CAREERS FOR YOUTH IN CONSTRUCTION AND DRAFTING

BRICKLAYER  CARPENTER  CEMENT MASON  DRAFTING

ELECTRICIAN - RESIDENTIAL WIRING  PLUMBER OR PIPEFITTER

BROUCHURE NUMBER 1
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FOREWORD

This Brochure is one of five which is being published as a supplement to the research report, entitled: "Survey of Employment Opportunities, Career Ladders, and Training Requirements for Basic Jobs in the Vocational Job Clusters, 1971–76". Funds for this research were provided by the State Board under the Authority of Part C of the Vocational Educational Amendments of 1968, P.L. 90–576. The Contract was administered by the Georgia Institute of Technology Research Administration as Contract M50–602.

Dr. John L. Fulmer, Regents' Professor of Economics in the College of Industrial Management, conducted the research and prepared this Brochure to highlight the findings for youth in the School Systems of Georgia.

The main report from this research may be obtained by writing to:

The Office of Vocational and Adult Education
State Department of Education
State Office Building
Atlanta, Georgia 30334

CAREERS FOR YOUTH IN CONSTRUCTION AND DRAFTING

ENTRY LEVEL SKILLS:
1. Knowledge of tools of trade, skills in their use, and purpose.
2. Blueprint Reading.
3. Common terms and concepts used on the job by workers and supervisors to improve communications.
4. Construction segments, their purpose, and raw materials used.

ENTRY LEVEL WORK ATTITUDES:
1. Dependable, punctual to work, and responsible.
2. Aggressive interest in job and willing to learn.
3. Respect for peers and supervisors.
4. Ability to cooperate with fellow workers and other Crafts on the Job.
5. Honest application of effort to requirements of the job.
6. Keep busy at job assigned or related work without being told.
INTRODUCTION

The construction industry is one of the most rapidly growing segments of the Georgia economy, and in line with national trends is expected to show rapid growth throughout the 70's. For those who prefer outside work, it offers unique opportunities for a great variety of jobs and career ladders that lead to pay levels that will offer an excellent standard of living. With serious application to training and dedication to the requirements of the job, a graduate from high school can move up the ladder to managerial positions. After considerable experience on the job, one may organize his own business.

The data on pay ranges which accompanies the Career Ladder charts depict pay levels existing in the different areas of Georgia and reflect pay conditions during the Spring of 1972. The charts were constructed on the basis of reports of various sizes of employers in the different areas of the State. The student studying the pay range chart should be conscious not only of the conditions which give rise to variations in pay but also to the fact that the data are fixed to the Spring of 1972. And over time he should expect these pay levels to rise probably in line with the national annual pay increase of about 5 percent yearly. Strong growth in demand for construction which will give rise to rapid growth in job openings is based on fact that during the 1970's youth born in the post World War II era will be forming families and buying homes. This very favorable outlook for job opportunities in the construction industry assumes that there will not be a depression of serious consequences.
The Bricklayer participates in construction by laying brick, structural tile, concrete cinder, cement blocks, terra cotta blocks, etc., to construct walls, repair walls, build partitions, arches, and other structures. One starts a career as a bricklayer as a helper or as an Apprentice, if an Apprenticeship Training Program is available and vacancies exist.

High School graduation is required if worker is to move to Journeyman or above. Neither previous experience nor any special courses from High School are required for entry level job. In fact, any one wanting to work can fill this job but he will not have the potential to go to higher levels in the Craft unless he is a high school graduate.

In this initial job the worker gets acquainted with the job's nature; helps bricklayers; serves their needs for materials and watches work; and picks up ideas of job requirements if he has ambition to become an Apprentice.

The training process starts with hauling or carrying brick or blocks. Then he mixes mortar which is followed by jointer type operations. He starts spreading mortar on a part-time basis. As openings in the Apprentice jobs become available, he moves into the Apprentice-type job and gains more intensive experience. The ratio of Apprentices to Journeymen is usually around 1 to 4.

Job attitudes which identifies him as having potential for promotion are: Alert, willing and ambitious. Must have desire to want to do something with a preference for outside work. With these qualities and abilities, the opportunities are unlimited for the high school graduate.

Training is provided on the job through personal supervision from foreman and superintendent. This is a learning process on how to do the skills, including how to achieve quality work.

The company requirements for advances up the Career Ladder are to learn the skills of each higher level job, including proper placement of mortar, accuracy in layout, and keep brick or blocks lined accurately by use of level and trowell.

Identification of worker in early stages who will advance through steps on ladder into supervisory positions are as follows: Want to do good job, interested in doing highly skilled work, regular and punctual worker, willing to be a leader, understands that all people are different, and despite differences knows how to get along with different types and is able to get the most out of them. An important point also is to keep friction from developing between workers of different skills or background.
BRICKLAYER FOREMAN. Lays out work for other bricklayers, including corners and lines of walls. Sees that work is done properly.

SUPERINTENDENT. Plans ahead, orders materials and workers; and sees that they are on time. Checks all craft jobs and coordinates work of Bricklayers, Electricians, and Plumbers, and sees that contract specifications are met.

BRICKLAYER. Lays brick and block on line and builds corners. He does all types of masonry work.

APPRENTICE BRICKLAYER. Is learning craft skills. Starts by spreading mortar and then learns to lay brick or blocks on line.

HELPER. Keeps materials in position for craftsmen. Mixes mortar and does jointing.
CAREER LADDER FOR BRICKLAYER IN THE GENERAL CONTRACTORS' MARKET, 1972

Hourly Pay, in Dollars

$8 — $4

Yearly Pay, if 2080 Hours Worked

$16,640 — $4,160

Average months promotion time

0 — 57

LEGEND

Average Reported Pay

Highest Reported Pay

Lowest Reported Pay

Bricklayer

Foreman

Superintendent

Apprentice

Helper

Time-on-Job, Responsibility, and Performance Level
CARPENTER

The Carpenter constructs, erects, installs, and repairs structures and fixtures of wood, plywood, and wallboard, using carpenter's hand-tools and power tools, and conforming to local building codes.

The beginning carpenter need not have more than 10th grade education if he has interest and aptitude for carpentry, but to advance to higher levels of management, as Foreman or General Foreman, he will need a high school education. No special courses are specified for high school although woodworking and drafting will advance him. But seriousness of purpose and diligent and consistent work attitudes are required.

No formal training is given the beginning carpenter unless he goes the route of Formal Apprenticeship. He does get on-the-job training from more advanced carpenters and foreman in a variety of work situations in order to gain experience in all phases of construction with reference to carpentry. A certain amount of semi-formal training may be given on woodworking techniques, such as ripping plywood, set up saw, use cut-off saw, and is given lessons in basic carpentry, including lay-out of house and grading. For success in entry job and to gain promotion the worker must show intense interest in job and the ability to turn out volume, and have the curiosity to investigate situations on the job.

Excellent carpenters are recognized by ability to “fine finish a job”, and are highly skilled with carpentry tools. Carpenter tools are used properly and are kept sharp and in good condition at all times.

Recognition of carpenters who will go into supervisory positions and early stage management shows up in a number of attributes. The first eight hours of the day is not enough for learning, and he asks if he can stay and work it out, his curiosity and dedication is so great!

Eagerness to learn and ability to learn are essential, and is the reason high school graduation is advisable. In skills, he is able to lay-out house expertly and site-shoot elevations, lay out contours, cut and fill, and get foundation in, and is recognized as a very fine craftsman by others; his energy is catching. He is not afraid to tackle upper work. On everything he leads and goes ahead. Supervisory positions require ability to manage others, and also to coordinate the activities of the different craft skills required for a job.

Alternatives open to youth who select carpentry as a career area are managerial, contracting, and withdrawal temporarily from work force to attend college and become an Architect. In the managerial area, one can work toward a Carpenter Foreman, General Foreman, and then Superintendent of Construction. All three alternatives require learning energy, aggressiveness at work and in study, and the ability to manage others and get the job done. A contractor in addition to being a capable manager, must also raise capital, sell his contracting services, and not hesitate over the risks involved.
THE LARGE CONTRACTORS ERECTING INDUSTRIAL, COMMERCIAL, AND OTHER LARGE INSTALLATIONS

Carpenters working with large contractors on giant installations, specialize in lay-out, setting forms, and setting the structural framework if wood framing is used. Interior work involving window framer or placement of pre-formed frames, foundations for floors, hanging doors and placement of bookshelves in offices, placement of prefabricated wallboard, if used, are other types of work performed.

Work on such jobs involves a range of crafts, such as Plumbers, Electricians, Painters, Sheet Metal Mechanics and Air-Conditioning Mechanics, Cement Masons, Bricklayers, Structural Steel Erectors, listing some of the most common types. In addition to mastery of the basic carpentry skills, the carpenter must be able to work with these other crafts in order to achieve first class performance in all specifications of the contract. Many of these craft type jobs are done on subcontract but the need for cooperation and good working relationships is equally essential. Often the large contractor will not maintain many craftsmen on a regular payroll but obtains such workers as needed from union hiring halls. In this case, there is often a Joint Apprenticeship Training Program, involving the contractor, the Union, and the U. S. Department of Labor, Bureau of Apprenticeship Training. The entry level worker in this case begins as an Apprentice Carpenter and his training is administered by the joint committee representing the Union and representatives from the contractors association or group. He must, of course, have met the rather rigid criteria for admittance to such a program, discussed in detail in the main research report.

In the absence of a Joint Apprenticeship Training Program, the beginning Carpenter Trainee or Helper gets on-the-job training by working with a highly skilled carpenter, supplemented generally by supervisory instruction and observation of progress and work quality. A Carpenter Trainee with energy, an aggressive worker with eagerness to learn and seriousness of purpose and having the ability to work with others, should be able to acquire the required skills in carpentry to advance to rank of Carpenter in a reasonable period of time.
CARPENTER, LABOR FOREMAN. Foreman is supervising workers in preparing pit for forms and pouring concrete. He supervises excavation and checks to see if proper grade, and is responsible for clean-up and moving forms to another area. He also reports time and amount of work for each worker for costing and record keeping.

CARPENTER, LABORER. The employees are excavating pit to set forms and pour concrete in pit. Other duties include bringing pits to grade for forming and pouring; move forming materials and clean up. In buildings assist carpenters by supplying materials and in clean up.

CARPENTER, APPRENTICE, is driving nails to secure forms in place. As an Apprentice, he is learning the carpenter trade. He works along with Carpenter and assists him in construction work; also will procure tools and materials as needed.
CARPENTER FOREMAN is checking the layout of forms to determine conformance with plans. He supervises carpenters in forming and all other construction work, including layout of building, framing and otherwise. He studies plans to determine if all work meets specifications. He is also responsible for reporting time for payrolls.

CARPENTER GENERAL FOREMAN is studying plans to check layout and schedule work of employees. In addition he is also responsible for ordering the supplies and materials needed for the contract. He supervises field instrument men in layout of work. He is responsible for coordinating work of carpenters, laborers, and cement masons.

CARPENTER is checking to determine if form is level and plumb. He makes and sets forms. He constructs, erects, installs, and repairs fixtures of wood, plywood, and wallboard, using carpenter’s handtools, conforming to local building codes.
CAREER LADDER FOR CARPENTER IN THE GENERAL CONTRACTORS’ MARKET IN GEORGIA, 1972

<table>
<thead>
<tr>
<th>Time-on-the Job, Responsibility, and Performance Level</th>
<th>Yearly Pay, if 2080 Hours Worked</th>
</tr>
</thead>
<tbody>
<tr>
<td>Helper</td>
<td>$4,160</td>
</tr>
<tr>
<td>Apprentice</td>
<td>$8,320</td>
</tr>
<tr>
<td>Labor Foreman</td>
<td>$12,480</td>
</tr>
<tr>
<td>Carpenter</td>
<td>$16,640</td>
</tr>
<tr>
<td>Carpenter Foreman</td>
<td></td>
</tr>
<tr>
<td>Superintendent</td>
<td></td>
</tr>
</tbody>
</table>

LEGEND
- Average Reported Pay
- Highest Reported Pay
- Lowest Reported Pay

Average Months Promotion Time

Hourly Pay, in Dollars
Further illustrations of some of the alternative lines of work open to carpenters are shown in the two different types of Career Ladders which follow. Contracting enterprises vary greatly by size. Large contractors negotiate contracts and raise the financing for widespread operations. And a complex construction job will involve a great variety of skills. Detailed drawings of the plans must be prepared by Draftsmen, the execution of which will involve closely cooperating units of carpenters, bricklayers, cement masons, electricians, plumbers, and other crafts in order to execute the details of a complex job. But few contractors will employ directly such a wide range of skills. The subcontract approach will be employed to obtain the services of specialized contractors, who through specialization perform the highly technical skills required for a finished job on a large contract.

There is still another interesting approach in applying the skills of carpentry which is through being a homebuilder. This will often involve only a few skilled carpenters headed by the builder himself. He will likewise employ plumbers and electricians either as individuals or as specialized contractors to perform the plumbing and electrical wiring. The homebuilder’s main essential is to be a competent businessman who is able to buy building lots and either obtain contracts for a specifically designed home or he builds to his own plans and sells the finished home in the open market. He, therefore, must possess the ability to promote contracts with individuals, bear the risks of the market, and raise the necessary capital to have a successful operation. This is an interesting type of independent business enterprise which many prefer.
LABOR FOREMAN and HELPERS are cleaning up debris and piling left-over brick.

CARPENTER AND HELPER are placing Tongue and Groove Plywood for floor covering. Other functions of general Carpenter are framing with 2 x 4’s, etc., put in windows, dicky for roof, wallboard, and plywood for floor covering.

CAREER LADDER FOR CARPENTER IN SUBCONTRACT WORK

SUBCONTRACTOR for Condominium complex is giving instructions to Framing Carpenter.

CARPENTER FOREMAN is giving instructions on placement of window frame.

CARPENTER AND HELPER on left are nailing a temporary 2 x 4 brace, which is removed when the GIP rock is placed against uprights and framing.
Layout and grading for private home.

Private home is taking shape in first story framing.

CARPENTER HELPER is mounting joists to complete nailing 2 x 4's in framing.

CARPENTER is nailing board over upper door frame, forming plate.
CEMENT MASON

A Cement Mason smooths and finishes surfaces of poured concrete floors, walls, side walls, or curbs to specified textures, using hand tools, including trowells, floats, and screens.

The Criteria for employment in entry position is age 18 but no special requirement for education. Worker must be strong, alert and ready to learn. Training is given on the job and involves putting beginners with skilled craftsman who knows the job. This man teaches him what he needs to know in that particular position, and so on up the line. There is no job rotation in a formal sense but worker gets a variety of experiences because of the varied nature of the different jobs that arise.

There is no specific plan to assist promotion except as worker gains the needed knowledge as he works with more mature workers and gains skills in breadth and depth. Work attitudes identify workers with the potentials for promotion. These are shown by his interest in the work and keenness and ability to follow instructions.

Relative to helping workers advance up the Job Ladder above entry level positions, helper or even apprentice, this depends on worker's ability to acquire information from other workers; and his interest in the work and in seeing that it is done in a finished fashion. Worker must be dependable, know how to read the "stakes", and how to finish the concrete in an acceptable fashion.

The factors which identify workers in advanced positions, as for instance Cement Masons, with ability to advance to supervisory positions are ability to control men and get the job done. He has got to be a leader of men and not a driver.
CEMENT MASON APPRENTICE is helping Cement Mason spread concrete, hand float, edge, and cut joints. He is being trained formally or informally to become a Cement Mason.

CEMENT MASON smooths and finishes concrete surfaces to specified textures, using such hand tools as floats, trowels, and screens. He executes orders of Foreman and helps with instruction of helpers.

CONCRETING FOREMAN sets up forms and supervises Masons and Helpers in pouring, spreading, floating, edging, and cutting joints. He is responsible that job is finished right and corrects errors if made. He trains men used on job in all the skills required for concreting, and he gets them to work together efficiently as a team.

CEMENT MASON HELPER is assisting Cement Mason to smooth and finish surfaces of concrete, such as floating and edging freshly laid concrete.
CAREER LADDER FOR CEMENT MASON IN THE GENERAL CONTRACTORS’ MARKET IN GEORGIA, 1972

LEGEND
Average Reported Pay
Highest Reported Pay
Lowest Reported Pay

Time-on-the-Job, Responsibility, and Performance Level

Hourly Pay, in Dollars

<table>
<thead>
<tr>
<th>Helper</th>
<th>Apprentice</th>
<th>Cement Mason</th>
<th>Concreting Foreman</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>4</td>
<td>4</td>
<td>8</td>
</tr>
</tbody>
</table>

Yearly Pay, if 2080 Hours Worked

<table>
<thead>
<tr>
<th>Helper</th>
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<th>Cement Mason</th>
<th>Concreting Foreman</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,160</td>
<td>8,320</td>
<td>12,480</td>
<td>16,640</td>
</tr>
</tbody>
</table>
DRAFTSMAN

The primary job of a Draftsman is that of preparing drawings which are used by shop or field construction personnel. These drawings, often referred to as "prints", are actually sets of instructions to be used in the fabricating of construction projects. Everything which is built today must have a set of drawings, including highway projects, sewer lines, machine tools, and houses. This need for detailed drawings will keep the profession constantly expanding with the growth industry.

One may begin a drafting career as a Jr. Draftsman or Draftsman trainee. Both positions are similar and differ only in title; both familiarize the inexperienced man with insight toward the profession. Depending on previous experience, the trainee may start out directly on the drawing board. If experience in drawing techniques is lacking, the initiate will start by learning basic lettering, the operation of print machines, and filing. Having mastered these fundamentals, a trainee is provided the opportunity to make tracings, graphs, and illustration material.

Training is provided through on-the-job supervision by an experienced draftsman. Basic principals of Orthographic projection, Isometric Drawing, and Layouts must be mastered in order to advance. Neatness, precision, and attention to detail is mandatory at all times.

Most firms require a high school degree, but this is not mandatory. Math, Science, and Mechanical Drawing courses are most helpful, but an overall ability to interact efficiently with co-workers is the most important prerequisite. A student with adequate vocational training can start out at the level of Draftsman.

A Draftsman should be qualified to draw any type of material presented to him. This includes concrete foundations, steel structural detail, dimensioning, electrical plans, and topographic maps.

Job attitudes which identify a Draftsman as having potential to gain promotion are the following: A good "teach ability" attitude, willingness to learn and grow in experience, and being able to fit in and work closely with others.

Advancement past the position of Draftsman is limited only by the Draftsman's initiative. Those who demonstrate the capability to deal with clients and co-workers equitably are often promoted to management positions. Those who possess great skill and innovation may become engineering aides, cadet engineers, or designers. Continuing education by night school attendance would be very beneficial in attempting to reach an engineering or designing job.

If so desired, a Draftsman may concentrate his skills toward one particular area such as electrical, mechanical, or architectural drafting. Depending on what type of firm he is employed by, the projects may be many and varied or highly specialized.
CAREER LADDER FOR DRAFTSMAN

DRAFTSMAN is preparing a map. A Draftsman should be versatile enough to draw anything presented to him, such as structural detail, grading plans, topographical maps and electrical circuit diagrams.

SENIOR DRAFTSMAN is checking some prints. He must be highly skilled in all phases of drafting and performs supervisory work and assists in training. Often he is called upon to do design work if he possesses knowledge of structural mechanics.

DRAFTSMAN TRAINEE is operating a print making machine. He also prepares simple drawings, performs lettering and tracing, along with gaining familiarization with drafting instruments.
CAREER LADDER FOR DRAFTSMAN IN GEORGIA, 1972

LEGEND
Average Reported Pay
Highest Reported Pay
Lowest Reported Pay

Hourly Pay, in Dollars

Yearly Pay, if 2080 Hours Worked

Average Months Promotion Time

Time-on-Job, Responsibility, and Performance Level

$6

Draftsman

Senior Draftsman

Draftsman Trainee

$12,480

8,320

4,160
RESIDENTIAL WIRING

The Electrician doing residential wiring follows blueprint plans for wiring home to provide electricity for lighting fixtures, power for electric stove and similar fixtures. Installs meter and breaker box, and locates necessary outlets for electrical plugs. Connects household wiring to main power line, all in accord with specifications and local electrical code.

One seeking an entry level job as Helper Electrician should have High School education, must have desire to be an electrician and wants to work and learn. In first six weeks, he should know how to handle tools of trade with facility. He enjoys working with equipment and doing wiring. His success will depend upon his having initiative and wanting to learn. He must be presentable, friendly, and able to get along with other workers. But in order to make rapid progress to higher levels of the crafts it is essential that he have a High School education.

Electricians on residential wiring, like the Helper, are trained on the job by the Foreman, and must know the details of an internal electrical system and how to install it expertly. He is familiar with national codes as well as any local codes which apply.

The Foreman must be able to assume responsibility, know job specifications, and see that they are carried out. He must be aggressive and go in early to get job done in short time in workman-like manner. And he has the ability to grasp the whole concept of the electrical system; and can take and give instructions and inspire workers to get job done.
CAREERS IN RESIDENTIAL WIRING

HELPER AND FOREMAN. The Helper is assisting Foreman to set up breaker box. He hands materials and tools, assists in all electrical work and is learning on the job by doing and following instructions.

FOREMAN. He is shown at right in picture and is instructing Helper. He is in charge, plans work, and orders necessary material. Keeps paper work. He often wires with electrician and is responsible that job is done correctly.

HELPER AND ELECTRICIAN. Helper is on right and assists electrician who is in charge of the job. They are pulling wire to make connections; and will fasten fuse box and set outlets.
CAREER LADDER FOR ELECTRICIAN IN RESIDENTIAL WIRING IN GEORGIA, 1972

Hourly Pay, in Dollars

Yearly Pay, if 2080 Hours Worked

$8

Average Reported Pay

Electrician

Foreman

Highest Reported Pay

Lowest Reported Pay

Average Months Promotion Time

Average Time-on-Job, Responsibility, and Performance Level
PLUMBER OR PIPEFITTER

The Plumber or Pipefitter lays out, fabricates, assembles, installs, and maintains piping and piping systems, fixtures and equipment, steam, hot water, heating, cooling, lubricating, and industrial systems, on basis of systems operation and building plans or working drawings.

The entry level job for plumbing occupations is Plumber Helper. He must be 18 years of age and a high school graduate if he plans to enter this Career Area through a Joint Apprenticeship program. In other programs youth of 16 may be taken with special work permit but will have to go through the apprenticeship program and must pass plumber’s examination to be certified as a Journeyman Plumber.

