following:

Initial costs of equipment	$ 5,153.20
Additional supply costs @ $44 per trainee	880.00
Start-up costs including Monitor/Management	450.00
Operating expenses, per month, 42 months (9/67-2/71), @ $625/month	26,250.00
	$32,733.20

During the period covered, September 1967 to February 1971 the MIND program ran continuously at Bogalusa and there were twenty program completions (including one trainee who attended two sessions). On this basis, the cost per trainee who completed the program was $1,636.66.

SUMMARY AND STATISTICAL ANALYSIS

The MIND program was begun at Bogalusa in September 1967 as part of Crown Zellerbach's affirmative action program to provide upgrading for disadvantaged employees. Between September 1967 and February 1971, 19 different employees completed the program, 7 of whom were affected class members. The educational and job status of the MIND participants remained relatively unchanged upon completion of the program. For the whole group, the average grade level increase in math was 2.1 grades and in reading, the average increase was 0.7 grades.

A *t* test for differences in means was applied to the data in an attempt to determine significant differences between subgroups of those taking the MIND course at Crown Zellerbach. Table 6 compares the affected class members who took MIND with their non-affected class fellow graduates on the basis of their initial reading and math scores on the Stanford Achievement Test, post-training scores on the SAT, amount of change, and two other variables, age and stated education. Stated in standard units which control for the differences in range of scores or other factors, such as age, between the groups, there were no differences in group means which were significant at the 10 percent level. When the affected and non-affected class groups are subdivided into promoted and unpromoted segments, still no significant differences can be found.

TABLE 6. *Crown Zellerbach, Bogalusa MIND Program*
Statistical Comparison
Affected and Non-Affected Class Graduates

Variable	All Trainees[a]			Promoted[b]			Non-Promoted[c]		
	Affected Class	Non-Affected Class	Difference in Standard Units[d]	Affected Class	Non-Affected Class	Difference in Standard Units[d]	Affected Class	Non-Affected Class	Difference in Standard Units[d]
Reading score pre-MIND	4.78	6.40	–1.35	4.15	6.30	–1.54	6.05	6.52	–0.22
Reading score post-MIND	5.28	7.20	–1.67	4.80	6.75	–1.63	6.25	7.74	–0.66
Math score pre-MIND	4.08	5.66	–1.54	4.35	4.88	–0.50	3.55	6.60	–1.60
Math score post-MIND	6.80	7.85	–0.84	6.97	7.06	–0.06	6.45	8.80	–1.38
Change in reading	0.50	0.80	–0.50	0.65	0.45	0.37	0.20	1.22	–0.81
Change in math	2.72	2.19	0.58	2.63	2.18	0.39	2.90	2.20	0.47
Stated education	8.67	9.64	–0.86	9.25	9.33	–0.06	7.50	10.00	–1.35
Age	41.67	42.18	–0.90	39.00	44.83	–0.99	47.00	39.00	0.86

Source: Company data.

[a] $t_{.10,\ 15} = \pm 1.753$.
[b] $t_{.10,\ 8} = \pm 1.860$.
[c] $t_{.10,\ 5} = \pm 2.015$.
[d] Formula in Appendix B.

Table 7 compares the promoted and unpromoted groups for the eight variables. None of the educational differences reached levels of significance, indicating that there was little or no relation between job advancement and either achievement or performance in MIND for the trainees as a whole.

TABLE 7. *Crown Zellerbach, Bogalusa MIND Program*
Statistical Comparison
All Promoted and Unpromoted Graduates

Variable	Mean Promoted Group	Mean Unpromoted Group	Difference in Standard Units[a]
Reading score pre-MIND	5.44	6.38	–0.79
Reading score post-MIND	5.97	7.31	–1.18
Math score pre-MIND	4.67	5.73	–1.04
Math score post-MIND	7.03	8.13	–0.90
Change in reading	0.53	0.93	–0.71
Change in math	2.36	2.40	–0.04
Stated education	0.53	0.92	0.01
Age	42.50	41.28	0.23

Note: $t_{.10,15} = \pm 1.753$.
[a] Formula in Appendix B.

TABLE 8. *Crown Zellerbach, Bogalusa MIND Program*
Statistical Comparison
Promoted and Unpromoted Affected Class Graduates

Variable	Mean Promoted Group	Mean Unpromoted Group	Difference in Standard Units[a]
Reading score pre-MIND	4.15	6.05	–2.21[b]
Reading score post-MIND	4.80	6.25	–2.31[b]
Math score pre-MIND	4.35	3.55	0.76
Math score post-MIND	6.97	6.45	0.20
Change in reading	0.65	0.20	1.73
Change in math	2.63	2.90	–0.15
Stated education	9.25	7.50	1.40
Age	39.00	47.00	–1.30

Note: $t_{.10,4} = \pm 2.13$.
[a] Formula in Appendix B.
[b] Significant at the .10 level.

When affected class trainees alone, however, are compared on the basis of promotion, two significant differences do appear, as shown in Table 8. The data indicate a negatively significant difference between reading ability and job promotion, that is, those affected class trainees who were promoted scored significantly lower in reading comprehension both before and after taking MIND than those who remained in their old jobs. This may indicate that a program such as MIND is of little value in upgrading efforts, or it may mean that those with lower scores had higher seniority.

ST. FRANCISVILLE MILL

St. Francisville, Louisiana is a small town of approximately 1,600 residents located in West Feliciana Parish in the south central part of the state. It is situated in plantation country on the Mississippi River about 45 miles northwest of Baton Rouge and 60 miles south of Natchez, Mississippi. Blacks constitute about 40 percent of the population of St. Francisville and about 65 percent of West Feliciana Parish in which St. Francisville resides. A long history of segregated patterns of living has left its imprint on blacks in the town, many of whom have not been able to obtain a high school education.

SOCIOECONOMIC AND NEGRO EMPLOYMENT BACKGROUND

The socioeconomic background of St. Francisville and West Feliciana Parish is similar to that of Bogalusa, previously discussed. The population is characterized by low education levels (a median level of about seventh grade for whites and fifth grade for nonwhites in 1960), and low income (a median income of $2,459 for whites and $1,539 for nonwhites in 1960) derived mainly from employment in agricultural and personal services industries.[7] An employer, such as Crown Zellerbach, faces a labor market in the immediate area of its St. Francisville plant that is approximately 50 percent black, relatively uneducated, and with little or no manufacturing experience. Given this fact, the company recruits labor from as far away as Baton Rouge in order to find suitable employees for a paper mill with advanced technology.

Prior to the establishment of the Crown plant in St. Francisville in 1959, there was little industry in the town. A few canneries were in operation

[7] See Appendix A.

providing seasonal employment, but most of the population continued to be employed on farms. The Crown plant was built as a highly automated operation, requiring skilled labor, primarily to manufacture glossy paper. A major part of the plant's product is shipped by barge up the Mississippi River to Chicago and used by Time, Inc.

When the plant began production, it recruited employees from a wide labor market area. About 52 Negroes were initially hired for the plant, which was set up on the basis of a racially segregated occupational structure, just as was true of older plants. Negroes were not interviewed in the regular system of employment, nor were they tested. The mill superintendent searched the neighboring farms and small factories to find out who had a reputation for hard work and dependability. Blacks were hired for their physical strength, decent citizenship, and stability. White employees, on the other hand, were hired under vastly different employment standards that required a high school education, stated scores on tests, and projected ability to move up lines of progression in all departments.

As a result of civil rights litigation and Crown's difficulty at Bogalusa, the necessity of developing an affirmative action program at St. Francisville became imminent. It should be noted, however, that the program at St. Francisville did not result from direct government pressure or litigation at this particular plant. The company determined that 51 blacks were in the affected class (hired before July 1, 1964) and a MIND program was put into operation in November 1969. Prior to the MIND program, lines of progression were merged in 1966 and an open transfer system was adopted. Since many of the blacks work in departments such as Shipping where the working conditions are good—the work is performed on a straight day shift and the pay is excellent for St. Francisville—they are reluctant to transfer within the plant, e.g., to go to the paper machine operation.

MIND AT ST. FRANCISVILLE

The MIND program at St. Francisville began in November 1969 and continued through August 1970 as a means to improve the functional literacy of workers who did not have a high school education and particularly members of the affected class. Since a high school equivalency was required for transfer in the plant, it was felt that some educational program was needed to prepare employees to qualify for transfer. All employees without a high school education were interviewed and tested by members of the Psychology Department of Southern University (a predominantly Negro college in Baton Rouge) to determine suitability for the program.

The initial testing procedure used by Southern frightened many of the candidates and poor results were achieved. This led to retesting, and it was determined that 17 to 20 of the 44 interviewees could benefit from MIND. Seventeen employees began the program and eight finished.

Educational and Job Status of Participants

Table 9 presents data for the eight MIND participants at St. Francisville, all of whom were members of the affected class.

Educational Status. Characteristics of the trainees who completed the programs are noted below:

1. Eight trainees, all in the affected class, finished MIND.
2. Average age of the candidates was 40; the age range was 31 to 49.
3. Six of the 8 candidates scored above fourth grade before MIND in math. The average change in math grade level after MIND was 2.2 grades; increases ranged from 1.4 grades to 4.9 grades.
4. The average reading grade level before MIND was 5.1 years; grade levels ranged from 3.3 to 6.6; the average change in reading grade level after MIND was 0.5 grades; all increases were less than one grade.

In educational terms, the MIND program at St. Francisville resulted in significant math progress for three trainees. Even though most of the trainees were functioning above the fourth grade level before entering the program, none made meaningful progress in reading. The reason for this

TABLE 9. *Crown Zellerbach, St. Francisville MIND Program Educational and Age Data Affected Class Graduates*

Trainee	Age	Math Grade Level			Reading Grade Level		
		Before	After	Change	Before	After	Change
1	40	5.6	10.5	4.9	6.6	6.8	0.2
2	44	6.8	8.2	1.4	3.3	4.1	0.8
3	33	2.6	4.1	1.5	4.9	5.6	0.7
4	46	3.5	6.6	3.1	4.4	4.9	0.5
5	49	6.8	8.5	1.7	4.9	4.9	0.0
6	31	5.6	4.8	-0.8	5.5	5.9	0.4
7	42	5.9	9.9	4.0	6.2	7.1	0.9
8	35	7.1	8.6	1.5	5.2	5.9	0.7
Mean	40	5.5	7.7	2.2	5.1	5.6	0.5

Source: Company records.
Note: All trainees are affected class members.

is difficult to explain, but it probably can be attributed to a combination of factors including ineffectiveness of MIND reading materials (trainees and minorities complain that the readings are too far removed from life in a rural, Louisiana, southern setting), cultural background of participants who have lived all of their lives in a segregated society with little or no verbal communication (conversation) between blacks and whites, poor formal education of blacks in the public schools, and little or no recent or past success in the educational setting.

As indicated above, 9 of the 17 trainees in MIND dropped out. The reasons for this include overtime in the plant, a feeling of frustration by the trainee who could not keep up, trainees electing to go on vacation and not returning to the program, and availability of upward mobility without MIND. One additional factor which strongly influenced the operation of the MIND program was the discontinuance, soon after the beginning of MIND, of the requirement of a high school equivalency for in-plant transfer. Blacks in the affected class, who looked upon MIND as a means of achieving a high school equivalency and, hence, an improved job opportunity, lost their incentive to continue with MIND when the company abandoned the high school requirement.

Job status. From the job viewpoint, two of the eight MIND participants made major changes after the program as shown in Table 10. It should be noted, however, that the two participants transferred between departments (Shipping and Wood Yard) where traditionally there have been large numbers of Negroes. There does not appear to be any particular relationship between the performance in MIND and the job transfers since no movement occurred among the three top performers in terms of grade levels increased. Both of the trainees who moved progressed by less than 2 grades in both reading and math in the MIND program. Candidates 1 and 7, as shown in Table 9, made the most significant improvement in both subjects, but no job change was reported.

SUMMARY

The MIND program conducted at Crown's St. Francisville plant between November 1969 and August 1970 was completed by a total of eight employees in the affected class. The educational standing of the trainees improved by 2.2 grades in math and 0.5 grades in reading. A minimal educational achievement was obtained. While the math skills advanced modestly, there was practically no improvement in reading skills. From a job viewpoint, two of the eight employees moved into jobs in new departments;

TABLE 10. *Crown Zellerbach, St. Francisville MIND Program*
Pre- and Post-Program Job Status
Two Affected Class Graduates

Trainee [a]	Department	Former Job	Former Rate	Present Department	Present Job Title	Present Rate [b]
2	Shipping	Clamp Trucker	$3.79	Woodyard	Drum Barker Operator	$3.58
8	Shipping	Clamp Trucker	3.79	Woodyard	Drum Barker Operator	3.58

Source: Company records.

[a] Trainee number is the same as shown in Table 9; trainee 8 transferred to the millwright helper program before becoming a Drum Barker Operator.

[b] While the rates in these jobs are lower, the top rate in the line of progression in the Woodyard is $4.96 compared to $3.95 in the Shipping Department.

however, it should be observed that these employees transferred from the Shipping Department to the Wood Yard Department, both of which have traditionally had large numbers of blacks.

The MIND program at St. Francisville produced meager results educationally and jobwise for the affected class members. There appears to be little, if any, relationship between performance in MIND and job improvement in the plant.

SOUTHERN TIMBER DIVISION, BOGALUSA

Bogalusa is not only the location of Crown Zellerbach's largest southern mill complex but, in addition, the headquarters of its Southern Timber Division. This Division installed a MIND program under a different setup from that found in the mill and is treated separately.

BACKGROUND ON NEGRO EMPLOYMENT

The Southern Timber Division controls Crown's timber operations in Louisiana and Mississippi. These operations are becoming increasingly mechanized; yet, like most southern woods operations, the labor attracted has traditionally been poorly educated, rural Negroes. In the South, unlike the Far West, the logger has had little occupational prestige. Wages of woods employees in the South lag below those of mill workers, with 50 to 60 cents common labor differential often extant.

The management of Crown's Southern Timber Division has become increasingly concerned about the capacity of its labor supply to handle new, sophisticated equipment. It decided to experiment with MIND to help increase the potential of this personnel, but it utilized MIND under a specially designed format.

MIND AT SOUTHERN TIMBER

Four employees were selected to take 140 hours of MIND, one of whom dropped out before the program began. The three who took the program were brought into the Division's headquarters every Thursday for four hours and paid their regular rate while taking the courses. All three completed the program with minimum absences. The program was conducted by a former teacher in a black high school who is now on Southern Timber's personnel staff.

The three selected were black, but were recently hired employees, and

not affected class members. Table 11 shows that the participants ranged in age from 22 to 31; no one tested below the fifth grade in reading or below the sixth grade in mathematics at the start of the program. Their test scores advanced 3.2 grades in mathematics and 2.2 in reading comprehension after completing the course. The latter score is in sharp contrast to the achievement in previously mentioned programs. All three were soon promoted, as indicated in Table 12.

Of special interest is the question of how much the success of the Southern Timber program's first course can be attributed to the fact that the employees were paid to attend class as part of their job. Undoubtedly, this was a factor. The small number involved and the relatively high caliber and youth of the participants also played a part. The fact that all three were promoted has created considerable interest among other employees. A new class of five is being started at Bogalusa, and the program is being planned for other locations in the Division. The same teacher will handle all courses, traveling to various sites with such equipment as necessary to conduct the program. Because the Southern Timber Division believes men cannot be expected to come to a headquarters many miles from their work location, they will be brought in and paid.

Of interest also is the fact that the teacher of the course does not believe that the MIND reading material is adequate or responsive to the workers' needs.[8] He therefore plans to supplement it with reading pertaining to the South and to the paper industry.

SUMMARY

The Southern Timber's MIND program shows promise of filling a need for that Division. Employees received a substantial incentive by being paid for their study time and being rewarded by prompt promotion. In the future, enrollees will be paid, but promotions may not come so quickly. This could affect employee interest.

Those who took the Southern Timber program were carefully selected, young, and above the minimum in educational standing. Thus, they cannot be compared to a typically disadvantaged group. It will be of interest whether a less selective group, which is not promoted as promptly, will fare as well or advance as much, even though compensated for their time spent in learning.

[8] Interview, Bogalusa, June 16, 1971.

TABLE 11. *Crown Zellerbach, Southern Timber MIND Program Educational and Age Data Affected Class Graduates*

Trainee	Age	Stated Education	Math Grade Level			Reading Grade Level		
			Before	After	Change	Before	After	Change
1	31	10	6.0	9.5	3.5	5.2	7.5	2.3
2	27	9	6.5	9.3	2.8	5.2	7.0	1.8
3	22	11	7.0	10.2	3.2	5.5	8.0	2.5
Mean	27	10	6.5	9.7	3.2	5.3	7.5	2.2

Source: Company records.

TABLE 12. *Crown Zellerbach, Southern Timber MIND Program Pre- and Post-Program Job Status Affected Class Graduates*

Trainee [a]	Former Job Title	Former Rate	Present Job Title	Present Rate
1	Skidder Operator (Choker Type)	$2.82	Head Skidder Operator (Grappel Type)	$3.44
2	Power Saw Operator	2.82	Lead Skidder Operator	3.44
3	Power Saw Operator	2.82	Skidder Operator	3.44

Source: Company records.

[a] Trainee number is the same as shown in Table 11.

CHAPTER III.

The MIND Program at Continental Can, Hodge, Louisiana

The MIND program was begun at Continental Can in Hodge, Louisiana on April 15, 1968 and as of February 1971 six sessions had been completed and a seventh was underway. The programs were instituted as a means to improve functional literacy with the belief that such improvement could lead to more effective job performance and advancement.

COMPANY BACKGROUND

Continental Can Company is a diversified manufacturer with plants in various parts of the United States. The company operates a paper mill and converting plant, a large timber complex, and a railroad in Hodge, Louisiana, where it is presently engaged in a multimillion dollar expansion of facilities.

The company's roots in Hodge can be traced back to lumber operations that began in the nineteenth century in the Huey-Hodge Lumber Company which later became the Hodge-Hunt Lumber Company. The latter company merged with the Advance Bag and Paper Company of Howland, Maine in 1926, and became known as the Southern Advance Bag and Paper Company. In April 1928, two hundred people were employed in an eighty-ton per day paper mill and bag plant. The size of the plant was increased in 1932 and 1936 with the addition of two new paper machines. Southern Advance Bag and Paper Company was acquired by Robert Gair Company in 1955 and subsequently merged with Continental Can Company. Continental added a fourth paper machine, a multiwall bag mill, and a neutral sulphite pulp mill. In addition, plant expansion has occurred and new equipment and technology have been introduced.

Hodge and the Surrounding Area

Hodge is an old lumber and paper town located in Jackson Parish in the north central part of Louisiana approximately 75 miles southeast of Shreveport. The population of Hodge (818), the neighboring town of Jonesboro (5,072), and Jackson Parish (15,963) have remained fairly stable over the past few decades. Negroes constitute approximately 30 to 35 percent of the total population.[9]

Manufacturing has long been the major industry group for employment in Jackson Parish and the Hodge area. Continental Can is the leading manufacturer in the proximity of Hodge and Jonesboro, and, as a high wage employer, the company has no difficulty in recruiting a labor force. In December 1970, the company could report an active file of several hundred prospective employees.

Educational levels and the quality of education in an area such as Hodge can be a problem for a manufacturer involved with improved technology and automated processes. Even though increases occurred in the median education level of those 25 years of age and over between 1950 and 1960 in Jackson Parish, it was only about the 9th grade in 1960 and for nonwhites it was about the 6th grade. The percentage of nonwhites in the category "6th grade education or less" fell from 66.4 percent to 55.8 percent between 1950 and 1960; and also, the absolute number of nonwhites in the category fell from 1,410 to 1,306. Educational data in Appendix A and the employment analysis that follows herein indicate that, in the Hodge area, a company such as Continental Can will have to continue to conduct its own program to improve functional literacy if such is a necessary concomitant to successful employment.

Background on Negro Employment

Negroes traditionally played an important role in the employment picture of the lumber industry, and this was true in the early Hodge operations that eventually led to the establishment of the Continental Can plant. Howard points out in his study, *The Negro in the Lumber Industry,* that

> By 1910 the Negro had become a critical constituent of the work force of the lumber and wood products industry. . . . Lumber industry workers increased more than five-fold between 1890 and 1910 and "in 1910 represented more than one-fifth of all Negroes in industry. . . . The Negroes, because of the heavy, rough work to be performed were generally preferred as common laborers. In

[9] See Appendix A, Tables A-5—A-8 for these and other socioeconomic data on Hodge and Jackson Parish.

this capacity it was said that they had no superior. This hard work, too, was distasteful to whites. The small wages, 50 cents to 75 cents a day, however, partly account for this monopoly of the Negroes in these factories."[10]

When paper making facilities were later introduced to lumber operations, Negroes were generally assigned to unskilled jobs with heavy representation in the wood yards, shipping, and building and ground crews.[11] As a rule, physical strength determined the employability of blacks who, like whites at Continental, were hired without testing. It was normally expected that blacks would remain in relatively unskilled, laboring jobs during their entire employment career.

Negro employees at Hodge, as in most mills, are members of the union, but before 1966 they were in segregated locals. The United Papermakers and Paperworkers represents employees in the paper machine room and maintenance and the International Brotherhood of Pulp, Sulphite and Paper Mill Workers represents those employed in the bag and pulp mills. One joint agreement covers unionized employees. Negroes presently serve on various committees in the locals; however, it must be noted that when black and white local unions are merged Negroes are likely to lose positions of leadership.

MIND AT CONTINENTAL CAN

The MIND program was begun at Continental Can in April 1968 as a means of improving the functional literacy of unskilled employees primarily in the Shipping and Woodyard Departments of the mill where most Negroes were traditionally assigned. Both of the latter departments contain many employees who were hired with only a second or third grade education with the understanding that they would spend most of their working lives in laboring jobs. This situation was complicated in the mid-1960's with the requirements of the Civil Rights Act of 1964 and a change in working methods in the plant. While there was still some uncertainty, in April 1968, as to the meaning of civil rights legislation for long-term employees, the company felt the need to begin an affirmative action program with these people in mind. One of the most difficult problems for the company, however,

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[10] John C. Howard, "The Negro in the Lumber Industry," in Herbert R. Northrup, Richard L. Rowan, *et al., Negro Employment in Southern Industry*, The Racial Policies of American Industry, Vol. IV (Philadelphia: Industrial Research Unit, Wharton School of Finance and Commerce, University of Pennsylvania, 1970), Part Two, p. 28.

[11] See Herbert R. Northrup, "The Negro in the Paper Industry," in Herbert R. Northrup, Richard L. Rowan, *et al., op. cit.*, Part One.

grew out of the introduction of fork trucks to replace hand buggies in the Shipping Department. For many years, employees in shipping could move materials on the basis of verbal instructions, without being able to read and write. When the company decided to put in more modern machines, such as fork trucks to improve the efficiency of the Shipping Department, difficulties arose. Many of those employees who could not read and write refused to use the new equipment. From a practical standpoint, the company had to upgrade the employees' functional literacy if the advantages of new methods were to be attained. Subsequent pressures resulting from equal employment activities have caused the company to broaden its interests in using the MIND program.

At the present time, all employees who desire to upgrade their language and math skill levels, and perhaps qualify for a high school certificate, are encouraged to participate in MIND. As of February 1971, six MIND training classes had been completed, and a seventh was in progress.

The company took the following steps in putting the MIND program into operation:

1. A training room was established in a two-story building located near the main office. The room was refurbished with air-conditioning, new lighting, tables and chairs, and a kitchen. The room is easily accessible and, with its own outside entrance, the trainees do not have to pass through any office operations en route to class.
2. Two instructors/monitors were selected by the company and trained to use the materials by MIND. Both instructors—one black and one white—are attractive, middle-aged women who have long employment records with the company in the bag mill. The instructors rotate during the various sessions of the program; at one time, the white female administers the program and at other times the black female is in charge.
3. Recruitment for trainees is conducted throughout the Hodge operations. Various methods of recruiting have been used including communications in the company paper and personal in-plant interviewing.
4. Once recruited, the trainees are given the Stanford Achievement Test and the scores are recorded. No particular use of these scores has been made at Hodge except to indicate to the monitor where a candidate may begin instruction. No one has been refused admission to the course because of a failure to reach a stated score.
5. Trainees in sessions 1-6 were offered 160 hours of class-room training. A trainee was expected to attend class 2 hours a day, 5 days a week, on his or her own time. No incentive other than the opportunity to improve math and language skills has been offered. In later sessions, trainees

have been attending class 2 hours a day on an every other day basis for a total of 80 hours. The company's decision to reduce the total hours from 160 to 80, with the trainees participating on an every other day basis, was instituted in the seventh session based on the belief that a shorter program would attract more trainees and that as much could be accomplished in the shorter period.

The first session of MIND began on April 15, 1968 with 24 trainees and ended on August 2, 1968 with a high retention rate of 17 trainees. All of the participants in the first session were black, and the program became known as a "Negro program" at the outset. Since MIND was begun at Hodge with the idea that it would include all who wanted to participate, the absence of whites in the initial class caused concern. Such concern was probably premature since the following sessions have seen blacks and whites participating together. A review of the program from April 15, 1968 to October 30, 1970 is shown in Table 13.

The data in Table 13 indicate that as of October 30, 1970, there had been 155 enrollments in the six sessions. The 97 completions represent 71 individuals, 18 of whom attended two or more sessions. About 69 percent of all those who began the program were nonwhite and, of this group, approximately 64 percent finished.

General Educational Results

Table 14 shows the before and after SAT scores of the 71 trainees who completed one or more MIND sessions. As explained earlier, the MIND program is designed primarily for those who are functioning in the grade levels between 4.5 and 8.5. Continental Can did not use a cutoff score for admitting trainees to the program. The basic data indicate that about 85 percent of those completing any session were below grade level 4.5 in reading and math upon entering the program. This created paticular problems for the monitors, since these students needed special attention and tutoring in the basic skill level materials. There apparently is a major gap between the basic education material and the language skills development material designed for trainees functioning above grade level 4.5. Even after completing the MIND program about one-half of the trainees were still functioning below grade level 4.5.

Some 58 of the 155 trainees in the first six sessions of MIND at Continental dropped out. The reasons given for this were: overtime work in plant (25), part-time employment outside plant (13), illness (15), transportation difficulties (3), and domestic responsibilities (2). By far, the most

TABLE 13. *Continental Can MIND Program*
Total Trainees and Sessions
April 1968-October 1970

Trainees	Session						Total to date	Average to date
	First	Second	Third	Fourth	Fifth	Sixth		
	4/15/68-8/2/68	8/26/68-12/13/68	6/23/69-10/10/69	10/27/69-2/20/70	3/9/70-6/26/70	7/13/70-10/30/70		
Number started	24	23	34	27	26	21	155	26
Number finished	17	13	21	17	16	13	97[a]	16
Percent finished	71	57	62	63	62	62		63
Percent nonwhite started	100	54	56	67	81	57		69
Percent nonwhite finished	71	62	52	65	81	54		64

Source: Company records.

[a] Eighteen trainees completed more than one session.

important reasons for trainees dropping out of the program were overtime and part-time employment. Both of these activities offer the trainee an opportunity to increase income and, since there is no clear relationship between completion of MIND and an opportunity to increase income, the trainee chooses the income-producing alternative.

TABLE 14. *Continental Can MIND Program Educational Data All Program Graduates*

	Math Grade Level			Reading Grade Level		
Trainee	Before	After	Change	Before	After	Change
1	0.0	1.3	1.3	0.0	0.9	0.9
2	8.6	10.9	2.3	5.4	8.3	2.9
3	2.5	4.4	1.9	0.6	2.5	1.9
4[a]	8.9	9.1	0.2	9.0	10.3	1.3
5	6.0	7.9	1.9	7.2	10.1	2.9
6	3.0	6.1	3.1	2.2	6.9	4.7
7[b]	3.7	4.9	1.2	5.0	6.0	1.0
"	4.9	7.0	2.1	6.0	7.4	1.4
8	1.5	2.3	0.8	2.5	4.7	2.2
9	2.0	3.2	1.2	1.8	3.8	2.0
10	4.8	5.4	0.6	6.0	7.8	1.8
11	3.0	5.0	2.0	4.4	7.0	2.6
12	7.1	8.5	1.4	7.9	8.9	1.0
13	7.4	9.7	2.3	7.6	10.1	2.5
14	4.9	5.8	0.9	5.5	7.4	1.9
"	5.8	8.2	2.4	7.4	9.6	2.2
15	0.0	1.1	1.1	4.0	6.9	2.9
"	1.1	2.9	1.8	6.9	10.7	3.8
"	2.9	5.1	2.2	10.7	11.0	0.3
"	5.1	7.0	1.9	11.0	12.0	1.0
16[a]	1.5	2.8	1.3	3.5	4.9	1.4
17	1.8	3.8	2.0	1.6	3.2	1.6
"	3.8	5.0	1.2	3.2	4.6	1.4
18[b]	3.8	5.1	1.3	4.3	6.5	2.2
19[b]	2.1	3.0	0.9	1.9	2.9	1.0
20	2.3	3.8	1.5	2.7	4.0	1.3
"	3.8	6.1	2.3	4.0	6.5	2.5
21	10.2	12.0	1.8	11.0	12.0	1.0
22	4.5	6.9	2.4	6.5	9.1	2.6
23[a]	11.0	11.9	0.9	10.0	11.1	1.1
24	1.9	3.9	2.0	2.7	5.5	2.8

TABLE 14—*Continued*

Trainee	Math Grade Level			Reading Grade Level		
	Before	After	Change	Before	After	Change
25[b]	3.5	4.5	1.0	2.5	3.9	1.4
26	5.8	8.1	2.3	3.8	6.1	2.3
27[b]	0.0	1.8	1.8	0.0	2.0	2.0
28	2.0	3.6	1.6	1.8	3.8	2.0
29	2.1	3.7	1.6	1.7	3.3	1.6
30	2.5	4.0	1.5	3.1	4.6	1.5
31	8.9	12.0	3.1	9.1	12.0	2.9
32	7.0	9.2	2.2	9.6	12.0	2.4
33	1.0	1.8	0.8	1.6	2.0	0.4
"	1.8	2.0	0.2	2.0	2.4	0.4
"	2.0	2.7	0.7	2.4	3.1	0.7
"	2.7	3.4	0.7	3.1	3.8	0.7
"	3.4	4.1	0.7	3.8	4.5	0.7
34[a]	2.0	5.8	3.8	5.2	7.2	2.0
35	7.8	10.9	3.1	8.8	11.5	2.7
36	1.5	3.3	1.8	1.7	3.5	1.8
37	3.0	5.0	2.0	1.6	3.8	2.2
38	3.2	5.4	2.2	2.8	5.0	2.2
"	5.4	7.3	1.9	5.2	7.1	1.9
39	2.2	5.0	2.8	1.8	4.6	2.8
40	8.0	9.3	1.3	4.8	6.1	1.3
41	7.5	9.0	1.5	9.9	11.0	1.1
42	0.0	1.2	1.2	0.0	0.9	0.9
43	0.0	1.5	1.5	0.0	0.5	0.5
"	1.5	2.6	1.1	0.5	1.0	0.5
44	2.0	4.9	2.9	1.0	3.7	2.7
"	4.9	6.0	1.1	3.7	6.6	2.9
45	4.0	7.2	3.2	4.8	8.2	3.4
"	7.2	9.1	1.9	8.2	9.5	1.3
46	2.1	3.4	1.3	3.1	4.4	1.3
"	3.4	4.6	1.2	4.4	5.4	1.0
47	11.5	12.0	0.5	11.5	12.0	0.5
48	1.8	3.4	1.6	1.6	3.0	1.4
49[b]	2.0	4.6	2.6	4.0	6.0	2.0
50	9.5	11.0	1.5	8.5	11.0	2.5
"	11.0	12.0	1.0	11.0	12.0	1.0
51[a, b]	3.8	5.4	1.6	4.0	5.6	1.6
52	1.8	2.8	1.0	2.2	3.2	1.0
"	2.8	3.6	0.8	3.2	3.8	0.6
"	3.6	5.4	1.8	3.8	5.8	2.0

TABLE 14—*Continued*

Trainee	Math Grade Level			Reading Grade Level		
	Before	After	Change	Before	After	Change
53	1.5	2.4	0.9	1.9	3.0	1.1
"	2.4	5.0	2.6	3.0	6.0	3.0
54	2.5	3.6	1.1	1.5	2.2	0.7
"	3.6	4.6	1.0	2.2	5.0	2.8
55	8.0	11.0	3.0	7.0	9.8	2.8
56[b]	2.6	4.2	1.6	2.8	4.7	1.9
57	1.6	2.7	1.1	1.2	2.5	1.3
58[a]	2.0	4.3	2.3	2.2	4.8	2.6
59	10.8	12.0	1.2	11.2	12.0	0.8
60	6.0	9.1	3.1	4.8	7.1	2.3
61[a]	11.5	12.0	0.5	8.5	12.0	3.5
62	6.8	11.8	5.0	10.2	12.0	1.8
63	6.4	8.6	2.2	8.6	10.0	1.4
64[b]	1.4	2.1	0.7	1.2	1.9	0.7
65[b]	3.1	4.9	1.8	6.3	7.1	0.8
66	7.4	9.6	2.2	3.0	5.8	2.8
"	9.0	11.5	2.5	5.0	8.9	3.9
67[a]	3.7	8.3	4.6	4.1	7.4	3.3
68	2.0	2.2	0.2	1.6	1.8	0.2
"	2.2	4.6	2.4	1.8	4.0	2.2
"	4.6	6.5	1.9	4.0	6.1	2.1
69	3.5	5.8	2.3	3.3	5.4	2.1
70	1.4	3.5	2.1	1.0	3.1	2.1
"	3.5	5.8	2.3	3.1	5.2	2.1
"	5.8	8.6	2.8	5.2	6.5	1.3
71	7.5	9.5	2.0	6.9	9.1	2.2
Mean	4.2	5.9	1.7	4.5	6.3	1.8

Source: Company records.

[a] Those who made significant job changes.

[b] Affected class member.

Educational and Job Status of the Affected Class

On June 16, 1970, Continental Can signed a consent decree which singled out a particular group of employees as members of an "affected class" who were currently suffering from past discriminatory employment practices and who should subsequently be offered special opportunities for

upgrading. This group was defined as those individuals hired before December 10, 1964 and currently working in the Shipping and Stockroom Department and the Mill Yard. The affected class is made up of Negroes who had been hired as laborers with little promotional capability under segregated work patterns. At the time of the consent decree, 69 of the company's 1,750 employees fell into the affected class designation. This is the disadvantaged group who presumably need educational upgrading most in order to take advantage of newly available job progressions requiring higher degrees of skill and ability than generally needed by manual laborers.

Educational Status. In the first six MIND sessions, 21 affected class members participated, 10 of whom completed at least one session. All participated before the consent decree was signed. Data on those who finished are presented in Table 15 and those who dropped out are shown in Table 16

Characteristics of the MIND trainees in the affected class who completed the program, and the results of the training are stated below:

1. All trainees in the affected class who completed MIND attended session 1 except for one trainee who completed sessions 1 and 2 and one who completed session 4.
2. The average age of the trainees was 47. Ages ranged from 33 to 59; 4 trainees were 50 or older.
3. All trainees reported grade completion above 5th grade; however, only one was functioning at the 5th grade level according to the SAT scores in math and reading. Stated education and SAT scores varied greatly; e.g., a candidate whose stated education level was 12th grade tested at grade level 3.1 in math and 6.3 in reading; in another case, a trainee whose stated educational level was 7th grade tested at 1.4 in math and 1.2 in reading.
4. Increases ranged from 0.7 to 2.6 grade levels in math and 0.7 to 2.2 grade levels in reading. This performance is much less than the MIND objective of increasing grade levels by 3 to 4 grades for those completing the program.

Educational improvement for affected class trainees must be considered in light of their generally low entry scores. Only one of the 10 graduates had a grade level achievement within the optimum range, and he was at the lower end of the scale. Average grade level initially was 2.8 in math and 3.5 in reading. Upon completion, average grade level had increased about 1.5 in each subject. (The one trainee who completed two MIND sessions improved a total of 3.3 grade levels in math and 2.4 grade levels in reading.)

TABLE 15. *Continental Can MIND Program Educational and Age Data Affected Class Graduates*

Trainee	Age	Stated Education	Session	Math Grade Level			Reading Grade Level		
				Before	After	Change	Before	After	Change
56	47	8	1	2.6	4.2	1.6	2.8	4.7	1.9
49	53	9	1	2.0	4.6	2.6	4.0	6.0	2.0
18	46	7	1	3.8	5.1	1.3	4.3	6.5	2.2
7	48	6	1	3.7	4.9	1.2	5.0	6.0	1.0
〃	〃	〃	2	4.9	7.0	2.1	6.0	7.4	1.4
19	59	5	1	2.1	3.0	0.9	1.9	2.9	1.0
51[a]	50	7	1	3.8	5.4	1.6	4.0	5.6	1.6
25	52	7	1	3.5	4.5	1.0	2.5	3.9	1.4
65	33	12	1	3.1	4.9	1.8	6.3	7.1	0.8
27	43	6	4	0.0	1.8	1.8	0.0	2.0	2.0
64	42	7	1	1.4	2.1	0.7	1.2	1.9	0.7
Mean	47	7		2.8	4.3	1.5	3.5	4.9	1.4

Source: Company records.

[a] Made a major job change.

TABLE 16. *Continental Can MIND Program*
Characteristics of Program Dropouts
Affected Class Members

Trainee	Age	Stated Education	Session	SAT Average Grade Level	Number of Weeks Attended	Reason for dropping out
A	64	1	3	0.0	2	Part-time employment outside the plant
B	58	5	1	2.3	1	Transportation difficulties
C	57	4	1	1.4	2	Illness
D	57	3	1	1.5	2	Transportation difficulties
E	43	2 college	n.a.	n.a.	n.a.	n.a.
F	51	4	1	3.4	3	Illness
G	34	12	2	2.1	0	Overtime
H	34	5	1	1.8	2	Part-time employment outside the plant
I	31	11	n.a.	n.a.	n.a.	n.a.
J	35	11	n.a.	11.8	4	Part-time employment outside the plant
K	30	10	1	2.9	1	Overtime

Source: Company records.

Eleven trainees in the affected class dropped out of the program as noted in Table 16. Characteristics of the dropouts are noted below:

1. All of the dropouts were in session 1 except for one in session 3 and one in session 2. Only one of the dropouts had a pre-MIND SAT score above 4.5 In fact, 7 of the dropouts scored below third grade level.
2. The average age of the dropouts was 45. Ages ranged from 31 to 64; 5 trainees were over 50.
3. Just as was true with those who graduated from MIND, stated education levels were higher than the functional grade level determined by SAT.
4. Dropouts from the program specified several reasons for withdrawing: part-time employment outside the plant, usually in agriculture (3); overtime in the plant (2); transportation difficulties (2); and illness (2). About one-half of the dropouts left because of opportunities to earn more money either by working on a farm or overtime in the plant.

On balance, it appears that the MIND program was only moderately successful in improving the educational status of members in the affected class. In some subjective ways, the program appears to have had merit. It seems to have helped a few older workers improve their self-image. Those who have never been able to read very well or perform simple arithmetic calculations have made some advancement. They can better help their children at home with basic school lessons in the early grades, and they are slightly better off in terms of handling their personal financial affairs. The MIND program also indicates that the company has an interest in helping those who have been victims of many years of racial discrimination in every facet of life ranging from public schools to employment.

Job Status. A vital, and many times neglected, question in regard to MIND trainees (as well as those who participated in other programs) is: in terms of job status, what happens to the trainee? Table 17 indicates the job status of MIND graduates at Continental who were members of the affected class.

The data indicate that only one major job change has occurred among those in the affected class who completed MIND: one trainee transferred from the Shipping Department as a fork truck driver to the Pulp Mill as a Pulp Mill helper. All other trainees remain in the Shipping and Stockroom Department. From the standpoint of the job, MIND appears to have made little or no difference to the affected class trainees. A person who has completed the program, no doubt, will be able to read instructions better and interpret orders more efficiently, but the value of MIND in regard to job advancement is doubtful.

TABLE 17. *Continental Can MIND Program*
Pre- and Post-Program Job Status
Affected Class Graduates

Trainee	Mill Date	Former Department	Former Job Title	Former Rate	Present Department	Present Job Title	Present Rate
56	11-27-45	Shipping	Fork Truck Driver	$3.135	Shipping	Fork Truck Driver	$3.135
49	3-15-46	Shipping	Fork Truck Driver	3.135	Shipping	Fork Truck Driver	3.135
18	4-8-46	Shipping	Fork Truck Driver	3.135	Shipping	Fork Truck Driver	3.135
7	8-30-46	Shipping	Head Car Loader	3.355	Shipping	Head Car Loader	3.355
19	9-23-46	Stockroom	Fork Truck Driver	3.135	Stockroom	Fork Truck Driver	3.135
51	7-16-45	Shipping	Fork Truck Driver	3.135	Pulp Mill	Pulp Mill Helper	3.305
25	7-23-54	Stockroom	Bag Stacker	2.835	Stockroom	Bag Stacker	2.835
65	7-25-58	Shipping	Fork Truck Driver	3.135	Shipping	Fork Truck Driver	3.135
27	10-7-60	Shipping	Car Stacker	2.86	Shipping	Car Stacker	2.86
64	10-16-61	Shipping	Car Stacker	2.86	Shipping	Car Stacker	2.86

Source: Company records.

The data in Table 18 indicate the job status of those who dropped out of the program. An examination of Table 18 reveals that the dropouts are participating in most of the same departments and jobs as those who graduated from MIND. This suggests, further, that there is very little job relatedness to the MIND program.

Other Trainees

Sixty-one non-affected class trainees completed the first six sessions of MIND. These trainees were blacks and whites in various departments and jobs in the mill. As might be expected, educational levels among this group covered a much wider range than found among the affected class members. Over one-third (24 of 61) of the trainees entered the program for the first time with scores at or above 4.5 in both subjects and 11 of these were also above 8.5, while the highest score of any affected class participant was 6.3. Program averages for all trainees were mentioned above. For that group which had roughly comparable beginning levels to those of the affected class, the average initial grade was 2.1, increasing to 3.9 after one session of MIND.

Educational and Job Status of Those Promoted. Tables 19 and 20 present educational and job data for the 7 MIND graduates who are not members of the affected class and who made significant job changes.

1. Six white and one black trainee were promoted; 3 attended session 2, 2 attended session 5, and there was one each in sessions 1 and 4.
2. Three of the trainees had pre-MIND scores above 4.5 in both subjects, after MIND all were above 4.5 in reading and 5 were above 4.5 in math.
3. Increases ranged from 0.2 to 4.6 grades in math and 1.1 to 3.5 grades in reading. The performance of this group was slightly better than that of the affected class.
4. From a job status standpoint, all trainees made a major improvement. The one black trainee was promoted from head car loader to department supervisor in the Shipping and Stockroom Department. Three of the white trainees transferred from the bag mill and paper machine room to the maintenance and electrical departments as welder and electrician helpers. Two of the remaining 3 white trainees transferred from the bag mill—one to the storeroom and one to the laboratory. One trainee was promoted from fork truck driver to a non-exempt salaried position as warehouse controller.

The foregoing indicates that the MIND program was responsible for an average grade level increase of 1.9 grades in math and 2.2 grades in

TABLE 18. *Continental Can MIND Program*
Job Status of Program Dropouts
Affected Class Members

Trainee	Mill Date	Former Department	Former Job Title	Former Rate	Present Department	Present Job Title	Present Rate
A	5-27-41	Stockroom	Fork Truck Driver	$3.135	Stockroom	Fork Truck Driver	$3.135
B	3-25-46	Mill Yard	Labor	2.835	Mill Yard	Labor	2.835
C	9-23-46	Shipping	Fork Truck Driver	3.135	Shipping	Fork Truck Driver	3.135
D	8-12-47	Shipping	Fork Truck Driver	3.135	Shipping	Fork Truck Driver	3.135
E	9-30-56	Stockroom	Fork Truck Driver	3.135	Stockroom	Fork Truck Driver	3.135
F	7-9-57	Shipping	Fork Truck Driver	3.135	Shipping	Fork Truck Driver	3.135
G	9-3-58	Shipping	Fork Truck Driver	3.135	Shipping	Fork Truck Driver	3.135
H	5-9-60	Shipping	Car Stripper-Bracer	2.985	Shipping	Car Stripper-Bracer	2.985
I	n.a.	Shipping	n.a.	n.a.	Shipping	n.a.	n.a.
J	11-29-61	Shipping	Car Stacker	2.86	Shipping	Car Stacker	2.86
K	11-29-61	Mill Yard	Labor	2.835	Printing	n.a.	n.a.

Source: Company records.

TABLE 19. *Continental Can MIND Program*
Educational Data
Promoted Non-Affected Class Graduates

Trainee		Session	Math Grade Level			Reading Grade Level		
			Before	After	Change	Before	After	Change
16	W	5	1.5	2.8	1.3	3.5	4.9	1.4
23	W	2	11.0	11.9	0.9	10.0	11.1	1.1
34	W	1	2.0	5.8	3.8	5.2	7.2	2.0
58	W	4	2.0	4.3	2.3	2.2	4.8	2.6
67	W	5	3.7	8.3	4.6	4.1	7.4	3.3
61	N	2	11.5	12.0	0.5	8.5	12.0	3.5
4	W	2	8.9	9.1	0.2	9.0	10.3	1.3
Mean			5.8	7.7	1.9	6.1	8.3	2.2

Source: Company records.
W — White
N — Negro

TABLE 20. *Continental Can MIND Program*
Pre- and Post-Program Job Status
Promoted Non-Affected Class Graduates

Trainee		Former Department	Former Job Title	Present Department	Present Job Title
16	W	Bag Mills	Bag Machine Tender	Storeroom	Warehouse Controller [a]
23	W	Bag Mills	Collator Operator	Laboratory	Welder Helper
34	W	Shipping & Stockroom	Fork Truck Driver	Maintenance	Electrician Helper
58	W	Paper Machine Room	Refiner Helper	Electrical	Department Supervisor/Shipping
67	W	Multiwall	Bottomer Operator	Shipping & Stockroom	Electrician Helper
61	N	Shipping & Stockroom	Head Car Loader	Electrical	
4	W	Multiwall	Tuber Operator		

Source: Company records.

W — White

N — Negro

[a] Non-exempt salaried position.

reading. This supports the earlier finding that, in educational terms, the results of the MIND program have not been substantial. In regard to job results, it appears that white trainees have taken MIND with the hope of improving their reading and math skills in order to transfer into skilled jobs in the maintenance and electrical departments.

The impact of MIND on transfers is difficult to assess. An open transfer clause was placed in the labor agreement on July 1, 1968, and it is likely that the transfers noted would have occurred in the absence of MIND. There is no doubt, however, that any improvement in functional literacy, however small, would have a favorable influence over job performance.

The one black employee who made a significant job change remained in the Shipping and Stockroom Department, but he was promoted to a supervisory position in Shipping. It is interesting to note that the Negro trainee's SAT grade level score, upon completion of MIND, was the highest in the group.

Educational and Job Status of Those Not Promoted. Fifty-four MIND graduates did not make major job changes even though there were some promotions in the lines of progression. The average increase in grade level for this group in both math and reading was 1.8.

Several trainees in this group completed more than one session of MIND. Trainee No. 15, as shown in Table 14, attended 4 MIND sessions during which his math grade level increased from 0.0 to 7.0 and his reading grade level increased from 4.0 to 12.0. Another trainee, No. 33 (female), completed 5 sessions of MIND and increased her math grade level from 1.0 to 4.1 and her reading grade level from 1.6 to 4.5. Similar changes are indicated for 15 others who completed more than one MIND session.

The foregoing suggests that there was considerable advantage to the trainee in attending more than one MIND session in terms of improving educational levels. On the other hand, none of the trainees who took more than one session made a major job change. Promotions may have occurred, however, in existing lines of progression. These would have been based on seniority and performance may have been enhanced by completion of the MIND program.

On balance, it appears that the 54 trainees considered here, who were neither in the affected class nor who made a major job change, benefited mainly from MIND in improving their self-image. As far as these trainees are concerned, MIND does not appear to have played an important role in improving job opportunities.

COSTS OF THE MIND PROGRAM

Various estimates have been made as to the costs involved in conducting the MIND program. The costs at any particular plant would be a rough approximation based on the obvious direct expenditures related to the program. Indirect costs are difficult to measure.

The direct costs of the MIND program at Continental Can in Hodge covering the first six sessions were:

	1968	1969	1970
Supplies	$ 8,236.32	$ 2,041.22	$ 1,375.88
Salary	8,011.42	11,091.64	9,966.84
Total	$16,247.74	$13,132.86	$11,342.72

In addition to the costs shown, about $400.00 was spent in 1968 to convert and prepare the MIND classroom. Other costs, such as repair to air conditioners, janitorial services, and utilities are not included in the figures stated above.

During the period covered, April 1968 to November 1970, six sessions of MIND were conducted with a total of 155 trainees, of which 97 completed the program. A total of $40,723.32 was spent on the six sessions. The costs per trainee were $262.73, based on all trainees entering, and $419.83, per trainee per session for those who completed the program. These figures are consistent with the estimates made by MIND for conducting the program.

The return to the company and the trainees on the investment in MIND appears to be minimal. Trainees improved their grade levels slightly and the company has probably gained something in efficiency in the Shipping Department as a result of trainees being able to read and interpret orders a bit more effectively. Also, the MIND program has helped the company to satisfy demands for an affirmative action program.

STATISTICAL COMPARISONS

Table 21 presents a comparison of the educational variables of the Continental Can trainees divided between affected class and non-affected class groups. The data indicate that both initial and final reading and math scores of the non-affected class group were significantly higher than those of the affected class trainees as a group. Among the variables, there was a greater difference between the final scores in each subject

and the initial scores, indicating that the educational gap between the two groups widened as a result of the MIND program. Thus those who presumably needed the training most benefited least.

A comparison between all promoted and all unpromoted trainees, presented in Table 22, reveals no statistically significant differences in educational variables. Thus there does not seem to be a relation between

TABLE 21. *Continental Can MIND Program Statistical Comparison Affected and Non-Affected Class Graduates*

Variable	All Graduates		
	Affected Class	Non-Affected Class	Difference in Standard Units [a]
Reading score pre-MIND	3.30	5.11	−1.72 [b]
Reading score post-MIND	4.80	7.14	−2.26 [b]
Math score pre-MIND	2.72	5.08	−2.38 [b]
Math score post-MIND	4.26	6.98	−2.66 [b]
Change in reading	1.50	2.03	−1.63
Change in math	1.54	1.89	−1.20

Note: $t_{.10, 69} = \pm 1.67$.
[a] Formula in Appendix B.
[b] Significant at the .10 level.

TABLE 22. *Continental Can MIND Program Statistical Comparison Promoted and Unpromoted Graduates*

Variable	All Graduates		
	Promoted Group	Unpromoted Group	Difference in Standard Units [a]
Reading score pre-MIND	5.81	4.74	0.92
Reading score post-MIND	7.91	6.67	1.06
Math score pre-MIND	5.55	4.64	0.81
Math score post-MIND	7.45	6.48	0.83
Change in reading	2.10	1.93	0.46
Change in math	1.90	1.84	0.17

Note: $t_{.10, 69} = \pm 1.67$.
[a] Formula in Appendix B.

success in MIND and promotion, nor even between initial educational status and promotion. Apparently other factors were important in upgrading decisions, either on the part of the trainee or his supervisors, or both.

No statistical comparison was attempted of the scores of the one affected class trainee who was promoted and the other ten affected class graduates. The mean performance of the total group and that of No. 51, who was promoted to the Pulp Mill, can be seen in Table 15, presented above. Although the scores of this trainee were consistently above the group means, no reliable significance can be attached to this because of the small sample size.

SUMMARY

In regard to job results, MIND trainees at Hodge who completed the program have not made major changes. One black trainee, who was not a member of the affected class, was promoted from head car loader to supervisor in the Shipping Department, and a few white trainees have used the program as a means to transfer to the crafts. In the affected class, one black transferred from fork truck driver to pulp mill helper. On balance, there does not appear to be any direct relationship between completion of the MIND course and job changes.

Considerably more thought must be given to the development and implementation of programs for the disadvantaged in various locations, such as Hodge, if the objective is to qualify employees for promotion. As we have demonstrated above, the MIND program does achieve certain results in improving functional literacy of the participants; indeed, it is apparently much more successfful than the public schools in teaching people reading and math skills. It is commendable that MIND has developed the program and that employers have been willing to use it. Needless to say, it is also encouraging when employees benefit from it in an educational sense, regardless of how slight the improvement. It appears, however, that the MIND program has not been used directly as a promotion factor at Continental Can.

In the foregoing sense, the company may have been "operating in the dark" in adopting the MIND program. It is not clear that there was any understanding of the relationship between functional literacy (which is the basic thing MIND claims, and has demonstrated, that it can improve) and promotion on the job. It is, of course, true that an improvement in reading and math skills is valuable, but how valuable is this to jobs in a

paper mill? This is a question that appears to have been neglected in early planning stages between MIND and the Company. Also, how much of an improvement is necessary to qualify further an employee for promotion in a job? In a job sense, and from the Company's point of view, of what significance is the fact that a participant in MIND advanced educationally by 1.2 grade levels or by 2.3 grade levels? Perhaps the difficulty with these questions lies in the fact that no one has determined conclusively what combination of education and experience is necessary for promotion through the various lines of progression in a paper mill. Until further attention has been given to the matters referred to above, MIND will continue to serve mainly as a means to satisfy government pressures for affirmative action and as a social service to the employees.

CHAPTER IV.

Union Camp's Experience with Mind

MIND programs began operating at Union Camp's Savannah, Georgia facilities in June 1968. To date four sessions have been completed and a fifth is in operation.

COMPANY BACKGROUND

In 1936, the Union Bag and Paper Company moved from Fort Edward, New York, to Savannah, Georgia. Now known as the Union Camp Corporation, because of its merger in the 1950's with the Camp Manufacturing Company of Franklin, Virginia, its Savannah plant has grown into the largest pulp and paper complex at any one location in the country, and perhaps in the world. The complex includes a seven machine paper mill, a chemical plant, a corrugated box plant, a bag plant manufacturing multiwall, grocery, and many other types of bags, and other supporting facilities. Approximately 5,000 employees work for Union Camp in Savannah, of whom about 13 percent are black. The employees are represented by locals of the United Papermakers and Paperworkers and the International Brotherhood of Pulp, Sulphite and Paper Mill Workers, plus several craft unions.

Savannah, Georgia's oldest and principal seaport, is located near the mouth of the river of the same name in Chatham County. A diversified commercial and manufacturing city, Savannah in 1970 had a population of 118,349 which was 45 percent black. The county's population was 187,767, about one-third Negro. Union Camp is the largest employer in the area.[12]

Union Camp, one of the first major companies to move South, adopted the southern racial employment mores in regard to Negro employment.

[12] These and other socioeconomic data are presented in Appendix A, Tables A-9—A-12.

Black workers were hired for yard, laboring and other specified jobs and not permitted to move up other occupational progressions, or even to obtain employment in progressions reserved for whites. Separate locals were set up by the paper unions for Negro workers. Negroes were hired under different criteria from whites. The latter were expected to be qualified eventually to move to the top of a progression, and beginning in 1946, were required to take a battery of tests, the results of which were used in placement. Negroes were selected on the basis of reliability and necessary physical strength. Negro high school graduates were not generally employed and no tests were given to black applicants.

In the early 1960's, under increasing government pressure, Union Camp moved to end its discriminatory practices. Negroes were henceforth employed on the basis of the same criteria as were whites, the white and black progression lines were integrated, and as a condition of agreement in its 1963 negotiations, the company insisted that the white and black local unions be merged.

Having ceased to hire on a discriminatory basis, Union Camp, like other mills in the industry, was faced with the need to deal constructively with a group of disadvantaged workers (later designated as the "affected class")—over 600 black employees who were hired originally with the understanding that they would always be laborers, or hold similar jobs, and who now had the opportunity to go into lines of progressions but who generally lacked the necessary skills and qualifications needed to perform adequately in these more skilled jobs. The company's action to rectify matters was stimulated by charges of discrimination filed against Union Camp (and most other southern mills) pursuant to Title VII of the Civil Rights Act of 1964, by the court decisions in *Crown Zellerbach,*[13] and by the agreements of International Paper Company and other concerns in applying the principles derived from *Crown* and other court cases.

THE AFFECTED CLASS AGREEMENT

One action that Union Camp took was to sign an agreement with its unions similar to the Crown Zellerbach arrangement. Essentially this agreement provided that where members of the affected class[14] were involved,

[13] *United States v. Local 189, United Papermarkers and Paperworkers, Crown Zellerbach, et al.,* 282 F. Supp 39 (E.D. La., 1968); affirmed, 416 F. 2d (5th Cir., 1969); cert. denied, 397 U.S. 919 (1970).

[14] Affected class at Union Camp is defined as those minority employees who were hired prior to December 31, 1969; and who were initially placed in a job from which there was little movement, or were placed in jobs in which minority group employees constituted more than 50 percent of the incumbents.

the seniority criterion for advancement in a progression would be division seniority rather than job seniority so that an affected class member would not be penalized by reason of past discriminatory practices. ("Division" refers to broad areas, such as bag plant, mill, etc.) Most affected class members who transferred in order to get into a job progression were to be protected against any wage reductions, and qualifications for a job were established as high as the qualification of the employee currently working therein who was least qualified. The purpose of the last clause was again to attempt to avoid having Negro employees burdened by past discrimination, since as machinery has become more complex in the industry, standards have been progressively raised. Thus, the standards for affected class advancement were to be set somewhat akin to those which existed when an affected class member was hired. (One result of this clause was to exempt all affected class members from having to take the company's pre-employment test battery.) Finally, as in other companies, the affected class agreement did not cover maintenance jobs, an important factor in subsequent efforts to upgrade affected class members.

After the affected class agreement was signed, each Negro employee in that group was talked to by his supervisor and by a member of the company personnel department. The meaning of the agreement and the opportunities which it offered were stressed, and the affected class person was urged to take advantage of the new promotion opportunities. The responses to promotional opportunities as of May 17, 1971 for all Union Camp affected class members are shown in Table 23. The survey covered those working in the converting and chemical plants, as well as the mill employees.

Table 23 shows that 61 percent of the employees in the affected class declined to accept job movement. There are the usual reasons for this. Job movement could involve an exchange of regular day work for a swing shift, changing every week and thus requiring an entirely new life style. To anyone in his late forties or fifties, this would be a difficult adjustment. Then too, many of the employees have farms or side businesses—trucking, cement work, lawn care, etc.—and a job change could sacrifice what has been so carefully built up over the years. Others have accommodated to their situation and see no rationale in improvement now, carrying with it the need to work with unfamiliar supervisors and crews possibly less sympathetic than existing ones. And, of course, the fact remains that affected class members, while disadvantaged as to promotion rights and opportunity, were persons working in secure jobs with relatively high pay. Compared to their peers prior to the Civil Rights Act of 1964,

these paper industry workers were among the most successful Negroes in their communities. Finally, those who refused transfer, could, of course, accept it later, but few probably will for the reasons just noted.

TABLE 23. *Union Camp MIND Program Affected Class Attitudes toward Job Change May 17, 1971*

Classification	Number of Employees	Percent of Total
Total employees in affected class	629	100.0
Transferred to a progression line prior to agreement and elected to remain there	26	4.1
Declined offer for transfer/promotion	381	60.6
Accepted offer to seek transfer/promotion	209	33.2
Considering offer but undecided	13	2.1

Source: Company records.

One-third of the affected class group accepted the opportunity for job improvement. Another 4 percent (26 employees) had already transferred to previously all white progression lines prior to the affected class agreement and elected to remain there rather than to move again. Thirteen employees—2 percent—were undecided whether to accept offers of transfer and promotion as of mid-May 1971.

Table 24 summarizes what has occurred in the way of transfers and promotions of affected class members who indicated that they would take advantage of their new rights. Twenty-six, as already noted, were transferred before the affected class agreement was signed; 83 more transferred thereafter. Another 29 decided to move in existing progression lines. These were persons who had not been allowed to progress prior to the passage of the Civil Rights Act of 1964 because natural progression lines had been perverted by racial barriers. With barriers removed and white and black lines merged, they gained promotion opportunities without transferring. After the affected class agreement was signed, and mill seniority, instead of job seniority, became the criterion for upward movement, these opportunities were considerably enhanced. Employees so situated found their best opportunities in the progressions in which they already were working.