He gets on-the-job training by working with a Journeyman and rotates from job to job as required. He works with the Journeyman and learns from him the different tools and their use and other equipment, including transit and level. In order to become a Journeyman Plumber, he must get a license. This requires passing an examination on local, county, or state level. The examination is based on local, county or state codes. It includes sewers, hot water heaters, etc. and he must be proficient in calculations of cubic feet of air to support combustion in hot water heaters. Tests include mathematical ability to pass calculations pertaining to a variety of plumbing and heating problems. Given floor plans of buildings or vertical cuts, he must show how to pipe up the sanitary piping for the entire building or vertical cut.

In order to obtain the Master’s Certificate, required to operate or own a business, the Journeyman Plumber must pass the Master’s examination. This is much more complicated and is in the form of written exam, and drawings. It includes fresh air systems and their requirements for all public eating places, such as cafeterias, kitchens, bars, etc.; sand traps for laundries, poultry houses, and any kind of processing that produces wastes; acid systems, which involve the type of fresh air system that circulates air through the system; sanitary systems that come under the codes, which require that Master Plumber know how to set up piping, arrangements of pipes and fittings to meet code. He must also be proficient in calculations of flows of water on basis of 1/8 inch pipes in standard gallons per minute for fixtures. Fixture units are given to him and a rate of assumed use, and he must be able to calculate water requirements, correlating amount of water used relative to expected use. He must also familiarize himself with basic standards of government regulations for a worker can be penalized and contractor fined.

Job attitudes which identify Plumber Helper who will succeed are ability to accept mobility, want to learn, and physically able to keep pace with work assignments and keep up with plumbers in their work assignments.
The factors which identify Journeyman Plumbers who will be able to advance into supervisory positions are appearance of work, neat and with a minimum of fittings. He is workmanlike in his approach and really cares about the job. He must have the ability to get along with people which means the ability also to talk to other workers and management, and to follow instructions of the Supervisor or Foreman. If instructions applied to job show up difficulties or do not appear to be the best way, he tells top management about the difficulty and suggests what may be a better approach.
PLUMBER HELPER is cleaning a weld to remove slag to permit finishing weld on pipe. Other functions include supplying materials and tools to plumber and clean up work area of materials accumulated during work.

APPRENTICE PLUMBER is checking the angle of bend in pipe to determine if conforms to specs. He is learning the trade from experienced plumber who instructs and checks work of Apprentice.

PLUMBER is preparing to fit flange to piece of pipe. His duties include fabricating pipe to specifications. He must be able to fit the pipe by taking into account the various angles and types of fittings specified in the plans.
PLUMBER FOREMAN. The Foreman on right is explaining details of the pipe layout to one of his crew. Other duties include supervision of plumbers, keeping time with regard to cost centers, reporting units produced for costing purposes, drawing materials for work in progress, and study plans to supervise work and check layout of work.

PIPEFITTER GENERAL FOREMAN. General Foreman at right is explaining details of layout of pipe work for fabrication to his Foreman. His major responsibilities are checking work of Foreman under him which requires that he study plans to insure that work meets requirements. He also schedules work and procures materials for jobs in process.
HOW YOUR SCHOOL CAN HELP YOU FIND A CAREER IN CONSTRUCTION AND DRAFTING OCCUPATIONS

I. If you are in the middle grades (7th, 8th, or 9th grade).

This is your opportunity to EXPLORE the world of work.

In the middle grades you have the opportunity to test yourself in a number of different kinds of careers and occupations. Your school may offer some of the following programs that you can use to explore your occupational interest.

Through the Program of Education and Career Exploration (P.E.C.E.) you can explore construction and drafting jobs by actually visiting real workers as they do their job.

In the eighth grade you can take part in the new mini pre-vocational course in construction. This will allow you to explore the many jobs offered in construction and drafting work in your school shop. These programs generally last from eight to twelve weeks.

You may also enroll in the world of construction, a year long pre-vocational course in your school. This will give you the opportunity to try out, under real construction and drafting job conditions, the many different kinds of work roles available to students who choose to enter jobs in the field of construction or drafting.

II. If you are in senior high school (10th, 11th, 12th grade).

This is your opportunity to train for an entry level job in the field of construction or drafting.

Your high school offers a number of opportunities to help you gain the skills required for an entry level job in the construction or drafting field.

You might choose to enroll in the construction or drafting cluster in your school. One to two years of study in your chosen cluster program will provide you with skills required to obtain an entry level job in either of these occupational fields.

Cooperative programs or work study programs offer another means of preparing oneself to enter the construction or drafting field. Diversified Cooperative Training (DCT) is an example of a cooperative program. The DCT coordinator in your school can arrange with a construction or drafting company for you to attend school part time and work on an actual job part time.

III. If you are about to graduate or are already out of school, your school's GUIDANCE AND PLACEMENT OFFICE can help you with your next step in life.

If you still plan to enter the construction or drafting field, your counselor can provide information about the three options you now have.

If you want further training, there are two basic choices. The first is the area vocational-technical schools. Your counselor can help you identify your interests and gain entry into one of the construction or drafting courses offered at the area school nearest you. Georgia's area vocational-technical schools offer 56 courses at 25 different locations in the state.

Diversified Cooperative Training (DCT) is an example of a cooperative program. The DCT coordinator in your school can arrange with a construction or drafting company for you to attend school part time and work on an actual job part time.

The second option available to you for further training is the joint apprenticeship program for construction workers. Your counselor can help you identify the apprenticeship program nearest your home and provide you with information regarding admissions requirements for the various construction apprenticeship programs.

The third option available to you is to go directly to work. Your school’s Guidance and Placement Office can provide information on how to proceed in your "Job Search".

SUMMARY STATEMENT PREPARED BY THE OFFICE OF VOCATIONAL AND ADULT EDUCATION
ACKNOWLEDGEMENT

The following companies have cooperated in supplying pictures for the brochures which are published in connection with this research report. The author is sincerely grateful for this cooperation.

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Decatur, Georgia

Bob Bailey's TV & Appliances-
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CAREERS FOR YOUTH IN CONSTRUCTION AND DRAFTING

Training programs are available in:
- Comprehensive High Schools
- Area Vocational-Technical Schools
- Joint Apprenticeship Training Programs in major cities of Georgia
- On-the-Job Training in Companies

The Work attitudes for success are:
- Dependability and reliability
- Dedication to the job and
- Aggressiveness in voluntarily tackling jobs that need to be done
- Serious application to the requirements of the job and its work environment in order to learn and to contribute innovative ideas
CAREERS FOR YOUTH IN TRANSPORTATION, METAL WORKING AND ELECTRO-MECHANICAL CRAFT SKILLS

AUTOMOBILE MECHANIC • DIESEL MECHANIC • MACHINE SHOP MECHANIC • SHEET METAL MECHANIC • WELDER • AIR CONDITIONING MECHANIC (COMMERCIAL, DOMESTIC, AND SERVICE) • AIR-CONDITIONING AND HEATING MECHANICAL CONTRACTORS • ELECTRICIAN • ELECTRICAL APPLIANCE SERVICEMAN • MAINTENANCE MECHANIC, BUILDING RADIO AND TV REPAIRMAN • REFRIGERATION MECHANIC

BROCHURE NUMBER II
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CAREERS FOR YOUTH IN TRANSPORTATION, METAL WORKING
AND ELECTRO-MECHANICAL CRAFT SKILLS

Prepared By
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For
Georgia State Department of Education
Office of Adult and Vocational Education
Atlanta, Georgia 30334

Jack P. Nix
State Superintendent of Schools
1972
FOREWORD

This Brochure is one of five which is being published as a supplement to the research report, entitled: "Survey of Employment Opportunities, Career Ladders, and Training Requirements for Basic Jobs in the Vocational Job Clusters, 1971-76". Funds for this research were provided by the State Board under the Authority of Part C of the Vocational Educational Amendments of 1968, P. L. 90-576. The Contract was administered by the Georgia Institute of Technology Research Administration as Contract M50-602.

Dr. John L. Fulmer, Regents’ Professor of Economics in the College of Industrial Management, conducted the research and has prepared this and four other brochures to focus the attention of youth in the School Systems of Georgia on 48 highly significant Careers in the Georgia economy. Publication was by the Industrial Management Center, Georgia Institute of Technology, Atlanta, Georgia 30332.

The main report from this research may be obtained by writing to:

The Office of Vocational and Adult Education
State Department of Education
State Office Building
Atlanta, Georgia 30334

BRIEF DIGEST OF SKILLS AND WORK ATTITUDES REQUIRED FOR YOUTH TO SUCCEED IN TRANSPORTATION, METAL WORKING, AND ELECTRO-MECHANICAL CAREERS

ENTRY LEVEL SKILLS:
1. Knowledge of tools of trade, skills in their use and purpose.
2. Ability to identify component parts and functions of vehicle, machine, electrical unit or instrumentation to be repaired.
3. For metal working, know gauge of metals, manufacturing practices of cutting and forming different types of welds and how to apply.
4. For machinist, working knowledge of blueprints, drill sizes, feeds and speeds, how to use V-block and jigs and fixtures.
5. Common terms and concepts used on the job by workers and supervisors to improve communications.

ENTRY LEVEL WORK ATTITUDES
1. Interest in work, regularity of attendance, energy in applying self to learn skills of job and ability to work safely.
2. Ability to perform quality work and conscious of need to satisfy customer.
3. Observe safety precautions and be conscious of need of employer for high level worker performance and efficiency.
INTRODUCTION

A highly industrialized nation as the United States, in its premier economic position in the world, has exploited technology to the maximum in developing its economy, and this trend will continue.

By all tests the most critical areas for maintenance of a healthy and growing economy are the crafts related to transportation: auto workers, diesel mechanics, etc.; those related to metal working: machine shop workers, sheet metal workers and welders; and the electro-mechanical occupations which combine uniquely electrical and mechanical skills in each craft: air conditioning mechanics (commercial, domestic and service), electrical appliance servicemen, radio and television servicemen, refrigeration mechanics, maintenance mechanics. There are also mechanical contractors who employ specialized crafts to fabricate and install the conduits and duct work for heating and air conditioning systems for large industrial, commercial and institutional buildings.

For the youth mechanically inclined, with great curiosity and logical reasoning ability, and challenged by the old cliche: “What makes it work?”, these areas of the mechanical, metal working and electro-mechanical trades offer unlimited opportunities for employment, job achievement, advances up the Career Ladder and pay levels that are excellent.

The pictures and charts which illustrate the large number of Career Ladders in this brochure have been obtained from what are judged to be typical employers. Variations from this so-called median will occur both in terms of shorter, and in many cases, longer and more complex Career Ladders. There are many vacancies available in Georgia for youth with mechanical aptitudes, good work habits, entry level training, and an eagerness to learn and wherever one of these jobs is located, unique challenges for personal interest and development with excellent pay can be exploited.

Note that the pay range charts apply only to 1972 and the student is cautioned that the ranges will show a strong tendency to rise year by year over time in line with yearly pay increases of 6 percent, a national trend, over the last decade or so. This means that the student looking at the pay range charts in 1975 or 1980 must make substantial adjustments upward in the pay range for the career or careers in which he is interested.
AUTOMOBILE MECHANIC

Automobile and truck mechanics repair and overhaul automobiles, buses, trucks, and other automotive vehicles. This is an essentially critical service to keep the economy moving forward where so many automobiles and trucks are tied so closely to movement of people to work and supplying business and industry with vital services and supplies.

A youth entering this field should be 18 or 19 years of age and preferably have a high school education. In order to learn if he is really fitted for automobile mechanics, he should consider working in a filling station, greasing, changing plugs, etc., to determine if he will like this type of work.

The trainee on initial employment enters the special motor company job entry training program. He works three weeks and goes to school for one week for a period of six months, getting a total of six weeks entry job training. He gets full pay from the auto dealer or service center. Veterans prior to discharge can take the motor company trainee program which fits the veteran directly for the trainee job.

The trainee also learns on the job from more advanced mechanics in two directions. He helps on the line and also in the mechanics work. The more experience the worker gets, if he is alert, the more complex the mechanics he can do and the higher up the Career Ladder he can go.

Work attitudes are also most important for success in the entry level job and for advancing to more complex mechanics. He applies himself and shows an interest in trying to learn. If a worker shows interest, drive, and desire to learn, the company will make an effort in trying to train him at every level on the job ladder.

The factors which identify a worker on the Career Ladder as a potential supervisor or manager are the way he works at the job, takes pride in his work, tries to do a job without supervision, shows leadership and gets along with workers. The service writer has worked on cars and knows all the technical angles to be able to identify automobile trouble and write the orders. The shop foreman is so experienced and knowledgeable of mechanical functions he can also diagnose trouble for mechanics if necessary.
AUTOMOBILE SERVICE MECHANIC.
Performs minor repair and tune-up of motor vehicles.

TRANSMISSION MECHANIC.
Repairs manual and automatic transmissions in autos, buses and trucks.

AUTOMOBILE BODY REPAIRMAN.
Repairs damaged bodies and body parts of automotive vehicles, such as automobiles and light trucks.

AUTOMOBILE MECHANIC TRAINEE.
Assists automobile mechanic in repair of automobiles, buses, trucks and other vehicles.
AUTOMOBILE MECHANIC. Repairs and overhauls autos, buses, trucks and other automotive vehicles.

FOREMEN. Supervises all mechanics in service shop and helps in complex repair. He assigns work orders to mechanics and inspects for conformity with order. He helps in order to speed learning process. He orders parts and other supplies including tools, and supervises arrangement of vehicles for different job orders.

SERVICE WRITER. Greets customers, diagnoses trouble, writes repair order and passes onto foreman. He initiates claims under warranty.

SERVICE MANAGER is overall superintendent of all repairs and service for entire range of repairs — transmission, body repair, truck mechanics, and automobile service mechanics. Hires and supervises the training of new workers. Resolves differences with public over repair services.
The work of the diesel mechanic in keeping diesel engines, widely used in transportation and some heavy industry, in service is a most essential activity to a healthy, growing economy. He repairs and maintains diesel engines used to power buses, ships, trucks, railroad trains, and construction machinery, and must be expert in the use of hand tools, precision-measuring instruments and metal-working tools.

The entry level job is diesel mechanic helper or trainee. Requirements are not very exacting for this entry job, as there is no specific requirement for high school graduation, but this level of education would increase potentials for learning the skills and for rapid advance. No courses are specified in high school, but the worker should have mechanical aptitude and be at least 18 years of age. With advancing requirements of technology, it is likely that a high school education will soon be a necessity with a diesel trade school background helpful to accelerate progress.

Initially to qualify for the job as helper, the worker gets special on-the-job training and special instructions accompanying the practical experience. Dealers in this type of equipment and those maintaining a large repair shop will give more formal and specialized training. This will often consist of a combination of classroom instruction and related work in the repair shop. As much as eight weeks of instructions, with two days per week being given to classes and three days to related shop work may be involved. In class the trainee is taught basic mechanics, which includes the operating engine and its parts and functions, and comparisons of basic design differences for the types of diesel engines made. He is taught the four flows: air, cooling, fuel, and lube; and then the 45 different types of governors involved in the basic overhauling.

In the three-day shop work the trainee will be practicing what he is taught in the two-day classroom studies while this information is fresh in his mind. He does bench work overhaul on the four flow components: air pump or blower; cooling, including water pumps with fresh water; fuel, including fuel pumps, injectors, and governors; and lube, including oil coolers, oil pumps, and valve arrangements.

After eight weeks of basic training, he works with an experienced diesel mechanic who assigns work, monitors it, corrects and demonstrates correct methods, and he also advises on further development of skills, continuing with this mechanic until he is capable of doing a complete repair job alone.

After one year of the basic eight weeks training, followed by on-the-job supervision by a diesel mechanic, he is given a test to determine if he qualifies as a craftsman diesel mechanic. If he passes with a satisfactory grade, he gets the mechanic's rate of pay. The test score is compared with the test score after the eight weeks school-work training to determine the extent of improvement, including grades on mechanical ability, aptitude, and personal habits.
DIESEL MECHANIC (continued)

The personal attributes necessary for success as a diesel mechanic are: basic honesty towards self and towards the employer. He must be willing to admit lack of knowledge in certain areas when he does not know or is not competent, and he must give his best to the employer, working hard and carefully to turn out repairs and work that stands up. He must possess mechanical aptitudes and have personal habits of cleanliness, both relative to self and his work, with a strong desire to learn and excel.

The trainee in the early stages of development who will be successful and advance to higher levels in diesel mechanics work will ask penetrating questions in class, participate in class discussion, and show attentiveness.

The factors which identify mechanics who will go to the top as a mechanic and on into management are responsibility and dependability in work, shown by how much comes back on complaint and customer feedback on the quality of his work.

Lines of advance other than straight up the Career Ladder as a diesel mechanic include several steps in managerial type jobs, which include the following steps not shown in the chart: shop superintendent - field service, assistant service manager and service manager. A really good mechanic will have the choice also of going outside on “trouble-shooting” calls, earning the top pay among mechanics. Other alternatives are in the sales field. In the parts department, the job ladder is counterman, parts salesman, assistant parts manager, and parts manager. He can also become an engine salesman or other managerial level jobs.
CAREER LADDER FOR DIESEL MECHANIC

DIESEL MECHANIC TRAINEE is sizing a connecting rod on a machine and a connecting rod for a bearing fit. He assists diesel mechanic and works under his direction until he qualifies as Apprentice.

DIESEL MECHANIC APPRENTICE is overhauling a blower. He also tears down and inspects heads, rebuilds fuel pumps, and goes through all the operations of repairing and rebuilding diesel engines. If he shows ability to do all these jobs alone, he is promoted to rank of diesel mechanic.

DIESEL MECHANIC is checking oil shut down switch of diesel engine. He repairs, maintains and rebuilds diesel engines used to power buses, ships, trucks, railroad trains, electric generators and construction machinery, using hand tools, precision-measuring instruments and metal-working tools.

SHOP FOREMAN is inspecting diesel engine. Other functions include taking job orders from assistant service manager and scheduling work in shop with specific mechanics. He supervises mechanics and helps with difficult repair problems and improves shop work as needed. Also keeps track of equipment: reports deficiencies; and orders replacements needed.
MACHINE SHOP WORK

Basic requirements for entering the machine shop trades are a high school education and 18 years of age. In lieu of a high school diploma, most employers desire some type of vocational school training. Course preparations from high school should include mechanical drawing, basic math and shop courses, preferably metal shop. Previous experience is not always a prerequisite, as on-the-job training is often employed. A novice to the trade can acquire needed skills in the shop.

Basically, a machinist operates machines which shape, grind or drill metal plates, pipes and bars and castings. These metal work pieces often require surfaces milled to extremely close tolerances.

A trained machinist has the option of working on many different machines, or possibly only one type of machine. A typical machine shop will include drill presses, grinders, lathes, milling machines, cut-off saws, band saws and threaders. Some of today's machines are even computer controlled, requiring great skill to operate.

Experience, character, dedication and desire are important qualities in order to advance up the Career Ladder. The machinist who sets his goals high can advance to a foreman or supervisor position. The ability to get along with others, leadership, dedication to the firm, responsibility and thorough knowledge of all types of machinery are attributes which distinguish a man as possessing the potential to be a supervisor.
CUT-OFF SAW OPERATOR is using metal sawing machines, such as hacksaw, bandsaw, or circular saw to cut metal stock to dimension.

ENGINE LATHE OPERATOR is performing machine operations such as turning, boring and threading on an engine lathe.

GRINDER OPERATOR is operating surface grinding machine to grind flat or contoured surfaces of metal workpieces.

MILLING MACHINE OPERATOR is working a milling machine to mill surfaces of metal workpieces to specifications.

DRILL PRESS OPERATOR is operating drilling machine to drill, ream, countersink, or tap holes in metal pieces to specifications on a production basis.
CAREER LADDER FOR MACHINE SHOP WORK IN GEORGIA, 1972

Yearly Pay, if 2080 Hours Worked

<table>
<thead>
<tr>
<th>Rank</th>
<th>Average Reported Pay</th>
<th>Highest Reported Pay</th>
<th>Lowest Reported Pay</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drill Press Operator</td>
<td>$3,200</td>
<td>$5,000</td>
<td>$1,800</td>
</tr>
<tr>
<td>Cut-off Saw Operator</td>
<td>$4,000</td>
<td>$6,200</td>
<td>$2,400</td>
</tr>
<tr>
<td>Grinder Operator</td>
<td>$5,000</td>
<td>$7,200</td>
<td>$3,000</td>
</tr>
<tr>
<td>Milling Machine Operator</td>
<td>$6,200</td>
<td>$8,300</td>
<td>$3,600</td>
</tr>
<tr>
<td>Engine Lathe Operator</td>
<td>$8,300</td>
<td>$10,000</td>
<td>$4,000</td>
</tr>
</tbody>
</table>

LEGEND
- Average Reported Pay
- Highest Reported Pay
- Lowest Reported Pay

Time-on-Job, Responsibility, and Performance Level

Average Months Promotion Time

PAGE 14
SHEET METAL MECHANIC

Sheet metal workers fabricate and install ducts used in ventilating, air conditioning and heating systems. They also fabricate and install a wide variety of other products made from thin metal sheets, such as roofing and siding.

The recommended procedure to gain training in these skills is through a four year joint apprenticeship training program. Many sheet metal workers, however, acquire skills of the trade by working as helpers, observing or being taught by experienced craftsmen. Those with ambition and aggressiveness to get ahead seek additional knowledge of the trade through correspondence courses or registering in courses offered by the area vocational-technical schools.

Those who go the apprenticeship route for training must be between 17 and 26 years of age and a high school graduate, be physically fit and have mechanical aptitude. The four year training program consists of on-the-job training plus formal classroom instruction which may be set up in a cooperative arrangement with a nearby area vocational-technical school. The classroom instruction consists of two, two and a half hour classes weekly for two years. During the third and fourth years, three classes per week are required. The apprentice’s starting pay is 45 percent of journeyman’s pay with 5 percent increments each six months he remains in the program. At the end of four years if he passes the craft tests, he gains a journeyman’s rating.

In a typical training program on-the-job, the apprentice learns to use, care for and handle safely the tools, machines and equipment used in the trade. He also learns welding, soldering and seaming; air conditioning, heating and ventilating work. He learns general work processes such as cutting, forming, folding, grooving metal materials, finishing edges, and punching and drilling holes.

The related classroom instruction includes drafting, blueprint reading and mathematics applicable to sheet metal lay-out; and he learns how sheet metal work relates to other crafts.

Lines of advance beyond the journeyman sheet metal mechanic include foreman, superintendent of large projects or one may strike out on his own and become an independent sheet metal contractor.
CAREER LADDER FOR SHEET METAL MECHANIC

SHEET METAL MECHANIC HELPER is shown assisting in fabrication of sheet metal ductwork. He also obtains instruction from experienced mechanic in use of shop machines and equipment.

SHEET METAL MECHANIC is operating a press brake. He must be knowledgeable of fabricating and installing sheet metal products. He also operates machinery such as press brake, power shear, lockformer, cut-off saw and welding equipment.

SHEET METAL LAYOUT MAN is laying out a piece of ductwork. He is the most experienced man in shop as he must master all facets of sheet metal working. He scribes sheet metal for cutting and fabrication.

SUPERVISOR. Supervises and assists sheet metal workers in performing assigned tasks. Must have thorough knowledge of all phases of sheet metal working and machine operation.
CAREER LADDER FOR SHEET METAL MECHANIC IN GEORGIA, 1972

LEGEND
Average Reported Pay
Highest Reported Pay
Lowest Reported Pay

Hourly Pay, in Dollars
$12

Yearly Pay, if 2080 Hours Worked
$20,800

Sheet Metal Mechanic
Sheet Metal Layout Man
Supervisor

Sheet Metal Mechanic Helper

Average Months Promotion Time
0 10 48

Time-on-Job, Responsibility, and Performance Level
WELDER

Welding is a means of joining metal parts together. By application of heat and/or pressure the metal pieces are formed together in a permanent bond. As one can visualize, industry is very dependent on the welding process. Automobiles, ships, storage tanks, bridges and structures are all fabricated by using welding as the means of bonding.

Basically there are two types of welding: Electric Arc and Gas. Electric arc is the most common in use today. With electric arc welding, the welder uses electric current to produce the required heat. Actually, an electric arc is formed by holding the tip of the welding electrode a short distance from the metal. The arc that is formed produces intense heat, melting the metals together. The tip of the welding electrode also melts, forming a sort of flux to aid in the melting of the two metals. Heliarc welding is a special type of arc welding wherein a shield of inert gas is used to protect the surfaces from oxidation. This is used primarily in the welding of aluminum and stainless steel.

Gas welding is a process whereby a hot flame is obtained by the burning of acetylene and oxygen. This hot flame is used to melt the metals together. Depending on what type of metal is to be welded, skill is required in adjusting the mixtures of oxygen and acetylene in the flame.

Most firms use on-the-job training for their welders. A high school or vocational school degree is preferred, but is not always necessary. Courses in mathematics, mechanical drawing and blueprint reading are valuable. Additionally, a welder needs manual dexterity, good eyesight and good eye-hand coordination. Often he must work outdoors; therefore, he should be free of physical disabilities preventing him from climbing, bending or stooping. Safety precautions must also be followed due to the hazard associated with the work. Eye protection is foremost, as the intense light created by the flame or arc can cause permanent eye damage. If protective clothing and gloves are not used, serious burns can result. A welder with good job attitudes and who pays close attention to detail can advance up the Career Ladder. Beginning with simple jobs, as skills are learned and demonstrated, advancement is achieved.

After 2 years' training at a vocational school or technical institute, the skilled welder may qualify as a welding technician. Generally, workers in this small but growing occupation interpret engineers' plans and instructions. Occasionally, a welder may be promoted to inspector to check welds for general conformance with specifications and quality of workmanship. Welders also may become foremen. A small number of experienced welders establish their own welding and repair shops.
ARC WELDER is welding metal ductwork. He welds metal parts together as specified by layout or work order, using electric arc welding equipment.

SPOT WELDER is welding and fabricating metal supports. He sets up and operates spot welding machine to fuse together two or more overlapping metal parts.

WELDER HELPER is operating spot welder. He assists in all tasks in welding, brazing and flame and arc cutting activities.
HELIARC WELDER is preparing pieces for welding. He welds metal, often aluminum, using equipment which shields electric arc with inert gas in order to prevent oxidation.

OXYACETYLENE WELDER is fastening metal products. He uses gas welding equipment to weld metal parts according to blueprints.

COMBINATION WELDER is operating a press welding machine. A combination welder is skilled in the use of all welding equipment, both gas and electric.
AIR CONDITIONING MECHANIC, COMMERCIAL

Air conditioning mechanics (commercial) install, repair and service commercial air conditioning units, usually rated in excess of 25 tons cooling capacity, in department stores, office buildings and other large establishments, utilizing knowledge of refrigeration theory, sheet metal work, pipefitting and structural lay-out.

The entry level job is air conditioning mechanic helper or trainee. He should be a high school graduate and at least 18 years of age or over. A background in mechanics or a person with mechanical aptitude is desirable. Good working knowledge of English and ability to read, comprehend and communicate is terribly important to his future success and promotion. In order to advance he will need to take manuals from the shop for study at night. Most of the skills for each job are learned on the job, but during the winter in the slow season, the shop managers have courses of study and give slides to reinforce reading from the manuals.

The worker in the entry level job gets intensive on-the-job training to prepare him for whatever job he is holding and to enable him to advance to higher levels. He begins by assisting in rebuilding compressors in plant assembly and in disassembly of units. He cleans up parts and in all this shows willingness to learn. Some take courses at a nearby vocational-technical school to fortify and speed up the learning process. The next step in the acquisition of skills on the job occurs when he is assigned to a service mechanic who goes out in a truck to repair or pick up equipment for major shop repairs or overhaul. If he shows aptitude for outside work and good customer relations, then he is advanced to an intermediate type technician job. Promotion depends upon evaluation by peers and his superiors relative to his overall skill level. He is put out with more mature mechanics who will judge whether he knows skills for the higher level job. Company policy is to promote a valuable mechanic at the first job opening in higher level.

Job attitudes which are important for success in the entry level job and for promotion are willingness to work and demonstrate willingness to do what is required as directed. Dependability, being on time and at work every day, is critically important. The manner of work and application reflects a positive attitude toward the company and its goals.

The factors which identify workers in the early steps on the Career Ladder who will be able to advance to supervisory positions are: general likability by management and those in labor force, combined ability and personality to do a good job and satisfy the customer, and the capacity to reflect good public relations toward public, creating a good image in mind of customers and public of his company and its service.
CAREER LADDER FOR AIR CONDITIONING MECHANIC, COMMERCIAL

AIR CONDITIONING MECHANIC FOREMAN, COMMERCIAL, is inspecting section of large commercial air conditioning unit just prior to hanging. He supervises mechanics and helpers on the job to install metal ducts, hang air conditioning equipment and in general is responsible for completion of entire system.

AIR CONDITIONING MECHANIC, COMMERCIAL, is installing belt guard for air handler. Major functions are to install, service and repair commercial air conditioning units, usually in excess of 100 tons capacity, in department stores, office buildings, and other large commercial establishments.

AIR CONDITIONING MECHANIC HELPER is connecting refrigeration lines to coil which leads to condensing units of the air conditioning system for apartment complex.
CAREER LADDER FOR AIR CONDITIONING MECHANIC, COMMERCIAL, IN GEORGIA, 1972

LEGEND
- Average Reported Pay
- Highest Reported Pay
- Lowest Reported Pay

Hourly Pay, in Dollars

Yearly Pay, if 2080 Hours Worked

Air Conditioning Mechanic, Commercial

Air Conditioning Mechanic Helper, Commercial

Foreman

Average Months Promotion Time

Time-on-Job, Responsibility, and Performance Level
AIR CONDITIONING MECHANIC, DOMESTIC

Air conditioning mechanics, domestic, install, repair, and service air conditioning units in homes and small businesses. For the entry level job in the trainee category, neither age nor education is a limiting factor. Any qualified person of legal age will be employed. If he gets into the four-year apprenticeship program the younger person will have an advantage. Anyone can be hired if he passes the skills test. But to advance beyond rebuilder, the worker needs at least a high school education to enable him to talk with people and communicate with them about the service offered. Beyond the service helper level, the worker is out with customers and must make a good impression.

For entry level jobs most skills are learned on the job, but during winter and slow seasons courses are given, using slides. In the entry level job the worker who learns the job well can gain promotion. Some take self-training courses at a local area vocational-technical school to help them qualify for advancement.

Identifying the trainee who is going places are the desire for over-time and desire to learn more advanced skills by asking to work with a mechanic.

In the upper grades the worker’s training and aptitude must enable him to project the image of his company with the customer.
CAREER LADDER FOR AIR CONDITIONING MECHANIC, DOMESTIC

AIR CONDITIONING MECHANIC HELPER OR TRAINEE is removing cover from condensing unit, located in large repair facility, for a check-out before installing in a private home. His usual job is to assist mechanic in a learner role.

AIR CONDITIONING SERVICEMAN, DOMESTIC, is checking pressure on compressor in condensing unit at private home. Other functions include diagnosing and repairing deficiencies and defects in air conditioning equipment, including capacitors, defective motors and wiring.

AIR CONDITIONING MECHANIC and HELPER in picture at right are moving air conditioning compressor to cement slab for leveling and final connections to air conditioning refrigerant.

AIR CONDITIONING MECHANIC, DOMESTIC, assisted by helper at right in picture, is installing duct lines for home air conditioning central unit. Other functions are to install, repair and service air conditioning units in homes or small business establishments.
CAREER LADDER FOR AIR CONDITIONING MECHANIC, DOMESTIC,
IN GEORGIA, 1972

Hourly
Pay, in
Dollars

Average Months Promotion Time

Time-on-Job, Responsibility, and Performance Level

Yearly Pay, if
2080 Hours Worked

$0

$2

$4

$6

$8

$10

$12

$14

$16

Air Conditioning Mechanic, Helper

Air Conditioning Serviceman, Domestic

Air Conditioning Mechanic, Domestic

LEGEND

Average Reported Pay

Highest Reported Pay

Lowest Reported Pay

Average Reported Pay

Highest Reported Pay

Lowest Reported Pay

Average Reported Pay

Highest Reported Pay

Lowest Reported Pay

Average Reported Pay

Highest Reported Pay

Lowest Reported Pay

Average Reported Pay

Highest Reported Pay

Lowest Reported Pay
AIR CONDITIONING SERVICE MECHANIC, COMMERCIAL

The service mechanic on air conditioning and heating systems in large commercial establishments has been trained and matured from experience to make complete maintenance repairs and conduct once-a-year shutdown inspections in an expert fashion.

The major duties of the commercial air conditioning mechanic are to maintain and repair centrifugal air conditioning machines and equipment. On large commercial air conditioning units which are under service contracts, he does a once-a-year shutdown to check all clearances, changes oil and oil filters, removes condenser ends from big chillers, checks and changes chiller tubes if necessary and adjusts and calibrates all temperature and pressure controls. These functions are to remove moisture from refrigerants, tap coolers to install piping and tap discharge bilates, forcing refrigerant through the Ventura. For the control consoles he changes all vacuum tubes, calibrates the meter overload and changes chill water modules, leak checks the chiller, depressurizes the entire system using an electronic leak detector and repairs any leaks. On many machines he checks out electrical starters for overloads, contacts, linkage and coils.

The 1972 hourly pay scale for this type of air conditioning service mechanic is $7.35 plus fringe benefits, based on the existing union contract. In order to qualify for such a job the youth out of high school must first gain admittance to the five-year pipefitter apprenticeship training program, pass all requirements successfully and join a local union, which maintains a hiring hall from which all workers are hired.
CAREER AS AN AIR CONDITIONING SERVICE MECHANIC, COMMERCIAL

AIR CONDITIONING SERVICE MECHANIC is replacing low pressure control unit on pump-out unit for the two large chillers which burst and caused a refrigerant leak, affecting pump system from the chillers.

AIR CONDITIONING SERVICE MECHANIC is adjusting thermostat to maintain temperature of the oil in the large 2,000 ton chiller at 140°F degrees Fahrenheit.

AIR CONDITIONING SERVICE MECHANIC is checking safety switches on boiler. He will check for gas leaks, operation of safety switches, low water controls, feeder control and circulating pumps for hot water.
Large construction jobs, particularly in the Atlanta area, which include heating and air conditioning, require mechanical contractors or air conditioning and heating contractors. These companies generally employ union labor and the training program is under one of the joint apprenticeship programs. High school graduation or passing the high school equivalency test is a first requirement to be admitted to one of these two joint apprenticeship training programs: training for sheet metal mechanics and training for plumbers or pipefitters. Given below are the requirements for the Atlanta Area.

The apprenticeship training program for sheet metal mechanics requires that the youth be 17 to 26 years of age, high school graduate or pass the equivalency test. He must also pass a metal aptitude test at the Georgia Department of Labor, pass a fair math test and be interviewed and evaluated by the joint apprenticeship committee. For this field, apprenticeship training lasts four years, and is broken up into eight six-month periods which carry pay increments at the beginning of each new period. During the first two years of classes, he is required to meet with an instructor for five hours one night weekly. In the last two years classes meet twice weekly, two and one-half hours for welding classes and five hours for regular classes. Emphasis is on class studies with practice related directly to sheet metal mechanics. The apprentice hands in weekly a report relative to his on-the-job experiences. Skills emphasized are sheet metal lay-out, balancing systems, sheet metal math, welding for sheet metal, hand processing, machine processing and blueprint reading.

In order to be admitted to the joint apprenticeship training program for plumbers or pipefitters, the youth must be a high school graduate or pass the equivalency test, 18 to 25 years of age, and pass the GATB test at the Georgia Department of Labor. After this he is assigned a roster number and interviewed by the board of trustees which supervises the joint apprenticeship training program. This board makes the final decision relative to his admission.

The apprenticeship training period for plumbers or pipefitters is five years, broken down into six-month periods with pay increments for each interval. The first six months is a probationary period. If he passes the probationary requirements in mechanical aptitude and work attitudes and wants to join and the board passes him, he joins a union and gets a job in a company as an apprentice. He attends classes twice weekly for three hours each meeting period during the five year period. He must pass satisfactorily all apprentice's work in the field on the job. While at work on the job, the apprentice works with a journeyman plumber or pipefitter for five years and practices and learns all the skills required for plumbing or pipefitting, including welding (acetylene and arc) cutting and fitting, fine wiring and heliarc welding. He gets basic heating, air conditioning, pneumatic controls and basic electricity. City or county codes which govern heating and plumbing must be mastered and passed before certification.
Opportunities for jobs with excellent pay exist in either area of work. For the worker, advances up the Career Ladder depend upon serious application to the job requirements and to learning the batteries of skills that go with each journeyman type. Work attitudes of dependability and punctuality are vitally important. Advances to foreman or superintendent depend upon certain easily identifiable factors, such as initiative, ability to get the job done, curiosity to learn more about the job and ability to manage others and get along with workers.
AIR CONDITIONING AND HEATING FOR MECHANICAL CONTRACTORS:

Part I. Shop Fabrication of Sheet Metal products required for large commercial air conditioning system

SHEET METAL FOREMAN is studying plans and design requirements. His major responsibilities are to direct and supervise work so as to meet standards. He schedules work and makes assignments to apprentices and journeymen.

SHEET METAL MECHANIC is operating a shear which cuts to dimensions sheet metal. Other duties are to lay-out duct and fittings and put seams or locks on ducts if required. He bends and puts together ducts, some being welded.

SHEET METAL APPRENTICE is bending a piece of sheet metal for a duct. He assists journeyman and begins by learning how to lay-out duct and fittings, how to form seams or locks, and put together ducts.

SHEET METAL FOREMAN is studying plans and design requirements. His major responsibilities are to direct and supervise work so as to meet standards. He schedules work and makes assignments to apprentices and journeymen.
Part II. Installation of Air Conditioning System in large Commercial Building

THE PIPEFITTER with Welding Torch and APPRENTICE are installing a Chill Water line. Their job functions are to receive and store all pipe and fittings, cut and thread pipe as required, hang pipe and put it together by screwing, welding, or machine joint and receive and install all equipment and machinery connections, such as air conditioning units, boilers, furnaces, unit heaters, pump valves and air compressors.

FIELD FOREMAN and SHEET METAL MECHANIC are installing an air conditioning duct. Job functions of FIELD FOREMAN are job planning, work scheduling and work assignments, and he exercises quality control on either sheet metal ducts and fabricated items or piping and air conditioning units, boilers, furnaces, unit heaters, pump valves and air compressors.

SHEET METAL MECHANIC and APPRENTICE are hanging a mixing box. Job functions are to receive, distribute and assemble sheet metal fabricated in shop, put up hangers and duct work and fittings and also receive and set all moving devices, such as fans, filters, grills, registers and defumers, and air handling units.
CAREER LADDERS FOR SHEET METAL MECHANIC AND PIPEFITTER IN AIR CONDITIONING AND HEATING FOR MECHANICAL CONTRACTORS IN ATLANTA AREA, 1972

LEGEND
- Pipefitter
- Sheet Metal Mechanic

Hourly Pay, in Dollars

Yearly Pay, if 2080 Hours Worked

Average Years Promotion Time

Time-on-Job, Responsibility, and Performance Level
ELECTRICIAN

The career area discussed here pertains to construction electricians who lay out, assemble, install, and test electrical fixtures, apparatus, and wiring used in electrical systems. These systems provide heat, light, power, air conditioning, and refrigeration in residences, office buildings, factories, hospitals, schools, and other structures.

For youth interested in a career as an electrician, training is acquired through a joint apprenticeship training program over a four year period with classroom instruction provided through a cooperative arrangement with a nearby area vocational-technical school. In years past, however, some construction electricians acquired the skills of the trade by working many years as helpers, observing or being taught by experienced craftsmen.

An applicant must be between 18 and 24 years of age. Good health and physical fitness are necessary requirements for the job as outside work is often performed. A high school degree is also a must. Upon application, an aptitude and dexterity test is administered and the results reviewed by the joint apprenticeship and training committee. Once admitted to the program the apprentice must obligate himself to attend evening classes in order to gain promotion and enhance his skills. Along with the evening classes, the apprentice will also work full time, applying the skills he has learned. After four years of apprenticeship training, the journeyman rating is assigned, if the apprentice passes the craft tests.

A journeyman electrician has many and varied tasks dependent upon whether he works in a residential, commercial, or industrial environment. Typical jobs include wiring, laying conduit, pulling cable, installing switch and fuse junction boxes, hooking up major appliances such as air conditioning and heating equipment, service work, pole climbing and installation of high voltage switch gear.

Because of the dangerous potential of electricity, the electrician must be constantly alert and have thorough knowledge of each job’s special requirements in order that proper safety precautions be strictly adhered to. For this reason most large cities require electricians to be licensed. In order to obtain a license the electrician must pass an examination which requires a thorough knowledge of the craft and of state and local building codes.

An experienced construction electrician who has learned all the aspects of the craft through apprenticeship can transfer readily to other types of electrical work, for instance, maintenance electricians in factories or commercial establishments and aircraft manufacturing. Other alternatives are to become foremen or superintendents for electrical contractors on construction jobs. Some go into business for themselves as independent contractors. In order to do this, however, a master electrician’s license is required for electrical contracting work in most large urban areas.
CAREER LADDER FOR ELECTRICIAN

ELECTRICIAN is using electric winch to assist in pulling cable through conduit. He also performs such duties as wiring, installing switch and fuse boxes and hooking up major appliances such as air conditioning and heating equipment.

FOREMAN is instructing apprentice in proper method of joining conduit. He also supervises 10 to 13 journeymen.

APPRENTICE ELECTRICIAN is laying conduit. His other duties include assisting journeyman electrician in learning skills and proper use of tools.
CAREER LADDER FOR ELECTRICIAN IN GEORGIA, 1972

Hourly Pay, in Dollars

Yearly Pay, if 2080 Hours Worked

Foreman

$20,800

$16,640

$12,480

$8,320

$4,160

$10

8

6

4

2

0

Average Months Promotion Time

Time-on-Job, Responsibility, and Performance Level

Apprentice Electrician

Electrician

LEGEND
Average Reported Pay — —
Highest Reported Pay — — — — — —
Lowest Reported Pay • • • • • • • •
ELECTRICAL APPLIANCE SERVICEMAN

Youth 16 years old will be employed part-time while in high school, but for permanent employment, a helper must graduate from high school. It is important that he know how to use tools. If he has had courses in basic electricity and how to use it, what it is for in a house, and how it enters a home and is distributed, he will have a better chance for advancement. He gets training with experienced electrical appliance servicemen, both inside and outside, on all types of repair jobs: ranges, washers, dryers, window air conditioners and refrigerators. As a learning device, he may use his spare time to tear down and rebuild junked appliances in order to see how they work. He is also given jobs to do alone in the shop to see how far he can go. When outside, he accompanies the mechanic technician, seeing what is done and how. After this, he tries a job by himself, determines what needs to be repaired and replaced, with the serviceman technician there to check, instruct and correct.

Additional training help comes from manufacturers who run ten-hour programs twice a year to introduce new products and update service personnel on new technology.

Attitudes for success in the entry level job are desire and ability to learn. Also, a beginner must learn for himself if this is the field he wants to work in. Customer relations are very important also, and this means doing a good job the first time, giving the customer his money's worth.

Company requirements for advancements up the Career Ladder require a conscientious approach. This means a helper needs to be careful to do a good job and be interested in the fields of electrical appliance repair service. He should work at a job in such a way that even if he experiments with another job and later has a "change of heart" and wants to return, the company will want to rehire him because they will remember his performance so pleasantly.

The factors identifying a beginning worker who will advance to supervisory positions or to the top as a serviceman are a neat, clean appearance, polite language in dealing with customers and customer consideration. If complaints come in after a mechanic does a job, good customer relations demand he act politely and try to remove the difficulty.

Alternatives open to the energetic and top-rated mechanic are master repairman, supervisor of service or service writer, dealer contactman and field supervisor.
CAREER LADDER FOR ELECTRICAL APPLIANCE SERVICEMAN

ELECTRICAL SERVICEMAN, INSIDE, is replacing air baffle in a dryer. Other jobs in shop include correcting circulating system when it frosts up, replacing capillary tubes or repair gas leaks, changing tubes in washer, pulling transmission, repairing or overhauling and rebuilds trade-ins for resale.