Table 24 shows that 138 affected class employees transferred or were unfrozen in existing lines as of May 17, 1971. This was 59 percent of the affected class members who agreed to take advantage of their opportunities, but in view of the fact that the bulk of these employees declined

TABLE 24. *Union Camp MIND Program*
Affected Class Job Movements
May 17, 1971

Classification	Employees	Percent of Affected Class Transferred or Agreeing to Transfer and Promotion	Percent of Total Affected Class (629)
Agreeing to transfer or previously transferred			
Transferred to progression before affected class agreement	26	11.1	4.1
Transferred to progression after affected class agreement	83	35.3	13.2
Unfrozen in existing line	29	12.3	4.6
Refused job previously requested	26	11.1	4.1
Waiting transfer opportunity	71	30.2	11.3
Total	235	100.0	37.3
Actually transferred or unfrozen			
Returned to old job after trial at new one	19	8.1	3.0
Net transfers, promotions, or unfrozen	119	50.6	18.9
Total	138	58.7	21.9

Source: Company records.

such opportunity, only 22 percent of the total affected class. Another 71 employees were waiting for transfer opportunities and 26 declined opportunities which they had originally requested. Many of the 71 waiting transfer desired specific jobs and preferred to wait until they were available rather than to accept other transfers or promotions. Finally, 19 employees who were transferred returned to their old jobs after a trial period because they did not like their new ones, or because they could not perform adequately. Thus only 119 black employees, 19 percent of the affected class and 51 percent of those agreeing to transfer or to move ahead in existing lines, were actually transferred or promoted as of May 17, 1971.

DEVELOPMENT AND EARLY STAGES OF MIND PROGRAM

Union Camp's Savannah works has long emphasized training. A well staffed training department is found in the industrial relations division and training programs are continuously in operation. Figure 5 is a copy of an announcement issued in January 1971 listing the available training courses that would shortly begin, together with an enrollment form. Such announcements are sent to all employees regularly, and supervision encourages enrollment. Union Camp's Savannah works probably does as much, if not more, formal training than any other major paper manufacturer. It will be noted that Figure 5 lists a MIND course as one which was open for enrollment. It began functioning as the fifth MIND course given.

Union Camp had been interested in remedial mathematics and English training for a number of years. In 1955, when segregation was still very much a way of life, the company instituted a course in basic English and mathematics. It was moved to do this because of the difficulties which its black employees were having with loan sharks and local merchants and the problems, such as excessive garnishes, which resulted. The course was conducted by a former teacher in a black high school who had been employed since World War II to handle the segregated employment office for Negro employees. He taught the course after work hours for a number of years in the plant or in Negro schools. Attendance was good and satisfactory results were achieved in terms of the objectives. The course was not designed to increase the promotability potential of those who took it, but rather to assist them to deal with problems of everyday life more easily.[15]

[15] The background discussion is based on interviews with company personnel, Savannah, January 1971.

FIGURE 5. *Union Camp MIND Program Training Course Announcement*

EXTENSION TRAINING COURSES TO BEGIN
JANUARY 18, 1971

BEGINNING SHORTHAND	The Gregg Diamond Jubilee method will be taught.
BOILERPLATE LAYOUT	Begins January 11. Limited to employees in Maintenance.
INDUSTRIAL COMMUNICATIONS	Special emphasis on letters, memos, outlining, reports, bulletin board notices, vocabulary, grammar, oral expression, and listening.
MIND (Methods of Intellectual Development)	Basic arithmetic, reading, and vocabulary.
PULP & PAPER MANUFACTURING	Covers the process step by step from the tree nursery through papermaking. Includes visits into manufacturing areas.
SLIDE RULE	Introduction and application. This is a short 20-hour course.

(Detach Along Dotted Line)

To: Training Department

I would like to enroll in the following classes:

_____

_____

Suggested Course(s) for future: _____

Name _____

Department _____

Clock Number _____

Source: Company records.

Following the passage of the Civil Rights Act and the integration of progression lines and elimination of segregation through the operation, black employees who had formerly been given no opportunity for advancement gained that opportunity. Nevertheless, it was clear that many of them were not qualified by virtue of educational background or experience, and that something would have to be done to upgrade their educational status. Company officials were attracted to MIND as a result of articles in trade journals. They went to Laurens, South Carolina, to observe a MIND program which was being conducted in a community educational project by the United States Research and Development Corporation.[16] Feeling that the MIND program was doing a better job than they had been doing on their own, Union Camp ordered MIND materials in March 1968 and prepared to begin the first course in June.

Enrollment Criteria and Schedules

In talking to company officials it seems clear that they were looking for a program which would assist them to improve the educational background and job potential of their black employees, and especially those with minimum educational attainments. It is also clear that they felt, on the basis of their investigation of MIND and discussions with MIND personnel, that the MIND program would do just that. On the other hand, a key MIND executive did advise the company in writing at about the time that the sales commitment was made:

> Trainees who are selected initially for the Basic Education program should have minimum levels of achievement in both reading and arithmetic between grades 4.0 and 7.0 as measured by the tests. We strongly recommend that no more than two grade levels separate the entry of any two trainees in the same field.
>
> All trainees should possess an I.Q. of at least 75 as measured by the Lorge-Thorndike Intelligence Test.[17]

As a matter of fact, none of these limitations has ever been adhered to by Union Camp. The first MIND class, which began in June 1968, included twelve persons (ten completed), of whom eight tested below fourth grade in reading (word meaning) and six below fourth grade in mathematics (arithmetic comprehension). The grade spread was from 2.3 to 4.9 in reading and from 3.3 to 5.0 in mathematics. Ten of the twelve tested below 75 in the intelligence test and an eleventh tested at

[16] In our discussion of the Georgia Kraft program (Chapter V), we examine a separate USR&D program which that concern developed at a later time.

[17] Copy of letter in authors' possession, dated March 11, 1968. Later, MIND, Inc. increased its recommended class inhouse minimum grades to 4.5-8.5.

75. Thus only in grade spread of the enrollees did the first class conform to the MIND ideal. Moreover, in subsequent classes, the grade spread was substantially greater than the recommended two limit.[18]

Union Camp did attempt to select enrollees for the first course, and likely candidates from the disadvantaged group were interviewed and encouraged to attend. Twelve were enrolled. This is the number that a MIND class can accommodate at one time since there are twelve headsets in a MIND equipment chest. MIND desired that Union Camp keep a generally open room and available monitors, but the company believed that this was not feasible because of the numerous shift operations, and different shift changes of various sectors of the works.[19] Accordingly, the program was scheduled at first for three nights per week for two hours each. Later, because of difficulties involving attendance on Fridays, it was changed to a three-hour schedule on Tuesdays and Thursdays. Whether a three day or two day schedule was followed, trainees could not attend when they were working on the night shift, which occurred periodically. Enrollees were permitted to come into the unattended study room and do work there, but few ever did. Moreover, to study two and three hours after work is a difficult task. It should be noted that despite these considerations, Union Camp operated a group program based on stable class attendance, rather than individual participation.

Union Camp ran a longer program than the other companies—240 hours, which is 50 percent longer instructional time than that of the original Crown Zellerbach program discussed in Chapter II. Union Camp believed that the longer course would be helpful to those with low ability and/or poor backgrounds. But it also added to the absenteeism and drop-out potential, especially because the course took almost an entire year to complete and thus required considerable tenacity of purpose, especially in the summer months. In addition, it meant that vacations would interfere with attendance.

Monitor Selection

MIND officials had very clear criteria for the selection of course administrators whom they called "monitors." These are set forth below, reproduced from a letter from a MIND official to the company:

---

[18] Data from company. Complete data on program graduates are presented in Table 25.

[19] Other paper companies, as noted, have not found this to be an insurmountable barrier.

I am including a few suggestions concerning selection of monitors. The first suggestion concerns your initial interview. The monitors should be told as much about your program and class schedules as possible. Their personal commitments should be compatible with your plans. The objectives of your program and characteristics of the trainees should also be carefully discussed and considered.

In addition to the above, you will probably find it valuable to insure that a potential monitor understands clearly that she will be working with arithmetic and reading. Although monitors will not be the primary source of data they will be required to have the appropriate competencies to be truly effective.

As you know, the MIND program gives special attention to each trainee's objectives. These in turn play an integral part in his rapid mastery of new knowledge and skills. Since each trainee's success will also be related to his monitor's readiness and ability to help, we have found it valuable to consider carefully not only a monitor's technical competencies, but also her personal characteristics. Our experience indicates that a monitor's personality sets the tone of the class and has a major influence on a trainee's feelings about himself and his attitude toward learning. For this reason we recommend careful screening and selection of monitors in accordance with the following criteria:

a. Minimum of a 10th grade competency (preferably 12.0+) in arithmetic and reading.
b. High intelligence.
c. Mature approach to dealing with people.
d. Optimistic and positive attitudes towards the program, the trainees, and themselves.
e. Good perception and sound judgment, particularly the ability to recognize, evaluate, and resolve problems.
f. Ability to organize and express ideas clearly.
g. Ability to work independently with minimum supervision.
h. Neat and attractive appearance.
i. Sense of humor that will hold up under pressure.
j. Ability to listen.
k. Pleasant voice and good pronunciation.
l. Fexibility.[20]

Of special interest is the reference to "she" and "her personal characteristics." MIND officials believed that women make the best monitors and further that the women should be white. The reasons for this are not clear. Union Camp employed a white woman from its employment office for the initial course, but since has utilized both white and black males with at least as much success, as have other companies. It would seem that the qualifications desired by MIND for monitors are not solely the endowments of white women. The basis for this sex and race preference in monitor selection is not apparent.

[20] Copy in authors' possession, dated March 11, 1968.

PROGRAM RESULTS AND EVALUATION

Because we have examined the MIND program and curriculum in detail in the previous chapter, we shall not do so again here. Rather, we will concentrate on the unique characteristics of the program and the experience at Union Camp.

Initial Experience

The company made a special effort to recruit personnel for the first course who would qualify for promotion. Some of those who took the initial MIND course, for example, had previously taken the earlier Union Camp basic education one. Eight of the twelve in the first class (including two who dropped out) were less than 40 years old, and only two of the remaining four were over 50. This relatively young group also had a grade completion average of 9 (including the two dropouts). Ten of the twelve who began the first MIND course completed the required 240 hours, going to class at night between June 1968 and May 1969. Complete data on this first class and three subsequent ones are presented in Table 25.

The ten who completed the first course averaged a math increase of barely one grade, and less than one grade in reading. Only one student increased his math level in the range promised by MIND, Inc., and only five of the others gained as much as one grade level. In reading, the largest gain was only 1.8 grade levels. This evoked keen disappointment on the part of company executives. Typical was this comment: "I am a little disappointed in progress that was made. I honestly felt that on the average these students should have progressed from two to three grade levels in both word meaning and arithmetic computation." [21]

The disappointment of company officials was further reflected in the test scores achieved in June 1969 by five graduates of the program who expressed a desire to obtain maintenance jobs. They were given the standard Beta and Bennett tests and the simple mathematics test set forth in Figure 6. Their test scores are shown in Table 26. With 50 percentile as qualifying, one achieved that in the Bennett and two came close in the Beta, but none exceeded 19 in the math test. Yet that very month all five had completed the 240 hours of MIND, about one-half of which was devoted to arithmetic of the same nature as found in the test set forth in Figure 6. It would certainly seem that persons who test above the fifth grade in mathematics, as did three of the five listed in Table 26,

[21] Company correspondence.

TABLE 25. *Union Camp MIND Program Educational and Age Data All Program Graduates*

Trainee	Age[a]	Stated Education	Math Grade Level Before	After	Change	Reading Grade Level Before	After	Change
Class No. 1								
1	32	12	3.3	3.5	0.2	3.3	4.2	0.9
2	37	12	4.1	5.4	1.3	3.5	4.6	1.1
3	55	10	3.7	4.1	0.4	4.1	4.7	0.6
4	33	10	4.6	6.2	1.6	3.8	3.8	–
5	34	6	5.0	5.8	0.8	3.6	3.3	–0.3
6	44	6	4.4	4.8	0.4	3.0	4.7	1.7
7	34	4	0.0	4.4	4.4	2.3	3.0	0.7
8	38	10	3.7	5.0	1.3	4.9	6.7	1.8
9	45	5	4.4	5.9	1.5	4.4	5.4	1.0
10	56	6	3.7	5.2	1.5	3.2	3.5	0.3
Mean	41	8	3.7	5.0	1.3	3.6	4.4	0.8
Class No. 2								
11[b]	30	12	6.3	9.4	3.1	11.0	11.0	–
12	39	6	4.1	5.6	1.5	3.3	4.7	1.4
13	40	5	4.1	5.6	1.5	2.3	2.9	0.6
Mean	36	8	4.8	6.9	2.1	3.5	6.2	0.7
Class No. 3								
14	50	5	4.6	3.7	–0.9	7.3	7.6	0.3
15	41	10	4.6	4.6	–	5.6	6.6	1.0
16	50	8	6.6	7.1	0.5	7.3	9.5	2.2
17	35	8	2.0	3.7	1.7	2.3	3.3	1.0
Mean	44	8	4.5	4.8	0.3	5.6	6.7	1.1
Class No. 4								
18[b]	50	6	5.2	11.2	6.0	7.3	12.9	5.6
19	35	12	2.0	3.3	1.3	3.0	3.6	0.6
20	33	5	3.8	5.0	1.2	3.9	4.6	0.7
21	35	12	2.6	4.6	2.0	3.6	4.6	1.0
22	41	7	4.4	5.6	1.2	3.5	4.2	0.7
23[b]	44	9	8.5	10.5	2.0	8.8	12.9	4.1
24[b]	50	12	2.9	11.2	8.3	9.5	12.9	3.4
25	48	8	2.6	5.4	2.8	5.1	6.7	1.6
26	35	6	2.9	3.7	0.8	2.9	3.5	0.6
Mean	41	9	3.9	6.7	2.8	5.3	7.3	2.0
Total mean	41	8	4.0	5.8	1.8	4.7	6.0	1.3
Affected class mean	40	8	3.7	4.9	1.2	3.9	4.8	0.9
Non-affected class mean	44	10	5.7	10.6	4.9	9.1	12.4	3.3

Source: Company records.
[a] As of 1971.
[b] White employees.

should be able to score in the 50 percentile group for the test reproduced in Figure 6.

Such results caused Union Camp to advise MIND, Inc. that it was "disappointed with the results achieved thus far . . ." and to note that "efforts have fallen far short of the claims made at the time we bought the program." In response, MIND personnel admitted that some of the

FIGURE 6. *Union Camp MIND Program*
Test Given Five Graduates of First MIND Course
June 1969

Name _____

MATHEMATICS TEST

Directions: Put the answers to the problems in the spaces marked "Answer." You may use the bottom of this sheet for any extra figuring.

Add:

6634	2.8	
9835	34.3	
8947	6.5	
312		
4163		
Answer	Answer	

Subtract:

954462	14.7
483764	.6
Answer	Answer

Multiply:

375	2.5
826	3.7
Answer	Answer

Divide:

543 | 15204

Answer

6.8 | 132.6

Answer

Percentage:

14 is what per cent of 28: Answer _____

1.25 is what per cent of 6.25? Answer _____

What is 80% of 40? Answer _____

Source: Company records.

TABLE 26. *Union Camp MIND Program Test Results for Maintenance Jobs Five Affected Class Graduates June 19, 1969*

Trainee	SAT Math Test After MIND Course Completion	Company Test Results [a] (Percentile)		
		Beta	Bennett	Math
9	5.9	9	8	10
2	5.4	32	5	19
5	5.8	44	21	4
1 [b]	3.5	47	52	4
6	4.8	14	14	4

Source: Company records.

[a] Minimum qualifying—all tests—50 percentile. Average white applicant scores—85 to 100.

[b] Trainee No. 1 was later promoted to a non-maintenance job, but returned to his old job. None of others listed above promoted or in maintenance as of May 17, 1971.

earlier claims may have been "overplayed," but they could offer no solution to the problem of the poor learner except perhaps some memorization.[22] One Union Camp official believes that MIND increases speed primarily, instead of comprehension, and raises the question whether that does not account for results such as those involving the company mathematics test.[23]

Additional Sessions

After discussions with MIND officials, Union Camp decided to continue the program. Three additional sessions were completed by January 1971 and another is currently operating. As Table 25 shows, the number of participants completing declined for the second and third classes: for the second, seven of ten failed to finish; for the third, nine of fifteen also did not finish. Attendance was better in the fourth session, when all but three of the twelve completed, with three of the six completing being white. Thus, at the end of two and one-half years of MIND instruction, 26 persons—22 Negroes and 4 whites—had completed the program.

[22] *Ibid.*
[23] Interview, January 1971.

Costs

Because the MIND program is still operative at Union Camp, it is not possible to give a definitive cost figure. In March 1968, when the company decided to purchase the MIND program, it acquired the basic equipment plus materials for 36 students. The costs were as follows:

MINDmaster 12-position control center	$ 595.00
Hardware/software equipment for 12 training positions	4,558.00
36 sets of textbooks and supplies @ $48.55 per set	1,748.00
Shipping costs on above (approximately)	200.00
Consultation fees and training of monitors	750.00
	$7,851.00

In addition to the above, Union Camp pays monitors $7 per hour. At 240 hours per session, that adds $1,680 for each session to the costs, $6,720 for the four completed. Assuming no new textbooks were required,[24] and ignoring such real costs as executive time relating to the course and classroom rent (space was provided in a training room), we have a cost for the first four sessions of about $560 each for the 26 graduates. Obviously, this cost will vary as the sessions continue. The fixed costs per pupil will decline as more persons complete the course; variable costs per pupil will depend on class size. When, as in sessions numbers two and three, a majority of the participants drop out, the costs per graduate are high. Even so, however, MIND's costs are not excessive provided a reasonable number of students take the course.

JOB RESULTS

In the final analysis, the purpose of a MIND, or similar program, is to improve the job and income potential and level of those who participate. For the 22 members of the affected class who completed the MIND course as of May 17, 1971, Table 27 shows that seven had moved to new jobs or been unfrozen in their lines of progression and one was already in progression. Two declined to accept jobs which they had originally requested, and one who was promoted returned to his old job. In addition, four individuals who began but did not complete the MIND program were in progressions, either unfrozen or promoted.

[24] More than 36 started MIND sessions, although only 26 completed. It is likely, therefore, that additional textbook sets were required.

TABLE 27. *Union Camp MIND Program*
Job Movement of MIND Participants
May 17, 1971

Affected Class Members	Number	Percent of Total (629)
MIND graduates in affected class already in progression	1	
Unfrozen in existing lines	4	
Promoted to progression	1[a]	
Transferred to maintenance	2	
Total moved	8	1.3
Balance in traditional jobs	14[b]	2.2
Total	22	3.5
Participants but not graduates already in progression	2	
Unfrozen in existing lines	1	
Promoted	1	
Total moved	4	0.6
Balance in traditional jobs	13	2.1
Total	17	2.7

Source: Company records.

[a] A second was promoted but returned to his old job.
[b] Includes two who declined previously requested jobs.

The effects of the MIND program on job improvement may be examined in another way. It will be recalled that 61 percent of the 629 persons in the affected class refused opportunities for job improvement. Of the remainder, 119, or 19 percent of the total and 51 percent of those who initially desired better jobs were in such jobs or unfrozen in progressions as of May 17, 1971. (See Tables 23 and 24 above.) Table 28 compares the job improvement results of the MIND program graduates with those for the affected class generally.

Only 3.5 percent of the affected class had completed the MIND program as of May 17, 1971. Moreover, the graduates had not fared better as to job promotions than had those who desired job improvements but did not complete MIND. Eight of the MIND graduates were in better jobs or progressions as of that date; 111 who did not complete MIND had also

TABLE 28. *Union Camp MIND Program Job Movement of All Affected Class Members May 17, 1971*

Affected Class Members	Number	Percent of Affected Class	Percent of Affected Class Desiring Job Improvement
Agreeing to promotion, transfer or unfreezing[a]	235	37.4	100.0
Actually promoted, transferred or unfrozen	119	18.9	50.6
MIND graduates	22	3.5	n.a.
MIND graduates promoted, transferred or unfrozen	8	1.3	3.4
Other than MIND graduates promoted, transferred or unfrozen	111[b]	17.6	47.2

Source: Company records.

[a] Includes 26 who rejected jobs previously requested, 19 who returned to original jobs after trial promotions and 71 waiting transfer opportunity.
[b] Includes four who started but did not complete MIND program.

experienced job improvement. In terms of percentages, 48 percent of those who originally desired promotion achieved it without taking, or taking but not completing, the MIND program; only 36 percent of those who completed the MIND program achieved such improvement. Obviously, the MIND program is neither a prerequisite nor a shortcut to promotion.

On the other hand, these discouraging data do not mean that the MIND program has been a failure. Eight have been successfully promoted and it is possible that taking MIND was a prerequisite in their particular cases. It is also possible that if the 26 who refused job offers or those 19 who returned to old jobs after trying new ones had taken the MIND course, they might have succeeded in upgrading their status.[25] And the successful completion of MIND might have induced many others who declined promotion to attempt to better their job situations.

Yet this is not at all certain. The average age of those who completed the MIND course was 41. We do not have data for the average age of the entire affected class, but it is undoubtedly higher, given the age of the plant and the fact that the percentage of Negroes employed prior to the mid-1950's was higher in most southern mills than in the 1955-1965 decade.[26] Considering the likely educational achievement of those in the affected class and the indifferent results which the MIND program has achieved with those who test out below the fourth grade, one may doubt that any great change would have resulted if more had completed the program. The lack of any clear relationship between completing the MIND program and obtaining a better job must certainly, by now, have reduced the appeal of the program to those for whom it was especially established.

Analysis of MIND Graduates Who Improved Jobs

Table 29 shows the basic data for MIND graduates who were transferred, promoted or unfrozen in their existing progression lines, and compares their averages with those of all affected class graduates of the program. Those who experienced job improvement averaged the same age, but tested slightly higher than the average of affected class members who completed the MIND program; our statistical analysis (Table 30), however, shows no significant difference in mean performance of the two affected class

[25] Of course, some refusals may reflect desires to wait for a particular opening such as in maintenance.

[26] This is because so many of the jobs for which Negroes were originally employed were automated out of existence in this period. Since 1965, under affirmative action plans, the rate of black hiring was substantially increased. Recent hires are of course not members of the affected class. See Northrup, Rowan, *et al., Negro Employment in Southern Industry,* Part One, pp. 47-53.

TABLE 29. *Union Camp MIND Program*
Educational and Age Data
All Promoted Graduates
May 17, 1971

Trainee	Age	Stated Education	Math Grade Level			Reading Grade Level		
			Before	After	Change	Before	After	Change
4[a]	33	10	4.6	6.2	1.6	3.8	3.8	–
8[a]	38	10	3.7	5.0	1.3	4.9	6.7	1.8
9[b]	45	5	4.4	5.9	1.5	4.4	5.4	1.0
15[c]	41	10	4.6	4.6	–	5.6	6.6	1.0
16[d]	50	8	6.6	7.1	0.5	7.3	9.5	2.2
17[d]	35	8	2.0	3.7	1.7	2.3	3.3	1.0
20[d]	33	5	3.8	5.0	1.2	3.9	4.6	0.7
22[d]	41	7	4.4	5.6	1.2	3.5	4.2	0.7
Mean	40	8	4.3	5.4	1.1	4.5	5.5	1.0
Mean affected class	40	8	3.7	4.9	1.2	3.9	4.8	0.9

Source: Company records and Table 25.
[a]Transferred to maintenance.
[b]Already in progression before the affected class agreement.
[c]Transferred to progression.
[d]Unfrozen in existing progression.

groups. We therefore conclude that although the completion of the MIND program may be helpful to improved job opportunity, other factors, probably individual motivation, must be more important.

Comparison with White Graduates

The four white employees who completed the MIND program averaged the same age and stated education as did the others, but tested at a statistically significant higher grade level initially in reading. The white graduates gained much more, up 4.9 grades in reading and 3.2 grades in math, as compared to about one grade in each for the affected class. These are statistically significant differences, as shown in Table 31. Obviously MIND has had much more success in improving the educational status of the advantaged than of the disadvantaged, despite its claims and despite the fact that Union Camp installed the program for the latter, not the former. Table 32 shows further that there were no statistically significant differences in performance between all promoted and all unpromoted graduates.

TABLE 30. *Union Camp MIND Program Statistical Comparison Promoted and Unpromoted Affected Class Graduates*

Variable	Promoted Group	Unpromoted Group	Difference in Standard Units[a]
Reading score pre-MIND	4.60	4.82	–0.21
Reading score post-MIND	5.53	5.14	–0.44
Math score pre-MIND	4.11	3.92	0.28
Math score post-MIND	5.31	5.96	–0.65
Change in reading	0.93	1.33	–0.88
Change in math	1.20	2.05	–1.03

Note: $t_{.10, 20} = \pm 1.72$.

[a] Formula in Appendix B.

TABLE 31. *Union Camp MIND Program Statistical Comparison Affected and Non-Affected Class Graduates*

Variable	Affected Class	Non-Affected Class	Difference in Standard Units[a]
Reading score pre-MIND	3.96	9.15	–7.03[b]
Reading score post-MIND	4.80	12.82	–9.01[b]
Math score pre-MIND	3.65	5.72	–2.72[b]
Math score post-MIND	4.92	10.58	–11.12[b]
Change in reading	0.84	3.28	–4.81[b]
Change in math	1.27	4.85	5.03[b]

Note: $t_{.10, 24} = \pm 1.71$.

[a] Formula in Appendix B.

[b] Significant at the .10 level.

TABLE 32. *Union Camp MIND Program Statistical Comparison All Promoted and Unpromoted Graduates*

Variable	Promoted Group	Unpromoted Group	Difference in Standard Units [a]
Reading score pre-MIND	4.60	3.66	1.60
Reading score post-MIND	5.53	4.47	1.50
Math score pre-MIND	4.11	3.43	1.19
Math score post-MIND	5.31	4.73	1.38
Change in reading	0.93	0.81	0.43
Change in math	1.20	1.30	–0.21

Note: $t_{.10, 24} = \pm 1.71$.

[a] Formula in Appendix B.

CONCLUDING REMARKS

The MIND program at Union Camp, in a three year period, has been both underutilized and indecisive insofar as promotion opportunities are concerned. About two-thirds of the affected class refused to consider promotion; as of May 17, 1971, only 8 of the 22 completing the MIND program had experienced job improvement. This occurred despite extensive recruiting by the company for the program and a long tradition there of inplant formal training.

The company attempted to compensate for the low educational attainment of the affected class by adding extra hours to the program. It appears that this discouraged attendance at least as much as it improved learning. As a matter of fact, educational improvement was meager, and considerably less than the MIND proponents promised. MIND lacks an effective course for the below grade 4 student and at Union Camp was not particularly successful at improving the comprehension of affected class members at any level, if the Stanford Achievement Test scores are to be taken as valid indicators of this.

The problem at Union Camp cannot be laid to poor instructors or facilities. The monitors are experienced, sympathetic, and otherwise capable. Training facilities are first rate and conducive to good results. MIND simply does not appear appropriate for a group of this type if

educational improvement is the goal. Mcreover, at Union Camp results show that MIND graduates are not more likely to be promoted than are other members of the affected class who have not taken MIND. This certainly must reduce the propensity of affected class members to take the MIND course. It would therefore appear unlikely that the MIND program will increase in popularity, or that it will have a significant impact on job movements of the affected class in the future.

CHAPTER V.

The USR & D Program at Georgia Kraft

The basic education program undertaken at Georgia Kraft's Rome and Macon, Georgia plants, although similar to MIND in course content, differed significantly in both teaching method and goals. The program was devised and operated by the United States Research and Development Corporation and took place from March 1969 to December 1970.

COMPANY BACKGROUND

Georgia Kraft Company is one of the nation's largest manufacturers of containerboard, with mills at Macon and Rome, Georgia, and a newly constructed one in Alabama. Georgia Kraft is jointly owned by the Inland Container Corporation of Indianapolis, Indiana and The Mead Corporation of Dayton, Ohio. The parent concerns are the sole customers of Georgia Kraft. Headquarters of Georgia Kraft is located in Rome.

The company's first mill was built in Macon in 1948; the Rome mill dates from 1954. Both those plants followed the racial mores of the area and industry in employment and thus had a substantial affected class following the passage of the Civil Rights Act of 1964. The Alabama mill, having been built in the late 1960's, adopted a nondiscriminatory employment policy from its inception. Therefore, none of its employees were involved in post-employment basic education training. The ensuing discussion deals solely with the Macon and Rome mills.[27]

Locational Factors

Both Macon and Rome are cities with diversified sources of income and employment. The paper mills located there are important, but not the sole sources of good jobs. Macon is located approximately 70 miles southeast of Atlanta, in Bibb County. This is farming and plantation country in which large numbers of Negroes have always dwelled. In 1970, about 35 percent of both the city's and the county's population was black.

[27] Of special help in writing this chapter have been memoranda on the company experience issued by Mr. Robert A. Rock, Vice-President of Georgia Kraft and Dr. Joseph M. Rich, Rutgers University.

Rome is located about the same distance from Atlanta, but northeast, in the foothills of Floyd County, close to the Alabama and Tennessee borders. Fewer Negroes have traditionally dwelled in this area than in the Macon area. In 1970, Rome's population was 30,759, of whom 7,249 were black, a proportion of about 23 percent. The county's black population was only about 13 percent of its total population.[28]

Negro educational levels in Rome and Macon historically have been low, and their employment status disadvantaged. The data available in the appendix tables are outdated but they show the historical situation from which the present problems of Negroes in the paper mills at least partially derive.

Mill Employment

The employment situation at Macon and Rome was like that in the other mills studied, and indeed all mills throughout the South. Negroes employed prior to 1965 were assigned to unskilled jobs, mostly in the wood yard or on building and grounds crews, and were expected to remain in such jobs throughout their working careers. They were selected on the basis of physical capacity and reliability, and were not given the pre-employment tests which have been in use since 1948. White applicants were required to meet critical scores on these tests if they were to be employed. White applicants who were employed after testing were considered qualified to work in any starting job in a line of progression that their work performance justified.

Again, as in most paper mills, the Negro employees of Georgia Kraft were union represented, but confined to separate local unions. Both the United Papermakers and Paperworkers and the International Brotherhood of Pulp, Sulphite and Paper Mill Workers, plus three craft unions at Rome and two at Macon represent the employees. The Pulp and Sulphite Workers provided the separate black locals.

In 1965, Georgia Kraft Company adopted the practice of employing only those applicants who qualified for general employment—that is, who would be capable of moving up progression lines. Negroes, as well as whites, were henceforth given the pre-employment tests before being hired, and Negroes were placed in previously all white progressions.

The Affected Class at Rome and Macon

Having originally hired on a discriminatory pattern, Georgia Kraft Company, like the other mills in the industry, was faced with the need to

[28] Socioeconomic characteristics are presented in Appendix A, Tables A-13—A-16.

deal constructively with an "affected class"—130 of its 1,375 employees who were hired as lifetime laborers and whose promotion capabilities were probably limited. The need for action on the basis of human considerations was stimulated by the requirements of Title VII of the Civil Rights Act of 1964 and later by the court decisions in *Crown Zellerbach*[29] and the agreements of International Paper Company and other concerns in applying the principles developed from the Crown court cases and from other governmental litigation.[30]

Since promotion capability was determined at Georgia Kraft by preemployment tests which Negroes had never been given the opportunity to take, the company decided to offer all Negro employees hired before 1965 the "opportunity" to take the tests, and thus qualify for upgrading. Only three attempted them, and they did not pass.

THE UNITED STATES RESEARCH AND DEVELOPMENT PROGRAM

After the three nonqualified employees failed to pass Georgia Kraft's tests, the company established its own special training-orientation program on test taking and offered it to all nonqualified employees. Somewhat less than one-half participated, and were given the tests at the end of the program. Eighteen passed and qualified for employment in any progression; that still left 112 who were confined to the traditional "Negro" jobs. Realizing that it was impractical to expect these employees to meet educational standards at this stage of their lives, and that conventional teaching programs would in any case probably not meet the needs of these employees, the company in early 1968 looked around for a special program. It found that program in the work being done by the United States Research and Development Corporation.

USR&D Corporation was founded in 1967 by former staff of the Peace Corps and other federal programs. This New York City based concern has expanded widely in the compensatory adult education field. Its funds come from government contracts, particularly with the U.S. Department of Labor, U.S. Department of Health, Education and Welfare, and the Office

[29] *United States v. Local 189, United Papermakers and Paperworkers, et al.*, 282 F. Supp. 39 (E.D.La., 1968), affirmed, 416 F.2d 980 (5th Cir. 1969), cert. denied, 397 U.S. 919 (1970).

[30] A discussion of the International Paper agreement and others is found in Herbert R. Northrup, Richard L. Rowan, *et al.*, *Negro Employment in Southern Industry*, Studies of Negro Employment, Vol. IV (Philadelphia: Industrial Research Unit, Wharton School of Finance and Commerce, University of Pennsylvania, 1971), Part One, pp. 104-112.

of Economic Opportunity. It also contracts directly with industry and community groups, and as will be noted, it is the beneficiary of foundation grants.

Initial Experiment

In early 1968, USR&D was operating an "Industrial Education Center" in Columbus, Georgia. This was a prevocational training program, funded by the federal Office of Economic Opportunity, which recruited and trained unemployed and underemployed persons and then assisted in placing them in jobs.[31] USR&D agreed to modify this program slightly to meet the needs of Georgia Kraft's so-called "nonqualified" group, and the company decided to experiment with a few of its employees. Four volunteers from the nonqualified group were sent to the Columbus center for full-time training for a period of ten weeks. Upon completion of the training, all four employees passed Georgia Kraft's tests, thus making them eligible to enter progression lines. In addition to this achievement, the company felt that "there were a number of indications that the training was valuable to them and had a favorable effect upon their work performance." [32]

Program Design for Rome and Macon

On the basis of the Columbus experience, Georgia Kraft decided to work with USR&D on a special program designed to prepare its 112 non-qualified employees to pass the pre-employment tests and thus be qualified for promotion. The program, as proposed in July 1968, included the following dimensions:[33]

1. The program would last for 36 weeks. During that time, employees would attend for 216 hours at the rate of 6 hours per week.
2. After evidence of training, employees could take the general employment tests when they felt competent to pass (if they failed, they would be able to re-enroll in the program, and retake the tests at a later date).
3. Employees would attend on their own time—either before or after work. It was felt that this personal investment on their part would make the training more meaningful to them.
4. No incentives, other than the opportunity to qualify, would be used.

[31] This was similar to the Laurens, South Carolina, center operated by USR&D which was observed by Union Camp and led to the latter company's use of the MIND program, as set forth in the previous chapter. Whereas USR&D utilized the MIND equipment in the Laurens center, it later developed its own, as will be discussed below.

[32] From Georgia Kraft's unpublished summary of the program, p. 5.

[33] *Ibid.*, pp. 5-6.

To house the program, well appointed separate buildings, or "educational centers," were constructed both at Macon and at Rome by Georgia Kraft. Unlike MIND, USR&D did not train company personnel as instructors but supplied the total staff—an administrator, an administrative secretary, two training directors and three group leaders. USR&D also supplied teaching materials and electronic equipment for programmed learning. Unlike MIND, it did not sell the equipment, but removed it at the close of the program.

Obviously this approach made the Georgia Kraft program a far more expensive one than the MIND type. USR&D justified this on the grounds that its purpose was to go beyond training Georgia Kraft employees. "In order to produce a replicable model for other industries, an evaluation system would be built into the proposed program to keep track of workers before, during and after the training course." [34] Therefore, provision was made for evaluation by outside scholars,[35] and application for support was made to the Ford Foundation on the grounds that it would be a unique program. The Foundation contributed an initial grant of $141,000, and Georgia Kraft committed itself to pay $200 per program graduate in addition to the cost of the facilities.[36]

Early Curriculum Problems

USR&D based its program content on a rule of thumb that the stated educational attainments of the involved employees—that is, the grade which the employees claimed, or which the company records showed, that they had completed in school before employment would be about one-half their actual attainment. The average scholastic attainment claimed for the Macon group was sixth grade; for the Rome group, eighth grade; and for the combined total, seventh grade.[37] It was assumed that most could therefore read at a third grade level or better and thus could benefit from USR&D materials. No verification or testing was done before the program was undertaken to ascertain whether this was a correct assumption because USR&D feared that pretesting would adversely affect its relationship with

[34] United States Research Development Corp., "A Proposal for Upgrading Underemployed Workers," submitted to the Ford Foundation, July 9, 1968, pp. 13-14.

[35] Evaluations included Dr. Emory Via of the Southern Regional Counsel, Dr. Joseph M. Rich, Rutgers University, and Dr. Herbert R. Northrup. Dr. Via has not yet issued a report, having visited Rome and Macon but once; Dr. Rich issued a detailed report; and Dr. Northrup, several memoranda.

[36] Costs will be examined in detail below. The grant was made to the American Paper Institute, which in turn paid USR&D, since the Ford Foundation could not give funds to a profit making corporation.

[37] See Table 33.

the group. A program was therefore planned which would include the following subjects:

1. *Basic Literacy.* Elementary reading and writing at level of grades 1 to 3.
2. *Adult Reading.* Grades 3 to 8.
3. *The World of Words.* Vocabulary, grammar, punctuation, spelling and handwriting—Grades 3 to 8.
4. *The World of Numbers.* Mathematics from below Grade 3 up.
5. *Human Resources Development.* Attitude and personal competence.
6. *Introduction to Physics Principles.* Concepts necessary for Bennett Mechanical Comprehension Test.
7. *Stretch Your Test Score.* Basic skill for taking and passing standardized tests.
8. *GED Program.* Preparation for the General Equivalency Degree high school equivalency test.[38]

All participants were to take the math and human resources courses (the latter taking up about one-third of class hours). It was proposed that all participants scoring below 3.5 grade levels in reading would take both 18 week sessions, beginning with the *Basic Literacy* course and moving into *Adult Reading,* for 216 class hours in all. The rest of the trainees were to be divided into two groups, one taking the first session only and the other group attending session number two. It was projected that only about 25 percent of the nonqualified group would need the full 36 week course.[39]

When USR&D began interviewing and testing for placement, however, it became clear that there was a more than 50 percent difference between stated educational attainment and reading and arithmetic comprehension as revealed by the Stanford Achievement Test, as shown in Table 33. The differential among the Macon group was between 3 and 4 grades in each subject, among the Rome group, 5 grades, and among the combined group, about 4 grades. Far more than 25 percent fell below the 3.5 grade level, with an overall reading average of 2.7 grades, so that nearly 40 percent of all enrollees were required to begin at the *Basic Literacy* course. Consequently, the course design was revised to enroll all participants in the first session. Still, as it turned out, many of these required considerably more than 100 class hours before undertaking *Adult Reading* and *The World of Words* and some actually completed the full course without even beginning the *Adult Reading* course.[40]

[38] Joseph M. Rich, "Program Evaluation: Demonstration Training Program for Upgrading Present Employees to Qualify for Lines of Progression," August 30, 1970 (mimeo), p. 2.
[39] *Ibid.*
[40] *Ibid.*

Early Administrative Difficulties

The program, which began operations in March 1969, encountered severe administrative problems. Most can be attributed to faulty assumptions and planning, such as those regarding curriculum; some were, however, the result of unfortunate coincidental developments, in part related to the EEOC case.

First of all, although USR&D and Georgia Kraft apparently understood that the Columbus, Georgia, experience was not a true model for their program, they apparently did not appreciate fundamental differences in the institutional environments. The Columbus one was a community program, operated under community auspices, attended by volunteers actively desiring to improve themselves. Even the Georgia Kraft employees who went through the Columbus program were especially selected or were volunteers. In contrast, the Georgia Kraft nonqualified group included persons who were already employed at good wages for the work involved and whose motivation for job advancement and belief that job advancement was in fact feasible certainly varied considerably. In addition, the average age, as of July 1968, of the Georgia Kraft group was 45 for Macon, 38 for Rome and 41 for the combined group.[41] Although we do not have data for enrollees at Columbus, it is very likely that they were a younger group much closer to school age and experience.

Second, at Columbus, the Georgia Kraft experimental group went full time to the school, with all expenses and wages paid. This is quite different from the in-plant training programs where a facility was available and employees were told to take advantage of it on their own time. Shift changes, overtime, secondary jobs, family responsibilities, car pool arrangements, individual motivations, and job fatigue all work to inhibit attendance even when the best of intentions are involved.

Third, the USR&D personnel exhibited insufficient understanding of the different environment which they would encounter at a paper mill in comparison with a general community. They were briefed on the background, nature and attitudes inherent in a paper mill situation by company personnel, but did not seem to grasp the significance of the seniority system; nor did they fully grasp that the employees involved, although disadvantaged in terms of promotion, nonetheless had well paying, steady jobs which might be considered adequate by some; and they did not foresee that there might be severe antagonisms among white workers to a special program designed to upgrade black employees. It is one thing to prepare a person

[41] The data on age are found in the appendix of the USR&D proposal to the Ford Foundation. See Table 34, below.

TABLE 33. *Georgia Kraft USR&D Program*
Grade Level Comparison
Stated and Pre-Course Levels
All Tested Participants

	Average Stated Educational Grade Level	Pre-Course Tested Grade Level		Difference between Stated and Tested Levels	
		Math	Reading	Math	Reading
Macon group	6.0	2.8	2.4	3.2	3.6
Rome group	8.0	3.2	2.9	4.8	5.1
Total group	7.0	3.1	2.7	3.9	4.3

Source: Company records and Table 34.

for a better job in the community; it is quite another to prepare one to break into a closed circle within the narrow environment of one plant. Lack of understanding of these factors made it difficult for USR&D personnel to deal adequately with the motivation and attendance problems which arose.

Company officials endeavored to indoctrinate the USR&D personnel, but basically gave USR&D a free hand. As a consequence, indoctrination of superiors and of white employees, particularly at Rome, proved insufficient to prevent rumors that the program was a device to place Negroes in jobs displacing whites. Yet USR&D personnel were convinced that they could easily attract and hold as students virtually all the employees who needed instruction. As we shall see, this just did not occur.

A further factor which caused difficulties was the failure of USR&D to free its first program administrator of other responsibilities. He spent some time during the critical first months of the Georgia Kraft program completing work on a former assignment and being otherwise engaged. Moreover, although reputedly an excellent teacher and community organizer, his capacity for administration appeared less than was required, especially in view of the other problems involved.

The failure to prepare for the true educational attainment of the employees reacted unfavorably, and may well have hurt attendance and interest in the early stage. Moreover, the hostility of white employees to the program at Rome undoubtedly discouraged the minority group from participation for at least six months. After management stepped in and instructed its supervisors to deal sternly with such opposition, it abated. Here again, it was the failure of USR&D to appreciate fully the local environment that caused the problems. Finally, developments pertaining to the Equal Employment Opportunity Commission case hurt the program.

IMPACT OF THE EQUAL EMPLOYMENT OPPORTUNITY COMMISSION CASE

On April 22, 1966, Georgia Kraft Company had been charged with violation of Title VII of the Civil Rights Act of 1964 by employee complaints. The test procedure was involved in the charge. In February 1968, almost two years later, the EEOC announced that it had found "reasonable cause" to believe that the company was violating the Civil Rights Act and that it would attempt conciliation of the matter.[42] For the next year, however, the matter seemed dormant. After the USR&D training program

[42] *Ware et al. v. Georgia Kraft Company*, EEOC Case Nos. 6-8-6685-6687, February 27, 1968.

was developed, the case became active again with the filing of a charge in the U.S. District Court for the Northern District of Georgia.[43] The company and the unions involved then succeeded in having the court return the matter to the parties for conciliation and negotiation.

As a result of extended negotiations involving the company, the unions, the black employees represented by lawyers from the National Association for the Advancement of Colored People (NAACP), and the EEOC, agreement was worked out. A court consent decree was issued in November 1969 which took advantage of the USR&D training program then in operation. The parties agreed to use successful completion of the USR&D course as a *substitute* for passing Georgia Kraft's pre-employment tests as a means of qualifying persons "for transfer and/or promotion into any job in any line of progression. . . ." [44] Conflict during litigation leading to this agreement, and the consent decree itself, had a major impact on the operation and outcome of the training program at Georgia Kraft.

PROGRAM OPERATION

The USR&D program began in Macon and Rome in late March 1969, after some, but not all, pretesting and interviewing of eligible participants had been accomplished. Unlike other programs studied herein, the Georgia Kraft program was closed to all but the Negro nonqualified group.

Initial Training Period

Attendance was a problem from the outset of the program. The earliest status report showed that only 95 eligible employees had enrolled and that of these, only 70 had actually reported for training during the first two weeks of operation—46 of 54 at Macon and 24 of 41 at Rome. The June report showed attendance of 42 "active" students at Macon and 41 at Rome, but by the end of July, Rome attendance had dropped to 28 while remaining fairly stable at Macon.[45]

In connection with litigation on the discriminatory testing charges, the leadership of the black local at Rome urged a boycott of the USR&D

[43] *Long et al. v. Georgia Kraft Company*, CA No. 2033 and *Long et al. v. International Brotherhood of Pulp, Sulfite, and Paper Mill Workers, et al.*, CA No. 2103 (D.C.N.D. Ga., 1969).

[44] *Id.* at 2. Originally applied to the Rome mill, the agreement was extended to employees working in Macon as well. Litigation involving other remedies for past discrimination at Rome is still pending. See *Long et al. v. Georgia Kraft Co. et al.*, U.S. Court of Appeals, Fifth Circuit, November 12, 1971.

[45] Status reports dated April 10, June 24, and July 24, 1969.

course. Although the impact of this action cannot be measured, it certainly added to the difficulties and hindered attendance. Enrollee absenteeism, for all reasons, rose substantially during the summer and early fall of 1969, so that although more than 80 persons were listed as enrolled in Macon and Rome combined, those attending six or more hours per week fell to as low as 7 in Rome and 13 in Macon.[46] Moreover, absenteeism was frequent so that few attended consistently. Vacations and other summer activities played a role, but the black local boycott was an added factor at the Rome facility. The question of whether the program would indeed be helpful in upgrading also played a part, since no promotions from among those taking the course had occurred by September 1, 1969. (On the other hand, three of the four who graduated from the Columbus training center had moved into lines of progression, and the fourth had turned down specific opportunities offered to him.)

Course Reorientation

For whatever the reason, the 36 week training program, scheduled to be completed by December 1969, was behind schedule by September. Initially, USR&D believed that it could complete the training in 18 weeks for those employees with some reading skills, and in 36 weeks for the nonreaders. As noted, its proposal was based on reported educational attainments of the group, which exceeded the actual; and on the assumption that attendance would not be a problem, which in fact was incorrect. It was therefore clear that by the end of the 36 week period the training job would be far from complete. Furthermore, the course design and goals were changed when the company offered to eliminate testing for program participants who completed the course. Successful completion was finally defined in the consent decree as attendance at the rate of "six (6) hours per week for 38 weeks, on the employees' own time. . . . satisfactory attendance shall be deemed to be 90% of 216 hours, or 90% of six hours a week as long as the course is given, whichever is less. . . ."[47] Furthermore, it was agreed that participants would be immediately eligible for advancement. The necessary number of hours required to qualify, pursuant to the consent decree, was later set at 183, less than 90 percent of 216.

Following the consent decree, the sights of the course were lowered, its objectives altered, and its administration reorganized. An extension grant of $99,575 was obtained from the Ford Foundation to continue the program from December 1969 through September 1970. USR&D staff then re-

[46] Data from the company.
[47] *Long v. Georgia Kraft Company, loc. cit.*

mained on the scene for several months thereafter until all eligible employees who so desired had completed the requisite number of hours for qualification.

After the second Ford grant was made, USR&D brought in new and far more effective staff. Moreover, with company cooperation, supervisors were induced to talk to the enrollees and a far better understanding of the program than had heretofore been extant was accomplished. Eligible employees were visited, coaxed and, with the help of both supervisors and Negro leaders who were now cooperating, all employees who evidenced interest were put through the program, some with the help of home study which was offered toward the end of the program. The Macon training ended on September 25, 1970, while Rome training continued until December 18, 1970.

PROGRAM RESULTS AND EVALUATION

Table 34 lists the employees who finished the course, together with age as of 1968, stated education, and Stanford Achievement Test scores before and after training. Some 71 employees—43 at Rome and 28 at Macon—took advantage of the USR&D program, 4 through the experimental course at Columbus and 67 through in-plant training. Of the latter group, 5 passed the qualifying tests and the rest completed the requisite number of hours for promotional opportunity pursuant to the consent decree. Of the 112 previously unqualified employees, 63 percent completed the program. A few others have indicated that they would like to work out a home study program but it is questionable whether they will complete any program after not taking the USR&D course to completion. The participation rate probably is about as good as can be expected in such a program.

Age Distribution

Table 35 shows the age distribution of eligible employees compared with that of employees who completed the program. As might be expected, the oldest group—46 and older—was less represented among program graduates than among those eligible. Only 53 percent of the two older groups participated, whereas 76 percent of the two younger groups did so.

Test Results

The test scores listed in Table 34 show that the Rome employees for whom complete data were available made math increases of an average 1.8 grade levels, from 3.4 to 5.2, and reading 1.3 levels, from 3.1 to 4.4.

TABLE 34. *Georgia Kraft USR&D Program*
Educational and Age Data
All Program Graduates

Trainee	Age	Stated Education	Math Grade Level			Reading Grade Level		
			Before	After	Change	Before	After	Change
Rome								
1[a]	40	6	4.6	6.3	1.7	5.3	6.1	0.8
2	44	11	3.7	3.5	–0.2	1.6	4.3	2.7
3	40	6	2.7	4.1	1.4	3.3	3.6	0.3
4	47	6	4.3	6.1	1.8	4.4	5.9	1.5
5	45	7	3.3	4.2	0.9	3.3	4.7	1.4
6[a]	38	7	0.0	n.a.	–	0.0	n.a.	–
7	36	6	3.4	4.4	1.0	1.5	2.4	0.9
8	27	11	n.a.	5.5	–	n.a.	3.6	–
9	43	5	n.a.	n.a.	–	n.a.	n.a.	–
10	39	7	4.0	8.6	4.6	3.6	6.0	2.4
11[a]	28	11	5.6	8.6	3.0	6.5	6.6	0.1
12[a]	46	6	6.6	7.6	1.0	3.4	4.5	1.1
13	44	6	5.2	6.1	0.9	4.3	5.7	1.4
14	48	7	3.9	5.9	2.0	3.7	5.7	2.0
15	38	10	n.a.	4.0	–	n.a.	4.5	–
16	44	5	2.4	4.4	2.0	2.8	3.2	0.4
17	40	11	0.0	5.7	5.7	0.0	4.2	4.2
18	35	9	4.3	5.8	1.5	3.3	5.4	2.1
19	29	11	3.8	4.6	0.8	3.0	3.6	0.6
20	30	11	5.6	6.2	0.6	6.8	9.7	2.9
21	43	11	n.a.	4.6	–	n.a.	3.9	–
22	26	11	6.4	7.4	1.0	5.9	8.1	2.2
23	37	11	5.3	6.1	0.8	5.0	5.1	0.1
24	30	8	n.a.	6.6	–	n.a.	5.1	–
25	34	9	5.3	5.9	0.6	5.3	6.1	0.8
26	32	9	3.3	4.4	1.1	2.8	3.1	0.3
27	35	8	0.0	3.8	3.8	0.0	2.4	2.4
28	37	5	4.0	5.4	1.4	3.8	3.7	–0.1
29	39	1	0.0	2.5	2.5	0.0	2.1	2.1
30	27	9	0.0	5.0	5.0	0.0	2.2	2.2
31	31	11	5.0	5.9	0.9	2.5	3.3	0.8
32	34	4	2.0	3.9	1.9	2.1	3.0	0.9
33	45	6	n.a.	4.1	–	n.a.	4.0	–
34	30	6	n.a.	n.a.	–	n.a.	n.a.	–
35	41	8	0.0	n.a.	–	1.4	n.a.	–
36	38	5	3.1	4.0	0.9	2.9	2.6	–0.3
37	48	6	n.a.	4.6	–	n.a.	5.2	–
38	39	4	1.6	2.4	0.8	0.0	2.5	2.5
39	49	8	2.0	5.3	3.3	5.0	4.8	–0.2

TABLE 34—*continued*

Trainee	Age	Stated Education	Math Grade Level Before	After	Change	Reading Grade Level Before	After	Change
40	37	6	1.7	2.7	1.0	0.0	2.5	2.5
41[b]	n.a.	n.a.	n.a.	n.a.	–	n.a.	n.a.	–
42[b]	n.a.	n.a.	n.a.	n.a.	–	n.a.	n.a.	–
43[b]	n.a.	n.a.	n.a.	n.a.	–	n.a.	n.a.	–
Mean[c]	38	8	3.4	5.2	1.8	3.1	4.4	1.3
Macon								
1	53	10	4.2	5.9	1.7	3.7	4.5	0.8
2	48	6	4.6	7.0	2.4	3.4	5.6	2.2
3	51	11	4.0	5.9	1.9	4.1	5.5	1.4
4	42	7	3.5	7.2	3.7	3.3	7.7	4.4
5	38	7	5.3	5.2	–0.1	4.6	4.4	–0.2
6	40	8	n.a.	6.5	–	n.a.	4.9	–
7	43	5	0.0	5.7	5.7	0.0	4.2	4.2
8	57	2	n.a.	n.a.	–	n.a.	n.a.	–
9	32	10	5.4	6.6	1.2	3.3	4.8	1.5
10	54	8	2.2	3.7	1.5	2.5	4.0	1.5
11	50	5	n.a.	3.4	–	n.a.	4.5	–
12	30	5	0.0	6.4	6.4	0.0	4.8	4.8
13	48	7	6.0	6.1	0.1	2.6	5.7	3.1
14	46	6	3.0	6.2	3.2	3.5	5.5	2.0
15	44	11	5.0	6.9	1.9	2.5	5.4	2.9
16	50	3	0.0	5.3	5.3	0.0	5.2	5.2
17[a]	30	8	5.5	6.5	1.0	4.6	6.1	1.5
18	56	4	n.a.	n.a.	–	n.a.	n.a.	–
19	37	8	n.a.	4.4	–	n.a.	4.2	–
20	53	4	2.0	3.8	1.8	2.7	3.4	0.7
21	45	4	0.0	4.3	4.3	0.0	3.6	3.6
22	30	6	2.4	4.5	2.1	3.6	2.7	–0.9
23	50	5	0.0	n.a.	–	0.0	n.a.	–
24	51	1	n.a.	n.a.	–	n.a.	n.a.	–
25	35	5	n.a.	n.a.	–	n.a.	n.a.	–
26	58	0	0.0	n.a.	–	0.0	n.a.	–
27	33	6	2.9	4.1	1.2	3.5	4.2	0.7
28[b]	n.a.	n.a.	n.a.	n.a.	–	n.a.	n.a.	–
Macon Mean[d]	43	7	2.1	5.6	2.5	2.7	4.8	2.2
Company Mean[e]	40	7	3.3	5.4	2.1	2.9	4.6	1.7

Source: Company records.

[a] Test qualified.

[b] Graduate of Columbus Industrial Education Center and test qualified.

[c] Based on 30 complete scores.

[d] Based on 18 complete scores.

[e] Based on 48 complete scores.

TABLE 35. *Georgia Kraft USR&D Program*
Age Distribution
Eligible Employees and Program Graduates

Age	Eligible Employees		Program Graduates	
	Number	Percent in Age Group	Number	Percent in Age Group
25 and under	–	–	–	–
26 through 35	16	14.3	13	18.3
36 through 45	39	34.8	28	39.4
46 through 55	45	40.2	24	33.8
56 through 65	12	10.7	6	8.5
Total	112	100.0	71	100.0

Source: Company records.

Macon did better, raising the math average from 2.1 to 5.6 overall, 2.5 grade levels and the reading average from 2.7 to 4.9, 2.2 grade levels. Why those at Macon did better is not clear. One possibility is that the USR&D staff was more expert there. Also at Macon, staff turnover was less and Macon was not directly involved in EEOC controversy and litigation, as was Rome. We believe a significant although nonmeasurable factor in the Macon situation is the superior employee relations and civil rights climate there. Both employee-employer and black-white relationships seemed by our observations to provide the background for more cooperation in human relations programs at Macon than at Rome. Macon enrollees did better even though their average age level was higher and stated grade level lower. The total training group at both locations averaged 2.1 grade level increase in math, 1.7 in reading.

If the testing results are valid, then the improvement in reading and arithmetic grade levels was small—approximately two grades in each. Nevertheless, company and USR&D personnel feel that this was a substantial accomplishment under the difficult circumstances. Whether significant or not, the average grade level remained low—5.4 in math and 4.6 in reading—the end results did not leave the average participant with a substantially improved education. Of course, it may be that the difference was greater than two grades, and that the person who took the course sufficiently sharpened his perceptions that he was able to upgade his job performance and potential. As we shall point out below, this has not been proved.

In both Rome and Macon, the syndrome noted in other programs insofar as better performance in arithmetic than in reading comprehension was again present. Table 36 shows the average test scores before and after the program was taken. The students scored higher in arithmetic comprehension both before and after the course was given; moreover, they averaged higher gains in math than in reading. It appears inevitable that the low reading comprehension of these black employees will continue to be a major hindrance to the advancement of their economic welfare.

TABLE 36. *Georgia Kraft USR&D Program Comparison of Test Scores in Math and Reading All Tested Graduates*

	Rome		Macon		Total Company	
	Math	Reading	Math	Reading	Math	Reading
Before program	3.4	3.1	3.1	2.7	3.3	2.9
After program	5.2	4.4	5.6	4.9	5.4	4.6
Net gain	1.8	1.3	2.5	2.2	2.1	1.7

Source: Table 34.
Note: Based only on complete scores of 48 trainees.

Curriculum Evaluation

The curriculum utilized by USR&D is quite similar to that of MIND, but there are significant differences. Methodology is sufficiently similar that it appears that USR&D has been profoundly influenced by MIND whose techniques and apparatus it utilized for some time before developing its own. On the other hand, the USR&D approach does utilize programmed learning less than does MIND.[48]

Basic Literacy. Like MIND, USR&D has failed to solve the problem of bringing the functional illiterate up to a modest reading standard. Its basic course is built around the first three grade levels of Laubach, Kirk and Laubach, *The New Streamlined English Series* (Macmillan, 1966). Content is standard for such programs: alphabet, spelling, handwriting, and eventually some reading. The materials are programmed, but USR&D did not develop any accompanying audio tapes until the last five months of

[48] This section owes much to the report of Professor Joseph M. Rich of Rutgers University. Dr. Rich is a psychologist and as a former member of the personnel staff of St. Regis Paper Company, he is thoroughly familiar with the industry and its job requirements and structure. On the other hand, the evaluations are our own.

the program. USR&D claims that the programmed materials do not require an experienced teacher. Yet it is difficult to believe that this course does not require rather continuous coaching and encouragement.

Professor Rich found the Laubach material "at best dull and uninspiring to both learner and teacher," and he concluded that the *Basic Literacy* course had not received "the attention deserved in the Georgia Kraft program, either in materials or instructor interest." [49] Professor Rich further found this USR&D course inferior to that on the same level of MIND. We, of course, have found MIND's introductory course unproductive and rather barren of results. The materials developed by USR&D after the Rich report were undoubtedly some improvement, but we did not find them adequate for the purpose.

At Georgia Kraft, functional nonreaders remained in the *Basic Literacy* course as long as from 100 to the full 183 hours. At some of its community Industrial Education Centers, USR&D reported to Professor Rich that it requires up to 300 hours to advance nonreaders to the third or fourth grade level. Obviously, our studies have yet to encounter the curriculum which will equip the functional illiterate to acquire quickly and satisfactorily the necessary credentials for upward movement.