ELECTRICAL APPLIANCE SERVICEMAN, OUTSIDE, diagnoses and repairs refrigerators, ranges, washers and dryers, replacing timers, selection controls, belts, clutches, brakes, solenoids, water mixing valves, hoses, thermostats, pumps, heating elements, agitators, tube boots, door boots and seals. For serious problems, an appliance will be transported to shop for major repairs or overhaul.

ELECTRIC APPLIANCE SERVICEMAN HELPER is pulling motor from washer to be sent to rebuild shop. He accompanies serviceman on outside jobs when it is necessary to remove and reinstall appliances.
CAREER LADDER FOR ELECTRICAL APPLIANCE SERVICEMAN IN GEORGIA, 1972

LEGEND
Average Reported Pay
Highest Reported Pay
Lowest Reported Pay

Electrical Appliance Serviceman, Inside
Electrical Appliance Serviceman, Outside
Foreman

Hourly Pay, in Dollars
Yearly Pay, if 2080 Hours Worked

Average Months Promotion Time
Time-on-Job, Responsibility, and Performance Level

PAGE 40
ELECTRICAL APPLIANCE SERVICEMAN
GEORGIA POWER COMPANY PROGRAM

The electric appliance serviceman is important to customer satisfaction and also to maintain the goodwill of customers towards branded equipment manufactured by national companies. Persons having mechanical aptitude and who are customer oriented rank high for this type of work. Some companies providing appliance repair service require applicants to pass a mechanical aptitude test.

For entry level job at Georgia Power a high school education is necessary and a course in appliance service from one of the vocational-technical schools is desired. Training in the voc-tech schools should concentrate on washers, dryers, ranges, and refrigerators. If a youth in high school chooses a career as a household electrical appliance serviceman, he should try to work in basic electricity and refrigeration.

Company training is given by experienced electrical appliance servicemen through on-the-job training and personal instruction. He is assigned to this experienced worker either inside or outside. First in the training program the new man is taught welding as applicable to appliances, i.e. light brazier welding. He learns company methods, practices, and paper work. He learned some theory in the vocational-technical school. In his field training, working with a mature mechanic, he is exposed to simple, repetitious types of jobs, then is put on jobs that require technical skills. He may run into an appliance he has never seen before. There is not much very standard about household appliances because of the wide range of brands, and he will just have to figure them out.

The trainee works with the field man until this mature mechanic thinks he can do the job alone. Radio equipment is on the truck and he is in constant contact with more advanced mechanics. The trainee and the electrical appliance serviceman chosen to work with him must be able to get along well together.

In general office, the appliance service manager deals with manufacturers and in collaboration works up policies and service contracts. Over the years, they have developed a yearly up-date training program by investigating technological changes being introduced by manufacturers. Yearly, two Georgia Power graduate electrical engineers put on a series of one day clinic-like training programs at key points in the state in order to up-date appliance servicemen to new technology on latest models of equipment and the problems they are likely to encounter in service work on this equipment. The engineers in the company’s general offices also design and put on as requested (continued on next page)
three day refresher clinics. They plan and conduct one week basic schools for all new men, as well as one week product schools for new men.

Training for promotion to higher levels on the Career Ladder involves ability to master more and more complex skills and ability to diagnose trouble in appliances from the process of working and learning, and this also includes study of manuals. Gains in ability to satisfy customer and keep proper records for employer are also observed. Ability to satisfy customer and satisfy complaints are increasingly significant as he advances up the Career Ladder.

Foremen are selected on basis of seniority and competency. He has got to be up-to-date on what is happening in the appliance field technology, have ability to work with people, and handle a mass of paper work.

What identifies workers on the Career Ladder who will be able to advance to supervisory or early stage management positions are as follows: keeps a neat truck, proper record on parts, reads up on bulletins, writes tickets correctly, reports to customer promptly when missing part will be available and schedules new visit from appliance serviceman.
CAREER LADDER FOR ELECTRIC APPLIANCE SERVICEMAN
IN GEORGIA POWER COMPANY

FOREMAN has the responsibility for all appliance service work done by men assigned to him, including scheduling work and routing the servicemen. On "trouble call-backs" from servicemen on the job, he may supply needed information or visit the location to assist in diagnosis and repair. He is responsible for the condition of vehicles assigned to his men and supervises the log each serviceman prepares on completed jobs and the status of incomplete ones.

ELECTRIC APPLIANCE SERVICEMAN, CLASS C, is installing an ice maker in a refrigerator. He is qualified to perform more complex work than is the helper and with experience will be assigned to more complicated work.

ELECTRIC APPLIANCE SERVICEMAN, CLASS B, is replacing the belt in a dryer. He also replaces transmissions in washers, motors, heating elements or thermostats in dryers, or burners and thermostats in ranges. As he becomes proficient, he will service and repair all household appliances.

ELECTRIC APPLIANCE SERVICEMAN, CLASS A, is assembling the basket and shell to replace washer for reception of repaired transmission. His advanced status enables him to diagnose and make complex repairs on any household appliance.

ELECTRIC APPLIANCE SERVICEMAN HELPER is replacing agitator on washer. He works under close supervision in order to learn the skills necessary to qualify him for advancement.
MAINTENANCE MECHANIC, BUILDING

Building maintenance mechanics perform a variety of repair and maintenance functions in order to keep buildings properly heated and cooled. This requires work in heating, air conditioning, plumbing, electricity and carpentry.

The entry level job for maintenance mechanic work is maintenance mechanic helper. He must be at least 18 years of age, but high school graduation is not necessary if he is mechanically inclined and has had previous mechanical experience. He gets on-the-job training with a mature and capable maintenance mechanic who instructs and shows him how to repair a variety of equipment in the building, including calibration of regular and insulation thermostats, and he is shown how to do all the types of jobs. He must work with the maintenance mechanic until he learns all types of maintenance work including heating, air balance, electrical systems, control work, plumbing, minor repair on electrical systems and wiring.

The worker attitudes which are important to success in the initial job and for advances up the Career Ladder are high work interest, ability to work with a variety of tools, and ability to grasp and remember details of repair procedures. He must have the ability to work with other people and particularly other mechanics. In order to gain promotion a worker must be competent in the details of maintenance work. Advances to managerial position depend on ability to manage others and stimulate them to do a good job.

The chart shows foreman of maintenance, but often companies will have more than one supervisory position in a variety of maintenance types of work and these in turn will be headed by a building superintendent. While the chart has converted all pay to an hourly basis, the foreman and above are salaried employees.
MAINTENANCE MECHANIC, BUILDING, is attaching a thermostat to an induction unit. Other functions include repair of pumps, fans and electric motors, blowing down boiler to remove sludge in bottom, repairing air conditioning units and also repairing control tower fans which cool water. He does a variety of plumbing work: Installs piping, cleans out drains, replaces valves, spigots, hot water heater controls or even complete units if needed.

MAINTENANCE MECHANIC, BUILDING, is writing up work order. Other functions are to supervise maintenance mechanics, scheduling work and seeing that it is done properly, or even assisting with complex repair on maintenance problems. He is on call 24 hours a day to solve any problems in air conditioning, heating, water boilers, etc. When an especial difficulty involving heating or air conditioning develops on a floor, he may move to it directly to apply technical knowledge.

MAINTENANCE MECHANIC HELPER, BUILDING, is receiving instructions from a maintenance mechanic on repair procedures for a cold water pneumatic valve connection. Other functions include putting chemicals in boilers for heating and air conditioning building or factory, taking samples of water for analysis, and also taking calls off log sheet for repair or assists mechanic.
CAREER LADDER FOR MAINTENANCE MECHANIC, BUILDING, IN GEORGIA, 1972

LEGEND
Average Reported Pay
Highest Reported Pay
Lowest Reported Pay

Maintenance Mechanic Supervisor
Maintenance Mechanic, Building
Maintenance Man, Factory or Mill
Maintenance Man, Building
Maint. Mech. Helper, Building
Salaried Personnel

Hourly Pay, in Dollars
Yearly Pay, if 2080 Hours Worked

Average Months Promotion Time

Time-on-Job, Responsibility, and Performance Level

PAGE 46
MAINTENANCE CRAFTSMEN IN A LARGE EDUCATIONAL INSTITUTION

Only experienced craftsmen are hired. This includes carpenters, bricklayers, air conditioning mechanics, electricians, sheet metal mechanics and plumbers. Each new employee is on trial for six months. Then his competency is assessed by the supervisor, and if he is judged competent he will be employed on a permanent basis. All newly employed craftsmen are trained by working on-the-job with the more mature craftsmen under the direction of a foreman or a more general supervisor, in the case of some of the trades.

There is not a trainee program for youth from high school, although a move is being made in the direction of employment of "trades helpers" who would have completed a prescribed post-high school program in some nearby Area Vocational-Technical School. A second move anticipated is to employ the more general maintenance mechanic, less specialized, but expert in preventive maintenance and in making minor repairs as observed or reported.

In this section of the brochure, students can see how complex and all inclusive building maintenance work can become, and the opportunities for employment of a broad range of craftsmen to cover all the areas of maintenance and upkeep. Secondly, youth can consider adding maintenance work of large industrial, business, office buildings, or large service institutions as a career area. The pay levels are equal to what are generally found in the specialized craft trades. In addition, especially with some of the larger educational, medical, and similar institutions, fringe benefits increase the incentives. These will generally include sick leave, vacation varying in duration with length of employment, and some form of retirement benefits, in addition to Social Security.

The pictures which follow illustrate specific maintenance craft specialties. While the pictures do not depict a Career Ladder, it should be emphasized that there are promotion potentials under each type of maintenance craftsman shown in the pictures. First there are the grade level advances which generally involve two grade level promotions beyond trainee. Furthermore, since each maintenance craft speciality has a foreman, the aggressive, ambitious craftsman in each category can aspire to rise to the level of foreman if his work attitudes, skills proficiency, and dedication to the requirements of the job are such that he will be given prime consideration when a vacancy occurs.
MAINTENANCE CRAFTSMEN IN A LARGE EDUCATIONAL INSTITUTION, Page 1 of 2

MAINTENANCE BRICKLAYER is building a wall-connection for door joists. Other functions include repairing walls and steps and constructing partitions as needed.

MAINTENANCE CARPENTER is cutting off the end of door which is about to be hung. Other functions include patching floor tiles, ceiling tiles, hanging doors, repairing locks, cutting openings in walls and in partitions and building concrete steps and patios.

MAINTENANCE AIR CONDITIONING MECHANIC is installing window air conditioner in small office. Other jobs include replacing compressors in central air conditioners. He may replace switch controls when timing is off and maintains ice making machines and water coolers.

MAINTENANCE AIR CONDITIONING MECHANIC is replacing a burned out breaker on switch of large central air conditioning unit.
MAINTENANCE ELECTRICIANS are running a four to six inch conduit with 500 MCM cable. Other functions for the MAINTENANCE ELECTRICIAN include making all minor and major electrical repairs on buildings, replacing fuse boxes or installing them as needed and doing wiring repairs of interiors of all buildings. He repairs shorts and replaces lights of high tower buildings also.

MAINTENANCE PLUMBER is repairing a steam trap in MAINTENANCE SHOP for replacement in large buildings. Other job functions include unstopping condemodes and sewer lines; unstopping drain lines in coolers and maintaining steam supply and proper heating in all buildings.

MAINTENANCE PLUMBER is replacing hot water circulating pump for domestic hot water service in large apartment complex.
RADIO AND TELEVISION REPAIRMAN

Radio and television repair meet an essential need of keeping modern day entertainment and news source equipment in working order. Some of this equipment can be repaired in the home by replacing a tube or making minor adjustments. Much repair work, however, requires replacement of picture tubes, tuning, color circuits, etc. which require that the television set be transported to the repair shop for major repairs. In addition to technical competency in repair work, a television serviceman must have the ability to deal with customers and give them satisfactory service, maintaining goodwill, so necessary for repeat business.

The entry level job for a youth in high school or after graduation is radio and television repairman helper. Youth 16 years old will be employed on part-time basis, but must continue until high school graduation. For entry into radio and television repair work no courses or experience are required, but would help advance a helper if he had background in vocational courses. In order to enable youth to acquire skills for serviceman rating, the helper works with radio and television serviceman both on inside and outside jobs. On outside jobs, he goes with the serviceman to change tubes and does various repair jobs in the home. Then his training is furthered by his being assigned to work on minor shop work under the supervision of the television serviceman. He changes picture tubes, repairs portables, etc. And also he works inside with the television serviceman on major repair jobs for television: tuning, color circuits, etc. Then he is put on his own to see how far he can go with repairs.

Job attitudes which favor rapid advancement include conscientiousness. Televisions are complex and tedious and he may have to stick with a job and keep trying and asking advice. Efficiency is important to business in that it saves time and money. Honesty is necessary because he is entrusted with a truck with $2,000–3,000 worth of parts. He must also show responsibility in doing a job, determine what is needed, and know how to accomplish it. In order to gain promotions and be a part of a team, he must have basic intelligence and tenacity to learn skills for service repair jobs. He must apply himself seriously and get the job done. Ability to communicate with customers and satisfy their requirements is also important.

Alternate lines of advance at upper levels are: master repairman, supervisor, shop supervisor, field supervisor, and dealer contact man.
CAREER LADDER FOR RADIO AND TELEVISION REPAIRMAN

RADIO AND TV REPAIRMAN, OUTSIDE, is using screwdriver to adjust vertical circuit of color TV controls. Outside work first requires diagnosis of trouble. If he is unable to repair on the spot, he calls for deliveryman to pick-up and deliver to shop where more expert advice and extensive equipment are available.

RADIO AND TV REPAIRMAN, INSIDE, is checking the wave form on horizontal output tube with oscilloscope. Other functions include checking alignment, video circuit, vertical circuit and voltage to determine if regulations are complied with.

RADIO AND TV REPAIRMAN HELPER is changing picture tubes on an inside job. Other functions inside are pulling chassis for repair, installing tubes and other replacements, and accompanying deliveryman to pick up sets for shop repairs.
REFRIGERATION MECHANIC

A refrigeration mechanic installs and repairs refrigeration equipment according to blueprints and engineering specifications, using knowledge of refrigeration, structural layout, and functions and design of the different components. He maintains all ice-making equipment, lift equipment, and packaging equipment. He maintains and repairs ice storage bins at the head office and other locations of the company.

Entry level job for a refrigeration career is helper or trainee. The age requirement is 18 with a high school education. With previous experience or training preferable, high school preparation is not a prerequisite. The refrigeration mechanic trainee learns by engaging in a variety of refrigeration repairs and projects with the refrigeration mechanic and he learns from him. Some companies will fortify this learning on-the-job by sending the trainee to an area vocational-technical school for training in courses related to refrigeration. The job attitudes in the entry job which contribute to success and to promotion are the desire to do a good job and a conscientiousness in work.

Requirements for promotion are proven capability of performing first class job and possessed of a high degree of responsibility towards job requirements. After the trainee has mastered and learned the skills of the job, he steps up to refrigeration mechanic, either on local jobs of the company or will be transferred to some other branch or unit where mechanics are needed.

The personal attributes which identifies worker in entry level position who will make rapid progress up the Career Ladder are earnest desire to learn and proven mechanical aptitude.
CAREER LADDER FOR REFRIGERATION MECHANIC

REFRIGERATION MECHANIC is repairing and replacing tops on 40 ton turbo ice maker. He operates and maintains ice making equipment, lift equipment, and packaging equipment and repairs and maintains ice storage bins in all company units.

DIVISION REFRIGERATION MAINTENANCE ENGINEER is inspecting compressor for leaks around seals. His other functions include giving technical advice to mechanics. He engages in construction and overhauls any major maintenance projects, rebuilds ice machines and ice making equipment when needed, installs ammonia pumps and overhauls compressors.

REFRIGERATION MECHANIC TRAINEE is adjusting valves on compressor of turbo ice machine. He assists refrigeration mechanic to install and repair refrigeration equipment.
GENERAL SCENE PICTURES

Diesel Engine rebuilding and part of re-fabrication unit.

Room of Air Conditioning parts for use in heating and air conditioning maintenance for a large apartment complex.

Metal working equipment shop in large maintenance unit of institution.

Electrical materials and maintenance equipment in electrical repair shop of large maintenance unit of institution.
<table>
<thead>
<tr>
<th>Career Area</th>
<th>Number of Job Openings Yearly</th>
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<tr>
<td>Automobile Mechanic</td>
<td>3200</td>
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<tr>
<td>Diesel Mechanic</td>
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<tr>
<td>Metal Fabricating Mechanic</td>
<td>2400</td>
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<td>Welder</td>
<td>800</td>
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<tr>
<td>Machine Shop Mechanic</td>
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<tr>
<td>Electric Appliance Serviceman</td>
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<tr>
<td>Air Conditioning Mechanic</td>
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<tr>
<td>Electrician</td>
<td></td>
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<tr>
<td>Maintenance Mechanic, Building</td>
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</tbody>
</table>

LEGEND

- Entry Level Job (Helper or Trainee)
- Craftsman or Skilled Class of Worker

Entry level jobs are estimated to equal 2,053 jobs yearly for period 1971–76 or 21 percent of the total of 9,558 job openings yearly for the nine career areas shown. The largest number of entry level job openings yearly will be for Automobile Mechanic Helper, 557; Electrician Helper, 430; Metal Fabricating Shop Helper, 274; Air Conditioning Mechanic Helper, 222; and Machine Shop Helper, 206.
Beginning students are using electric arc welding to reinforce truck trailer.

Students are working on gasoline auto engine, putting in manifold.

Students are checking out tubes for a TV set.

Students are being taught to operate a lathe.

Students are learning to install duct-work.

Students are being taught sheet metal layout and are in process of designing a tool-box.
I. If you are in the middle grades (7th, 8th, or 9th grade):

This is your opportunity to EXPLORE the world of work.

In the middle grades you have the opportunity to test yourself in a number of different kinds of careers and occupations. Your school may offer some of the following programs that you can use to explore your occupational interest.

Through the Program of Education and Career Exploration (PECE), you can explore transportation, metal working and electro-mechanical jobs by actually visiting real workers as they do their job.

In the eighth grade you can take part in the new mini-pre-exploratory course in technology. This will allow you to explore the many jobs offered in transportation, metal working and electro-mechanics in your school shop. These programs generally last from eight to twelve weeks.

You may also enroll in the World of Manufacturing, a year long pre-vocational course in your school. This will give you the opportunity to try out, under real job conditions, the many different kinds of work roles available to students who choose to enter jobs in the field of transportation, metal working and electro-mechanics.

II. If you are in senior high school (10th, 11th, 12th grade):

This is your opportunity to train for an entry level job in the field of transportation, metal working or electro-mechanics.

Your high school offers a number of opportunities to help you gain the skills required for an entry level job in one of these fields.

You might choose to enroll in the transportation, metal working or electro-mechanics cluster in your school. One to two years of study in your chosen cluster program will provide you with skills required to obtain an entry level job in either of these occupational fields.

Cooperative programs or work study programs offer another means of preparing oneself to enter the transportation, metal working or electro-mechanical field. Diversified Cooperative Training (DCT) is an example of a cooperative program. The DCT coordinator in your school can arrange with a related company for you to attend school part time and work on an actual job part time.

If you desire further exploration in these occupations, you may choose to enroll in Industrial Arts pre-post secondary courses of metals, electronics, power, and American industries.

III. If you are about to graduate or are already out of school your school’s GUIDANCE AND PLACEMENT OFFICE can help you with your next step in life.

If you still plan to enter the transportation, metal working or electro-mechanical field, your counselor can provide information about the options you now have.

If you want further training, there are two basic choices. The first is the area vocational-technical schools. Your counselor can help you identify your interests and gain entry into one of the highly specialized courses offered at the area school nearest you. Georgia’s area vocational-technical schools offer 56 courses at 25 different locations in the State.

The second option available to you for further training is the joint apprenticeship program for metal workers. Your counselor can help you identify the apprenticeship program nearest your home and provide you with information regarding admissions requirements for the various metal worker apprenticeship training programs.

The third option available to you is to go directly to work. Your school’s GUIDANCE AND PLACEMENT OFFICE can provide information on how to proceed in your “Job Search.”
PICTURES OF SELECTED CRAFTS IN SPECIFIC JOBS

Television repairman, inside, is checking the wave form on horizontal output with oscilloscope.

Building maintenance mechanic is blowing down boiler in order to remove solids from bottom of boiler.

Grinder in machine shop is finishing piece of metal.

Air conditioning mechanic lead man and two helpers are placing trunk lines which regulates flow of air to rooms in apartment complex.
ACKNOWLEDGEMENT

The following companies have cooperated in supplying pictures for the brochures which are published in connection with this research report. The author is sincerely grateful for this cooperation.

<table>
<thead>
<tr>
<th>Company</th>
<th>City, State</th>
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<tr>
<td>Bagby Elevator &amp; Electric Co., Inc.</td>
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<td>Bob Bailey's TV &amp; Appliances—Sales &amp; Service</td>
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<tr>
<td>R. A. Banks &amp; Company</td>
<td>Atlanta, Georgia</td>
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<td>L. D. Barber, Company</td>
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<tr>
<td>Carrier Air Conditioning Company</td>
<td>Atlanta, Georgia</td>
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<td>A Child's Place</td>
<td>Atlanta, Georgia</td>
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<td>Colonial Stores, Inc.</td>
<td>Atlanta, Georgia</td>
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<td>DeKalb County Recreation and Parks Department</td>
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<tr>
<td>Dixie Engine Company</td>
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<td>Edwards and Rosser, Inc.</td>
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<tr>
<td>Estes Heating &amp; Air Conditioning, Inc.</td>
<td>Mountain View, Georgia</td>
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<td>First National Bank of Atlanta</td>
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<td>Union Camp Corporation</td>
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<td>U. S. Soil Conservation Service</td>
<td>State Office For Georgia</td>
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<td>Wade Ford, Inc.</td>
<td>Atlanta, Georgia</td>
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<tr>
<td>Wiring, Inc.</td>
<td>Forest Park, Georgia</td>
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CAREERS FOR YOUTH IN AGRICULTURE AND NATURE RELATED OCCUPATIONS

FARM EQUIPMENT MECHANIC • SOIL CONSERVATION SERVICE AID • WOODYARD LABORER
FORESTRY TECHNICIAN • LANDSCAPE GARDNER • NURSERY WORKER
FLORAL DESIGNER • WILDLIFE BIOLOGIC AIDE

BROCHURE NUMBER III
CAREERS FOR YOUTH IN TRANSPORTATION, METAL WORKING, AND ELECTRO-MECHANICAL CRAFT SKILLS

Training Programs are available in:

- Comprehensive High Schools
- Area Vocational-Technical Schools
- Joint Apprenticeship Training Programs in Major Georgia Cities
- On-the-Job Training in Companies

Work Attitudes for Success are:

- Applying self to job aggressively and show interest in learning
- Practicing basic honesty towards self and employer
- Character, dedication, and desire for excellence
- Enjoying work, being responsible and receiving respect from peers
- Willingness to work and perform according to directions
- Serious application to learning batteries of skills for craft
- Through knowledge of job and its dangers, observing all safety precautions
- Interest in work, ability with variety of tools, and grasp and remember repair techniques
- Desire and ability to learn repair skills and satisfy the customer
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State of Georgia

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Georgia Department of State Parks

Mr. Charles Yeargin, President
Home Builders Association
FOREWORD

This Brochure is one of five which is being published as a supplement to the research report, entitled: "Survey of Employment Opportunities, Career Ladders, and Training Requirements for Basic Jobs in the Vocational Job Clusters, 1971–76". Funds for this research were provided by the State Board under the Authority of Part C of the Vocational Educational Amendments of 1968, P. L. 90–576. The Contract was administered by the Georgia Institute of Technology Research Administration as Contract M50–602.