Adult Reading. Professor Rich was enthusiastic about this course. He wrote:

> For those who can read at the 3rd and 4th grade level, this course is great. Four graded readers—*Beginnings, Yourself, Others* and *Tomorrows* plus a workbook, *Thoughts*. The prose and poetry content is pegged to life as experienced by the disadvantaged, highly engrossing, and often worded in the vernacular. Stories deal with such things as playing the horses and losing, raising kids without a husband, buying on installment at inflated interest rates, unwed motherhood and the like. Yet there are also fascinating pieces by Carl Sandberg, Jimmy Breslin, Robert Frost, Helen Keller and other well known literary figures.
>
> Programmed audio tapes are not needed or supplied because the teaching method stresses reading aloud. In the preferred arrangement of groups of two or more, students read to each other then discuss the selection and perform workbook exercises. When working alone, the student reads to the instructor or into a tape recorder; in the latter case, he later listens to his own tape to determine whether he can understand his own reading.
>
> In summary Adult Reading is an excellent course for students above third grade level. The teaching methods are sound, and student-staff enthusiasm appears to be maintained.[50]

We offer some caveats. Fully employed works in rural or small southern mill communities do not have the life style of the city slum dweller. Like the authors of the MIND materials, those of the USR&D books are New

[49] Rich, *op. cit.*, p. 3.
[50] *Ibid.*, pp. 3-4.

York oriented, with built-in stereotypes of how southern black people live—or perhaps more accurately, devoid of knowledge that in the South, there can be relatively well paid, fully employed Negro family men who have long seniority but are at the same time disadvantaged in terms of education and opportunity for upward mobility. Although some of it was relevant, much of the *Adult Reading* was interesting to the readers in the sense that it would be interesting to read about life in Africa. It could be improved by a greater consideration for the true life styles of the people involved. Again, of course, we emphasize the need for educational programs to be attuned to the constituency and to the institutions involved.

The World of Words. This course seeks to expand the learning of *Adult Reading* through programmed texts and exercises, dealing with words, sentence structure, spelling, writing, punctuation, capitalization, etc. Audio tapes accompany each text, and a reference book attempts to relate the learning to the dictionary, encyclopedia and almanac. Exercises are provided which the book and tapes attempt to show how to correct. Course content is enlivened by music, tape discussions and provisions for group discussion. The darker side of life seems to be stressed, but the materials do appear to build toward a solid foundation. Unfortunately, few enrollees made sufficient progress to reach high in these materials, primarily because of the low level of initial readership and the inadequacy of the *Basic Literacy* course.

The World of Numbers. The arithmetic (or mathematics) sequence of USR&D, like that of MIND, has proved easier to teach. USR&D's course includes a series of nine programmed texts, five practice books, eight audio tapes and an abacus. No knowledge of math is assumed. Theoretically, the first two units can be undertaken while the student remains at the near nonreader level, since at the beginning level, the audio tapes include every word of the books. Actually, a nonreader would appear to have difficulty with practice books, but this is offset by the fact that numbers have proved less foreign than words to all groups studied including those at Georgia Kraft. Professor Rich found that "the content, programming, and interest level of this course provides all that could be expected in elementary math for adults."[51] We agree.

Human Resources Development. This course is an USR&D innovation, there being nothing analogous in the MIND program from which other USR&D courses derive much. One-third of the class hours are devoted to this course. We seriously question the concept, the time spent, and the content. As originally given, the *Human Resources Development* course

[51] *Ibid.*, p. 4.

used unstructured group process to improve motivation and goals. Sensitivity training, buttressed by videotapes of group sessions, was the principal technique of instruction. The course was envisioned as a motivational force with each successive session building on the past one, but attendance at USR&D sessions was very low and irregular. Shift changes, overtime, personal needs and general absenteeism all contributed to the failure of these classes, in USR&D's words, to reach "critical mass."

It is likely, however, that this USR&D course failed for a more important reason than absenteeism. Despite laudable attempts, USR&D and its instructional materials and ideas did not grasp beforehand that they were not dealing with a totally disadvantaged, totally unsuccessful group. Actually, in terms of pre-Civil Rights Act standards, this was a group that stood high among their peers: successful holders of relatively high paid jobs. We concur with Professor Rich that "the USR&D type of Human Resources Development is viewed as superfluous by men who have known stable employment for many years, who already have a substantial measure of self confidence." [52]

After criticism of the USR&D program by Professor Northrup,[53] particularly as it related to lack of concern for the mill environment and for integration into the job structure, and for failure to sell the program to line management, the time formerly devoted to *Human Resources Development* was given over to informational meetings about mill operations and jobs. Supervisors and department heads met with the classes and discussed job requirements, seniority, and other practical problems. These meetings not only drew the highest attendance of the entire program, attesting to their interest to the group, but also brought supervision and line management into the program as an interested and participating party. Had this approach been attempted from the program's inception, the results could well have been substantially superior.

We believe that the USR&D type of *Human Resources Development* was largely a waste of time as conceived on a theoretical basis without regard to the needs of the concerned personnel. We would scrap it entirely in any future program. From the beginning of any program, however, we would schedule mill tours, talks by supervisors and department heads, and discussions of job content with question and answers emphasizing the relationship of the educational material to the jobs. Acquainting supervision and black workers with each other and showing Negroes where the jobs are and their content relates the training to the end desired. Assuring white workers that

[52] *Ibid.*, p. 5.
[53] In a memorandum to the Ford Foundation and to the American Paper Institute, August 22, 1969.

their jobs are not being jeopardized is an obvious need. Only after the USR&D program was reorganized were these done. Yet they should be done throughout a course, and can be done in far less time than one-third of the course hours. This would leave more instructional time for reading and math.

In discussing this point with company and USR&D personnel, they argued that the concept of the *Human Resources Development* course was necessary to develop confidence in learning by the participants. We believe that this can be accomplished within regular course contexts while at the same time concentrating on relating instruction to job objectives.

Other courses. The *Introduction to Physics* and *Stretch Your Test Score* were not utilized much after the consent decree was issued and the need to prepare for tests eliminated, and we did not evaluate them. Professor Rich found that the former had no formal curriculum, but that a special curriculum on physics was developed which did not have sufficient test problems and was written at a difficult reading level. He recommended improvement before it was used in a similar program. For *Stretch Your Test Score,* he found that an excellent curriculum was written with "simple rules for test taking and lots of practice." Where employees face standard tests, he highly recommended this course.[54]

USR&D also offered a course designed to help candidates prepare for the General Equivalency Degree High School Equivalency Test. Few took the course and no one took the test. The curriculum was not a special one, being standard manuals which Professor Rich found "a compendium of dull and difficult test questions." [55]

Special Evening Program

Toward the end of the course, Georgia Kraft and USR&D offered a special evening program for prospective employees. Fourteen persons who had applied for jobs but had failed pre-employment tests were contacted and offered instruction at night for fifteen weeks; nine completed the program. At Rome, seven Negroes and two whites accepted, and six, all black, completed the course, passed the tests and were employed. At Macon, three blacks completed the program and passed the tests. Two were employed and the third declined employment after his present employer promoted him to foreman.

Curriculum—Final Comment

Overall we regard the USR&D program as not too different from that of MIND. Like MIND, it has failed to provide a solution to the problem of

[54] Rich, *op. cit.,* p. 6.
[55] *Ibid.*

the nonreader. Its *Basic Literacy* course is neither sufficiently engrossing nor adequately constructed to provide a breakthrough for the functional illiterates who comprised nearly 40 percent of those requiring educational improvement as a condition for upgrading, despite the fact that the course is superior to what is offered in most public schools, and despite energetic and thoughtful efforts to improve it. In addition, although USR&D advertisements tout highly its *Human Resources Development* course, we found it inappropriate for a situation such as that found in paper mills, and recommend that the time spent be divided between practical mill visits and job discussions with line management and direct educational courses.

The USR&D materials and teaching apparatus in the upper elementary grades are, like those of MIND, quite good. Our main criticism is that they might contain better materials pertaining to the local environment, both sectional and industrial, or be supplemented by such.

JOB RESULTS

Table 37 lists members of the affected class who have been promoted into progression lines, together with relevant job and wage data. Of the sixteen employees, five graduated from the Columbus Industrial Education Center and/or passed the qualifying tests. The other eleven are graduates of the programs at Rome or Macon.

The number who have been promoted is, of course, disappointing. Moreover, we do not expect more than a total of 30 additional promotions to be achieved during the next five years, and given the age of the affected group, not many more after that. There are several reasons for this.

In the first place, movement and turnover in the industry are slow. At the present time this is reinforced by overcapacity problems which have curtailed operations in some plants. Opportunities for advancement therefore do not open rapidly. When opportunities do occur, however, they are not always grasped. In Macon, for example, the company was able to secure only one bid by one man from among 25 qualified candidates viewing 17 job openings.[56] A major problem is that promotion can mean the transfer from a day shift to a rotating shift. Promotion from the woodyard or upgrading within it involves no change of life style, since this department operates on rotating shifts. But service, or general labor, in which many Negroes are employed, is often day work. Those on such jobs often hold out for maintenance, which is also usually day work. Unfortunately, many maintenance jobs are beyond their capability, although some, as Table 37

[56] Rich, *op. cit.*, p. 1.

TABLE 37. *Georgia Kraft USR&D Program*
Graduates in Higher Rated Jobs
August 6, 1971

Trainee	Plant Seniority	Former Job	Rate	New Job	Rate
Macon					
2	7/9/48	Automotive Utility Man	$3.010	Auto Mechanic Helper	$3.045
6	7/15/48	Laborer	2.660	Equipment Operator-Power	3.825
9	7/22/51	Laborer	2.660	Millwright Helper	3.175
10	5/30/56	Laborer	2.660	Millwright Helper	3.175
21	7/14/48	Laborer	2.660	Equipment Operator	3.825
24	6/5/48	Long Log Feeder	3.415	Control Tower Man	3.680
28[a]	10/13/53	Chip Unloader	2.635	Millwright Helper	3.490
Rome					
5	9/13/54	Chip Feeder	3.020	Wood Control Helper A	3.805
6[a]	8/9/54	Chip Feeder	3.020	Knife Grinder	3.660
19	9/25/61	Truck Repairman	2.715	Receiving 2nd Helper A	3.345
22	2/10/64	Laborer	2.660	Car Loader	3.075
23	11/21/64	Crane Laborer	2.745	Pulp Helper-Utility	3.100
30	5/28/62	Laborer	2.660	Broke Helper	3.085
41[b]	9/22/55	Chip H. Relief Man	2.855	Millwright Helper	3.490
42[b]	7/20/54	Chip Feeder	3.020	Wood Control Helper A	3.805
43[b]	10/19/54	Unloader	2.800	Receiving 2nd Helper B	3.290

Source: Company data.

[a] Test qualified.

[b] Columbus Industrial Education Center graduate and test qualified.

shows, are within reasonable grasp. In addition, turnover within the maintenance departments of paper mills is low, and the jobs are much sought after. Nevertheless, program graduates definitely seem to prefer maintenance opportunities and turn down others to wait for them.

Finally, it must be emphasized again that we are not here dealing with the chronically unemployed or the welfare recipient. Rather, we have a group who have stable, quite secure employment at low levels but in a high paying industry, who are probably better off financially than their peer group. If they have made an adjustment to their situation, and perfer the status quo to advancement with perhaps more trying work and work associations, should that be surprising?

Profile of Those Promoted

In examining the profile of those promoted and comparing it with those who have not yet, or may never be promoted, but who nevertheless completed the program, two facts must be born in mind. One is the question of just what completion of the 183 hours of course study means. The answer is that it can mean 183 hours of *Basic Literacy* or 183 hours of work advanced to the upper elementary grades and testing as high as 8.6 grade level in math and 9.7 grade level in reading. With such a fluid standard, one would expect many who did not make out well to be reluctant to chance more complicated jobs.

Second, there is no provision that persons be promoted on the basis of test scores. Rather seniority governs. Thus—and in possible contradiction to our first point—the most senior person eligible for promotion obtains the first opportunity to prove his qualification. Hence, a person who did very poorly in the program could, if he had greater seniority, be promoted while the person who did well in the program, but had less seniority, would still be waiting his turn. Of course, if success in the program could be correlated with job performance, or especially if success in the program were, in fact, a prerequisite for successful qualification by an upgraded employee, then any other factors, including seniority, would be less significant.

By combining the data in Table 34 with those in Table 37, we can compare those who took promotion opportunities with the other program graduates. The graduates of the Columbus Industrial Education Center are not included within our comparative data because of noncomparable features. In view of the fact that the promotion process had still not run its course as of August 1971, our conclusions must still be tentative. Nevertheless, the data in Table 38 indicate no main differences between the perform-

TABLE 38. *Georgia Kraft USR&D Program*
Comparison of Age, Educational Data, and Seniority
All Graduates and Promoted Graduates

Variable	Rome		Macon		Combined Group	
	Graduates	Promoted Graduates[a]	Graduates	Promoted Graduates[a]	Graduates	Promoted Graduates[a]
Age	38	33	43	45	40	38
Stated education	8	10	7	7	7	9
Starting SAT						
Math	3.4	3.8	3.1	3.1	3.3	3.4
Reading	3.1	3.4	2.7	2.3	2.9	2.9
Ending SAT						
Math	5.2	5.5	5.6	5.4	5.4	5.4
Reading	4.4	4.7	4.9	4.5	4.6	4.6
Seniority	13.0	11.3	19.5	20.3	15.7	15.8

Source: Tables 34 and 37.
[a] As of 8/6/71.

TABLE 39. *Georgia Kraft USR&D Program Statistical Comparison Promoted and Unpromoted Graduates*

Variable	Promoted Group	Unpromoted Group	Difference in Standard Units[a]
Reading score pre-USR&D	2.93	2.91	0.03
Reading score post-USR&D	4.63	4.58	0.09
Math score pre-USR&D	3.44	3.28	0.22
Math score post-USR&D	5.43	5.36	0.13
Change in reading	1.70	1.67	0.06
Change in math	1.99	2.08	–0.15
Stated education	8.56	7.02	1.67
Age	38.00	40.00	–0.66
Seniority	15.75	15.67	0.03

Note: $t_{.10, 46} = \pm 1.68$.

[a] Formula in Appendix B.

ance or scholastic attainments of those graduates who have been promoted and those who have not. In grade level achievement, the promoted group scored slightly higher, although they were younger and had less seniority.

In order to test this apparent lack of signficance between the characteristics of the promoted and nonpromoted graduates, statistical analysis of the data was undertaken. A 10 percent level of significance was used to determine the critical value of ± 1.68 noted in Table 39.

None of the variables exceed the critical value—that is, none shows a difference which may not be attributed to chance—although stated education, just below the critical value, comes close. Since stated education does, in fact, provide little comparative or even objective information about an individual's relative capacity to handle communication or mathematics, we would hesitate to give much credence to this variable. Performance in the program cannot at this time be correlated with occupational progress except that completing a certain number of hours therein was a prerequisite for being considered for promotion.

Seniority

In discussions with officials of Georgia Kraft and U.S. Research and Development, the point was made that seniority prevails in promotions,

and that therefcre, one would expect the most senior graduates of the program to be the first promoted, not those who performed best as revealed by test scores. Again, however, our statistical analysis fails to bear out this contention. Table 39 shows that seniority ranks lowest in significance among the variables considered. In fact, the average seniority of promoted and unpromoted graduates is about the same. The greater propensity of younger graduates to take advantage of opportunities would seem to balance out the greater seniority of older employees.

Some Cautionary Comments

Athough our data do show a correlation between occupational improvement and either grade level improvement or final grade achieved in the program, we must caution against premature conclusion. First, as more program graduates are promoted, the data may change. Different job openings may appeal to those who have not taken advantage of existing opportunities, and the success of others who have been promoted may induce some to attempt what now they fear to chance.

Furthermore, it may well be that the program was, in fact, a prerequisite for success in the jobs which those promoted now occupy. This cannot, of course, be proved now, and probably never will be, but the confidence gained in the program by participants is a factor which could be of real significance.

Another fact needs to be noted. At the Georgia Kraft plant, all affected class personnel who were promoted were either test qualified or completed the USR&D course. Unlike other plants studied, where tests have been eliminated altogether for affected class members, test requirements have been waived at Georgia Kraft only for those completing the course—no other affected class members are eligible for promotion. This accounts for the comparatively high percentage of eligibles who enrolled. This eliminated any possibility of a comparison between those in Georgia Kraft who were promoted without a test or a course and the program graduates and is a limiting factor in comparing the various programs in this study.

Finally, we stress again that we are not evaluating possible benefits of the program other than its impact on upgrading. Georgia Kraft officials believe that one side effect has been a substantial improvement in race relations, particularly in the Rome plant where such relations earlier were harsh. They also cite the usual claims of improved morale and self-esteem among their black employees. We have no reason to doubt the accuracy of these reports, but we have made no attempt to measure them.

COSTS

The direct costs of the Georgia Kraft-USI&D program may be estimated as follows:

Ford Foundation contributions		
Initial grant	$141,000	
Extension grant	99,575	
		$240,575
Georgia Kraft Company contributions		
Two facilities @ $15,000	$ 30,000	
67 graduates @ $200	13,400	
		43,400
		$283,975

Not included in the above are the costs of sending four employees to the Columbus, Georgia center and the considerable time spent by company executives and employees in assisting in the program's development, administration, and problems. A modest estimate for these costs would surely bring the total to $300,000. On the other hand, these costs do include the special pre-employment program.

On a per trainee basis, at $300,000, the costs can be estimated as follows:

For the 112 eligible for the course	$2,679
For the 66 who completed the course	4,545
For the 16 promotions to date	18,750
For the 46 real and potential promotions	6,522

There are, of course, reasons for such high costs. Foremost was the willingness of the Ford Foundation to bear the major share, and to extend its support until successful completion, and the fundamental belief on the part of the Georgia Kraft company that it was experimenting in behalf of the whole industry. The Foundation also was persuaded to initiate the program on the basis of the supposed innovative character and of the potential of the training. Costs were higher also because, as a proposed demonstration or prototype, provision was made for a very large staff and for review by independent professional consultants. In addition, however, a principal reason why costs were so high was the failure of the program initially to be structured for the needs of the people involved. This, combined with the involvement of the program in the EEOC litigation, resulted in a serious waste of time and funds, especially during the first six months.

Future Costs Estimates

On the basis of its experience in this program, USR&D believes that it can train a class of 12-15 persons for a rate of $800 per person, or for a 400 hour program, $2 per pupil per hour.[57] It is doubtful if a 400 hour program is viable, since at that length of time required of the participant, the drop out rate would be substantial, but the president of USR&D is adhering to the $2 rate for shorter programs.[58] If the program could assure significant results, industry might well be willing to pay a higher fee. The key issue, once costs are brought to a reasonable level, is not the fee, but the ability of the program to produce results.

CONCLUDING REMARKS

The Georgia Kraft USR&D program provides interesting but not conclusive information on the difficult task of training for upgrading. Like the MIND programs, it did not develop a satisfactory method of teaching the functional illiterates. It did provide the means of upgrading for some employees, and more may take advantage of the opportunity. The fact that Georgia Kraft, like other southern mills, is now employing Negroes on all progression lines, should encourage more of those already employed to move out of traditional black jobs when the opportunity is offered. In our concluding chapter we shall compare the USR&D program with that of MIND as well as with the third program discussed in the next chapter.

[57] Statement of William Haddad, President of USR&D, at a seminar on the program, Rome, Georgia, July 9, 1970; and interview with Mr. Haddad, Rome, Georgia, August 11, 1971.

[58] Interview, August 11, 1971.

CHAPTER VI.

The EMC Program at Boise Southern

Boise Cascade joined with the Southern Natural Gas Company in 1967 to build a multimillion dollar pulp and paper mill in DeRidder, Louisiana. The plant, which became fully operational in December 1969, now operates under the name of Boise Southern Company with Boise fully responsible for its management. The decision to build the mill was based on Boise's internal needs and a growing market in the South for paper and wood products

In contrast to the other paper mills studied in this report, Boise Southern is unique in that it represents a totally new plant situation committed to an integrated work force at the outset. The company was not faced with the problem of attempting to eliminate the present effects of past discrimination wherein old, disadvantaged employees must be educated for upgrading. Rather Boise's challenge was to recruit and educate new employees to perform jobs in all departments in the mill.

SOCIOECONOMIC BACKGROUND

DeRidder is a small town of less than 10,000 people located in Beauregard Parish in the west central part of the state, approximately 20 miles from the Texas border. The socioeconomic background of DeRidder and the surrounding area is presented in the statistical appendix. As will be noted from these data, the population of DeRidder has remained stable

This study is based in large measure on Economic and Manpower Corporation, *Industrialization in Rural America: A Training Program and Intensive Follow-up Study*, prepared under grant number OEC-0-70-1283 (335), U.S. Department of Health, Education and Welfare, Office of Education. The following reports have been issued: Report Number 1: Program Implementation, January 1, 1970; Report Number 2: Supervisory Training and Development, December 1, 1970; Report Number 3: Training Program Results, August 1971, Report Number 4 forthcoming. Reports can be obtained from: Economic and Manpower Corporation, 119 West 57th Street, New York, New York; additional information was obtained by the authors during field work in DeRidder, Louisiana.

over the past few decades (5,799 in 1950 and 8,030 in 1970), and Negroes constitute approximately 30 percent of the total population. The data further reflect an area devoid of industrialization, prior to Boise Southern, with resulting low family income.

Educational levels in DeRidder and in Beauregard Parish have been relatively low. This fact, together with the situation described above, presents particular problems to an employer in the paper industry where highly automated and technical production processes are involved. The company understood that in locating in DeRidder a major recruiting and educational program would have to be conducted to staff the plant adequately. A New York based firm, Economic and Manpower Corporation, was selected by Boise to assist in these endeavors.

THE ECONOMIC AND MANPOWER CORPORATION PROGRAM

Economic and Manpower Corporation (EMC) is a private, profit-making organization that specializes in manpower training and development. The company has conducted large scale training programs in various areas including hospitals and the steel industry. EMC claims that it tailors a program to fit the needs of individual clients and a close follow-up is made to determine the job status of those trained.

The DeRidder program was financed by a grant from the Office of Education of the U.S. Department of Health, Education and Welfare. EMC undertook a two-year longitudinal study (1969-1971) to determine the social and economic impact of the establishment of an industrial plant in a rural area. The overall study contains seven parts: (1) pre-Boise social-economic study, (2) recruitment of participants, (3) staff development, (4) program operation, (5) supervisory training, (6) participant analyzation, and (7) post-Boise social-economic follow-up. Our interest here pertains to those aspects of the program which relate to the recruitment, training and job placement of trainees which occurred from July through December 1969.

Boise's Training Concept

At the outset, Boise Southern decided to implement a training program that would equip employees to remain competitive in the paper mill. Since DeRidder is an area which had experienced little industrialization, and the company desired to use local employees, training was an essential element in its early activities. EMC and Boise's industrial relations manager

determined that a functional level above ninth grade in reading and math was required for employees to participate effectively in apprenticeship and promotion opportunities. It was further determined that mechanical comprehension and dexterity were essential, and this would be demonstrated by a score of 30 or better on the Bennett Mechanical Comprehension Test. Before any employee was placed in the mill, the ninth grade level in reading and math and at least a score of 30 on the Bennett test had to be achieved. Given these requirements, it became incumbent upon Boise and EMC to recruit a group of employees with good training potential. This eliminated the heavily disadvantaged from consideration.

Recruitment

Prior to July 1969, Boise conducted meetings in DeRidder in an effort to acquaint local business and community leaders with the company's plans and manpower needs. A temporary employment office was opened and by July more than 3,000 applications had been received. Applications from local residents had been solicited by spot radio and television announcements, advertisements in the local papers, and contact with community groups, but these efforts met with little success. During the week of August 4, while preparations for final screening and hiring were underway, it was discovered that very few of the 3,000 applications were from local residents and only 22 were from the Negro community. EMC and Boise then found it necessary to develop a recruitment program to bring in more local and Negro applicants. The following plan was implemented:

Step 1. To ascertain the reasons for local residents not applying to Boise for employment.

Step 2. To conduct a personalized recruitment effort in the community in order to secure applications in the amount required.

Step 3. To interview, select, and hire 100 individuals by the end of August.[59]

The first step in the plan was begun on August 5 and the following reasons were found to be indicative of a failure on the part of local residents to apply for a job at Boise:

"I did not know they were hiring yet."
"The jobs won't last very long; they never do."
"I wouldn't be hired anyway because I am black."
"I haven't any skills and they only want experienced people."
"I don't know how to apply for a job."
"I filled out an application and gave it to the man, he said I would get a job." [60]

[59] Economic and Manpower Corp., "Industrialization in Rural America," Report No. 1, January 1970, p. 11.

[60] *Ibid.*

As indicated by the foregoing responses, individuals in the DeRidder community were generally confused about how to apply for a job, whether or not it would last very long, and whether the company was really serious about hiring blacks. EMC staff members followed up the intial step with visits to local community action groups, schools, churches, and public officials to explain further the recruitment program and ask for assistance. This activity led to the submission of 175 local applications from which 100 candidates were selected.

The third step of the recruitment plan was conducted during the last two weeks in August. Each applicant was interviewed and given a physical examination. Upon a determination that the applicant was generally suitable for employment, the Stanford Achievement Test, Intermediate Battery II, and the Bennett Mechanical Comprehension Test, Form AA, were given. The company and EMC wished to bring into the training programs those with a high functional level, since the program was designed to bring each individual above the ninth grade level. Contrary to other programs studied herein, Boise was able to select the "cream of the crop" for training in a new, modern mill. The 100 candidates selected were placed in the training program during an eight-week period beginning on September 8, 1969, with an initial group of 53 trainees.

The Training Plan

The trainees were assigned to class on the basis of scores attained on the Word Meaning section of the Stanford Achievement Test. Guidelines for assignment were established as follows: Advanced Course I, trainees with test scores between 4.6 and 6.2 grade levels; Advanced Course II, trainees with test scores between 6.6 and 7.6 grade levels; High School Course, trainees with test scores between 7.8 and 9.5 grade levels; Mechanical Comprehension Course, trainees with the highest scores, 10.0 to 12.9; and World of Work Course, all trainees.

All classes were conducted during the hours of 4 p.m. to midnight, corresponding to the second shift in the mill, in order to introduce the trainee to the idea of shift work. The schedule of courses was as follows:

Advanced Course I	
4:00 p.m. - 10:00 p.m.	Reading and Mathematics
10:00 p.m. - 12:00 midnight	World of Work
Advanced Course II	
4:00 p.m. - 7:00 p.m.	Reading
7:00 p.m. - 9:00 p.m.	World of Work
9:00 p.m. - 12:00 midnight	Mathematics and Science

High School Course

4:00 p.m. - 7:00 p.m.	High School Mathematics
7:00 p.m. - 9:00 p.m.	World of Work
9:00 p.m. - 12:00 midnight	High School English

Mechanical Comprehension Course

4:00 p.m. - 6:00 p.m.	World of Work
6:00 p.m. - 9:00 p.m.	Mechanical Comprehension
9:00 p.m. - 12:00 midnight	Mathematics Refresher

The *advanced course* was 120 instructional hours. It included reading, writing, and spelling, mastery of a vocabulary of 5,000 to 10,000 words; and instruction in inductive and deductive reasoning and reading comprehension. Fractions, decimals, percents, weights and measures, and graph reading were covered in the math section. The grammar section sought to improve a student's written and spoken English in order to communicate more effectively. Physical science and history were also offered.

The *high school completion course* took 200 instructional hours. There was instruction in physical science; social science; math, including algebra and geometry; and English grammar and literature.

The *mechanical comprehension course* was 80 instructional hours long. It included instruction in physics and related physical science leading to understanding of mechanical processes. Principles of gears, levers, and pulleys were also taught. Each student who completed the educational program was expected to be functioning at an above the ninth grade level in reading and math and be able to score 30 or above on the Bennett Mechanical Comprehension Test.

In addition to the careful planning for training hourly employees, EMC developed a 52 hour program for all management personnel. The program was designed to cover all management people including the mill manager, assistant superintendents, the technical staff, and frontline foremen. A major thrust of this program was to make management aware of the factors necessary to operate an integrated mill. EMC felt that it was essential for management to be sensitive to the problems of training and utilizing a minority work force in an area where blacks and whites had never worked together on an equal basis. It becomes obvious that if management was not receptive to change the whole recruiting and training concept would be undermined. Boise appears to have been the only company studied to have given significantly serious consideration to this aspect of training. Later, Boise also had EMC run a training session for the skilled hourly workers who had come to DeRidder from other paper mill locations.

Development of Staff

Unlike some of the earlier programs studied, Boise and EMC placed great importance on trained instructors. It was determined that four instructors and two counselors would be needed at DeRidder. Experienced teachers were employed and a preservice seminar was conducted for the staff in which various aspects of the training program were discussed and each staff member was acquainted with the magnitude of the problem.

Dr. R. Lee Henney of EMC states the importance of the instructor in the following manner:

> The instructor will greatly influence anyone whom he teaches to read and write. The prime motivation of a person who undertakes to teach an adult the communication skills is the desire to help another human being. The instructor must see each student as a human being, with human feelings and needs. The instructor must be a dedicated person who is willing to give his time and effort for the student's proper guidance in the learning situation.[01]

Under the EMC program, the instructional staff is well trained in the use of class materials which are contained in two basic volumes written by Dr. Henney. These volumes, *System for Success,* Books 1 and 2, contain a complete program in reading, writing, spelling, arithmetic, and English. Unlike other programs studied in this report, the EMC course at DeRidder made no use of casettes as part of the learning mechanism.

TRAINING PROGRAM RESULTS

The Boise program included 100 trainees among whom were 56 whites, 42 blacks, 1 Mexican-American and 1 Creole. Characteristics of the trainees are shown in Table 40. Age distribution of the group ranged from 18 to 47 with a median age of 25; 84 trainees were between the ages of 18 and 30; and only 7 were over 40. In terms of education, 87 of the trainees completed high school or held a GED certificate; 3 of the foregoing had completed college and 5 had some college education. Only 3 of the remaining 13 trainees had less than a ninth grade education while the other 10 dropped out of school between the ninth and twelfth grades.

Table 40 further reveals that the 100 trainees accepted in the Boise program were a much more highly selected group than those studied earlier. The median skill level for the Boise group was grade level 7.7 in reading and 7.2 in math. The lowest group, containing those 13 who did not finish high school, were functioning at a median grade level of 6.6 in reading and 5.8 in math.

[01] R. Lee Henney, *System for Success,* Book 1, revised, Instructor's Book (Chicago: Educational Opportunities Division, Follet Educational Corporation, 1965), p. 6.

TABLE 40. *Boise Southern EMC Program*
Educational and Age Data
All Trainees

Trainee	Age	Stated Education	Pre-instructional Test Scores		
			Bennett	SAT Grade Level	
				Reading	Math
1	22	H.S.	21	5.9	6.5
2[a]	30	H.S.	35	6.4	6.2
3	42	H.S.	42	11.8	6.8
4	19	G.E.D.	18	7.1	8.8
5	23	H.S.	47	8.3	11.2
6	27	H.S.	41	11.0	12.2
7	23	H.S.	38	6.9	6.5
8[a]	20	H.S.	14	5.6	6.3
9	30	10	30	9.5	5.6
10	22	H.S.	26	7.6	7.4
11	18	H.S.	15	5.6	5.6
12	22	9	26	9.0	5.4
13	21	H.S.	33	8.0	6.3
14	27	H.S.	39	8.0	7.1
15[a]	21	H.S.	57	10.5	11.4
16	22	H.S.	38	10.0	9.4
17	29	H.S.	54	10.0	11.2
18	20	H.S.	41	11.8	11.7
19	19	H.S.	41	7.3	6.0
20	24	H.S.	39	6.8	5.9
21	19	H.S.	50	6.2	9.9
22	20	H.S.	50	10.5	9.4
23	21	H.S.	26	5.1	4.8
24[a]	18	11	18	5.2	5.2
25	25	3 college	32	8.0	7.1
26	19	H.S.	53	11.8	6.8
27	28	H.S.	51	10.0	12.2
28	25	10	35	7.3	8.8
29[a]	35	A.B.	44	10.0	6.6
30[a]	27	H.S.	55	7.1	7.4
31	19	H.S.	48	6.0	9.9
32[a]	20	H.S.	41	6.9	8.2
33	40	G.E.D.	44	12.9	8.8
34	23	H.S.	0	6.0	5.9
35	24	G.E.D.	36	10.0	7.1
36	18	H.S.	15	5.4	6.8

TABLE 40—*continued*

Trainee	Age	Stated Education	Pre-instructional Test Scores		
				SAT Grade Level	
			Bennett	Reading	Math
37[a]	18	G.E.D.	21	6.6	6.3
38	23	H.S.	12	5.4	7.1
39	19	H.S.	33	7.3	6.2
40[a]	26	1 sem. coll.	39	7.6	7.4
41	28	H.S.	36	6.8	9.9
42	28	10	15	4.6	5.6
43	30	11	35	8.5	4.1
44[a]	42	2 college	32	7.6	5.8
45	19	H.S.	42	10.0	6.0
46	29	H.S.	56	9.0	7.9
47	19	H.S.	18	6.7	6.8
48	26	H.S.	45	10.0	8.2
49	36	H.S.	35	8.5	5.0
50	22	H.S.	41	6.2	6.0
51	18	8	24	5.5	5.0
52	37	H.S.	21	5.6	4.4
53	35	A.B.	29	7.6	6.5
54	22	11	20	5.6	4.8
55	22	H.S.	36	9.0	6.5
56	22	H.S.	38	10.0	5.8
57	23	H.S.	51	9.0	7.7
58	21	H.S.	26	7.3	4.6
59	27	H.S.	38	10.0	8.2
60	19	H.S.	29	7.1	4.8
61	26	9	23	6.0	5.4
62	24	H.S.	36	5.7	6.0
63[a]	22	H.S.	19	3.5	7.4
64	27	H.S.	24	6.6	5.8
65	21	H.S.	35	6.7	4.4
66	22	H.S.	41	10.5	11.2
67	28	H.S.	30	9.0	6.3
68	25	H.S.	10	5.1	6.2
69	23	H.S.	41	11.8	8.8
70[a]	41	G.E.D.	42	7.8	6.0
71	47	H.S.	36	7.8	6.0
72	23	H.S.	38	8.0	6.3
73[a]	18	H.S.	23	6.6	5.6
74	25	H.S.	45	9.5	9.4

TABLE 40—*continued*

Trainee	Age	Stated Education	Pre-instructional Test Scores		
			Bennett	SAT Grade Level	
				Reading	Math
75	18	G.E.D.	36	5.4	6.3
76[a]	22	1 sem. coll.	48	10.5	12.9
77	22	H.S.	30	6.2	4.1
78	18	H.S.	23	6.6	5.2
79	28	A.B.	26	7.8	9.9
80	20	H.S.	21	5.2	5.8
81	22	H.S.	48	10.5	10.5
82	47	7	18	4.6	5.4
83	39	H.S.	29	5.5	4.6
84	19	H.S.	29	8.3	8.2
85	47	H.S.	36	5.6	7.7
86	36	H.S.	60	10.5	10.0
87[a]	45	6	29	5.4	5.2
88	23	H.S.	30	5.4	11.2
89	24	H.S.	35	5.5	5.6
90	23	H.S.	47	8.8	7.4
91	37	G.E.D.	36	7.3	4.8
92	18	H.S.	44	11.8	7.9
93	22	11	42	8.3	8.5
94[a]	35	3 college	40	7.6	7.1
95	26	H.S.	29	7.3	5.6
96	22	H.S.	51	9.5	11.6
97	23	H.S.	45	10.0	7.9
98[a]	19	H.S.	26	5.9	6.8
99[a]	24	10	38	6.6	6.6
100	18	H.S.	17	9.5	8.8
Mean	25		34.2	7.7	7.2

Source: EMC report.
[a]Terminated.

Program Graduates

Characteristics of the graduates of the EMC program at Boise Southern are shown in Table 41 and summarized below:

1. A total of 81 of the 100 trainees completed the program.
2. Only 4 of the 81 graduates were above 40 years of age. The average age was 25.
3. In terms of stated education, 64 completed high school, 5 obtained GED credit, 2 had a college AB degree, 1 had 3 years of college, 3 completed the 10th grade, 3 the 11th grade, 1 the 9th grade, 1 the 8th grade,

TABLE 41. *Boise Southern EMC Program*
Educational and Age Data
Program Graduates

						SAT Grade Level					
			Bennett			Before		After		Change	
Trne.	Age	Stated Educ.	Bef.	Aft.	Chg.	Reading	Math	Reading	Math	Reading	Math
1	22	H.S.	21	41	20	5.9	6.3	12.9	9.4	7.0	2.9
3	42	H.S.	42	–	–	11.8	6.8	–	11.7	–	4.9
4	19	G.E.D.	18	39	21	7.1	8.8	11.8	9.4	4.7	0.6
5	23	H.S.	47	–	–	8.3	11.2	11.0	12.9	2.7	1.7
6	27	H.S.	41	–	–	11.0	12.2	–	–	–	–
7	23	H.S.	38	–	–	6.9	6.5	9.5	11.7	2.6	5.2
9	30	10	30	–	–	9.5	5.6	–	10.5	–	4.9
10	22	H.S.	26	41	15	7.6	7.4	12.9	12.2	5.3	4.8
11	18	H.S.	15	30	15	5.6	5.6	12.9	12.6	7.3	7.0
13	21	H.S.	33	–	–	8.0	6.3	9.0	12.2	1.0	5.9
14	27	H.S.	39	–	–	8.0	7.1	9.5	12.6	1.5	5.5
16	22	H.S.	38	–	–	10.0	9.4	11.0	11.2	1.0	1.8
17	29	H.S.	54	–	–	10.0	11.2	–	–	–	–
18	20	H.S.	41	–	–	11.8	11.7	12.9	12.6	1.1	0.9
19	19	H.S.	41	–	–	7.3	6.0	11.8	9.4	4.5	3.4
20	24	H.S.	39	–	–	6.8	5.9	9.0	9.4	2.2	3.5
21	19	H.S.	50	–	–	6.2	9.9	11.8	–	5.6	–
22	20	H.S.	50	–	–	10.5	9.4	11.8	11.7	1.3	2.3
23	21	H.S.	26	36	10	5.1	4.8	11.8	10.5	6.7	5.7
25	25	3 college	32	–	–	8.0	7.1	11.8	10.2	3.8	3.1
26	19	H.S.	53	–	–	11.8	6.8	–	12.2	–	5.4
27	28	H.S.	51	–	–	10.0	12.2	10.5	12.9	0.5	0.7
28	25	10	35	–	–	7.3	8.8	11.0	10.5	3.7	1.7
31	19	H.S.	48	–	–	6.0	9.9	12.9	–	6.9	–
33	40	G.E.D.	44	–	–	12.9	8.8	–	9.9	–	1.1
34	23	H.S.	0	35	35	6.0	5.9	12.9	9.4	6.9	3.5
35	24	G.E.D.	36	–	–	10.0	7.1	–	12.2	–	5.1
36	18	H.S.	15	35	20	5.4	6.8	12.9	12.6	7.5	5.8
38	23	H.S.	12	30	18	5.4	7.1	11.8	10.5	6.4	3.4
39	19	H.S.	33	–	–	7.3	6.2	10.0	12.9	2.7	6.7
41	28	H.S.	36	–	–	6.8	9.9	12.9	12.2	6.1	2.3
42	28	10	15	35	20	4.6	5.6	12.9	9.9	8.3	4.3
43	30	11	35	–	–	8.5	4.1	11.0	10.5	2.5	6.4
45	19	H.S.	42	–	–	10.0	6.0	–	10.5	2.5	6.4
46	29	H.S.	56	–	–	9.0	7.9	10.0	12.6	1.0	4.7
47	19	H.S.	18	31	13	6.7	6.8	11.8	9.9	5.1	3.1
48	26	H.S.	45	–	–	10.0	8.2	11.0	11.7	1.0	3.5

TABLE 41—*continued*

Trne.	Age	Stated Educ.	Bennett			SAT Grade Level					
						Before		After		Change	
			Bef.	Aft.	Chg.	Reading	Math	Reading	Math	Reading	Math
49	36	H.S.	35	–	–	8.5	5.0	9.5	11.2	1.0	6.2
50	22	H.S.	41	–	–	6.2	6.0	11.0	11.2	4.8	5.2
51	18	8	24	31	7	5.5	5.0	12.9	12.2	7.4	7.2
52	37	H.S.	21	36	15	5.6	4.4	11.8	12.6	6.2	8.2
53	35	A.B.	29	32	3	7.6	6.5	12.9	11.7	5.3	5.2
54	22	11	20	35	15	5.6	4.8	11.8	9.5	6.2	4.7
55	22	H.S.	36	–	–	9.0	6.5	10.0	12.2	1.0	5.7
56	22	H.S.	38	–	–	10.0	5.8	–	9.5	–	3.7
57	23	H.S.	51	–	–	9.0	7.7	10.0	11.7	1.0	4.0
58	21	H.S.	26	30	4	7.3	4.6	12.9	9.5	5.6	4.9
59	27	H.S.	38	–	–	10.0	8.2	–	11.7	–	3.5
60	19	H.S.	29	39	10	7.1	4.8	11.0	12.2	3.9	7.4
61	26	9	23	45	22	6.0	5.4	11.8	12.2	5.8	6.8
62	24	H.S.	36	–	–	5.7	6.0	11.8	11.7	6.1	5.7
64	27	H.S.	24	31	7	6.6	5.8	11.8	12.2	5.2	6.4
65	21	H.S.	35	–	–	6.7	4.4	12.9	12.2	6.2	7.8
66	22	H.S.	41	–	–	10.5	11.2	–	–	–	–
67	28	H.S.	30	38	8	9.0	6.3	11.0	12.6	2.0	6.3
68	25	H.S.	10	39	29	5.1	6.2	10.0	9.9	4.9	3.7
69	23	H.S.	41	–	–	11.8	8.8	–	12.2	–	3.4
71	47	H.S.	36	42	6	7.8	6.0	9.8	11.7	2.0	5.7
72	23	H.S.	38	45	7	8.0	6.3	9.5	11.7	1.5	5.4
74	25	H.S.	45	–	–	9.5	9.4	–	10.5	–	1.1
75	18	G.E.D.	36	–	–	5.4	6.3	12.9	9.9	7.5	3.6
77	22	H.S.	30	–	–	6.2	4.1	12.9	9.9	6.7	5.8
78	18	H.S.	23	33	10	6.6	5.2	11.0	12.2	4.4	7.0
79	28	A.B.	26	38	12	7.8	9.9	10.0	12.6	2.2	2.7
80	20	H.S.	21	41	20	5.2	5.8	12.9	11.2	7.7	5.4
81	22	H.S.	48	53	5	10.5	10.5	–	12.2	–	1.7
82	47	7	18	35	17	4.6	5.4	11.0	9.9	6.4	4.5
83	39	H.S.	29	35	6	5.5	4.6	11.8	11.7	6.3	7.1
84	19	H.S.	29	35	6	8.3	8.2	9.5	12.2	1.2	4.0
85	47	H.S.	36	–	–	5.6	7.7	12.9	12.6	7.3	4.9
86	36	H.S.	60	–	–	10.5	10.0	11.8	12.9	1.3	2.9
88	23	H.S.	30	41	11	5.4	11.2	11.8	11.7	6.4	0.5
89	24	H.S.	35	–	–	5.5	5.6	11.0	9.8	5.5	4.2
90	23	H.S.	47	–	–	8.8	7.4	10.0	12.9	1.2	5.5
91	37	G.E.D.	36	–	–	7.3	4.8	12.9	10.5	5.6	5.7

TABLE 41—*continued*

Trne.	Age	Stated Educ.	Bennett			SAT Grade Level					
						Before		After		Change	
			Bef.	Aft.	Chg.	Reading	Math	Reading	Math	Reading	Math
92	18	H.S.	44	–	–	11.8	7.9	–	11.7	–	3.8
93	22	11	42	–	–	8.3	8.5	10.5	11.7	2.2	3.2
95	26	H.S.	29	38	9	7.3	5.6	11.0	10.5	3.7	4.9
96	22	H.S.	51	–	–	9.5	11.6	12.9	12.9	3.4	1.3
97	23	H.S.	45	50	5	10.0	7.9	–	11.2	–	3.3
100	18	H.S.	17	41	24	9.5	8.8	11.0	12.2	1.5	3.4
Mean	25		34	40	n.a.	7.9	7.3	11.3	11.4	n.a.	n.a.
Mean of those retested[a]			24	37	13	7.2	7.0	11.4	11.4	4.2	4.4

Source: EMC report.

Note: Post instructional tests were not required of trainees whose entry scores met the minimum training goals of: Bennett AA—30; SAT word meaning—9.0; and SAT arithmetic comprehension—9.0.

[a] Only those who had a Pre-Instructional Test score on the Bennett less than 30 were required to retake the test after completing the Mechanical Comprehension Course. Only those who had a Pre-Instructional Test score on the Word Meaning or Arithmetic Computation Sub-Test of the Stanford Achievement Test of less than 9.0 grade level were required to retake a different form of the same test after completing the prescribed course of study.

and 1 the 7th grade. Interestingly enough, almost all of the high school graduates were brought up to a functional high school level in the training program.

4. As noted earlier, a score of 30 on the Bennett Mechanical Comprehension test was considered necessary for each trainee; 54 of the trainees scored 30 or above on the test before training and all who failed to do so were able to score 30 or above after training. The mean score of all 81 trainees was 34 before training and 40 after training, while the mean score of the 27 who failed to score 30 or above before training was 21 and after training it was 36.

5. A 9th grade funcional level in reading and math was established as a requirement for job progression in the Boise Southern plant; 28 of the trainees scored grade 9.0 and above on the SAT word meaning test before training and 17 scored grade 9.0 and above in arithmetic comprehension before training. The pre-training scores in word meaning ranged between grade levels 5.1 and 12.9 with a mean score of grade level 7.9; in math, pre-training scores ranged between grade levels 4.1 and 12.2 with a mean score of grade level 7.3.

The post-instructional test scores show that all trainees reached 9th grade level or better in both reading and math. Post-instructional scores ranged from grade level 9.0 to 12.9 and 9.4 to 12.9 in reading and math, respectively. In reading, the average post-instructional score was grade level 11.3 and in math it was 11.4

Increases in grade levels in word meaning ranged from 1.0 grade to 7.7 grades with an average increase of 4.2 grades; in math, increases ranged from 0.5 to 8.2 grades with an average increase of 4.4 grades.

Program Terminations

Table 42 indicates that 19 of the 100 trainees were terminated from the program for a variety of reasons. Five voluntarily quit to return to former jobs and four had medical problems. Another problem was absenteeism; even though an effort was made to accommodate trainees to the second shift (4 p.m.—12 midnight), 4 could not adjust well enough to stabilize attendance. Other reasons for termination were military service, fighting in the plant, falsifying records, and dissappearance.

The retention rate of 81 percent was high for the program, and it indicates, in part, that the trainees were carefully selected and that they recognized the training as specifically related to a job in the new plant. Characteristics of those terminated show no unusual deviations from those who graduated. Their average age was 26 and their average scores on the Bennett and SAT tests were basically the same as those of the graduates.

TABLE 42. *Boise Southern EMC Program Educational, Age, and Termination Data Terminated Trainees*

			Pre-Instructional				
		Stated		SAT		Termination	
Trainee	Age	Education	Bennett	Reading	Math	Date	Reason
2	30	H.S.	35	6.4	6.2	9-24-69	Failure to meet vision requirements—No vision left eye
8	20	H.S.	14	5.6	6.3	9-24-69	Failure to meet vision requirements — Color blindness
12	22	9	26	9.0	5.4	9-30-69	Absenteeism
15	21	H.S.	57	10.5	11.4	10-16-69	Voluntary—Other job
24	18	11	18	5.2	5.2	11-05-69	Absenteeism
29	35	A.B.	44	10.0	6.6	9-24-69	Medical Reasons
30	27	H.S.	55	7.1	7.4	12-05-69	Voluntary—Other job
32	20	H.S.	41	6.9	8.2	10-21-69	Voluntary — No reason
37	18	G.E.D.	21	6.6	6.3	9-30-69	Fighting
40	20	1 coll.	39	7.6	7.4	9-17-69	Failure to meet vision requirements
44	42	2 coll.	32	7.6	5.8	11-30-69	Absenteeism
63	22	H.S.	19	3.5	7.4	9-15-69	Falsifying of records
70	41	G.E.D.	42	7.8	6.0	9-29-69	Absenteeism
73	18	H.S.	23	6.6	5.6	11-17-69	Voluntary — Enlisted in USAF
76	22	1 s. coll.	48	10.5	12.9	12-22-69	Voluntary—Other job
87	45	6	29	5.4	5.2	9-29-69	Voluntary—Other job
94	35	3 coll.	40	7.6	7.1	9-09-69	Voluntary—Other job
98	19	H.S.	26	5.9	6.8	11-17-69	Voluntary — Enlisted in USN
99	24	10	38	6.6	6.6	9-30-69	Fighting
Mean	26		34	7.1	7.0		

Source: EMC report.

JOB PLACEMENT OF PROGRAM GRADUATES

As indicated earlier, the Boise Southern plant in DeRidder is a new one and, as such, it was possible to begin operations with integrated divisions. As each of the 81 trainees in the EMC program reached the ninth grade level or above in both reading and math and completed the Mechanical Comprehension Course, he was assigned to a job in the mill as the divisions opened in the sequence shown in Table 43.

TABLE 43. *Boise Southern EMC Program Initial Job Placement Program Graduates*

Division	Job	Number of Trainees
Kraft Power	Second Power Helper	3
Woodyard	Control Point Operator	3
	Helper	12
Maintenance	Mechanic I	1
Pulp Mill	Assistant Caustic Operator	3
	Assistant Pulp Operator	4
Storeroom	Utility	2
Paper Mill	Scales Helper	30
Utility Pool	Utility	23
Total		81

Source: EMC reports.

The largest number of trainees were placed in the Paper Mill and Utility Pool divisions of the plant. One of the most interesting aspects of job placement at DeRidder was the fact that since trainees were assigned to divisions upon reaching the ninth grade level, it was possible to integrate the plant in an orderly manner. The Woodyard did not become a "black island" as had been true in older plants where Negroes were traditionally assigned. On the other hand, it was a natural process under the EMC program to place Negroes in the Paper Mill and in the divisions which have been traditionally reserved for whites.

Table 44 shows basic data for program graduates and their job placement. Only 9 of the 81 trainees who were placed had less than a high school education when hired. All of those placed scored at least 9.0 in word meaning and above that in math on the SAT test and 30 or above on the Bennett test. In fact, all but 6 scored at or above the eleventh grade in one

TABLE 44. *Boise Southern EMC Program Educational and Job Placement Data Program Graduates*

Trne.	Age	Stated Educ.	Post-Instructional Test Scores: SAT Reading	SAT Math	Bennett	Position	Date of Placement
1	22	H.S.	12.9	9.4	41	Utility	12-22-69
3	42	H.S.	11.8	11.7	42	Woodyard-Wood Helper	10-13-69
4	19	G.E.D.	11.8	9.4	39	Paper Mill-Scales Helper	12-03-69
5	23	H.S.	11.0	12.9	47	Pulp Mill-Ass't Caustic Oper.	10-27-69
6	27	H.S.	11.0	12.2	41	Pulp Mill-Ass't Pulp Oper.	10-27-69
7	23	H.S.	9.5	11.7	38	Storeroom Utility	11-03-69
9	30	10	9.5	10.5	30	Paper Mill-Scales Helper	12-03-69
10	22	H.S.	12.9	12.2	41	Utility	12-08-69
11	18	H.S.	12.9	12.6	30	Paper Mill-Scales Helper	12-03-69
13	21	H.S.	9.0	12.2	33	Pulp Mill-Ass't Pulp Oper.	10-27-69
14	27	H.S.	9.5	12.6	39	Utility	12-05-69
16	22	H.S.	11.0	11.2	38	Woodyard-Wood Helper	10-13-69
17	29	H.S.	10.0	11.2	54	Paper Mill-Scales Helper	12-03-69
18	20	H.S.	12.9	12.6	41	Utility	12-08-69
19	19	H.S.	11.8	9.4	41	Woodyard-Wood Helper	9-11-69
20	24	H.S.	9.0	9.4	39	Storeroom Utility	12-05-69
21	19	H.S.	11.8	9.9	50	Utility	12-08-69
22	20	H.S.	11.8	11.7	50	Woodyard-Wood Helper	10-13-69
23	21	H.S.	11.8	10.5	36	Utility	12-22-69
25	25	3 coll.	11.8	10.2	32	Kraft Power-2nd Helper	9-29-69
26	19	H.S.	11.8	12.2	53	Woodyard-Wood Helper	10-13-69
27	28	H.S.	10.5	12.9	51	Woodyard-Wood Helper	11-25-69
28	25	10	11.0	10.5	35	Utility	12-22-69
31	19	H.S.	12.9	9.9	48	Paper Mill-Scales Helper	12-03-69
33	40	G.E.D.	12.9	9.9	44	Woodyard-Control Point Oper.	10-13-69
34	23	H.S.	12.9	9.4	35	Paper Mill-Scales Helper	12-03-69
35	24	G.E.D.	10.0	12.2	36	Woodyard-Wood Helper	11-24-69
36	18	H.S.	12.9	12.6	35	Utility	12-22-69
38	23	H.S.	11.8	10.5	30	Woodyard-Wood Helper	11-03-69
39	19	H.S.	10.0	12.9	33	Paper Mill-Scales Helper	12-03-69
41	28	H.S.	12.9	12.2	36	Paper Mill-Scales Helper	12-03-69
42	28	10	12.9	9.9	35	Paper Mill-Scales Helper	12-03-69
43	30	11	11.0	10.5	35	Paper Mill-Scales Helper	12-03-69
45	19	H.S.	10.0	10.5	42	Utility	12-08-69

TABLE 44—*continued*

Trne.	Age	Stated Educ.	Post-Instructional Test Scores SAT Reading	SAT Math	Bennett	Position	Date of Placement
46	29	H.S.	10.0	12.6	56	Paper Mill-Scales Helper	12-03-69
47	19	H.S.	11.8	9.9	31	Utility	12-22-69
48	26	H.S.	11.0	11.7	45	Paper Mill-Scales Helper	12-03-69
49	36	H.S.	9.5	11.2	35	Pulp Mill-Ass't' Caustic Oper.	10-27-69
50	22	H.S.	11.0	11.2	41	Control Point Operator	10-13-69
51	18	8	12.9	12.2	31	Utility	12-22-69
52	37	H.S.	11.8	12.6	36	Paper Mill-Scales Helper	12-03-69
53	35	A.B.	12.9	11.7	32	Paper Mill-Scales Helper	12-03-69
54	22	11	11.8	9.5	35	Utility	12-22-69
55	22	H.S.	10.0	12.2	36	Woodyard-Wood Helper	11-24-69
56	22	H.S.	10.0	9.5	38	Woodyard-Wood Helper	11-24-69
57	23	H.S.	10.0	11.7	51	Paper Mill-Scales Helper	12-03-69
58	21	H.S.	12.9	9.5	30	Paper Mill-Scales Helper	12-03-69
59	27	H.S.	10.0	11.7	38	Pulp Mill-Ass't Pulp Oper.	10-29-69
60	19	H.S.	11.0	12.2	39	Paper Mill-Scales Helper	12-03-69
61	26	9	11.8	12.2	45	Utility	12-08-69
62	24	H.S.	11.8	11.7	36	Paper Mill-Scales Helper	12-03-69
64	27	H.S.	11.8	12.2	31	Woodyard-Wood Helper	11-24-69
65	21	H.S.	12.9	12.2	35	Pulp Mill-Ass't Pulp Operator	10-27-69
66	22	H.S.	10.5	11.2	41	Pulp Mill-Ass't Caustic Oper.	10-27-69
67	28	H.S.	11.0	12.6	38	Utility	12-08-69
68	25	H.S.	10.0	9.9	39	Utility	12-22-69
69	23	H.S.	11.8	12.2	41	Utility	12-08-69
71	47	H.S.	9.8	11.7	42	Utility	12-22-69
72	23	H.S.	9.5	11.7	45	Utility	12-08-69
74	25	H.S.	9.5	10.5	45	Kraft Power-2nd Helper	9-29-69
75	18	G.E.D.	12.9	9.9	36	Paper Mill-Scales Helper	12-03-69
77	22	H.S.	12.9	9.9	30	Paper Mill-Scales Helper	12-03-69
78	18	H.S.	11.0	12.2	33	Utility	12-22-69
79	28	A.B.	10.0	12.6	38	Woodyard-Control Point Oper.	10-13-69
80	20	H.S.	12.9	11.2	41	Paper Mill-Scales Helper	12-03-69
81	22	H.S.	10.5	12.2	53	Paper Mill-Scales Helper	12-03-69
82	47	7	11.0	9.9	35	Utility	12-22-69
83	39	H.S.	11.8	11.7	35	Utility	12-22-69
84	19	H.S.	9.5	12.2	35	Paper Mill-Scales Helper	12-03-69
85	47	H.S.	12.9	12.6	36	Utility	12-22-69

TABLE 44—*continued*

Trne.	Age	Stated Educ.	Post-Instructional Test Scores SAT Reading	SAT Math	Bennett	Position	Date of Placement
86	36	H.S.	11.8	12.9	60	Maintenance-Mechanic I	10-15-69
88	23	H.S.	11.8	11.7	41	Paper Mill-Scales Helper	12-03-69
89	24	H.S.	11.0	9.8	35	Paper Mill-Scales Helper	12-03-69
90	23	H.S.	10.0	12.9	47	Paper Mill-Scales Helper	12-03-69
91	37	G.E.D.	12.9	10.5	36	Woodyard-Wood Helper	
92	18	H.S.	11.8	11.7	44	Kraft Power-2nd Helper	9-29-69
93	22	11	10.5	11.7	42	Paper Mill-Scales Helper	12-03-69
95	26	H.S.	11.0	10.5	38	Paper Mill-Scales Helper	12-03-69
96	22	H.S.	12.9	12.9	51	Paper Mill-Scales Helper	12-03-69
97	23	H.S.	10.0	11.2	50	Utility	12-08-69
100	18	H.S.	11.0	12.2	41	Paper Mill-Scales Helper	12-03-69

Source: EMC Report.

or both subjects after training. This clearly indicates that the EMC graduate is a well prepared employee if a ninth grade functional level in basic education is required for job progression throughout the mill.

COSTS OF THE PROGRAM

The cost of six months of instruction in the EMC program was $86,619. One hundred trainees started the program and 81 graduated. Thus the cost per trainee started was $866.00, whereas the cost per trainee graduated was $1,094. In addition to the direct cost of training, the company paid employees during the training period at the rate of $2.00 per hour.

CONCLUDING REMARKS

The EMC training program at Boise Southern in DeRidder, Louisiana, conducted during 1969, was well conceived and successfully implemented. Several factors contributed to the favorable results of the program: (1) a new plant situation in which management made a commitment at the outset to have an integrated work force throughout the mill; (2) the assistance of a consulting firm, EMC, that understood the concepts of recruiting and adult basic education and was able to obtain ample funds to do the job; (3) a well developed and effectively implemented training schedule for hourly employees and management; and (4) the recruitment of a group of trainees who were clearly capable of benefitting from the training. The last factor was very important in the success of the Boise program in comparison to other programs studied in this report. EMC recruited the "cream of the crop" in the DeRidder area to train and place in the first production jobs that opened in the plant. Future promotions and upgrading of employees at DeRidder should reveal blacks and whites progressing in an equal manner in all divisions of the plant.

A challenge to the Boise situation may arise, however, since no training device has replaced the EMC program. If the company continues to recruit from the area but offers no opportunity for new employees to improve functional literacy to the ninth grade level, blacks, as well as whites, may find themselves locked into the lower rungs of the promotion ladder. A few critical questions remain for the company: can employees who are presently being hired without the requirement of a ninth grade functional ability in reading and math compete effectively for promotion; and, without training such as that provided by EMC, are these employees likely to become a major problem in the future? If it has been conclusively determined that a ninth grade functional education is required for maximum job advancement in the mill, then it appears risky for Boise to proceed without insuring that this criterion can be met by new employees.

CHAPTER VII.