Dr. John L. Fulmer, Regents' Professor of Economics in the College of Industrial Management, conducted the research and has prepared this and four other brochures to focus the attention of youth in the School Systems of Georgia on 48 highly significant Careers in the Georgia economy. Publication was by the Industrial Management Center, Georgia Institute of Technology, Atlanta, Georgia 30332.

The main report from this research may be obtained by writing to:

The Office of Vocational and Adult Education
State Department of Education
State Office Building
Atlanta, Georgia 30334

BRIEF DIGEST OF SKILLS AND WORK ATTITUDES REQUIRED FOR YOUTH TO SUCCEED IN AGRICULTURE AND NATURE RELATED OCCUPATIONS

ENTRY LEVEL SKILLS:
1. Farm mechanic: knowledge of technical skills.
2. Landscape gardener or floral designer: knowledge of design requirements and techniques.
3. Forestry technician: ability to cruise timber, detect disease or insect infestation and take corrective action.
4. Wildlife biologic aide: knowledge of habitat and characteristics of wildlife and skill to use technical equipment.

ENTRY LEVEL WORK ATTITUDES:
1. Farm mechanic: punctuality and dependability, interest in mechanical or heavy outdoor work and willingness to learn.
2. Landscape gardener or floral designer: promptness and faithfulness in work, congeniality and ability to deal with the public.
3. Forestry technician and wildlife biologic aide: ability to follow oral and written instructions, work long hours outdoors and communicate with fellow workers and superiors.
INTRODUCTION

This brochure concerns occupations related directly or indirectly to the great outdoors. The person who loves the outdoors, recreation and sports will find incentives and interest to consider strongly how he or she can make a life's work of these occupations. Modern technology has had its greatest impact on agriculture replacing the massive amounts of backbreaking labor with large and complex machines. The maintenance and upkeep of this massive and complex equipment, power drawn by tractors, offers interesting careers for the mechanically inclined.

A type of nature-related enterprise which is also business oriented is ornamental horticulture. This industry involves the production, design and display of shrubs and flowers to make the environment, especially in cities, more attractive and satisfying. The growth of shrubs and flowers usually occurs in country areas or in greenhouses located near the city, but the display and sale of these products occur in locations convenient to city communities. Working out a plan to landscape and sod a residence is a career for the artist who loves nature and uses plants to reflect different terrain features and soil types, beautifying the home environment. A career more closely related to the final consumer and more detached from nature's influence are florists catering to interior display of floral arrangements in homes, offices and funeral parlors and expressions of sympathy and love.

Outdoor minded and athletically inclined persons like to get away from the crowded cities for recreation on lakes, large recreation areas in state or federal preserves. There are also recreation areas in most large cities which persons on a short tour or with a little time to spare can visit for relaxation, but often under somewhat more crowded conditions. Others with the sportsman's instinct seek relaxation from the pressures of city life through hunting and fishing. All of these activities afford careers appealing to the extrovert, outdoorsman and sportsman.

A final area of outdoor careers is found in the state's forests of growing importance as farm lands are abandoned in response to rising productivity from research and mechanization. There is little contact with people, but nature's appeal is an attractive factor for the outdoor and sports oriented person. These jobs involve caring for growing forests through control of disease and insect infestation. Proper control of growth conditions through appropriately timed plantings and thinnings is also involved. When the woodlands are ready for harvest, foresters and their aids determine the extent of the harvest, and woodlands dealers harvest and deliver the pulpwood and saw timber to pulpwood mills and sawmills, where this raw material is either processed or shipped to a central point. Handling of pulpwood after arrival at the pulpwood yard gives rise to careers having to do with the receipt, measurement, loading, shipping and maintaining inventory for the processing industries.

(continued on next page)
This brochure outlines eight careers based on agriculture and nature related enterprises. In most cases the usual pay range charts accompany the Career Ladder pictures. But as in other brochures the data pertain to spring 1972, and the student considering a career in one of these areas should adjust the pay level in line with trends in pay increases. In view of the range of jobs cutting across occupations in agriculture, mechanics and retailing, a specific rate of pay increase cannot be identified but the composite of all economic activities in the United States will be fairly indicative, which for the decade 1960–1970 the increase averaged 4.3 percent yearly. But considering the increasing needs of industry and business for packaging and printed forms, and the housing industry for lumber and related products to meet the demands for housing which the surge in population growth after World War II is causing, it is likely that the annual pay gains will be even larger during 1970–1980.
FARM EQUIPMENT MECHANIC

Farm equipment mechanics maintain service and rebuild farm equipment and tractors, a necessary function for customer goodwill and satisfactory operation of a dealership.

The entry level job is farm equipment mechanic trainee. Some high school education is required and graduation is preferred. The person must have strong mechanical aptitudes, be familiar with electrical systems of motors, transmissions and hydraulics. Work attitudes necessary for success in the initial job are wanting to work, taking pride in work, and having customer's and company's interests at heart. In the initial job the worker is given on-the-job training in the functions of jobs and works with others. Regularity of work habits and hard, conscientious work are important for promotion.

The advanced mechanics are more aware of the needs of the business and practice them seriously. One or two three-day technical schools are held annually by company service supervisors to update mechanics and acquaint them with new machines and equipment. They get on-the-job training and also study service manuals which are available throughout the company.

The factors which identify advanced workers who will go up the Career Ladder rapidly are quality of work and attitude toward the company and the customer.

Alternate lines of advancement are tractors and farm equipment salesman, parts salesman, and some management positions.
CAREER LADDER FOR FARM EQUIPMENT MECHANIC

FOREMAN employs and hires mechanics and servicemen, supervises all mechanics, writes work orders and assigns to mechanics. He handles customer warranty work.

FARM EQUIPMENT MECHANIC rebuilds engines, repairs hydraulic systems and overhauls transmissions.

FARM MACHINERY SET-UP MAN mounts various attachments on machines, including cultivators and planters.

FARM EQUIPMENT SERVICE MECHANIC tunes engines, installs batteries, points, plugs and condensers and adjusts clutches and brakes.

FARM EQUIPMENT MECHANIC TRAINEE services a unit, lubricates, changes oil, checks hydraulic oil and tire pressure.
SOIL CONSERVATION AID

The Soil Conservation Service assists rural and urban land users to control erosion and sediment pollution. Technical knowledge of plants, soils, drainage and erosion control methods are essential.

Requirements for entry into this kind of work are 18 years of age and high school education if not experienced in farming methods and soil conservation practices. A youth wanting to enter this line of work usually starts on a part-time basis and the Soil Conservation Service develops a training plan to let him learn what is expected of him. Information is passed on to him as to how he can acquire the skills expected in the entry level job, Soil Conservation Aid, GS-3, which involves basic knowledge using simple surveying equipment, how to read aerial photograph maps and learn the principles of proper use and management of our natural resources. A list of manuals and technical memoranda is provided which he is expected to study and also the local staff proceeds to familiarize him with the personnel benefit programs of the Service. In addition, all new Service employees must spend one to four weeks at Fort Worth, Texas, for in-service training in the special Service courses. In this work it is important to have basic knowledge of good conservation practices and the ability to communicate with both rural and urban land users. A man with these attributes can be trained as a conservationist.

What identifies a worker who will go up the Career Ladder in the Conservation Service is the ability and willingness to accept new techniques, his liking for this type of work and dedication to it, his attitude toward policies and procedures of the organization. The worker must demonstrate serious application to the requirements of the job. As the worker progresses to being able and willing to accept more responsibility, he is eligible for grade promotions until he reaches the maximum grade for conservation technicians. Within each grade salary increases are made at one, two, and three year intervals based on satisfactory work performance.
CAREER LADDER FOR SOIL CONSERVATION AID

SOIL CONSERVATION AID, GS-4, is acting as chainman. He also cuts right-of-way.

SOIL CONSERVATION AID, GS-3, is making or cutting a right-of-way for survey crew. He also occasionally acts as chainman and keeps equipment together.

SOIL CONSERVATION TECHNICIAN, GS-7, is engaged in map reading. Another major function is to assist planners in developing conservation plans for the landowner. His map expertise enables him to consider topographic features in planning and establishing boundary lines.

SOIL CONSERVATION TECHNICIAN, GS-6, is operating a survey instrument. He also provides technical assistance to landowners in applying conservation practices. He has greater responsibility in helping landowners apply water disposal systems and establish erosion control vegetation.

SOIL CONSERVATION TECHNICIAN, GS-5, is rodman. He also provides technical assistance to landowners in applying conservation services on the land. These include assisting in laying out water disposal systems and establishing erosion control vegetation.

SOIL CONSERVATION TECHNICIAN, GS-5, is rodman. He also provides technical assistance to landowners in applying conservation practices. He has greater responsibility in helping landowners apply water disposal systems and establish erosion control vegetation.
CAREER LADDER FOR SOIL CONSERVATION AID, 1972

Yearly Income

$10,000

Technician GS-7

Technician GS-6

Technician GS-5

Aid GS-4

Aid GS-3

4,000

2,000

Average Months Promotion Time

0 12 24 42 78

Time-on-Job, Responsibility, and Performance Level

LEGEND
US Civil Service Entry
Level Pay for Each Job

PAGE 10
WOODYARD SUPPLY FOR PULP AND PAPER MILLS

Careers in woodyard supply for pulp mills involve the assembly of timber or logs cut to certain lengths, loading on trucks or freight cars, shipping to the woodyard at the mill, checking in receipts of wood, weighing and calculating cordage and accumulating at accessible points in woodyard processing. Not only must records be kept of daily receipts but also a running account of inventory of usable wood on hand must be maintained in order to provide the pulp mill with an accurate inventory of wood in order to operate on schedule and plan ahead.

The entry level job for high school graduates is the log scaler but the entry job as laborer does not require a high school diploma. A log scaler must be proficient in mathematical calculations. Part-time cooperative work experiences on the job while in school through cooperative vocational education programs involving a variety of woodyard or paper mill jobs would be helpful in training the high school youth for log scaler; otherwise, he would probably have to begin as a laborer assembling logs and loading trucks.

The log scaler calculates cordage of loads of wood delivered either by truck or freight car by weighing loaded trucks or loaded freight cars on two different sets of scales, reweighing unloaded trucks or cars to determine the net weight of wood, and then converting these weights to equivalent cordages by mathematical calculations. High school graduates with interest and intelligence can be trained by the woodyard manager or foreman through on-the-job training.

Work attitudes which are essential for success in woodyard work are dependability, regularity of attendance, and serious applications to the requirements of the job.

Work attitudes which identify workers in the initial steps on the Career Ladder who will advance to supervisory positions are enthusiasm for challenge, competitive desire for achievement, respect for supervisors and subordinates, eagerness to accept new assignments and overt signs of improvement.
CAREER LADDER FOR WORKERS IN WOODYARD FOR PULP AND PAPER MILLS

LOADER OPERATOR is using hydraulic loader to load pulpwood on rail car for shipment to pulpmill.

LOG SCALER is measuring height of 63 inch-long bolts of wood on rail car in order to calculate cordage contained in car. Other functions include estimation of marketable timber content of logs, including loss of board footage from sawing waste and defects and rejecting logs containing excessive amount of unsound timber.

WOODYARD MANAGER is using Printomatic to determine net weight of wood delivery. His other major functions are: supervises employees of woodyard; makes daily status reports, which include current inventory, receipts from previous day, and amount loaded on rail cars; coordinates flow of wood into yard, adjusting his time and hours to fit volume of wood arriving at yard; and checking for quality of wood received and proper loading of wood on rail cars to assure arrival at destination.

LABORER is preparing pulpwood on rail car for shipment to mill. He also helps to load and unload truckloads of wood brought in by wood producers.
FORESTRY TECHNICIAN

Forestry occupations involve inspecting and managing forests and estimating the volume of forest products for sale. Such occupations not only require a technical knowledge of the growth requirements of timber, but also the ability to detect diseases or other forms of deterioration. Technical workers must have the technical ability to judge the output quality of woodlands and reforestation requirements.

The entry level job for high school graduates is the forestry technician. But part-time experience on-the-job or through some cooperative vocational education program involving the wood using industries are required for direct entry into a job as a forestry technician. Related experiences surveying and logging, reinforced by part-time work as a compassman are required. A high school graduate with good work attitudes can begin his job at the lower pay levels and be trained in the actual skills needed to assist the forester in his more technical functions. This would require a period of two years, during which he would be assigned to progressively more responsible jobs.

Work attitudes which are regarded as essential are dependability, regularity of attendance and serious application to the requirements of the job.

The forestry technician could become a woodyard manager but the pay differential is not significant. His best alternative is to choose the professional line of advance and pull out of the work environment for a time and attend college for four years, specializing in forestry, if he likes the outdoor environment for work and has a liking for the technical aspects of forestry. With this sort of training, he could look forward to advances to top positions as forester or in some areas of management, such as chief forester, area forester, unit processing manager, staff forester and land and timber or processing manager. He can also expect employment opportunities with government, industries, or self-employed as a forest consultant.

Work attitudes which identify workers in the initial steps on the Career Ladder who will advance to top level positions are enthusiasm for challenge, competitive desire for advancement, respect for supervisors and subordinates, eagerness to accept new assignments and overt signs of improvement.
FORESTRY TECHNICIAN is using Hypsometer to measure height of tree to determine the volume of wood in tree. He works alone or as member of crew to inventory, protect and reforest timber; and observes, measures and records data, such as tree species, volume of merchantable timber, forest topographical features and tree seedling mortality.

FORESTER is using increment borer to obtain growth data in pine plantation. His duties include: managing and developing forest lands and their resources for economic and recreational purposes; planning and directing projects in forestation and reforestation; mapping forest areas, estimating standing timber and future growth and managing timber sales; planning cutting programs to assure continuous production of timber; conducting research in methods of cutting and removing timber with minimum waste and damage and methods of processing wood for various uses; directing suppression of forest fires and conducting fire prevention programs.
LANDSCAPE GARDENER

Landscaping involves the process of fitting plantings of shrubbery, flowering plants, lawn grass and evergreens of every sort, including trees, into the terrain surrounding various types of buildings to form a design in the landscape which contributes to the ornamental layout or perspective. The emphasis is on use of an array of plants, combined with lawn grass, to enhance the general appearance of a home or any other buildings. Workers who plan, execute and often maintain these landscape designs rank from semi-skilled to professional and have an artistic bent.

The entry level job for landscaping type work is the landscape laborer or worker who executes landscape plans, under the direction of a supervisor or landscape gardener. Plans are conceived and converted to a scheme of drawings by a landscape designer or architect. The requirements for the entry level job are a man of at least 18 years of age who has familiarity with plants, soils, yard work and the ability to make plantings which will thrive. A high school education with work in biology, geology, botany and, preferably, ornamental horticulture will increase speed of adaption to the requirements of the job and enable rapid advances up the Career Ladder. The landscape laborer gets on-the-job instruction from the landscape gardener, who not only instructs and demonstrates, but assists in the plantings. The landscape gardener executes landscape designs, and may plan the details of small scale landscape operations.

The attitudes for success in landscaping work are enthusiasm for outside work and manual type operations. A future landscape gardener is not afraid of “pick and shovel” types of work and should have an appreciation, and admiration for ornamental constructions involving the terrain of residences or other buildings, and he takes pride in this sort of work. He must be technically competent in terms of digging, mixing soils and fertilizers, placement of the plant at proper depth and soil placement necessary for the type of plant involved. He gets along well with fellow workers and is conscientious and precise in carrying out instructions of superiors. He is careful on others' property and cleans up when finished.

The artistically inclined has the alternative of a four year college course in ornamental horticulture or becoming a landscape architect after one additional year of college study. Those who can combine technical competence, public relations ability and supervision of different levels of workers with the complex, broad aspects of managing a business can move to top management for a large landscaping concern or organize own business.
CAREER LADDER FOR LANDSCAPE GARDENER

LANDSCAPE FOREMAN is discussing planting of azaleas and other nursery products with landscape gardener at home of customer. The foreman provides guidance to the men to satisfy customers in accord with landscape plans.

LANDSCAPE GARDENER is planting azaleas according to landscape design plans for residential home. He also prepares soils with fertilizer, peat moss, and other organic materials for plantings. He plans and executes small scale landscaping operations and maintains grounds and landscape of private homes or business locations.

LANDSCAPE LABORER is observing placement of azaleas in yard of new residential home. He plants and waters sod and shrubbery. Moves in topsoil as needed, and spreads and levels soil using rake.
CAREER LADDER FOR LANDSCAPE GARDNER IN GEORGIA, 1972

LEGEND
Average Reported Pay
Highest Reported Pay
Lowest Reported Pay

Hourly Pay, in Dollars

$10,400
$9,320
$6,240
$4,160

Yearly Pay, if 2,080 Hours Worked

Average Months Promotion Time

Time-on-Job, Responsibility, and Performance Level

0 12 28
NURSERY SALES

Workers in nursery sales outlets supply the public with ornamental plants, seeds, fertilizer, sprays and lawn equipment for demands originating with owners of homes, commercial establishments and institutions. But the worker in a nursery sales outlet is primarily concerned with serving homeowners and their wives. These sales outlets also provide a market outlet for the large nurseries and greenhouses which produce shrubbery and flowers in large volume in rural areas often distant from large markets.

The entry level job is nursery helper. Many high school youths find employment in these sales outlets during the heavy spring-fall seasonal sales. The worker who seeks a permanent job must be at least 18 and preferably have some background in plant characteristics and culture. He gets on-the-job training through assignments to a variety of specific duties, such as watering plants, unloading loaded trucks arriving with orders, loading customers' vehicles and adjusting the mechanism to the covering for proper light or shading. These assignments are made by the manager, or the assistant manager, if there is one, and verbal instructions and often actual demonstrations are provided. The instructions are followed up by the manager for level of performance.

The alert and aggressive worker can move up the Career Ladder in the direction of sales, management or both. If he is public relations oriented and able to communicate with customers, identify their needs and fill these needs without complaint, his most logical move is into sales of nursery stock and related equipment. A managerial level job requires ability to supervise and stimulate workers. If the sales oriented person also has the capacity to manage workers, the line of movement would extend beyond sales into management fairly rapidly, first as assistant manager if the sales outlet is large; and later to manager, most probably of a newly established sales outlet of a multi-unit concern.
CAREER LADDER FOR WORKERS IN NURSERY SALES OUTLETS

MANAGER OF NURSERY is examining broken limbs of Ilex-Lingustrum damaged in shipment. He is in total charge of the nursery operations and confers with shippers, customers and the owners to assure success of the business. He manages salesmen and nursery laborers in a branch operation.

NURSERY HELPER is receiving instructions from nursery manager relative to location of pasques in display yard for better sales potential. Other functions include unloading supplies from truck and loading purchases of customers, watering plants and adjusting overhead mechanism for proper light on different plants.

NURSERY STOCK SALESMAN is discussing grass seed with customer for fall plantings. He advises customers also on the most favorable applications of nursery products. Other functions are to keep track of inventory of all products and receive orders from customers by telephone.

MANAGER OF NURSERY is examining broken limbs of Ilex-Lingustrum damaged in shipment. He is in total charge of the nursery operations and confers with shippers, customers and the owners to assure success of the business. He manages salesmen and nursery laborers in a branch operation.
CAREER LADDER IN NURSERY SALES IN GEORGIA, 1972

LEGEND
- Average Reported Pay
- Highest Reported Pay
- Lowest Reported Pay

Promotion Interval Quite Variable, depending on Worker and Market Growth

Time-on-Job, Responsibility, and Performance Level

Yearly Pay, if 2080 Hours Worked

Manager

Salesman, Nursery Stock

Nursery Helper

Hourly Pay, in Dollars

$6

5

4

3

2

1
FLORISTS

The floral business supplies several forms of artistic, sentimental and ceremonial demands. Workers in this business, especially floral designers, should be responsive to these demands and sensitive to people under a variety of circumstances, helping customers often to conceive of unexpressed needs. This demands a worker who is imaginative, gifted and original.

The entry level job for the designer is helper or florist assistant. Girls 18 or over and preferably high school graduates, having artistic talent, patience and a tenacious desire to complete the job which may often be complex and tedious possess the qualifications for success. The public has an image that floral design is the exclusive territory of girls but men are also found in floral design and can be quite successful in this line of work if artistically inclined. In some types of heavy and complex design and decorative work at distant points a man is needed, such as setting up church arrangements for a formal occasion, funeral arrangements and planning and installing decorations for large commercial and office buildings.

The new employee gets on-the-job training from a skilled floral designer and gains experience in how to meet customers and assess demands for floral gifts or offerings.

The factors which identify a young worker who will succeed in the floral business, or similar artistic endeavor, are natural and inherent artistic abilities, friendly dealings with customers and ability to please them through imaginative designs. Dependability, being at work on time and ability to do a complex, tedious job to the satisfaction of the customer are essential.

The youth out of high school who chooses the floral business has a number of alternatives. She (or he) can go the floral design route, act as a salesperson taking orders and greeting customers and be assistant manager of a moderate sized shop and, where it is a multi-unit operation, manager of a unit.
CAREER LADDER FOR FLORAL DESIGNER

FLORAL DESIGNER TRAINEES are completing work on corsages and wedding bouquets. All three have been in an intensive training program, the two disadvantaged females under Welfare sponsorship, to attain status as floral designer. Their training was completed as of date of picture and each is leaving for a job with another employer, two in a distant southern state.