Conclusions and Implications

Paper manufacturing concerns operating in the South have been faced with a massive equal employment problem as a result of the racial employment policies which they pursued prior to the enactment of the Civil Rights Act of 1964. Negroes were employed for specific tasks only, and were denied the opportunity for upgrading into better paying positions. Most of the Negroes so hired were employed because of their reliability and physical capacity; since they were not expected to advance up the occupational ladder, their educational attainments were not considered and they were, in fact, likely to be very poorly educated. On the other hand, the jobs which these blacks did obtain were usually among the best available to Negroes in terms of pay and job security. Thus, despite their discriminatory status, the black paper mill employees were among the most successful economically of their peers who chose to remain in the South. This very success limited the interest of some in educational and/or job improvement.

Whites employed by paper mills were hired under quite different criteria. Especially since World War II, the mills required a high school education and attainment of stipulated scores on a battery of tests as a condition of employment. In contrast to the situation involving their black employees, whites were employed with the expectation that they would be competent to perform satisfactorily the top job in the various progression lines.

Not only in the community and the schools, but also on the job, segregation prevailed. Especially as laboring and material .handling jobs were mechanized during the late 1940's and the 1950's, Negroes simply did not have an opportunity to acquire familiarity with jobs in many sectors of the modern mills. Separate local unions further institutionalized this separation.

The passage of the Civil Rights Act of 1964, government procurement policies and subsequent court decisions altered company employment

policies and opened up previously all-white jobs to black employees. For many of the latter, however, whose schooling was meager, the opportunity was more illusory than real.

To overcome this educational disability, some employers in the industry have made available remedial adult basic education programs to what is known as the "affected class"—defined somewhat differently in each case, but generally referring to Negro employees hired before employment was put on a nondiscriminatory basis. Some companies inaugurated these programs prior to civil rights litigation or problems; others did so as a result thereof. Although the programs were instituted to aid the affected class, they were often made available to the entire work force. Thus, non-affected class personnel, white as well as black, did in fact participate. In all cases, the purpose of the adult education programs has been to improve the capability of the participants and if possible, to make them capable of working in better paying jobs.

It is obvious from this background summary that the personnel and environments involved provide a difficult milieu for adult basic education programs to achieve success in upgrading educational attainments. Nevertheless, adult education programs are being promoted and purchased with the understanding that they can overcome difficult environments and personal backgrounds, for it is precisely in such situations that they are needed most. Hence their record in such situations is properly worthy of critical judgment.

PROGRAM COMPARISONS

Because we have already made our findings quite explicit in the preceding chapters, we shall emphasize herein comparisons of the various programs, particularly in these areas: educational effectiveness as determined by Stanford Achievement Test scores; teaching methodology; job relativeness of teaching materials; relations of programs to promotion and/or upgrading opportunity. We shall then compare statistically the MIND and USR&D programs in order to make more explicit observations regarding their performances in the companies studied. The Boise Southern-Economic and Manpower Corporation program involved the creation of an effective labor force, not the upgrading of an existing one. It was included in this study as a means of illustrating a different approach to the adult basic education problem in a southern paper mill setting, but its objectives and participants are too different from the others for statistical comparison.

Participation

In all cases involving MIND and USR&D, both the contractors and the companies overestimated the level of participation that could be expected. The USR&D program succeeded by extensive efforts and spending to enroll a majority of the affected class, but the MIND program attracted only a minority thereof. Our findings indicate generally that merely offering a program does not suffice to attract a majority of those for whom the course is given. One reason, of course, is the lack of conviction and demonstration that participation in the course will in fact lead to better jobs. (The fact that the EMC course was a prerequisite for employment is not a comparable situation, but it did insure that those needing adult basic education received it.)

Relation of Programs to Upgrading

Another key finding is that the potential usefulness of MIND programs at the three companies where they were studied was blunted by the fact that they were not a sine qua non of promotion. The extreme case was at the Crown Zellerbach, St. Francisville, plant where the MIND program became dormant as soon as educational and testing qualifications were abandoned. At Continental Can, at Crown Zellerbach's Bogalusa works, and at Union Camp, there was little or no correlation between improving one's job status and completing the MIND program. This fact, of course, is obvious to employees and must diminish interest in MIND among potential participants. The strong interest in MIND generated by the initial promotion of the three graduates at Crown Zellerbach's Southern Timber Division may well depend for its continuance on the relationship in the future between course completion and job improvement.

The Georgia Kraft USR&D program succeeded in relating promotion and course completion much more directly. Affected class participants could be promoted only by completing the required number of course hours, or by passing a battery of tests, which few were able to do. This is one reason why this program enrolled a higher percentage of the affected class than did any of the MIND programs. On the other hand, there was no performance requirement in course work for promotion at Georgia Kraft. So long as an employee stayed in class for the required number of hours, he was eligible for promotion. Since there has been to date no significant difference in the course accomplishments of those promoted and those not promoted, it is difficult to determine the contributions of the USR&D program in terms of promotion other than that it provided a means

whereby several persons were promoted who might not otherwise have been.

The Economic and Manpower Corporation program was directly related to job opportunity. Participants were required to achieve a certain grade level and then placed on the job. The number of class hours which a participant took was directly related to his achievement. Until a participant reached ninth grade level or better both in reading and in arithmetic comprehension, he remained in class. Such a program cannot, of course, be easily adapted to situations where employees are already working. Moreover, it would appear that Boise Southern is abandoning any pre-employment training for present and future lines.

Educational Effectiveness

Educational effectiveness in terms of grade comprehension advancement has been detailed in previous chapters. Here we need only repeat that our finding must be a negative one; none of the programs discussed—MIND, United States Research and Development, or Economic and Manpower Corporation—can claim success with the target group studied herein: the functional illiterate, and others below a fourth or possibly a fifth grade reading level as measured by the Stanford Achivement Tests. The EMC program, directed toward creating a labor force, eliminated that group entirely from its trainee population. Such low achievers or poorly educated were not considered for a job.

MIND and USR&D personnel have admitted[62] that they are not, at least as yet, equipped to handle those at the lowest educational level. They do, however, continue to provide workbooks and programmed material for these low grade levels. It is unfortunate that especially MIND personnel oversold their capability in this regard and that companies eager to solve a problem expected too much.

Would an environment of all day study with pay permit the fourth grade or less achiever to improve his arithmetic and/or reading comprehension by several grades utilizing the materials of one of these programs? We cannot, of course, be certain, but surely there is no evidence. EMC, which operated in this manner, involved no low achievers; neither did the MIND program at Crown Zellerbach's Southern Timber Division in which the employees were paid while studying. Both the latter also involved a young, select group. Such evidence as we have tends to cast doubt that these programs are adaptable to teaching any below fourth grade group, at least in the environment and format studied.

[62] In interviews with the authors.

It is particularly in reading comprehension that the programs fail to achieve substantial improvement among those who test out near the bottom of the scale. Negroes confined to a segregated society and lacking in education appear to have great difficulty communicating and understanding communication in the common basic English of white Americans. Inevitably, this holds back their comprehension generally. The data show that their familiarity and understanding of basic arithmetic is often greater, but arithmetic comprehension must also be adversely affected by the reading difficulties, even though participants gain more in arithmetic comprehension than they do in reading. We do not believe, and our findings do not support a belief, that the reading comprehension curricula of any of these programs meet the needs of persons in the lower literacy comprehension brackets.

It might be objected that we expect too much.[63] It has been pointed out, for example, that all these programs provide more interesting, significant, and potentially more successful curricula than do those available in public schools. We agree. Indeed, one could well make the point that if the public schools were doing the job that their role requires, it would not be necessary for government and private interests to spend additional billions of dollars on remedial education. Unfortunately, neither the public schools nor the programs studied here achieve the needed results for the most undereducated.

On the other hand, for the above 4-5 grade educational achievers, our findings indicate that all three programs have a greater potential for improving educational attainment. The course contents and teaching methodology of the three programs, however, offer important contrasts which affect results.

Teaching Methodology

Our study of these programs has left us with misgivings about the usefulness of programmed learning in a setting similar to those studied herein. We believe that such methodology is particularly difficult to adapt to the least literate. MIND depends more than the other two on its prepackaged programs and electronic equipment; USR&D utilizes programmed tapes a great deal also, but supplements the tapes with professional staff instruction, rather than utilizing company employee monitors as does MIND.

[63] Some authorities are more impressed with reading improvement of only a grade or two. See Francis Gregory, "Preparation for Employment as a Motivator for Adult Basic Education," in W. Griffith and A. Hayes (eds.), *Adult Basic Education: The State of the Art* (Chicago: Department of Education, University of Chicago, 1970), p. 146.

Both MIND and USR&D have their own texts and workbooks. EMC devises a separate program for each group with which it works, and uses programmed learning tapes to supplement its texts and workbooks to a less degree.

Given the varied community and industrial environments in which adult basic education programs may be given, we believe that programmed learning material which is prepackaged for a variety of users is often likely to fail to provide sufficient cognizance of the local environment and the peculiar educational needs of the participants. We commented on the reactions of participants and teachers relating to this point both in the MIND and USR&D programs. The problem, of course, is that only by the utilization of such prepackaged materials can costs be kept in line. It can be pleasant and rewarding to experiment under a generous Ford grant or to create a competent, interracial labor force with the United States Health, Education and Welfare Department footing the bill, but neither source of funding is generally available.

Some compromise is, therefore, required between the cost saving of the prepackaged programmed learning and the need to tailor each program to meet the educational needs of local environments. Flexibility is essential. This could be achieved by prepackaging much of the basic educational material, but supplementing it with specially tailored reading, supervisory participation and instruction and job-related materials and instruction. Both USR&D and EMC are working in this direction, but considerably more must be done if the courses are to meet local environmental needs.

Job Relatedness and Supervisory Training

The MIND program contains neither mechanical comprehension nor direct job relatedness courses. Likewise, it provides for neither corollary supervisory training nor "human resources or relations" concepts. It does provide a course designed to assist participants to cope with their environment which can be useful in their social and economic relationships.

USR&D's "human resources development" course has been thoroughly commented upon. When it substituted work orientation and supervisory involvement, it was far more successful. USR&D also intended to utilize a physics principles course, which, if improved, could be taken for mechanical comprehension. The low educational attainments of the Georgia Kraft affected class and the fact that eligibility for promotion was geared to course completion, not course mastery, caused the physics course to be largely unutilized.

EMC's course devoted extensive time both to supervisory and management orientation and to mechanical comprehension. Its experience and that of USR&D emphasize the importance and significance of such courses. We believe that adult basic education programs could enhance their value by including such courses.

Of course, mechanical comprehension requires more than basic educational attainment, and both MIND and USR&D had a few in their courses who had the basic prerequisites for such a course. Programs must overcome their inability to teach the lowest achievers first. EMC excluded this problem by "creaming" the labor force. On the other hand, sensitizing management and supervisors, involving them in the programs, and explaining the job requirements to participants by talks, films and plant visits are all advantageous and would seem to be a requirement of an adult basic education curriculum designed for upgrading if that program is to be successful. It is difficult enough for disadvantaged employees to understand the relation of "book learning" to job success. Unless job requirements are fully explained, unless the nature of the potentially new work place is examined, and unless management and supervision react favorably to their promotion and contribute to their instruction, many of those who might benefit from the programs are likely to lose interest or to fail to relate the course work to their future advancement.

Educational Requirements for Jobs

A corollary to this point is the need for the paper industry to relate more specifically job requirements and educational requirements. Obviously, some education is needed for job success, and obviously more is required as a person moves up the lines of progression. How much education qualifies a person has never been made explicit. Perhaps it cannot be, but realistic estimates would make more clear what might be expected in job advancement potential to those who take remedial programs.

At the same time, it would also be well for administrators of federal civil rights programs to familiarize themselves with the nature of paper industry job requirements and the capabilities of the work force. Watching the paper machine crew repair a paper break, or examining the complicated dials and machinery in pulp mills or powerhouses would surely instill some caution on the part of those who tend to reach for easy or standard solutions.

The question has been raised as to whether the paper industry could provide on-the-job training simultaneously with adult basic education. Industrial relations executives in the industry with whom we have discussed this matter do not believe so. The reason is that the bottom progression job

begins the training for higher positions up the line. In many progressions, it takes several years to work forward to the top or even to the middle positions. As we have noted in Chapter I, the seniority progressions are a form of institutionalized on-the-job training. If an employee is working as a No. 5 hand in progression line, his duties require him to learn the No. 4 job above him and to work there when a temporary vacancy occurs. Because of high seniority and long vacations now common in the industry, employees may also work temporarily in jobs two or three grades above the regular jobs (in this illustration, Nos. 3 and 2 in the line), as well as the one above them. In addition, each employee is traditionally charged with the responsibility of helping to train the workers in the slot below.

Poorly educated workers who can barely perform the lowest job on the progression ladder, or who can successfully operate only in the lowest rated jobs, are poor candidates for jobs in such an upgrading system given the risks involved, according to industry personnel. There is, of course, no way to prove this except by trial and error. Moreover, the fact that in the past some employees with meager formal educations have successfully handled top jobs in the industry does not mean that others can do the same, although it does lend credence to the possibility. Managements point out that those who are poorly educated but employed on key jobs started their careers when the equipment was less complicated and learned to handle the modern equipment with a backdrop of experience. They also emphasize that many so situated were transferred to less difficult jobs, or otherwise failed to progress, and that most such employees have been less effective than better educated ones and will soon be retired in any case.

In the final analysis, few who have spent much time in paper mill complexes, including these authors, would want to take the responsibility for placing the likely unqualified in lines of progression. If that were done, most would, of course, recognize their limitations and leave. But even so, the possible injury or loss of life, damage to expensive equipment and losses of production at rates up to $25 per minute of downtime or more are awesome prospects. Nevertheless, we believe that a careful study of actual job requirements and educational attainments needed to master them could result in some revision of existing standards without detriment to industrial efficiency and safety.

STATISTICAL COMPARISONS

Because of the abundance of data generously made available by the companies studied, we are able to make some statistical comparisons to supplement the foregoing analysis. These relate only to MIND and USR&D.

The objectives of the Economic and Manpower Corporation program at Boise Southern and the labor force involved, particularly in terms of age, experience and education, are too different to be compared. We also excluded the Crown Zellerbach-Southern Timber data from the MIND program data. We did this because the Southern Timber program involved a labor force of a different and more favorable character and operated under different, and again more favorable conditions. This latter excluded group, however, was too small to affect results significantly.

Statistical Methodology

In the tables which follow, statistical analysis using the concept of standard units[64] was employed to detect the occurrences, direction and magnitude of differences between the mean scores of those participating in the USR&D and the MIND programs. The variables analyzed include the tested mathematics and reading levels prior to and after participation in the programs and the changes in the reading and mathematics averages after participation in the program.

The tests were designed in a manner that would enable us to determine if there was a difference in the mean scores between the different programs, and if these differences could be statistically attributed to qualities other than chance. Since it would be anticipated that the range of some variables would tend to be greater than that of others, one would also anticipate that the differences in the mean scores of these variables would fluctuate in direct proportions with the ranges of the observed data. To overcome these differences in the observed ranges, and to facilitate a comparative analysis of the differences in the means of the test variables, the concept of standard units has been employed to measure the differences in the variables. In effect, the standard unit is a relative measure of comparing variations among data of different magnitudes as opposed to an absolute measure.

In determining the statistical significance of the differences in the observed means, a 10 percent level of significance was used to determine the critical values noted at the top of each chart. This implies that any variance for which the difference in means is calculated at an absolute value greater than its appropriate critical value, in standard units, can have its difference attributed to something other than chance. The 10 percent level of significance implies that there is only one possibility in ten that the difference in observed means is caused by chance if the absolute difference, in standard units, exceeds the critical value. For example, in Table 45 each of the

[64] Formula in Appendix B.

first four variables have differences in means, in standard units, with absolute values which exceed their critical value ($\pm$ 1.64). For each of these variables, the difference can be attributed to characteristics other than chance.

Educational Effectiveness of Programs

Table 45 compares the educational variables for the MIND program participants with those of USR&D participants. There are statistically significant differences between the two groups which seem to favor the MIND programs—that is, MIND participants had significantly higher scores on the Stanford Achievement Tests in both reading and math before and after the program. On the other hand, there was not a statistically significant difference in grade improvement between the two programs. MIND participants started higher, ended higher, but improved at a rate less than did USR&D participants, although the difference in the last could be attributable to chance.

Actually, if we examine more carefully the data input of Table 45 the higher educational levels of MIND participants as a group are to be expected, because both affected class and non-affected class persons, including non-disadvantaged whites, participated. The latter, as noted in Chapters II-IV, generally entered the programs at a higher level and progressed faster than the former. Accordingly, Table 46 shows the same basic data, but for affected class participants only. The results are dramatically different.

For affected class participants, the data in Table 46 show USR&D in a much more favorable light. Although math scores between the two affected class groups were not significantly different, entry reading scores of the MIND group were significantly higher. USR&D, however, produced a significantly greater improvement in reading scores at Georgia Kraft. This difference combined with the significant difference recorded for the reading score prior to participation in the programs shows that Georgia Kraft participants started at a lower reading base but made more progress.

Tables 47 and 48 break down the same data for promoted and unpromoted affected class participants. For both subgroups of the affected class, MIND participants had statistically significant higher reading scores to start, but USR&D participants experienced significantly greater progress in reading.

One can conclude from these data that the USR&D program was more successful than that of MIND in improving the reading level of affected class participants than was MIND, even though it was dealing with partici-

TABLE 45. *MIND and USR&D Programs*
Statistical Comparison
All Graduates

Variable	USR&D[a]	MIND[b]	Difference in Standard Units[c]
Reading score before program	2.92	4.90	–4.55[d]
Reading score after program	4.59	6.36	–4.05[d]
Math score before program	3.31	4.64	–3.17[d]
Math score after program	5.38	6.50	–2.63[d]
Change in reading	1.67	1.45	1.07
Change in math	2.06	1.86	0.86

Source: Company data.

Note: $t_{.10,\,165} = \pm 1.64$.

[a] Georgia Kraft, only those for whom complete data were available.
[b] Crown Zellerbach, Bogalusa and St. Francisville; Continental Can; and Union Camp.
[c] Formula in Appendix B.
[d] Significant at the .10 level.

TABLE 46. *MIND and USR&D Programs*
Statistical Comparison
All Affected Class Graduates

Variable	USR&D[a]	MIND[b]	Difference in Standard Units[c]
Reading score before program	2.92	4.13	–3.42[d]
Reading score after program	4.59	5.01	–1.28
Math score before program	3.31	3.78	–1.25
Math score after program	5.38	5.50	–0.32
Change in reading	1.67	0.88	3.48[d]
Change in math	2.06	1.72	1.11

Source: Company data.

Note: $t_{.10,\,92} = \pm 1.66$.

[a] Georgia Kraft.
[b] Crown Zellerbach, Bogalusa and St. Francisville; Continental Can; and Union Camp.
[c] Formula in Appendix B.
[d] Significant at the .10 level.

pants who entered the program at significantly lower reading levels. The data presented in the foregoing tables thus tend to confirm our impression that the USR&D program, relying less on packaged programs and well taught, at least in its final six months at Georgia Kraft, was more successful in teaching reading to participants than was MIND. The small amount of such change, however, must not be overlooked. The net improvement in reading in both programs was disappointingly small. In comparison, Tables 45-48 all show that in both programs greater math improvement than reading improvement was made, although there were no significant differences between the two in the math area.

Educational Achievement and Job Results

Tables 49 and 50 show the statistical analysis of the educational variables in terms of differences between promoted and unpromoted participants. For affected class participants (Table 49), there were no significant differences between the promoted and unpromoted groups either on the basis of grade level achievement (i.e., level attained by the end of the course) or improvement (i.e, number of grade levels raised) either for math or for reading. The one significant difference was in the area of entry math score, where the promoted group average was above fourth grade, significantly higher than that of the unpromoted group, which was below 3.5. The figures in Table 49 indicate that, for the affected class, superior performance or achievement in these programs was not a prerequisite to employment opportunity enhancement.

Data on the non-affected class, shown in Table 50, indicate further that educational improvement was not significant for job improvement. The only significant difference between the promoted and nonpromoted groups was in reading improvement, where the unpromoted participants, who started at a slightly lower reading level, gained significantly more than the promoted group. This supports the conclusion that other factors were more important than course achievement in job upgrading.

Other Factors Affecting Promotion

Another measure of the effectiveness of the program is the percentage of program participants promoted to more favorable positions. So far, 34 percent of the MIND program participants have been promoted to more favorable positions as opposed to 22.5 percent of the USR&D participants, as shown in Table 51. This could change with time. It could also be a function of the higher initial educational attainments of the MIND par-

TABLE 47. *MIND and USR&D Programs*
Statistical Comparison
Promoted Affected Class Graduates

Variable	USR&D[a]	MIND[b]	Difference in Standard Units[c]
Reading score before program	2.93	4.38	–2.29[d]
Reading score after program	4.63	5.25	–0.93
Math score before program	3.44	4.56	–1.45
Math score after program	5.43	6.24	–0.96
Change in reading	1.70	0.87	2.50[d]
Change in math	1.99	1.67	0.52

Source: Company data.

Note: $t_{.10, 21} = \pm 1.72$.
[a] Georgia Kraft.
[b] Crown Zellerbach, Bogalusa and St. Francisville; Continental Can; and Union Camp.
[c] Formula in Appendix B.
[d] Significant at the .10 level.

TABLE 48. *MIND and USR&D Programs*
Statistical Comparison
Unpromoted Affected Class Graduates

Variable	USR&D[a]	MIND[b]	Difference in Standard Units[c]
Reading score before program	2.91	4.02	–2.60[d]
Reading score after program	4.58	4.91	–0.86
Math score before program	3.28	3.44	–0.37
Math score after program	5.36	5.17	0.48
Change in reading	1.67	0.89	2.75[d]
Change in math	2.08	1.73	0.94

Source: Company data.

Note: $t_{.10, 69}$
[a] Georgia Kraft.
[b] Crown Zellerbach, Bogalusa and St. Francisville; Continental Can; and Union Camp.
[c] Formula in Appendix B.
[d] Significant at the .10 level.

TABLE 49. *MIND and USR&D Combined*
Statistical Comparison
Promoted and Unpromoted Affected Class Graduates

Variable	Mean Promoted	Mean Unpromoted	Difference in Standard Units [a]
Reading score before program	3.81	3.41	0.92
Reading score after program	5.01	4.73	0.73
Math score before program	4.13	3.35	1.80 [b]
Math score after program	5.92	5.28	1.52
Change in reading	1.20	1.32	–0.44
Change in math	1.79	1.92	–0.35

Source: Company data.
Note: $t_{.10,92} = \pm 1.66$.
[a] Formula in Appendix B.
[b] Significant at the .10 level.

TABLE 50. *MIND and USR&D Combined*
Statistical Comparison
Promoted and Unpromoted Non-Affected Class Graduates

Variable	Mean Promoted	Mean Unpromoted	Difference in Standard Units [a]
Reading score before program	6.18	5.37	0.82
Reading score after program	7.55	7.40	0.15
Math score before program	5.37	5.16	0.24
Math score after program	7.43	7.26	0.17
Change in reading	1.37	2.02	–1.72 [b]
Change in math	2.05	2.11	–0.13

Source: Company data.
Note: $t_{.10,74} = \pm 1.67$.
[a] Formula in Appendix B.
[b] Significant at the .10 level.

ticipants. But it does limit one's belief in the superiority of one program over the other.

There are other factors which could affect relative results. Where the MIND programs were conducted, there were other and simpler avenues to promotion. This was not true at Georgia Kraft. Moreover, Georgia Kraft had the funded means to use more resources to obtain participation. The result was thus a much higher proportion of the affected class—63.4 percent, compared with only 5.0 percent for the MIND programs—participated in the Georgia Kraft program. Just how this affected the results is indeterminable.

We also do not have relative turnover rates at the various plants where the programs were conducted. Hence we do not know the extent of job availability for upgrading, nor the kinds of jobs available. Although we do not have data on the percentage of available jobs filled by affected class personnel or program participants, our impression is that these factors do not vary significantly.

Finally, we regret that the program of the Economic and Manpower Corporation did not deal with a comparable group and environment. It appears to have potential and it would have been instructive to be able to subject it to a statistical analysis for comparison with the other two. It is not known how this progam would perform with the already employed disadvantaged and with those below a fourth grade level of education.

IMPLICATIONS

The adult basic education programs studied here were undertaken in a southern, formerly heavily segregated environment. The programs involved people who were disadvantaged as to education and opportunity, but who nonetheless held well-paying, secure jobs, and were traditionally better off in terms of jobs and pay than were the great bulk of their peers. They involved an industry in which the equipment and technology are complicated and demanding, and in which Negroes were historically denied a place on the long and narrow progression lines where progress is slow. What is the significance of our findings in this environment for other industrial situations?

We believe considerable. First is the difficulty of adult basic education instruction, particularly at the lowest grade levels or involving functional illiterates. We do not believe that there is any evidence that the programs studied here would have greater success with other below fourth grade achievers, particularly those age 35 or above, than they did in the southern

TABLE 51. *MIND and USR&D Programs*
Comparative Job Results
Affected Class Participants

Program	Total Affected Class	Participants	Percent Participation	Promotions	Percent Participants Promoted	Percent Total Promoted
MIND[a]	935	47	5.0	16	34.0	1.7
USR&D[b]	112	71	63.4	16	22.5	14.3

Source: Data in Chapters II-V.

[a] Crown Zellerbach, Bogalusa and St. Francisville; Continental Can; Union Camp.
[b] Georgia Kraft.

paper industry. If we are correct, it certainly behooves private and public institutions interested in such programs to cease making expansive claims and to reexamine their approach, curricula, and teaching methodology.

Our findings also strongly indicate that if serious work is to be done to improve such programs, that it start with the understanding that the environment in which the program is utilized must be considered. Stories of the typical black resident of Harlem who drifts without a job are likely to be quite incomprehensible to a rural Negro with a steady job. A story about a paper machine of 1935 vintage loses the respect of an employee in a modern, automated mill. A story of a trip to London is much less meaningful than a trip to New Orleans for a Bogalusa resident. If basic teaching curricula can be supplemented by local, work-oriented material, interest and learning may be increased.

We also believe that the lack of correlation between completion of a program and job advancement may be a common occurrence. We suspect that this is true because the literature seems totally devoid of studies which relate the two. One would think that a program proprietor who had success in this regard would publicize it widely, but we have found no such claims backed by data.

Need for Further Research

Unfortunately, we can only guess about the effectiveness of adult education programs in other environments. Where job progressions are long and narrow and competence in one area does not qualify one in another, as in the paper industry, would results, in terms of job advancement, be different from industries in which most jobs fall within a few skill levels, seniority is broad based, and job movement over wide areas common? An example of the latter is the automobile industry; between these extremes are many variations. We believe that it would be profitable to explore industry profiles as one vehicle for explaining problems inherent in job upgrading (for example, the flat type of occupational organization, as in automobiles, vs. the variegated occupational skill profile of an industry such as paper manufacturing.) Other industry characteristics could also be taken into account in such an analysis. This is essentially the approach utilized in the Racial Policies of American Industry series to explain the varying utilization of Negroes by industries.[65] An analysis of adult basic education programs in various industries with diverse occupational upgrading systems and other distinct characteristics could shed much light on

[65] A list of these studies is found on the back cover.

whether adult basic education programs can have a more positive impact on upgrading in some industrial systems than in others, and if so, what are the key determinants.

Can Adult Basic Education Work Alone?

A very fundamental question remains as to whether such programs can achieve upward mobility without concomitant skill training, especially on-the-job training. Essentially what the basic programs attempt to do is to prepare the individual for skill training. What we observed was that preparation was more often incomplete. Therefore, if these programs cannot improve the reading and arithmetic comprehension of those who test at the fourth grade and below, can they successfully give skill training? Probably not, but for those above that level we believe such training could be very helpful. The policy of the Economic and Manpower Corporation in giving a mechanical comprehension course and sending persons on the job as soon as they tested at a certain level appears to recognize the importance of skill training, but of course, no low achievers were included in its courses.

We conclude that a model adult basic education program should include mechanical comprehension and move the participants on the job as rapidly as possible for skill training, perhaps continuing the basic education even after the skill training commences. But our model cannot be constructed until a means of teaching successfully the older functional illiterate has been found, or until a decision is reached that this job cannot be accomplished.

Appendix A

SOCIOECONOMIC DATA ON COMPANY LOCATIONS

TABLE A-1. *Crown Zellerbach Corporation*
Population by Race
Washington and West Feliciana Parishes, Louisiana
1950, 1960, and 1970

Location	White	Negro	Other	Total
Washington Parish				
1950	26,303	12,064	4	38,371
1960	29,107	14,892	16	44,015
1970	28,273	13,666	48	41,987
Bogalusa				
1950	12,048	5,748	2	17,798
1960	13,949	7,464	10	21,423
1970	12,279	6,109	24	18,412
West Feliciana Parish				
1950	2,929	7,239	1	10,169
1960	4,197	8,190	8	12,395
1970	3,840	7,527	9	11,376
St. Francisville				
1950	n.a.	n.a.	n.a.	936
1960	997	660	4	1,661
1970	n.a.	n.a.	n.a.	1,603

Source: U.S. Census of Population:

1950: Vol. II, *Characteristics of the Population*, Part 18, Tables 34, 42.

1960: Vol. I, *Characteristics of the Population*, Part 20, Tables 21, 23, 28.

1970: Advance report general population characteristics, Louisiana.

TABLE A-2. *Crown Zellerbach Corporation*
Educational Characteristics by Race
Washington and West Feliciana Parishes, 1950 and 1960

Education Level	Washington Parish				Bogalusa				West Feliciana Parish			
	1950		1960		1950		1960		1950		1960	
	Total	Non-white	Total	Non-white	Total	Non-white	Total	Non-white	Total	Non-white	Total	Non-white
Persons 25 years and over	19,215	5,465	21,786	6,412	9,495	2,955	11,014	3,578	5,425	3,305	6,456	3,877
No school completed	795	455	843	541	320	205	482	367	710	645	486	450
Elementary: 1-4	3,665	1,975	3,338	1,894	1,755	1,120	1,674	1,087	1,700	1,510	1,638	1,467
5-6	3,285	1,355	3,207	1,385	1,520	710	1,485	724	925	650	998	725
7	2,015	540	2,045	619	905	275	863	277	350	170	599	367
8	1,875	415	2,058	552	990	250	1,087	306	325	90	593	306
High school: 1-3	3,565	400	4,363	808	1,880	220	2,286	461	575	110	921	339
4	2,005	120	3,977	356	1,080	75	2,031	201	310	35	666	122
College: 1-3	950	70	1,003	87	525	35	589	55	225	25	314	65
4 or more	570	35	952	170	295	15	517	100	180	15	241	36
Not reported	490	100	—	—	225	50	—	—	125	55	—	—
Median education	7.8	5.4	8.7	6.1	8.1	5.4	8.9	5.9	5.5	3.6	7.2	5.1

Source: U.S. Census of Population:
1950: Vol. II, *Characteristics of the Population*, Part 18, Tables 34, 36, 42, 44.
1960: Vol. I, *Characteristics of the Population*, Part 20, Tables 73, 77, 83, 87.