FLORAL DESIGNER and HELPER are wiring carnations for funeral spray and are also preparing casket cover with red roses. The designer also makes wedding bouquets, wreathes and Christmas decorations. Another responsibility is handling nationwide florist delivery service orders made from other cities.

FLORAL DESIGNER TRAINEE is placing artificial flowers in a heart design for a funeral. She works under the direction of the floral designer who shows and teaches her the creative skills to create a wide variety of floral arrangements demanded by customers. She begins the learning process making sprays, wreathes and mixed floral arrangements.
CAREER LADDER FOR FLORAL DESIGNER IN GEORGIA, 1972

LEGEND

- Average Reported Pay
- Highest Reported Pay
- Lowest Reported Pay

Floral Designer

Floral Designer Trainee

Assistant Manager

Yearly Pay, if 2080 Hours Worked

Hourly Pay, in Dollars

Average Months Promotion Time

Time-on-Job, Responsibility, and Performance Level

$8,320

$6,240

$4,160

$2,080

$4

$3

$2

$1

0 15

0
WILDLIFE BIOLOGIC AIDE

The wildlife biologic aide works directly with fish and wildlife to feed, trap and collect specimens of flora and fauna for identification and evaluation. Fish are marked for identification; trapping of deer, turkey, and beaver is supervised. Feed is prepared and made available. Data are collected on the population of various types of wildlife in game refuge. Programs of pond management are set up. Recreation lakes for public use are developed and managed and laws enforced. Records are kept on activities and water quality control studies are conducted.

The entry level position is wildlife biologic aide I. He must be a high school graduate and 18 years of age with courses in biology and chemistry or other courses dealing with animal care. In his first six months he gets on-the-job training. Two years after entry on job, he gets schooling at the University of Georgia in final qualification for a step up to biologic aide II. One week of training is given in law enforcement and one week in conservation courses.

Work attitudes important for success in this area of work are devotion to the duties of the job, interest in environment and conservation, animals and sports.

Advance to biologic aide II depends upon how closely a worker must be supervised, how well he performs duties, his ability to use required wildlife equipment, his identification in his work with others in conservation and his competency in judgment.

In order to be able to move up to wildlife biologic aide III, which is a supervisory position, the worker must demonstrate ability to direct others and reflect a high degree of basic knowledge of game and fish management.
CAREER LADDER FOR WILDLIFE BIOLOGIC AIDE, GEORGIA GAME AND FISH COMMISSION

WILDLIFE BIOLOGIC AIDE I prepares and mixes feeds, traps wildlife, collects various flora and fauna, particularly aquatic, for identification and ecological evaluation, and participates in fishery operations.

WILDLIFE BIOLOGIC AIDE II marks fish for identification, supervises deer, turkey, and beaver trapping, conducts stream surveys, participates in collection of population data on various aspects of wildlife, outlines programs for pond management to property owners and supervises the development, law enforcement and fish management of a public recreation lake.

WILDLIFE BIOLOGIC AIDE III keeps complete records and reports on activities of projects, prepares project budget, conducts essential water quality studies of specific areas and predesigned research activities and maintains equipment and physical facilities.
CAREER LADDER AS WILDLIFE BIOLOGIC AIDE, GEORGIA GAME AND FISH COMMISSION, 1972

- **Wildlife Biologic Aide I**
  - Monthly Salary: $400
  - Yearly Income: $4,800
- **Wildlife Biologic Aide II**
  - Monthly Salary: $600
  - Yearly Income: $7,200
- **Wildlife Biologic Aide III**
  - Monthly Salary: $800
  - Yearly Income: $9,600

LEGEND
- State Merit System Starting Pay
- State Merit System Top Pay

Average Years Promotion Time: 0, 2, 4

Time-on-Job, Responsibility, and Performance Level
### NET NUMBER OF JOB OPENINGS YEARLY, 1971–76, IN AGRICULTURE AND NATURE RELATED CAREER AREAS IN GEORGIA

<table>
<thead>
<tr>
<th>Career Area</th>
<th>Number of Job Openings Yearly</th>
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<tbody>
<tr>
<td></td>
<td>100</td>
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<tr>
<td>Farm Equipment Mechanic</td>
<td>1</td>
</tr>
<tr>
<td>Floral Designer</td>
<td>1/4</td>
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<tr>
<td>Landscape Gardner</td>
<td>1</td>
</tr>
<tr>
<td>Nursery Worker</td>
<td>1</td>
</tr>
</tbody>
</table>

**LEGEND**
- **Entry Level Job (Helper or Trainee)**
- **Skilled Worker**

Entry level jobs are estimated to equal 336 jobs yearly for the period 1971–76 or 34 percent of the total of 999 job openings yearly for the four career areas shown. The largest number of entry level jobs yearly will be for Landscape Gardner, 204; Florist Helper, 63; and Nursery Helper, 56; (adequate data were not available to report job openings for the other four career areas presented separately in this brochure).
Students studying agricultural power and machinery are receiving instruction on how to install wiring harness for ignition system.

Students in forestry course are being given a demonstration on the use of the increment borer to determine age of tree.

Students are preparing a pile of pulpwood from trees that have been thinned or cut because of disease infection.

Students in landscape design are receiving instruction on how to fit and properly plant a shrub in a landscaping plan.

Students in horticultural class are being taught how to plant a pot of mums for transplant in lawn or a landscape design.

Students in horticultural class are preparing a floral arrangement under direction of instructor for FFA banquet.
HOW YOUR SCHOOL CAN HELP YOU FIND A CAREER IN AGRICULTURE AND NATURE RELATED WORK

I. If you are in the middle grades (7th, 8th, or 9th grade):

This is your chance to EXPLORE careers!

In the middle grades you can "try out" a number of different jobs. Your school may offer some of the following programs. If they do, you can explore the world of work!

Program of Education and Career Exploration (P.E.C.E.). Learn about all kinds of careers, including agriculture and nature-related jobs, by spending time on the job with real workers in your community.

Mini-Prevocational Course in Agriculture. A long name for a short course! It lasts from eight to twelve weeks and involves you in all the different kinds of work done in agriculture and nature. You will begin to learn some basic skills needed to get a job by carrying out projects and work activities in agriculture and nature-related careers.

Prevocational Course in Agriculture. You may want to learn much more about work in the field of agriculture and nature-related jobs. This course lasts a full year. You will try out under real job conditions, many work roles available in agriculture and nature-related careers. This course should help you better understand this part of the world of work.

II. If you are in senior high school (10th, 11th, or 12th grade):

Then you will be getting ready to enter the world of work or post-secondary education.

In high school you can develop the skills necessary for entering a job in agriculture or nature-related careers. Many high schools offer courses in production agriculture, farm machine operation and maintenance; agriculture power and equipment, ornamental horticulture, agri-business and forestry. Agri-Business (sales and service) is a cooperative course where you can work in the field and go to school, getting credit in school for the work you do on the job. You can earn and learn. Each of these can be the first step in preparing for a rewarding career for you!

III. If you are about to graduate or are already out of school, your school's GUIDANCE AND PLACEMENT OFFICE can offer help.

Are you interested in entering agriculture or nature-related careers? Then you now have two options.

1. You may want further preparation. Georgia has 25 area vocational-technical schools offering 56 different courses, including agri-marketing, farm equipment mechanics, and forest harvesting technology to mention only a few. One of the area vocational-technical schools is within commuting distance of your home. Ask your counselor to help you apply for the school nearest you. The counselor and the agriculture instructor can also help you pick the course of study best suited to your interests and talents.

Some agriculture and nature-related careers require a baccalaureate degree. Your counselor is also a source of information regarding college entrance and courses of study at the university level.

2. You may want to go to work now. See your school's GUIDANCE AND PLACEMENT OFFICE for help in finding employment and beginning your career.

SUMMARY STATEMENT PREPARED BY THE OFFICE OF VOCATIONAL AND ADULT EDUCATION
GENERAL SCENE PICTURES

FARM EQUIPMENT AND TRACTOR display for local dealer and service agency of national manufacturer.

WILDLIFE BIOLOGIC AIDE II is reporting conditions in Game Preserve to his supervisor.

WATERSHED IMPOUNDMENT SYSTEM, illustrated in picture, provides flood retarding, fish and wildlife, water supply, recreation and other water use needs.

The Hydroseeder in picture is seeding a mixture of seed, fertilizer, fiber and water for control of erosion on graded road bank.

LAWN MAINTENANCE FOREMAN is instructing helper in lawn and shrubbery maintenance required at a large commercial establishment.

LABORER is preparing wood racks for shipment to pulp mill.
ACKNOWLEDGEMENT

The following companies have cooperated in supplying pictures for the brochures which are published in connection with this research report. The author is sincerely grateful for this cooperation.

<table>
<thead>
<tr>
<th>Company</th>
<th>City, State</th>
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<tr>
<td>Bagby Elevator &amp; Electric Co., Inc.</td>
<td>Decatur, Georgia</td>
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<tr>
<td>Bob Bailey's TV &amp; Appliances—</td>
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<tr>
<td>Sales &amp; Service</td>
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<tr>
<td>R. A. Banks &amp; Company</td>
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<td>L. D. Barber, Company</td>
<td>Tucker, Georgia</td>
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<td>Carrier Air Conditioning Company</td>
<td>Atlanta, Georgia</td>
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<td>A Child's Place</td>
<td>Atlanta, Georgia</td>
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<tr>
<td>Colonial Stores, Inc.</td>
<td>Atlanta, Georgia</td>
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<td>DeKalb County Recreation and Parks Department</td>
<td>Decatur, Georgia</td>
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<tr>
<td>Delta Corporation</td>
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<td>Dixie Engine Company</td>
<td>Atlanta, Georgia</td>
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<tr>
<td>Edwards and Rosser, Inc.</td>
<td>Atlanta, Georgia</td>
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<tr>
<td>Estes Heating &amp; Air Conditioning, Inc.</td>
<td>Mountain View, Georgia</td>
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<td>First National Bank of Atlanta</td>
<td>Atlanta, Georgia</td>
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<td>O. W. Gardner &amp; Sons</td>
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<td>Sheet Metal Company</td>
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<td>Georgia Game &amp; Fish Commission</td>
<td>Atlanta, Georgia</td>
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<td>Georgia Institute of Technology</td>
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<td>Physical Plant Division</td>
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<td>Georgia Power Company</td>
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<td>Appliance Repair &amp; Service</td>
<td>Forest Park, Georgia</td>
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<td>Gold Kist, Inc.</td>
<td>Atlanta, Georgia</td>
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<td>Green Brothers Nurseries</td>
<td>Decatur, Georgia</td>
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<td>Herren's Restaurant</td>
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<tr>
<td>Hyatt Regency Atlanta</td>
<td>Atlanta, Georgia</td>
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<tr>
<td>International Harvester Sales &amp; Service Branch</td>
<td>Decatur, Georgia</td>
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<td>ITT Rayonier, Inc.</td>
<td>Jesup, Georgia</td>
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<td>Kennestone Hospital</td>
<td>Marietta, Georgia</td>
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<td>Lanier Flower Shop</td>
<td>Decatur, Georgia</td>
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<tr>
<td>Life Insurance Company of Georgia</td>
<td>Atlanta, Georgia</td>
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<td>Marriott Motor Hotel</td>
<td>Atlanta, Georgia</td>
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<td>Munford, Inc.</td>
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<td>Pike Nurseries, Inc.</td>
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<td>Pittman Highway Contracting Co., Inc.</td>
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<td>Richards &amp; Associates, Inc.</td>
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<td>Rome Plow Company</td>
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<td>Southern Cross Industries, Inc.</td>
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<td>Union Camp Corporation</td>
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<td>State Office For Georgia</td>
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<td>Wade Ford, Inc.</td>
<td>Atlanta, Georgia</td>
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<tr>
<td>Wiring, Inc.</td>
<td>Forest Park, Georgia</td>
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</tbody>
</table>
Training Programs are available in:
- Comprehensive High Schools
- Vocational Agriculture Programs
- Area Vocational-Technical Schools
- On-the-Job Training by Employers

The Work Attitudes for success are:
- Dependable and at work on time; show interest and aggressiveness in learning program; does not mind outside work
- Congenial, compatible with other employees; show promptness and faithfulness in work; have ability to deal with the public
- Enthusiasm for challenge outdoors, humility tempered with aggressiveness, and respect for supervisors and subordinates
CAREERS FOR YOUTH IN SERVICE TO PEOPLE

FRONT OFFICE SERVICE IN HOTELS AND MOTELS
FOOD PREPARATION AND CUSTOMER FOOD SERVICE IN HOTELS AND MOTELS, AND RESTAURANTS
FOOD PREPARATION AND DIETARY SERVICE IN HOSPITALS

CHILD CARE CENTER SERVICE • PUBLIC RECREATION

BROCHURE IV
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CAREERS FOR YOUTH IN
SERVICE TO PEOPLE

Prepared By

John L. Fulmer
Regents' Professor of Economics
College of Industrial Management
Georgia Institute of Technology

For

Georgia State Department of Education
Office of Adult and Vocational Education
Atlanta, Georgia 30334

Jack P. Nix
State Superintendent of Schools

1973
FOREWORD

This Brochure is one of five which is being published as a supplement to the research report, entitled: "Survey of Employment Opportunities, Career Ladders, and Training Requirements for Basic Jobs in the Vocational Job Clusters, 1971-76". Funds for this research were provided by the State Board under the Authority of Part C of the Vocational Educational Amendments of 1968, P. L. 90–576. The Contract was administered by the Georgia Institute of Technology Research Administration as Contract M50–602.

Dr. John L. Fulmer, Regents' Professor of Economics in the College of Industrial Management, conducted the research and has prepared this and four other brochures to focus the attention of youth in the School Systems of Georgia on 48 highly significant Careers in the Georgia economy. Publication was by the Industrial Management Center, Georgia Institute of Technology, Atlanta, Georgia 30334.

The main report from this research may be obtained by writing to:

The Office of Vocational and Adult Education
State Department of Education
State Office Building
Atlanta, Georgia 30334

BRIEF DIGEST OF SKILLS AND WORK ATTITUDES REQUIRED FOR YOUTH TO SUCCEED IN SERVICE TO PEOPLE

ENTRY LEVEL SKILLS:

1. Cook’s helper: know how to take orders and cook vegetables; assist with trimming meats.

2. Busboy or busgirl: ability to handle china and glassware and act on what needs to be done.

3. Waiter or waitress: knowledge of menus and proper service methods; be well organized in taking orders from guests.

4. Dietary aide: takes diet order from diet clerk or dietitian and sets up and serves trays specified.

5. Teacher aide: helps with children in sensory development, language readiness and development of motor skills.

6. Recreation center leader: ability to instruct, lead and direct groups in recreation and social activities.

ENTRY LEVEL WORK ATTITUDES:

1. Cook’s helper: have basic desire and interest to be associated with cooking; thinks highly of potentials of this line of work.

2. Busboy or busgirl: have open mind; take direction from hostess and be punctual. Show enthusiasm and be cooperative.

3. Waiter or waitress: seriousness of purpose, neat and attractive in appearance and friendly attitude towards customers.

4. Dietary aide: willingness to do assigned work to best of ability and does all work in an acceptable and attractive manner.

5. Teacher aide: shows love for children and is conscientious in all work assignments.

6. Recreation center leader: ability to develop enthusiasm in youth and adults for recreation activities.
INTRODUCTION

Service to people careers are people-oriented either through face to face contact or through responding to individuals’ wishes or orders for food, entertainment and dietary service in hospitals, child care centers and recreation centers. In order to succeed, one must be sensitive to people, responding directly to the expressed or implied needs of persons for service.

Success in service occupations hinges on anticipating the needs of others and responding to them promptly and courteously. Small touches, such as the warmth expressed in the greetings of hostess, waiters and waitresses, willingness to serve and desire to please the customer, are essential in food service. Attentiveness and enthusiasm can mean the difference between a return customer and one who is disgruntled.

Food preparation involves behind the scenes efforts to satisfy the customer. Tasty food attractively served brings compliments from the customer, “tips” to the waitress, and possibly a return with friends for more such service.

A second type of customer food service is in hospitals where the patient’s diet considers the medical needs of the patient and may contribute to the patient’s recovery. Dietary personnel, headed by the diettitian, a college graduate with specialization in food and nutrition, determine the diets that are in the interest of the patient’s progress in medical treatment. Food must be served which meets the nutritional requirements of the patient. This means choice of foods within the diet needs of patients, attractively served at proper temperature. Cooks and others in food preparation respond to the menus written out for patients by diet clerks upon instruction from the diettitian, and become a part of the food service team contributing to patient care. The cafeteria at the hospital must also serve food to appeal to employees and the general public, and it must be kept clean to dispense wholesome and appetizing food.

Child care service is related directly to preschool age children, some under two years old. The work involves the techniques of showing, illustrating and guiding children into exploring and learning about the world in which we live. The curiosity aroused is fundamental to the learning process. The essential characteristics for success in this type of service to small people are love for children, conscientiousness and energy in learning new techniques for teaching children skills, motivation and coordination and the ability to understand and communicate with the parents of the children.

Recreation activities provided by public agencies enable children of all ages and also adults to escape the home environment when not in school or working and become part of a social activity or athletic team. Recreation centers operated by persons trained in formal programs of recreation and child psychology enable participants and especially children to obtain a broader view of the world, learn to mingle and socialize with others, engage in athletics, and respond to a variety of instructional and training programs.

The pay ranges which accompany most of the Career Ladders represent various sizes of companies in the different areas of Georgia and apply to Spring 1972. Another special point to note is that pay data for waiters and waitresses, except in hospitals, include an adjustment for tips, which are based on estimates by food service supervisors of how much tips add to these workers total pay. The personality of the waiter or waitress, enthusiasm in service, and ability to (continued on next page)
please the customer will determine size of tips. The other important factor to adjust for the 1972 pay ranges is that the charts are for a fixed point in time. As students study the Career Ladder pictures relative to the pay range scales and try to look ahead a few years, the pay range scales should be adjusted to reflect the fact that pay increases in the United States averaged 6.2 percent yearly during 1960–1970. Pay levels may be expected to continue to rise in the future, but the average yearly pay increments will tend to vary from the rate of the 1960’s, depending upon the rate of growth of the national economy.

SHORT ORDER COOK in service kitchen of large hotel.

DIETARY AIDES in hospital are setting up patient trays in conformity with diet lists prepared by therapeutic dietitian.
Many job opportunities and attractive Career Ladders exist in local hotels and motels. The areas of work for high school youth or for youth who quit high school after the eighth grade are concentrated in three broad service areas: food preparation, food service and front office service. The major duties are: receive guests in the motel; prepare a variety of foods for general and special occasions; and provide food service to these guests in such a cordial and understanding fashion that the customer will have a happy and pleasant stay, and return at first opportunity for another visit, advertising through word of mouth the service and pleasure dispensed by the hotel or motel staff. Details are given in following discussion of three Career Areas.

Front office service in hotels. Through the front office, reservations are made, guests received and escorted to rooms, messages received and transmitted, room service provided, guests checked out and transportation arranged. The front office also has the responsibility for maintaining a prestige appearance, inside and outside the hotel.

The entry level job is desk clerk or room clerk which requires a high school education and age 21. There is no identifiable course preparation from high school. The employee learns on-the-job the basics of telephone service, room service and hotel procedures. Job rotation involves alternation in areas of cashier and reservations.

Job attitudes are reflected in sincere courtesy towards guests and efficiency in the details of work.

Advances up the Career Ladder depend on management’s appraisal of the worker’s courtesy to customers and knowledge about his job. In higher level jobs, advance depends on ability to manage other workers and run operations effectively. Top positions depend on effectiveness in controlling the appearance of the hotel, inside and out, efficiency in managing hotel procedures and, in many cases, substantial food and beverage background.

Food preparation in hotels involves planning and preparing a variety of foods to meet the tastes of hotel guests under a variety of circumstances, including formal and informal dining.

The entry level positions (dishwasher, food preparer, or cook’s helper) require high school education or equivalent but no special skills or specific training. These workers must exercise cleanliness and caution with equipment and have interest in higher level positions.

Job attitudes include reliability, interest in learning other jobs and realization that promotion requires good, conscientious work on the job. Training for entry jobs comes from working with higher level employees. In higher level jobs which require managerial skills, advanced study in restaurant administration is required.

Advances up the Career Ladder depend on good, efficient work; ability to learn duties of higher level jobs; ability to work with others and, in higher level jobs; ability to supervise operations, manage others, handle public relations, perform necessary paper work, and display originality in food preparation. Ability to adjust quickly to various problem areas is helpful.

Customer food service in hotels and motels involves the seating of customers under formal and semiformal conditions, taking customers’ orders for food, drink, and other service. Filling orders and satisfying customers’ needs (continued on next page)
Careers in Hotels and Motels (continued)

are the essentials of customer food service.

The entry level position is busboy or busgirl, requiring age 16, with special permission. There are not particular requirements as to education or skills for this job. If one applies for waiter or waitress, training or experience is required. The employee must have the ability to move fast, have strength and be somewhat agile.

Job attitudes required are courtesy, politeness and the ability to work easily with others, waiters and waitresses, and have the ability to understand and take simple orders from them. Training comes from working with others in superior positions. The worker must be efficient.

Advances up the Career Ladder depend on the ability to adjust quickly to the needs of higher level jobs, perform efficiently and execute orders promptly. Quick upward movement is related to the desire to learn well and quickly. In higher level jobs one must be able to satisfy customers and show effectiveness in management of service personnel under his or her control. Time required to move into the higher level positions depends on efficiency and ability to learn quickly from others the functions of the next job up the Career Ladder.

Alternate lines of advance from the basic steps on the Career Ladder for the specialized areas of front office service, food preparation and customer food service involve movement into different managerial positions. In food service these are maitre d’hotel, catering manager, director of food and beverage, and restaurant manager. In food preparation these are purchasing agent and restaurant manager. In the front office these are assistant manager, resident manager, managing director of departments and general manager.

In order to qualify for advances along any of these three alternative lines of advance, the worker must experience great success in helping others, be willing to work hard and have a real liking for people. These are the personal characteristics required. To meet educational requirements for advancement the worker has two choices. First, he can complete a college course in hotel/motel administration available in a number of colleges in the United States. The second method is through programs of study offered by the Educational Institute of the American Hotel and Motel Association. He or she can pursue either self-study through correspondence or group study. This method requires that the interested worker apply directly to the Operations Training Director, Educational Institute of the American Hotel and Motel Association, Kellogg Center at East Lansing, Michigan 48823. Applicants should have finished the eighth grade or equivalent and be 18 years old. To obtain the training locally through Group Study application must be made through a hotel or local hotel/motel association, which will often arrange for these studies in cooperation with a local school system. In group study the student has the chance to gain greater knowledge of the hospitality industry by comparing on-the-job experiences with other students in the group.

Source of Notes on Training:

Career Opportunities in Hotel-Motel Management, offered by the Educational Institute of the American Hotel & Motel Association, 221 West 57th Street, New York, N. Y. 10019.
CAREERS IN HOTELS AND MOTELS (continued)

COOK HELPER is preparing salads for luncheon.

CAPTAIN is answering phone for a change in plans for a function he has already set up.

KITCHEN LAYOUT SCENE IN HOTEL.

HOSTESS in dining room of hotel is preparing to seat patrons for food service.
CHIEF DESK CLERK OR SUPERVISOR is checking pre-registration and he checks in guests on busy days. He makes sure reservations on board are correct and handles any problems that come up with guest registrations.

RESERVATIONS MANAGER is checking arrival and departure records with ASSISTANT RESERVATIONS MANAGER. He is responsible for reservations for people and groups and makes corrections in any way involving reservations, including any changes and cancellations. He backtracks reservations when necessary and relocates people if needed, and accepts deposits against reservations. He is required to make long-range forecasts of what is expected on reservations six months ahead or longer.

DESK CLERK is checking in a guest. He checks forms on guest room assignments and answers questions on their needs. He also takes messages and maintains information.

FRONT OFFICE MANAGER is checking computer room print-out, showing any room and rate discrepancies. He is in control of entire front office and has the responsibility to secure a high occupancy rate with comparable room rates. He strives for occupancy of as many rooms as possible. He is in charge of desk clerks, reservations, and data processing.
CHEF is preparing vegetables. He supervises and coordinates activities of cooks and other kitchen personnel in preparing food for customers.

CAREER LADDER FOR FOOD PREPARATION IN HOTELS AND MOTELS

COOK is preparing soup for lunch. He also seasons and cooks meats, vegetables, desserts and other foodstuffs for meals.

COOK HELPER is preparing salad for luncheon. She also assists cook in readying foods for cooking.

EXECUTIVE CHEF is looking over price list for ordering supplies. He supervises and coordinates activities of chefs, cooks, and other personnel in preparing food for customers.

CHEF is preparing vegetables. He supervises and coordinates activities of cooks and other kitchen personnel in preparing food for customers.
CAREER LADDER FOR FOOD PREPARATION IN HOTELS AND MOTELS IN GEORGIA, 1972

LEGEND
- Average Reported Pay
- Highest Reported Pay
- Lowest Reported Pay

Hourly Pay, in Dollars

Average Months Promotion Time

Time-on-Job, Responsibility, and Performance Level

Yearly Pay, if 2080 Hours Worked

Executive Chef

Chef

Cook

Cook Helper

Average Reported Pay

Highest Reported Pay

Lowest Reported Pay

$16,640

$12,480

$8,320

$4,160

$8

$6

$4

$2

0

7

22

0

7

22

0

7

22

0

7

22

0

7

22

0

7

22
CAPTAIN is going over menus for meal to be served in ballroom. He schedules dining reservations, arranges parties for patrons and adjusts complaints regarding food or service.

WAITRESS. The three waitresses in picture are waiting on orders they have given the cook. They serve food at formal and informal dining functions.

BUSBOY is placing tray of rolls on counter in dining room. He also helps clean up, clears dishes from tables and assists waiters.

MAITRE' D is going over meals to be served in ballroom with waiters. He supervises and coordinates dining room employees, and engages in rapid and courteous service to diners on formal occasions.

CAPTAIN is going over menus for meal to be served in ballroom. He schedules dining reservations, arranges parties for patrons and adjusts complaints regarding food or service.

CAREER LADDER FOR CUSTOMER FOOD SERVICE CATERING TO FORMAL FUNCTIONS IN HOTELS AND MOTELS
HOSTESS is seating customers at table to be served. She welcomes all patrons to eating areas and assures fast, competent service by directing waitresses and busboys.

WAITRESS is taking customers’ orders for food and drink. She also serves customers food at counters, coffeeshops and other dining establishments in hotels and motels.

BUSBOY is clearing dining table after customers have left. He helps clean up and assists waitresses.

SUPERVISOR OF DINING ROOM is going over menus with waitress. She supervises waitresses in training for service and approves the hiring and firing of service personnel under her direction.

HOSTESS is seating customers at table to be served. She welcomes all patrons to eating areas and assures fast, competent service by directing waitresses and busboys.

CAREER LADDER FOR CUSTOMER FOOD SERVICE IN THE DINING AREAS OF HOTELS AND MOTELS
CAREER LADDER FOR CUSTOMER FOOD SERVICE IN HOTELS AND MOTELS IN GEORGIA, 1972

LEGEND
Average Reported Pay
Highest Reported Pay
Lowest Reported Pay

Hourly Pay, in Dollars

$6

Waiter or Waitress

Busboy or Busgirl

$2

Average Months Promotion Time

0 6 16

Average Reported Pay
Highest Reported Pay
Lowest Reported Pay

Yearly Pay, if 2080 Hours Worked

Maitre D'
$12,480

Captain
8,320

Hostess
4,160

Time-on-Job, Responsibility, and Performance Level
FOOD SERVICE IN RESTAURANTS

Food service in restaurants consists of two major career areas, food preparation and customer food service. Food preparation in restaurants or cafeterias involves frying, cooking, baking, and preparing a variety of salads and drinks to satisfy eating habits of a wide range of customer tastes. Customer food service involves serving food to customers in formal and informal circumstances. Formal service consists of a customer's being met by a hostess and escorted to a formal dining room where a waiter or waitress takes the customer's order for dining and provides service during dining. In informal food service the customer picks up a tray and goes down the cafeteria line to select his or her favorite foods served directly on the cafeteria food line. The customer may be escorted to a vacant table by a busboy or busgirl who carries one or more trays of food.

Food preparation. Preparing good, appealing food depends on persons who occupy the steps on this Career Ladder. Typically, these are the cook helper, cook, chef, and kitchen manager. The entry level position is generally cook helper, although one might begin as dishwasher. The age requirement for cook helper is flexible and can be age 16 with a work permit, but age 18 is preferred, as well as a high school education or equivalent. Regardless of the educational level the cook helper must have reading ability in order to understand recipes as well as mathematical ability to calculate quantities of elements required for the menus chosen for the day. The typical helper may start the day as busboy, doing clean-up work on dishes or even washing them. Then the rest of the day he does food preparation work for the cook or cooks, including baking, broiling, roasting, fry cooking and soup making. He services the steam table, broiler, grill and fry stations.

The attitudes important to success in entry level jobs and for promotion are regularity of work habits, shown by being on time and without absenteeism and an earnest desire to get ahead. The supervisor or cook explains basics and the helper should be able to proceed to tasks without further instruction; he does not have to be told each time what is to be done.

In order to advance to the next level on the Career Ladder, the helper must have mastered the technicalities of being a cook. He must be able to read and understand recipes and know the necessary techniques. He must know how to cut meat and serve foods that are appetizing to customers, setting up orders on serving places from the steam table. He must know proper seasonings for foods and proper cooking times and temperatures for many foods.

The factors which identify workers who are likely to advance into supervisory positions are willingness to take directions and interest in cooking and serving.

Customer food service. The second Career Ladder in the restaurant business is Customer Food Service. The entry level is busgirl or busboy, which involves the simple job functions initially of clearing the tables and setting them up for customers. For entry, a busgirl must be 18 years of age, or 16 with a special work permit, and preferably have a high school education, although an intelligent and presentable person with less education can obtain a job as a busgirl and succeed by aggressive application (continued on next page)
to her duties. Initially, the busgirl works directly with the supervisor who shows the location of supplies and instructs her in her duties. Then she works with the hostess, who instructs the new employee in clearing and setting up the table for new customers. The hostess repeats and corrects until the busgirl's duties are performed satisfactorily.

In order to earn promotion to higher levels on Career Ladder, the busgirl must learn menus and help waitresses with orders. In the process she is trained in serving customers, including how to talk to them, take orders, and follow up on the peculiar needs and whims of each.

The work attitudes important to success in the entry level job and to gain promotion are: dependability; ability to communicate with customers; a pleasant, outgoing attitude and friendly personality toward customers.

Promotion to higher levels depends upon the ability of a busgirl to make her supervisor or hostess feel confident that she can please customers by taking orders promptly and accurately and cater to individual needs until a meal is completed.

The factors which identify workers on the customer food service ladder who will advance to supervisory positions are: energy and enthusiasm, attractiveness to customers in appearance and attitude, consideration of management business pressures in seeking information while on the job, and cleanliness and neatness.

Alternative career areas. In food preparation many of the larger restaurants and cafeteria chains have executive chefs, and there are alternatives in management, such as assistant manager and general manager. In order to follow the line into management the worker would have to acquire additional training through special college courses or by means of Association programs provided for employees who have made rapid advances on the Career Ladder and show management potential.

Alternatives from the charted Career Ladder are cashier, bookkeeper and clerk-typist. Workers able to learn easily, show keen interest and enthusiasm, get along well with people, and supervise and stimulate workers to high performance levels have managerial alternatives also. These include assistant manager and manager of the restaurant. If the food service business is a multi-unit operation, the managerial career ladder may lead to divisional or perhaps corporate headquarters.
FOOD SERVICE IN RESTAURANTS (continued)

COOK in restaurant is panning a steak.

HOSTESS in restaurant is instructing Busboy.

HOSTESS is seating customers for dining service in restaurant.

HOSTESS in restaurant is instructing Busboy.

COOK HELPER is serving customers from steam table.
COOK HELPER is assembling customer food orders on trays from steam table. She also prepares food for cooking and assists cook.

COOK is paning a rib roast. He prepares, seasons, and cooks soups, meats, vegetables, desserts and other food-stuffs.

KITCHEN MANAGER with CHEF is recording menus and discussing kitchen preparation and sales details with CHEF. The CHEF supervises, coordinates and participates in activities of cooks and other kitchen personnel.

CAREER LADDER FOR FOOD PREPARATION IN RESTAURANTS
CAREER LADDER FOR FOOD PREPARATION IN RESTAURANTS IN GEORGIA, 1972

LEGEND
Average Reported Pay
Highest Reported Pay
Lowest Reported Pay

Hourly Pay, in Dollars

Average Months Promotion Time

Time-on-Job, Responsibility, and Performance Level

Chef
Cook
Cook Helper

Yearly Pay, if 2080 Hours Worked

$10

$20,800

$16,620

$12,480

$8,320

$4,160
CAREER LADDER FOR CUSTOMER FOOD SERVICE IN RESTAURANTS

HOSTESS OR HEAD WAITRESS is instructing BUSBOY. She coordinates the activities of dining room employees, helps provide rapid and courteous service to diners and adjusts complaints. She arranges parties for patrons and hires and trains dining room employees.

WAITRESS is taking orders from customers. She serves food in dining facilities and maintains constant contact to provide additional food, drink, or amend orders for food as needed.

ASSISTANT HOSTESS is seating customers. She welcomes all customers, seats them at tables in the dining facility and assures quality service.

BUSGIRL is setting table for customers. Other duties are to clean up after meals, carry dishes and assist waitresses.
CAREER LADDER FOR CUSTOMER FOOD SERVICE IN RESTAURANTS IN GEORGIA, 1972

LEGEND
- Average Reported Pay
- Highest Reported Pay
- Lowest Reported Pay

Hourly Pay, in Dollars

$8

Yearly Pay, if 2080 Hours Worked

$16,640

Head Waiter or Waitress

Waiter or Waitress

Busboy or Busgirl

Average Months Promotion Time

Time-on-Job, Responsibility, and Performance Level
FOOD SERVICE IN HOSPITALS

Hospital food service places major emphasis on patients' room service. The cafeteria is operated for employees and the public, usually patients' visitors. The basic objective is to serve food that meets nutritional requirements of patients, offering a choice of foods according to the patients' diet needs, served at proper temperature. The cafeteria should serve food of general appeal to employees and the public. It should be kept clean and dispense appetizing and wholesome food. The food service department in a hospital is a part of the team in patient care, and is in a constant process of developing new ideas and research into nutrition, diet therapy and management of the food service for patients.

Food service in hospitals affords two major career areas. These are food preparation emphasizing patients' diet needs and food service to the public. Major emphasis is on the special needs of patients for diet requirements.

Food preparation. The entry level job in food preparation is cook helper, who must be at least age 18, have completed at least sixth grade with ability to read with understanding and write coherently. No particular course preparation in school is required. The new employee gets on-the-job training from an experienced cook. There are also classes on sanitation and cleaning and handling equipment. Visual aids are employed to show the new employee how to handle equipment, sanitation and food preparation. Work attitudes important for success in the entry job as cook helper and to gain promotion are personal cleanliness, regular attendance at work, interest and aptitude for food preparation and tidiness.

The factors which identify workers on Career Ladder who will be able to advance to supervisory positions are personal cleanliness and attention to sanitation needs of his job; initiative in advancing and testing his own ideas; independence to proceed on any job which needs to be done without some supervisor pointing out the need. He or she must have the ability to work with others and communicate easily with management.

Food service to patients. The entry level job for food service to patients in hospitals is dietary aide. For this job one must be 18 years of age and, preferably, a high school graduate. No particular course preparation in high school is specified, although courses in home economics and home management would be advantageous to success and promotion. She works with dietitian doing minor tasks and gradually learns skills required for job. She is required to take courses offered by the hospital on diet theory and sanitation. Through on-the-job training by more advanced diet specialists, she learns to set-up and serve patient trays; helps dismantle and store trays; learns minor food preparation, such as pouring juices; and serves attractively arranged food to patients in correct portions.

Work attitudes important for success in this entry level job and to gain promotion are a willingness to do any assigned job to the best of her ability and move from one job to another without being told. If she sees something that needs to be done, she should act without being told. She should do all her work in a quiet, patient and acceptable manner, and have a good working relationship with other employees.

The factors which identify workers on the Career Ladder who will probably advance to supervisory positions are willingness to perform, regularity in work habits and dependable, eager to learn, able to work with other em-

(continued on next page)
ployees and superiors and anticipate what management wants.

FOOD SERVICE IN HOSPITALS (continued)

PURCHASING CLERK-SECRETARY is verifying purchase orders and invoices relative to food service for hospital patients. She also keeps personnel time records.

FOOD SERVICE AIDES in hospital are setting food on patient trays in accord with diet lists prepared by Diet Clerk on instructions from Therapeutic Dietitian.
CAREER LADDER FOR FOOD PREPARATION IN HOSPITALS

FOOD PRODUCTION SUPERVISOR supervises food preparation and dietary personnel and checks all food trays served patients.

COOK prepares a variety of foods for hospital patients and personnel.

ASSISTANT COOK assists cooks and other workers in preparing food for hospital patients and personnel.

POT SANITIZER is sanitizing pots and pans used in food preparation.
CAREER LADDER FOR FOOD PREPARATION IN HOSPITALS IN GEORGIA, 1972

LEGEND
Average Reported Pay
Highest Reported Pay
Lowest Reported Pay

Hourly Pay, in Dollars

Yearly Pay, if 2020 Hours Worked

$16,640
$12,486
$8,320
$4,160

Average Months Promotion Time
0 20 50

Time-on-Job, Responsibility, and Performance Level

- Helper
- Pot Sanitizer
- Assistant Cook
- Cook
- Chef
- Salaried Personnel

PAGE 25
THERAPEUTIC DIETITIAN instructs patients on special diets and checks menus with patients on modified diets.

CAREER LADDER FOR DIETARY FOOD SERVICE IN HOSPITALS

DIRECTOR OF FOOD SERVICE plans and directs activities of food service department for patients and personnel. She also provides guidance and direction on menu formulation, procures food and supplies and employs personnel.

DIET CLERK compiles dietary information for use of kitchen personnel in preparing food for hospital patients.

THERAPEUTIC DIETITIAN instructs patients on special diets and checks menus with patients on modified diets.

DIETARY AIDE supervises employees engaged in serving food to patients.
LEGEND
Average Reported Pay
Highest Reported Pay
Lowest Reported Pay

Average Months Promotion Time

Time-on-Job, Responsibility, and Performance Level

CAREER LADDER FOR DIETARY FOOD SERVICE IN HOSPITALS IN GEORGIA, 1972

Hourly Pay, in Dollars

Yearly Pay, if 2080 Hours Worked

$8

6

4

2

0

24

42

62

Dietary Aide
Diet Clerk
Therapeutic Dietitian
Salaried Personnel

Director of Food Services
CHILD CARE SERVICE

Child care in private or public agencies is growing in importance in early childhood development and in providing badly needed assistance to working mothers. The work consists of showing, illustrating, and guiding children into doing and learning about the world in which we live. The curiosity aroused is fundamental to the learning process.

The entry level job for work in a day care center is the teacher aide. The girl, or in some cases the boy, must be 18 and, preferably, a high school graduate. If the aide has completed only high school she must have had some experience working with children. The more sophisticated day care centers have training sessions for newly employed teacher aides. But first the prospective employee is asked to come in for three or four days to work with children. She is then assessed on her potential for this kind of work.

The training sessions run for two hours each week during a period of ten weeks. In these training sessions the aide learns sensory development, behavior modification, child growth and development. Each new employee is hired on a trial basis for twelve months. At the end of the twelve months, she is assessed not only on the subjects she has been taught but also on her attitudes. She is then assigned to a job level, usually teacher aide. Often one performing very competently as an aide may be promoted to a teacher at this point.

The attitudes important for success as an aide and for promotion to teacher are: enthusiasm; sincerity with children; organization of schedules to train children in needed attributes, skills, motivation and coordination; and finally the ability to get along with children and parents.

The factors which identify the teacher aide or the teacher who will advance to supervisory positions are: dedication to work; ability to communicate with parents and children; an overall pleasant attitude; and ability to keep accounts and “trouble shoot” on operating problems of the center.

A Child Learns What He Lives

If a child lives with criticism, he learns to condemn
If a child lives with hostility, he learns to hate
If a child lives with ridicule, he learns to be shy
If a child lives with shame, he learns to feel guilty
If a child lives with tolerance, he learns to be patient
If a child lives with encouragement, he learns confidence
If a child lives with praise, he learns to appreciate
If a child lives with fairness, he learns justice
If a child lives with security, he learns to have faith
If a child lives with approval, he learns to like himself
If a child lives with acceptance and friendship, he learns to find love in the world
TEACHER is helping toddlers (18 mos. to 2 1/2 years of age) to develop muscle coordination by teaching them to climb steps.

TEACHER AIDE is working with color blocks by identifying blocks and encouraging juniors to imitate a pattern.

TEACHER AIDE is matching sensory colors and teaching juniors (2 1/2 to 3 1/2 years) eye-hand coordination and how to identify shapes of things.

TEACHER is teaching identification and concept formation to infants (3 mos. to 18 mos. of age). She says the names of animals and asks infant to point them out.

TEACHER is helping toddlers (18 mos. to 2 1/2 years of age) to develop muscle coordination by teaching them to climb steps.
TEACHER is showing kindergarten children (four to five years) how to paint, fill and plant flower pots for Mother's day gifts. The objective is to let them witness plant growth and have his or her own something for achievement.

DIRECTOR is enrolling a child in program. She keeps attendance records and individual accounts, helps teachers with first aid and counsels teachers and parents. Supervises hiring and firing of personnel and maintains operations through orders for food, cleaning materials and art supplies. Based on records, sends written evaluation to public school when children in kindergarten enroll in public education.

TEACHER is instructing an advanced group of juniors in differences and similarities of designs and colors.
CAREER LADDER FOR CHILD CARE SERVICE IN GEORGIA, 1972

LEGEND
Average Reported Pay
Highest Reported Pay
Lowest Reported Pay

Hourly Pay, in Dollars

$5
4
3
2
1

Yearly Pay, if 2080 Hours Worked

$10,400
8,320
6,240
4,180

Average Months Promotion Time

0
12

Time-on-Job, Responsibility, and Performance Level
RECREATION CAREERS

Federal, state and local governments are giving increasing emphasis to developing accessible public recreation facilities. The objectives are to provide an outlet for children and adults to have recreation experiences, both passive and active, during leisure hours. This is a public and privately supported activity and has tremendous public relations implications through the appeals offered in athletics, crafts and social events for people of common interests to meet together and socialize.

The entry level job is recreation center leader, who must be a high school graduate, 18 years of age and preferably with a background of leadership in athletic or other activities involving children and adults and plans to enter college for special study in recreation as a field of specialization. During high school, courses in a wide variety of subjects related to leisure are of prime consideration. Immediately upon employment, he gets orientation to the recreation program of the unit and then works under the center director for special direction and supervision a certain number of hours during the week, depending on the facility’s open hours. This supervision and direction is in the way of recreation skills, programming facility operations and supervision. The job attitudes which are important for success in the entry level position are demonstration of a professional attitude towards the recreation field with skills in some of the different forms of recreation.

For advances up the Career Ladder beyond recreation center leader many recreation organizations, private, commercial, city, county, state, or federal, are increasingly requiring a college degree with specialization in recreation management and administration.

The factors which identify workers on the Career Ladder who are expected to advance into management or supervisory positions are performance of assignments with an intense job interest; good judgment and thoroughness in organizing and conducting activities; ability to show patience and gain the interest of children in craft skills and game activities; public relations orientation and ability to gain enthusiastic support of parents and the general public for programs.
DIRECTOR OF RECREATION CENTER on left is discussing with recreation leader the progress of the children. Her other functions are to: supervise all recreation activities at the center; schedule events and activities at center for day or night; secure instructors and supervise their activities. Her major responsibilities involve planning, organizing and directing program of activities of children at center.

RECREATION CENTER LEADER is instructing a class of pre-school children in crafts. Other functions are to referee games; serve as coach or instructor to an assigned group or team; issue, clean and repair equipment and assist in maintenance of center and preparation of reports on activities.