TABLE A-3. *Crown Zellerbach Corporation*
Employment by Major Industry Group and Race
Washington and West Feliciana Parishes, 1950 and 1960

Industry Group	Washington Parish				Bogalusa				West Feliciana Parish			
	1950		1960		1950		1960		1950		1960	
	Total	Non-white	Total	Non-white	Total	Non-white	Total	Non-white	Total	Non-white	Total	Non-white
Total employed	12,320	3,656	13,465	3,805	6,017	1,820	6,910	2,071	2,107	1,401	2,255	1,330
Agriculture, forestry, fisheries	3,092	1,179	1,391	552	119	85	170	127	1,008	855	577	485
Mining	90	3	105	12	15	1	28	5	18	10	20	16
Construction	806	178	781	191	505	154	240	48	92	23	127	45
Manufacturing	3,498	962	4,462	974	2,417	677	2,692	616	393	280	415	225
Transport, communication, utilities	534	102	725	136	362	57	332	71	49	21	58	16
Wholesale and retail	1,698	309	2,130	417	1,044	222	1,208	279	149	46	207	99
Finance, insurance, real estate	149	16	346	55	88	12	256	51	7	—	15	—
Business and repair service	197	31	163	32	117	15	89	9	25	9	8	—
Personal services	846	619	1,311	965	620	461	830	640	123	114	327	306
Entertainment and recreation	55	15	49	9	46	13	33	5	2	1	10	4
Professional and related	816	164	1,286	323	427	87	657	177	89	28	150	56
Public administration	286	11	388	8	160	7	243	4	131	2	247	—
Not reported	253	67	328	131	97	29	132	39	21	12	94	78

Source: U.S. Census of Population:
1950: Vol. II, *Characteristics of the Population*, Part 18, Tables 35, 36, 43, 44.
1960: Vol. I, *Characteristics of the Population*, Part 20, Tables 75, 78, 85, 88.

TABLE A-4. *Crown Zellerbach Corporation Income by Race Washington and West Feliciana Parishes, Louisiana, 1949 and 1959*

Income Level	Washington Parish				Bogalusa				West Feliciana Parish			
	1949[a]		1959[b]		1949[a]		1959[b]		1949[a]		1959[b]	
	Total	Non-white	Total	Non-white	Total	Non-white	Total	Non-white	Total	Non-white	Total	Non-white
Total	10,735	3,460	10,542	2,993	5,485	1,990	5,297	1,608	2,095	1,490	1,885	1,147
Less than $1000	3,315	1,580	1,240	736	1,375	795	531	331	915	795	402	371
$1000-1999	2,470	1,105	1,694	838	1,095	640	708	403	590	515	413	376
2000-2999	1,815	530	1,370	556	1,060	415	614	303	185	90	278	227
3000-3999	1,070	80	1,046	235	655	40	452	132	130	20	178	74
4000-4999	535	10	1,223	296	390	—	598	222	50	—	128	33
5000-5999	395	15	1,109	150	285	5	692	110	45	5	137	40
6000-6999	260	—	800	89	175	—	499	61	10	—	74	4
7000-9999	195	—	1,295	65	110	—	724	33	35	—	173	22
More than $10,000	110	10	765	28	70	10	479	13	10	—	102	—
Not reported	570	130	—	—	270	85	—	—	125	65	—	—
Median Income	$1,679	$1,069	$3,924	$1,908	$2,112	$1,219	$4,574	$2,231	$1,100	$992	$2,459	$1,539

Source: U.S. Census of Population:

1950: Vol. II, *Characteristics of the Population*, Part 18, Tables 37, 37a, 45, 45a.
1960: Vol. I, *Characteristics of the Population*, Part 20, Tables 76, 78, 86, 88.

[a] Families and unrelated individuals.
[b] Families only.

TABLE A-5. *Continental Can Company*
Population by Race
Jackson Parish, Louisiana, 1950, 1960, and 1970

	Jackson Parish			Jonesboro			Hodge		
	1950	1960	1970	1950	1960	1970	1950	1960	1970
Total	15,434	15,828	15,963	3,097	3,848[a]	5,072	1,386	878	818
White	10,841	10,696	10,731	2,412	2,735	n.a.	824	n.a.	n.a.
Negro	4,593	5,127	5,210	685	1,113	n.a.	562	n.a.	n.a.
Other	—	5	22	—	—	n.a.	—	n.a.	n.a.

Source: U.S. Census of Population:

1950: Vol. II, *Characteristics of the Population*, Part 18, Tables 38, 40, 42.
1960: Vol. I, *Characteristics of the Population*, Part 20, Tables 21, 22, 28.
1970: Advance report on general population characteristics, Louisiana.

[a] Includes 164 people in annexed areas.

TABLE A-6. *Continental Can Company*
Educational Characteristics by Race
Jackson Parish, Louisiana, 1950 and 1960

	Jackson Parish				Jonesboro	
	1950		1960		1950	1960
Educational Level	Total	Non-white	Total	Non-white	Total[a]	Total[a]
Persons 25 years and over	7,870	2,125	8,365	2,339	1,730	2,219
No school completed	295	170	248	144	30	58
Elementary: 1-4	1,500	800	1,202	687	185	219
5-6	1,175	440	1,167	475	180	226
7	1,035	265	852	284	185	178
8	885	140	940	240	135	196
High school: 1-3	1,520	185	1,701	291	340	434
4	690	40	1,435	116	340	518
College: 1-3	335	20	423	26	140	190
4 or more	270	25	397	76	175	200
Not reported	165	40	—	—	20	—
Median education	7.9	5.3	8.8	6.4	10.2	10.6

Source: U.S. Census of Population:

1950: Vol. II, *Characteristics of the Population*, Part 18, Tables 38, 42, 44.
1960: Vol. I, *Characteristics of the Population*, Part 20, Tables 81, 83, 87.

[a] No breakdown by race available.

TABLE A-7. *Continental Can Company Employment by Major Industry Group and Race Jackson Parish, Louisiana, 1950 and 1960*

Industry Group	Jackson Parish				Jonesboro	
	1950		1960		1950	1960
	Total	Non-white	Total	Non-white	Total[a]	Total[a]
Total employed	4,592	1,197	4,997	1,421	1,124	1,470
Agriculture, forestry, fisheries	591	196	218	40	7	19
Mining	11	—	12	—	—	—
Construction	231	28	306	21	59	99
Manufacturing	1,951	558	2,053	532	301	438
Transport, communication, utilities	221	44	224	93	59	40
Wholesale and retail	648	80	719	133	316	270
Finance, insurance, real estate	34	1	84	4	27	56
Business and repair service	96	12	87	17	26	17
Personal services	286	194	540	441	110	198
Entertainment and recreation	21	2	31	—	7	12
Professional and related	309	58	487	111	134	229
Public administration	125	2	167	17	63	84
Not reported	68	22	69	12	15	8

Source: U.S. Census of Population:
1950: Vol. II, *Characteristics of the Population*, Part 18, Tables 39, 43, 44.
1960: Vol. I, *Characteristics of the Population*, Part 20, Tables 81, 85, 88.

[a] No breakdown by race available.

TABLE A-8. *Continental Can Company*
Income by Race
Jackson Parish, Louisiana, 1949 and 1959

	Jackson Parish				Jonesboro	
	1949[a]		1959[b]		1949[a]	1959[b]
Income Level	Total	Non-white	Total	Non-white	Total	Total
Total	4,165	1,240	4,031	1,136	930	1,066
Less than $1,000	1,085	435	325	193	160	44
$1,000-1,999	1,065	445	812	399	220	162
2,000-2,999	895	265	571	212	185	125
3,000-3,999	480	40	450	121	135	110
4,000-4,999	275	25	487	99	75	108
5,000-5,999	170	15	350	46	90	94
6,000-6,999	30	—	271	9	20	88
7,000-9,999	70	5	547	36	20	254
More than $10,000	20	—	218	21	10	81
Not reported	75	10	—	—	15	—
Median income	$1,876	$1,321	$3,683	$1,940	$2,572	$4,852

Source: U.S. Census of Population:
1950: Vol. II, *Characteristics of the Population*, Part 18, Tables 39, 45, 45a.
1960: Vol. I, *Characteristics of the Population*, Part 20, Tables 81, 86, 88.

[a] Families and unrelated individuals.
[b] Families only.

TABLE A-9. *Union Camp Corporation*
Population by Race
Chatham County, Georgia, 1950, 1960, and 1970

	Savannah			Chatham County		
	1950	1960	1970	1950	1960	1970
Total	119,638	149,245	118,349	151,481	188,299	187,767
White	71,288	95,971	65,040	92,934	124,122	123,454
Negro	48,282	53,274	52,734	58,450	64,177	63,522
Other	68	—	575	97	—	791

Source: U.S. Census of Population:
1950: Vol. II, *Characteristics of the Population*, Part 11, Tables 34, 42.
1960: Vol. I, *Characteristics of the Population*, Part 12, Tables 21, 28.
1970: Advance report on general population characteristics, Georgia.

TABLE A-10. *Union Camp Corporation Educational Characteristics by Race Chatham County, Georgia, 1950 and 1960*

	Savannah				Chatham County			
	1950		1960		1950		1960	
Educational Level	Total	Non-white	Total	Non-white	Total	Non-white	Total	Non-white
Persons 25 years and over	67,920	26,650	77,758	26,354	84,085	31,550	96,941	31,222
No school completed	1,855	1,535	1,996	1,626	2,505	2,065	2,430	1,972
Elementary: 1-4	10,665	8,780	8,368	6,618	13,485	10,835	10,618	8,106
5-6	10,020	6,430	8,053	4,671	12,375	7,435	10,150	5,484
7	5,380	2,175	5,330	2,318	6,750	2,445	6,971	2,695
8	7,230	2,240	7,234	2,247	9,010	2,425	9,473	2,756
High school: 1-3	11,950	2,470	15,375	4,198	14,850	2,875	19,470	4,818
4	11,855	1,125	19,181	2,778	14,405	1,250	23,375	3,131
College: 1-3	4,390	640	6,865	949	5,155	730	8,119	1,120
4 or more	3,180	580	5,356	949	3,785	680	6,335	1,140
Not reported	1,395	675	—	—	1,765	810	—	—
Median education	8.7	5.8	10.5	7.1	8.7	5.7	10.4	7.0

Source: U.S. Census of Population:
1950: Vol. II, *Characteristics of the Population*, Part 11, Tables 34, 36, 42, 44.
1960: Vol. I, *Characteristics of the Population*, Part 12, Tables 73, 77, 83, 87.

TABLE A-11. *Union Camp Corporation Employment by Major Industry Group and Race Chatham County, Georgia, 1950 and 1960*

	Savannah				Chatham County			
	1950		1960		1950		1960	
Industry Group	Total	Non-white	Total	Non-white	Total	Non-white	Total	Non-white
Total employed	45,184	18,005	50,619	17,857	54,714	21,185	63,004	21,019
Agriculture, forestry, fisheries	289	173	157	91	966	558	479	232
Mining	9	3	17	8	11	3	17	8
Construction	2,970	1,006	3,474	1,008	3,779	1,201	4,638	1,212
Manufacturing	9,541	3,453	10,477	3,507	12,235	4,227	14,390	4,316
Transport, communication, utilities	5,977	2,127	5,445	1,735	6,910	2,324	6,640	1,908
Wholesale and retail	10,305	2,995	10,521	2,752	11,966	3,330	12,581	3,110
Finance, insurance, real estate	1,696	297	2,403	308	1,898	330	2,744	355
Business and repair service	895	195	1,088	217	1,094	221	1,386	247
Personal services	6,953	5,779	6,412	5,084	8,141	6,694	7,476	5,869
Entertainment and recreation	478	185	408	173	539	196	458	196
Professional and related	3,597	1,249	5,840	1,925	4,180	1,480	6,903	2,366
Public administration	1,977	325	2,488	487	2,371	361	3,049	562
Not reported	497	218	1,889	562	624	260	2,243	638

Source: U.S. Census of Population:
1950: Vol. II, *Characteristics of the Population*, Part 11, Tables 35, 36, 43, 44.
1960: Vol. I, *Characteristics of the Population*, Part 12, Tables 75, 78, 85, 88.

TABLE A-12. *Union Camp Corporation Income by Race Chatham County, Georgia, 1949 and 1959*

	Savannah				Chatham County			
	1949[a]		1959[b]		1949[a]		1959[b]	
Income Level	Total	Non-white	Total	Non-white	Total	Non-white	Total	Non-white
Total	39,525	16,280	36,693	11,837	49,480	19,635	46,073	13,949
Less than $1,000	9,960	6,805	2,253	1,620	12,490	8,465	2,846	2,018
$1,000-1,999	8,305	5,245	3,702	2,418	10,600	6,270	4,504	2,794
2,000-2,999	7,140	2,570	4,577	2,656	8,600	2,905	5,537	3,070
3,000-3,999	5,035	535	4,601	1,937	6,315	610	5,619	2,221
4,000-4,999	2,690	185	4,221	1,404	3,200	205	5,350	1,637
5,000-5,999	1,810	65	4,327	704	2,115	65	5,554	880
6,000-6,999	935	35	3,085	394	1,055	35	4,150	483
7,000-9,999	880	25	6,001	520	1,020	30	7,673	606
More than $10,000	615	15	3,926	184	730	20	4,840	240
Not reported	2,155	800	—	—	3,355	1,030	—	—
Median income	$2,049	$1,178	$4,761	$2,708	$1,997	$1,130	$4,847	$2,704

Source: U.S. Census of Population:
1950: Vol. II, *Characteristics of the Population*, Part 11, Tables 37, 37a, 45, 45a.
1960: Vol. I, *Characteristics of the Population*, Part 12, Tables 76, 78, 86, 88.

[a] Families and unrelated individuals.
[b] Families only.

TABLE A-13. *Georgia Kraft Company*
Population by Race
Bibb and Floyd Counties, Georgia, 1950, 1960, and 1970

Location		White	Negro	Other	Total
Bibb County					
	1950	73,217	40,839	23	114,079
	1960	93,992	47,257	—	141,249
	1970	94,372	48,911	135	143,418
Macon Metropolitan Area					
	1950	86,793	48,219	31	135,043
	1960	124,326	56,077	—	180,403
	1970	146,456	59,514	372	206,342
Macon					
	1950	40,704	29,534	14	70,252
	1960	38,761	31,003	—	69,764
	1970	77,220	45,092	111	122,423
Floyd County					
	1950	53,612	9,273	14	62,899
	1960	59,180	9,950	—	69,130
	1970	63,969	9,697	76	73,742
Rome					
	1950	23,571	6,035	9	29,615
	1960	25,023	7,203	—	32,226
	1970	23,466	7,249	44	30,759

Source: U.S. Census of Population:
1950: Vol. 11, *Characteristics of the Population*, Part 11, Tables 34, 42.
1960: Vol. 1, *Characteristics of the Population*, Part 12, Tables 21, 28.
1970: Advance report on general population characteristics, Georgia.

TABLE A-14. *Georgia Kraft Company*
Educational Characteristics by Race
Bibb and Floyd Counties, Georgia, 1950 and 1960

Educational Level	1950		1960		1950		1960		1950		1960	
	Total	Non-white	Total	Non-white	Total	Non-white	Total	Non-white	Total	Non-white	Total	Non-white
	Bibb County				Macon Metropolitan Area				Macon			
Persons 25 years and over	62,770	21,215	73,819	22,508	72,690	24,210	91,769	25,868	40,840	16,045	38,406	15,341
No school completed	2,530	1,895	1,978	1,483	2,790	2,120	2,464	1,892	1,610	1,285	1,266	1,037
Elementary: 1-4	11,155	7,815	9,462	6,607	13,005	9,350	11,173	7,897	7,460	5,720	5,791	4,438
5-6	9,240	4,510	9,151	4,476	10,470	5,185	10,625	5,081	5,840	3,385	4,958	2,997
7	6,510	2,115	7,043	2,542	7,335	2,340	8,243	2,892	3,950	1,650	3,539	1,709
8	4,875	1,205	5,584	1,625	5,595	1,285	6,897	1,815	2,935	1,000	2,838	1,210
High school: 1-3	10,310	1,605	14,888	3,173	12,115	1,720	19,190	3,445	6,235	1,345	6,727	2,211
4	9,455	880	15,323	1,719	11,260	910	20,022	1,861	6,155	715	6,786	1,143
College: 1-3	4,250	440	5,417	424	5,000	450	7,149	482	3,115	345	3,180	290
4 or more	3,315	270	4,973	459	3,660	285	6,006	503	2,655	210	3,321	306
Not reported	1,130	480	—	—	1,460	565	—	—	885	390	—	—
Median	8.3	5.3	9.7	6.4	8.4	5.1	10.0	6.2	8.4	5.5	9.4	65.

	Floyd County				Rome			
Persons 25 years and over	33,740	4,890	37,669	4,974	16,550	3,275	17,893	3,556
No school completed	1,110	405	1,009	316	495	255	460	185
Elementary: 1-4	5,830	1,675	5,272	1,383	2,830	1,150	2,431	955
5-6	5,735	1,225	5,194	1,003	2,875	810	2,395	705
7	3,840	550	4,178	636	1,765	350	1,730	433
8	3,830	330	3,906	428	1,740	210	1,765	346
High school: 1-3	7,650	440	7,266	661	3,375	285	3,158	515
4	2,485	70	6,677	346	1,325	40	3,485	257
College: 1-3	1,590	100	2,165	100	1,095	95	1,268	86
4 or more	1,385	70	2,002	101	915	60	1,201	74
Not reported	285	25	—	—	135	20	—	—
Median education	8.1	5.6	8.8	6.6	8.1	5.5	9.2	6.8

Source: U.S. Census of Population:
1950: Vol. II, *Characteristics of the Population*, Part 11, Tables 34, 36, 42, 44.
1960: Vol. 1, *Characteristics of the Population*, Part 12, Tables 73, 77, 83, 87.

TABLE A-15. *Georgia Kraft Company*
Employment by Major Industry Group and Race
Bibb and Floyd Counties, Georgia, 1950 and 1960

Industry Group	1950 Total	1950 Non-white	1960 Total	1960 Non-white	1950 Total	1950 Non-white	1960 Total	1960 Non-white	1950 Total	1950 Non-white	1960 Total	1960 Non-white
	Bibb County				Macon Metropolitan Area				Macon			
Total employed	45,154	16,252	54,480	16,733	51,915	18,698	66,932	19,527	29,600	12,139	28,150	11,270
Agriculture, forestry, fisheries	1,012	562	735	289	2,723	1,731	1,830	1,038	138	68	195	74
Mining	252	105	352	88	265	112	368	92	83	42	112	23
Construction	2,690	1,091	3,061	1,061	2,891	1,164	3,718	1,312	1,543	776	1,379	632
Manufacturing	10,009	3,476	11,003	3,121	10,565	3,777	11,787	3,334	6,193	2,567	5,396	2,094
Transport, communication, utilities	4,327	1,065	3,695	657	4,503	1,121	3,954	699	2,827	880	1,814	488
Wholesale and retail	9,566	2,328	10,227	2,109	10,380	2,513	11,808	2,392	6,627	1,867	5,350	1,515
Finance, insurance, real estate	1,478	228	2,168	194	1,540	234	2,377	217	1,125	203	1,262	145
Business and repair service	895	136	1,091	192	966	145	1,241	212	545	102	525	136
Personal services	6,337	5,315	6,411	5,295	6,874	5,719	7,525	6,020	4,806	4,105	4,337	3,715
Entertainment and recreation	618	160	377	124	657	166	437	139	434	123	234	114
Professional and related	3,599	1,170	5,791	1,706	3,816	1,224	6,576	1,883	2,816	947	3,544	1,077
Public administration	4,018	509	8,090	1,339	6,315	666	13,550	1,584	2,217	378	3,076	876
Not reported	353	107	1,479	558	420	126	1,761	605	246	81	926	381

	Floyd County				Rome			
Total employed	23,562	3,654	26,202	3,636	12,345	2,726	12,597	2,916
Agriculture, forestry, fisheries	2,202	332	870	78	88	20	102	17
Mining	18	6	21	—	11	6	—	—
Construction	1,069	117	1,617	132	630	91	724	112
Manufacturing	9,328	568	9,602	687	3,950	425	3,643	539
Transport, communication, utilities	967	183	1,317	184	704	160	704	135
Wholesale and retail	3,916	393	4,516	344	2,781	361	2,567	308
Finance, insurance, real estate	512	59	880	78	429	55	581	78
Business and repair service	359	12	431	24	230	10	257	12
Personal services	2,056	1,399	2,232	1,301	1,646	1,211	1,562	1,072
Entertainment and recreation	214	37	149	30	165	33	110	30
Professional and related	2,171	489	3,609	682	1,233	306	1,753	530
Public administration	465	17	584	4	355	16	383	4
Not reported	285	42	374	92	123	32	211	79

Source: U.S. Census of Population:
1950: Vol. II, *Characteristics of the Population*, Part 11, Tables 35, 36, 43, 44.
1960: Vol. I, *Characteristics of the Population*, Part 12, Tables 75, 78, 85, 88.

TABLE A-16. *Georgia Kraft Company*
Family Income by Race
Bibb and Floyd Counties, Georgia, 1949 and 1959

Income Level	1949[a] Total	1949[a] Non-white	1959[b] Total	1959[b] Non-white	1949[a] Total	1949[a] Non-white	1959[b] Total	1959[b] Non-white	1949[a] Total	1949[a] Non-white	1959[b] Total	1959[b] Non-white
	Bibb County				Macon Metropolitan Area				Macon			
Total	36,205	12,055	34,931	10,059	42,265	13,770	44,111	11,623	24,375	9,460	17,304	6,781
Less than $1,000	8,835	4,740	2,130	1,388	10,380	5,780	2,665	1,745	6,470	3,680	1,274	934
$1,000-1,999	7,750	4,190	3,607	2,291	8,835	4,610	4,261	2,710	5,605	3,300	2,286	1,595
2,000-2,999	6,565	1,725	3,989	2,452	7,725	1,880	4,688	2,774	4,120	1,335	2,457	1,710
3,000-3,999	4,955	555	3,662	1,579	5,905	585	4,473	1,752	2,740	420	2,224	1,125
4,000-4,999	2,845	180	3,916	990	3,245	195	5,099	1,124	1,680	150	1,804	638
5,000-5,999	1,495	50	4,256	571	1,805	60	5,539	635	940	45	1,694	358
6,000-6,999	905	20	3,327	267	1,010	20	4,217	292	560	20	1,113	168
7,000-9,999	770	15	5,719	384	870	15	7,631	434	575	10	2,178	178
More than $10,000	595	10	4,325	137	620	10	5,538	157	510	10	2,274	75
Not reported	1,490	570	—	—	1,870	615	—	—	1,175	490	—	—
Median income	$2,111	$1,237	$5,038	$2,551	$2,121	$1,167	$5,157	$2,489	$1,914	$1,238	$4,228	$2,504
	Floyd County								Rome			
Total	18,440	2,685	17,550	1,972					9,705	1,935	8,413	1,599
Less than $1,000	5,020	1,275	1,095	234					2,230	845	548	187
$1,000-1,999	3,595	895	1,935	478					1,980	690	1,036	373
2,000-2,999	3,535	330	1,978	471					1,815	255	1,073	393
3,000-3,999	2,395	65	2,238	309					1,280	55	1,043	249
4,000-4,999	1,490	30	2,284	186					880	25	907	141
5,000-5,999	730	10	2,069	130					390	10	899	113
6,000-6,999	400	5	1,714	59					275	5	722	46
7,000-9,999	360	—	2,909	74					240	—	1,402	66
More than $10,000	295	5	1,328	31					230	5	783	31
Not reported	620	70	—	—					385	45	—	—
Median income	$2,077	$1,034	$4,669	$2,582					$2,225	$1,152	$4,558	$2,609

Source: U.S. Census of Population:
1950: Vol. II, *Characteristics of the Population*, Part 11, Tables 37, 37a, 45, 45a.
1960: Vol. I, *Characteristics of the Population*, Part 12, Tables 76, 78, 86, 88.

[a] Families and unrelated individuals.
[b] Families only.

TABLE A-17. *Boise Southern Company*
Population by Race
Beauregard Parish, Louisiana, 1950, 1960, and 1970

	Beauregard Parish			DeRidder		
	1950	1960	1970	1950	1960	1970
Total	17,766	19,191	22,888	5,799	7,188	8,030
White	14,739	14,903	18,596	4,078	4,952	n.a.
Negro	3,023	4,288	4,232	1,719	2,226	n.a.
Other	4	—	60	2	10	n.a.

Source: U.S. Census of Population:
1950: Vol. II, *Characteristics of the Population*, Part 18, Tables 38, 42.
1960: Vol. I, *Characteristics of the Population*, Part 20, Tables 22, 28.
1970: Advance report on general population characteristics, Louisiana.

TABLE A-18. *Boise Southern Company*
Educational Characteristics by Race
Beauregard Parish, Lousiana, 1950 and 1960

	Beauregard Parish				DeRidder	
	1950		1960		1950	1960
Educational Level	Total	Non-white	Total	Non-white	Total[a]	Total[a]
Persons 25 years and over	9,305	1,515	9,894	1,940	3,180	3,827
No school completed	440	240	420	201	135	182
Elementary: 1-4	1,870	575	1,432	566	610	516
5-6	1,620	235	1,478	273	485	465
7	1,035	165	1,067	227	255	343
8	955	70	1,051	181	280	390
High school: 1-3	1,540	125	1,794	311	570	583
4	1,010	50	1,769	88	440	786
College: 1-3	415	30	519	43	230	310
4 or more	205	5	364	50	90	252
Not reported	215	20	—	—	85	—
Median education	7.6	4.5	8.5	6.5	8.2	9.1

Source: U.S. Census of Population:
1950: Vol. II, *Characteristics of the Population*, Part 18, Tables 38, 42, 44.
1960: Vol. I, *Characteristics of the Population*, Part 20, Tables 81, 83, 87.

[a] No breakdown by race available.

TABLE A-19. *Boise Southern Company Employment by Major Industry Group and Race Beauregard Parish, Louisiana, 1950 and 1960*

	Beauregard Parish				DeRidder	
	1950		1960		1950	1960
Industry Group	Total	Non-white	Total	Non-white	Total[a]	Total[a]
Total employed	5,166	908	5,012	919	1,935	2,034
Agriculture, forestry, fisheries	1,077	84	493	15	14	22
Mining	179	—	120	5	75	25
Construction	410	27	390	38	143	89
Manufacturing	1,276	359	1,010	293	521	408
Transport, communication, utilities	238	27	444	63	98	165
Wholesale and retail	834	108	1,013	103	440	519
Finance, insurance, real estate	76	8	119	—	62	86
Business and repair service	101	8	81	3	55	39
Personal services	333	214	399	262	215	193
Entertainment and recreation	21	2	52	4	15	34
Professional and related	380	54	475	93	189	268
Public administration	149	1	268	9	81	128
Not reported	92	16	148	31	27	58

Source: U.S. Census of Population:
1950: Vol. II, *Characteristics of the Population*, Part 18, Tables 39, 43, 44.
1960: Vol. I, *Characteristics of the Population*, Part 20, Tables 81, 85, 88.

[a] No breakdown by race available.

TABLE A-20. *Boise Southern Company*
Income by Race
Beauregard Parish, Louisiana, 1949 and 1959

	Beauregard Parish				DeRidder	
	1949[a]		1959[b]		1949[a]	1959[b]
Income Level	Total	Non-white	Total	Non-white	Total	Total
Total	5,115	880	4,625	878	1,785	1,747
Less than $1,000	1,675	425	535	199	535	196
$1,000-1,999	1,350	295	904	258	410	290
2,000-2,999	865	100	772	222	325	264
3,000-3,999	500	—	686	117	210	230
4,000-4,999	250	5	445	48	120	171
5,000-5,999	95	—	302	17	40	128
6,000-6,999	65	—	292	5	30	102
7,000-9,999	75	—	467	4	40	216
More than $10,000	20	—	222	8	10	150
Not reported	220	55	—	—	65	—
Median income	$1,573	$978	$3,148	$1,930	$1,764	$3,537

Source: U.S. Census of Population:
1950: Vol. II, *Characteristics of the Population*, Part 18, Tables 39, 45, 45a.
1960: Vol. I, *Characteristics of the Population*, Part 20, Tables 81, 86, 88.

[a] Families and unrelated individuals.
[b] Families only.

Appendix B

FORMULA FOR DETERMINING DIFFERENCE IN STANDARD UNITS FOR COMPARISON WITH CRITICAL VALUES

$$t = \frac{(\bar{X}_1 - \bar{X}_2) - 0}{S_{\bar{x}_1 - \bar{x}_2}}$$

$$S_{\bar{x}_1 - \bar{x}_2} = \sqrt{\frac{S^2}{N_1} + \frac{S^2}{N_2}}$$

$$S^2 = \frac{(N_1 - 1)S_1^2 + (N_2 - 1)S_2^2}{N_1 + N_2 - 2}$$

$\bar{X}_1$ = mean value of group in column one of each table

$\bar{X}_2$ = mean value of group in column two of each table

$S_{\bar{x}_1 - \bar{x}_2}$ = approximate standard error of the difference between the two means

S^2 = estimate of the common variance obtained by pooling the two sample variances into a weighted average

S_1^2 = variance of group in column one

S_2^2 = variance of group in column two

N_1 = number of persons observed in first group

N_2 = number of persons observed in second group

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