RECREATION SUPERVISOR on right is discussing with recreation center director the need for instructors to turn in outlines, showing lesson plans in recreation. Other functions of the recreation supervisor are to coordinate activities of all recreation centers under her department, employ recreation center leaders and set standards for promotion.

CAREER LADDER FOR PUBLIC RECREATION IN GEORGIA, 1972

DIRECTOR OF RECREATION CENTER on left is discussing with recreation leader the progress of the children. Her other functions are to: supervise all recreation activities at the center; schedule events and activities at center for day or night; secure instructors and supervise their activities. Her major responsibilities involve planning, organizing and directing program of activities of children at center.
CAREER LADDER IN PUBLIC RECREATION IN GEORGIA, 1972

LEGEND
- Average Reported Pay
- Highest Reported Pay
- Lowest Reported Pay

Parks and Recreation Director
Recreation Supervisor
Recreation Center Director
Recreation Center Leader

Average Months Promotion Time

Time-on-Job, Responsibility, and Performance Level

Monthly Pay

Yearly Income

Average Reported Pay

Highest Reported Pay

Lowest Reported Pay

20
42

4,800
7,200
9,600
12,000
14,400
16,800

$1,400
$1,200
$1,000
$800
$600
$400

0
20
42

PAGE 34
NET NUMBER OF JOB OPENINGS YEARLY, 1971-76, IN SERVICE TO PEOPLE CAREER AREAS IN GEORGIA

<table>
<thead>
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<th>Career Area</th>
<th>Number of Job Openings Yearly</th>
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<td>800</td>
</tr>
<tr>
<td></td>
<td>1600</td>
</tr>
<tr>
<td></td>
<td>2400</td>
</tr>
<tr>
<td>Food Preparation Service</td>
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<td>Child Care Center Workers</td>
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<td>Recreation Center Workers</td>
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LEGEND
- Entry Level Job
- Experienced Service Workers

Entry level jobs are estimated to equal 2,145 jobs yearly for the period 1971-76 or 38 percent of the total of 5,636 job openings yearly for the five career areas shown. The largest number of entry level jobs will be for Cook Helper, 720; Busboy or Busgirl, 668; and Teacher Aide in Child Care Centers, 679 jobs. It should be noted that food preparation includes hotels, restaurants and hospitals, while customers food service pertains only to hotels and restaurants.
I. If you are in the middle grades (7th, 8th, or 9th grade):

This is your chance to EXPLORE careers!

In the middle grades you can “try out” a number of different jobs. Your school may offer some of the following programs. If they do, you can explore the world of work!

Program of Education and Career Exploration (P.E.C.E.). Learn about all kinds of careers including food service, child care and recreation center service, by spending time on the job with real workers in your community.

Mini-Prevocational Course in Home Economics. A long name for a short course! It lasts from eight to twelve weeks and involves you in all the different kinds of work done in food service and child care. You will begin to learn some basic skills needed to get a job by carrying out projects and work activities in food service and child care careers.

Prevocational Courses. You may want to learn much more about work in the field of food service and child care. This course lasts a full year. You will try out, under real job conditions, many work roles available in food service and child care careers. This course should help you better understand this part of the world of work.

II. If you are in senior high school (10th, 11th, or 12th grade):

Then you will be getting ready to enter the world of work or post-secondary education.

In high school you can develop the skills necessary for entering a job in food service, recreation center service or child care careers. Many high schools offer cluster courses, one to two years of study in food service and child care.

Occupational Home Economics is a cooperative course where you can work in the field and go to school, getting credit in school for the work you do on the job. You can earn and learn. Each of these can be the first step in preparing for a rewarding career for you!

III. If you are about to graduate or are already out of school, your school’s GUIDANCE AND PLACEMENT OFFICE can offer help.

Are you interested in entering food service, recreation center service or child care careers? Then you now have two options.

1. You may want further preparation. Georgia has 25 area vocational-technical schools offering 56 different courses, including child care and food service, to mention only a few. One of the area vocational-technical schools is within commuting distance of your home. Ask your counselor to help you apply for the school nearest you. The counselor and the Home Economics instructor can also help you pick the course of study best suited to your interests and talents.

Some food service and child care careers require a baccalaureate degree. Your counselor is also a source of information regarding college entrance and courses of study at the university level.

2. You may want to go to work now. See your school’s GUIDANCE AND PLACEMENT OFFICE for help in finding employment and beginning your career.
**ACKNOWLEDGEMENT**

The following companies have cooperated in supplying pictures for the brochures which are published in connection with this research report. The author is sincerely grateful for this cooperation.

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CAREERS FOR YOUTH IN SERVICE TO PEOPLE

Training programs are available in:

- Comprehensive High Schools
- Area Vocational Technical Schools
- On-the-Job Training in Companies or employers
- Educational Institute of the American Hotel and Motel Association

The Work Attitudes for success are:

- Serious and dependable and accepts corrections from Cook or Chef in right spirit
- Punctual work habits; neat and attractive in appearance and friendly attitude towards customers
- Willingness to do assigned work to best of ability and does all work in an acceptable and attractive manner
- Show love for children and be conscientious
CAREERS FOR YOUTH IN BUSINESS AND DISTRIBUTIVE OCCUPATIONS

BOOKKEEPER • GENERAL CLERICAL • SECRETARIAL
RETAIL SALES • GENERAL SALES • STOCK CONTROL
DATA PROCESSING

BROCHURE NUMBER V
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CAREERS FOR YOUTH IN BUSINESS AND DISTRIBUTIVE OCCUPATIONS

Prepared By

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Regents' Professor of Economics
College of Industrial Management
Georgia Institute of Technology

For

Georgia State Department of Education
Office of Adult and Vocational Education
Atlanta, Georgia 30334

Jack P. Nix
State Superintendent of Schools

1973
FOREWORD

This Brochure is one of five which is being published as a supplement to the research report, entitled: "Survey of Employment Opportunities, Career Ladders, and Training Requirements for Basic Jobs in the Vocational Job Clusters, 1971-76". Funds for this research were provided by the State Board under the Authority of Part C of the Vocational Educational Amendments of 1968, P.L. 90-576. The Contract was administered by the Georgia Institute of Technology Research Administration as Contract M50-602.

Dr. John L. Fulmer, Regents' Professor of Economics in the College of Industrial Management, conducted the research and has prepared this and four other brochures to focus the attention of youth in the School Systems of Georgia on 48 highly significant Careers in the Georgia economy. Publication was by the Industrial Management Center, Georgia Institute of Technology, Atlanta, Georgia 30332.

The main report from this research may be obtained by writing to:

The Office of Vocational and Adult Education
State Department of Education
State Office Building
Atlanta, Georgia 30334

BRIEF DIGEST OF SKILLS AND WORK ATTITUDES REQUIRED FOR YOUTH TO SUCCEED IN BUSINESS AND DISTRIBUTIVE OCCUPATIONS

Entry Level Skills:
1. Ability to use specialized equipment, adding machines, math and spelling; and do mechanical aspects of job.
2. Stock control clerk learns product nomenclature and store's parts; familiar with "in" and "but" paperwork.
3. Sales clerk must understand merchandise, its producer, performance and quality; know store areas and help re-stock; ability to fill out documents.
4. Sales trainee, ability to answer telephone and fill orders to satisfaction of customer or solicit business by telephone.

Entry Level Work Attitudes:
1. Ability to grasp and follow instructions, general cooperative spirit, initiative, accuracy and promptness.
2. In sales work, be able to communicate with customers; identify needs and gain enthusiasm from product or service.
3. In stock control work, possess initiative and desire to learn; be honest and accurate; have pride in upkeep of place and sensitive to safety precautions.
INTRODUCTION

At the heart of any business is a network of communication and transportation which serves to move financial information, goods and services to satisfy customer needs; vital roles are played by office workers, salespeople, stock controllers and data processors. In the networks, these people are “movers”. Their jobs, as described in this brochure, are all involved with maintaining a healthy cash flow by moving information or merchandise.

In offices, the “movers” deal with information. Bookkeepers keep accurate records of financial transactions. Clerical workers receive telephone messages, direct visitors and file documents according to a system for ready reference and retrieval. Secretaries prepare written communications by managers to other managers, to employees, to businessmen in other firms and to the general public.

In merchandising, the “movers” are involved in moving merchandise, either by sales, which remove the merchandise from stock; or through stock control, the moving of stock from one location to another.

The salesman’s job is to bring together the producer and the buyer. Sales may be either direct, dealing with the consumer, as in a department store; or they may be indirect, from the producer to a middleman, as in the job of the man who sells the dresses sold in a department store. In both direct and indirect sales, the salesperson must be able to identify what the customer wants and have the stock on hand to satisfy that demand. No matter how persuasive the salesperson, no sale can be made if the merchandise is not available at the time of sale.

For this reason, the jobs of stock control personnel are vital to support a salesperson’s work. Their jobs are to maintain adequate inventory levels, update stock with new products, replenish stock depleted through sales and keep stock in good repair.

In all businesses, more and more information is accumulated and analyzed through computers. A host of new careers has opened up with the rapid growth of business volume and the simultaneous development of complex equipment capable of rapid data analysis. Data processing has replaced much old style record keeping formerly handled by clerks, bookkeepers and accountants; and these new style information “movers” use sophisticated electronic equipment to store and retrieve financial and statistical information.

This brochure presents seven Career Ladders for youth related to the internal workings of company management and its dealings with the public through product sales. The charts of pay ranges accompanying each Career Ladder pertain to 1972, and young people looking at earning prospects for any given Career Ladder should bear in mind that pay levels are rising each year. During 1960–70, pay increases nationally averaged 4.8 percent yearly. Forward projections of earnings over the next few years should take into consideration these increases.
BOOKKEEPING

Bookkeeping workers record day-to-day business transactions in journals, ledgers, and on other accounting forms. They calculate and check for accuracy, post various types of financial data and prepare invoices and bills. Some of the financial transactions of the establishment are recorded by a bookkeeping machine which sorts documents for posting. At regular intervals bookkeepers also prepare income statements which show all money received and from whom and money paid and to whom.

The entry level job is Accounting Clerk who must be 18 years old or older and have a high school education or equivalent. She should have had commercial courses in high school, including bookkeeping and business arithmetic. Accounting clerks should have above average aptitude for working with numbers and the ability to concentrate on details. Previous experience is not required if she has these aptitudes. On the job she is taught how to use adding machines, bookkeeping machines and calculators. While at work she will get informal job rotation which enables her to try other jobs in accounting and bookkeeping. In some localities, however, companies cooperate with business schools and high schools in work-study programs to give students practical part-time experience that is helpful in obtaining work after graduation.

In the initial job, bookkeeping workers usually start recording routine transactions and then advance to more responsible assignments. For example, experienced bookkeepers prepare income statements and operate complex bookkeeping machines. Some workers may be promoted to supervisors. Bookkeepers who can find the time to complete the college courses in accounting can become accountants.

The factors which identify workers in entry level jobs and other early stages who will advance up the Career Ladder are a serious attitude towards the work, including accuracy, dependability and loyalty, and responsibility to get a job done accurately. Job success is most importantly related to the bookkeeper's interest and enthusiasm for the accounting and bookkeeping technical skills required to assemble data for the great variety of financial statements that must be prepared.
BOOKKEEPING MACHINE OPERATOR is using bookkeeping machine to make account entries. She sorts documents to be posted, such as debit and credit items.

ACCOUNTING CLERK is preparing the cash receipts journal. She also calculates and types.

BOOKKEEPER is reviewing data processing general ledger. She keeps records of financial transactions and verifies and enters details as they occur in stubs, inventory records and requisitions.

ASSISTANT SUPERVISOR OF BRANCH ACCOUNTING is checking branch reports. Other functions are to supervise clerks and answer their questions relative to reports. She sees that deadlines are met and that all accounts are correct before transmittal to data processing.

CAREER LADDER FOR BOOKKEEPER
GENERAL CLERICAL OCCUPATIONS

These jobs are involved with receiving telephone messages, directing visitors and giving them information, filing correspondence and invoices, receipts and other records according to a designated system. The major function of clerical employees is to relieve company managers and officers of details and assist them in keeping necessary records readily accessible.

The entry level job is a file clerk who must be at least 18 and a high school graduate or equivalent. No previous experience is required and it is unusual to require certain course preparations from high school. On the job the file clerk gets orientation to the company and its products and services. She will usually be assigned to a trainer who, along with the first line supervisor, trains her in the skills required for the job of file clerk. The first six months requires skills development and good work attitudes. In one year or less the file clerk can advance to general clerk or more specialized jobs involving figuring and handling of data. Work attitudes important for success on the job and to gain promotion are willingness to learn new duties, competence and good performance. A person will not be promoted who has a poor work attendance record.

The factors which identify workers in their first jobs who will advance up the Career Ladder and qualify for alternative lines of work in accounting or data processing are cooperativeness, willingness, personality and the ability to turn out a good volume of accurate work.
CAREER LADDER FOR GENERAL CLERICAL OCCUPATIONS

FILE CLERK is filing records of checks paid out. Other functions include filing correspondence, cards, invoices, receipts and other records.

GENERAL CLERK is using an adding machine to verify sales tickets. She also writes or types bills, statements, receipts, checks or other documents, copying information from one record to another. Proofreads records or forms. Sorts and files records.

TELEPHONE OPERATORS are accepting and transferring telephone calls by operating cords on switchboard to relay incoming, outgoing or interoffice calls.

RECEPTIONIST is making an intercom announcement. She receives clients or customers in the office, ascertains their business and directs them.
CAREER LADDER FOR GENERAL CLERICAL OCCUPATIONS IN GEORGIA, 1972

LEGEND
Average Reported Pay
Highest Reported Pay
Lowest Reported Pay

Monthly Pay

Yearly Income

$9,600

Average Months Promotion Time

Time-on-Job, Responsibility, and Performance Level

File Clerk
General Clerk
Telephone Operator
Receptionist

$9,600

$7,200

$4,800

$2,400

$800

$600

$400

$200

0
7
17
28

Average Reported Pay
Highest Reported Pay
Lowest Reported Pay

SECRETARIAL OCCUPATIONS

Secretarial work is essential in managing any business or industrial organization. The secretary takes dictation, types memoranda, statistical reports and tables and prepares in final form all types of letters. This work is the key medium through which officers, managers and department heads communicate with their employees, other businesses and the public. Secretarial work is a most important function in company operations and is important and interesting work.

The entry level job is usually typist or clerk-typist. Requirements are at least 18 years of age, high school education or equivalent and typing skill, which may be acquired in high school, area vocational-technical school, or other sources. The typical required typing speed is 40 words per minute with accuracy. Often companies will employ a typist with a lower typing speed if she has good potential. In this case companies will expose the typist to work situations to enable her to work up to 40 words per minute in a reasonable time.

Some companies will employ stenographers directly, and provide on-the-job training to test typing skills, as she is tested for dictation or transcribing skills.

The work attitudes important in the entry level job, whether typist or stenographer, are willingness to learn and accept constructive criticism, self-motivation and ability to get along with others. Reliability and regularity of work is most essential. During employment interviews some companies check school attendance records in order to assess a worker's potential and work habits.

Advances up the Career Ladder depend on acquiring skills for the next level; ability to deal with the public; get along with other workers; and communicate with any manager, department head, or officer she may work for as a stenographer, secretary or administrative secretary.

The factors which identify typists who will advance rapidly to upper level positions on the Career Ladder are pride in work, concern for accuracy in work, ability to meet deadlines and punctuality.
STENOGRAPHER is transcribing from a dictaphone. She must also be able to take dictation directly for correspondence, reports or other matters.

SECRETARY is typing a statistical report. She schedules appointments, gives information to callers and takes dictation.

ADMINISTRATIVE SECRETARY is typing a memorandum. She keeps official records and helps carry out policies determined by the manager or officials of company.

TYPIST is typing an invoice. She also types letters, reports, stencils, forms, addresses or other straight copy material from a rough draft or corrected copy.
Retailing is a complex field, involving many different types of jobs. Before a retailer can successfully serve his customers, he must identify the needs of these customers so his stock will reflect both the quality and variety of merchandise customers want. This merchandise must be attractively displayed in the store and adequately advertised to create customer interest. Once the customer is in the store, it is the job of the salesperson to present the merchandise so the customer will see that this will fill his needs and desires. The salesperson must be able to establish a rapport with each customer, must have extensive knowledge of his merchandise and must possess both tact and self-confidence to complete the sale. The customer should not only buy the merchandise, but should be genuinely pleased with his purchase so he will return to the store and to that particular salesperson. Retail selling offers numerous opportunities for employment with lucrative earnings for the person who has the ability and the desire to become a truly professional salesman.

For a beginning job in general retail sales requirements include: 18 years of age; high school education; basic understanding of mathematics; ability to understand business transactions involving money (addition, calculation of percentages, computation of tax charges); and the ability to approach and communicate effectively with customers. No course requirements or experience are needed for the first position.

Upon employment, many large retailers send new salespeople through a training course. This course usually lasts three to five days in the classroom and is followed by a probationary employment period. The classroom training includes systems and procedures on the cash register system used by the store. As more and more stores move toward computerized register systems, this training becomes more exacting and important. Training also includes store policies on employee discounts, charge transactions, check acceptance, postage, delivery, security, exchanges and refunds. An abbreviated course in salesmanship is included in this training. The new employee is then assigned to an experienced salesperson in his department, who acts as a sponsor for the new salesman. The sponsor is responsible for introducing the new employee to the department, seeing that he understands and follows all policies and procedures correctly and that he develops both product knowledge and selling skills.

Continuous training is provided sales employees in most retail organizations. At times of seasonal merchandise change or when new merchandise is introduced into the department, vendor representatives, store buyers or sales managers meet with sales personnel to give them the product knowledge they need to present this merchandise to customers. Training meetings are also held to up-date employees on new store procedures and to keep employees informed about special sales or store-wide promotions.

A salesperson may advance in his career by moving laterally into a department with higher volume or higher commission rate. He may (continued on next page)
advance by moving vertically into an assistant department manager position. The assistant manager or head of sales usually performs some of the same functions as the sales manager. He may authorize transactions, help plan schedules, set up departmental displays and supervise the area in the absence of the sales manager. He also does some selling, adding some commission on sales to his salary.

Job attitudes are important in the entry position for selling and are the determining factors for success in the job and advances up the Career Ladder. The most important attitude for a salesman is that of genuine desire to please the customer, even if serving this customer takes extra time and effort. Customer satisfaction must be his primary goal, and his attitude must reflect the company policies on customer satisfaction. Neat, business-like dress and good grooming are outward signs of a good job attitude. Pleasant and accurate communications with customers and with other employees help maintain the desired atmosphere in the store.

Company requirements for advancement to jobs of greater responsibility include: sales volume, ability to communicate, and leadership ability indicative of supervisory skills. A genuine desire to advance is indicated to the sales manager through the employee's leadership qualities, his relationship to others in the organization, his reliability and, most of all, his desire and ability to do more than the minimum requirements of the job — his initiative and cooperation.

Two career areas illustrate retail selling. The first set of charts illustrate specialty selling in large department stores. The criteria for success have been outlined above. The second set of charts pertain to somewhat more generalized sales work in large retail sales discount operations. The entry level job is for sales aide or attendant who roams a general sales area in order to assist customers to find products and answer questions. Requirements for a job in this position are that a girl be at least 16 years of age with a work permit and need not be a high school graduate. She gets on-the-job training from the area supervisor. The typical line of advance is sales clerk, area supervisor and department manager. In order to move up this Career Ladder the employee must gain maturity, show expertness on each lower level of job functions, initiative in maintaining stock of area and ability to please and satisfy customers. An alternate line of advance would be sales clerk, cashier, and head cashier which requires expertness in handling NCR equipment.

The factors which identify workers in the entry level job in the first steps on the Career Ladder who will make rapid progress in either line of advance are conscientiousness in work assignments, ability to act pleasantly with customers and satisfy them and show cooperative and congenial work relationships with other employees.
SALES MANAGER at left works with buyers on sales plans in his area. He supervises selling floor to maintain standards of customer service, handles administrative duties and supervises training programs. HEAD OF SALES at right serves as sponsor and service manager when manager is not available. She is responsible for disposition of unsalable merchandise and for care and handling of all stock.

SALESPERSONS in men's and women's ready-to-wear garments fit customers, straighten merchandise and use NCR register to handle transactions.

SALESPERSON in boy's garments uses NCR Register to handle sales transactions.
SELLING MANAGER works with buyers on sales plans in his area of responsibility. He supervises the selling floor to maintain standards of customer service, supervises training programs, sells on the floor when key customers and important transactions require his presence. He earns a commission plus salary.

SALESPERSONS in furniture and appliances. Selling furniture is depicted in left picture; sales of appliances are shown in right picture. Both types of selling involve "Big Ticket" sales. The salesperson in either product line must have a thorough knowledge of merchandise, call customer techniques and sales contracts.
CAREER LADDER FOR RETAIL SELLING OF DEPARTMENT STORE SPECIALTIES IN GEORGIA, 1972

LEGEND

Average Reported Pay ——
Highest Reported Pay — — — —
Lowest Reported Pay · · · · · ·
(Note: Managers depict level of responsibility only)

Manager of Sales

Head of Sales

Sales, Women's Garments

Sales, Boys & Men's Garments

Sales, Appliances

Sales, Furniture

Selling Manager

Yearly Income
(Full-time plus Sales Commissions)

$16,640

$12,480

$8,320

$4,160

Hourly Pay, in Dollars

2

4

6

8

Time-on-Job, Responsibility, Performance Level, and Customer Satisfaction
CAREER AREA IN LARGE RETAIL SALES DISCOUNT OPERATIONS

AREA SUPERVISOR and SALES AIDE. He is explaining to her how to fill shelves and the price changes on a line of gift items. He determines markdowns or markups as required and is responsible for stocking, display and the general appearance of the merchandise area.

CASHIER is checking out an order of towels. She operates NCR Optical cash register, receiving merchandise from customer, ringing up sales and counting change, if any. Checks credit procedures and wraps and/or bags merchandise in absence of bagger.

HEAD CASHIER is checking out an order of wine glasses and wine. Her major responsibility is supervision of cashiers but she helps out in customer check-outs when needed.

SALES AIDE is providing customer with information on paints display. Other functions are to receive and display merchandise on counters. She also assists in markdowns and markups and keeps area maintained under direction of area supervisor.

SALES CLERK is preparing an order of doughnuts. Major functions are to handle direct sales transactions, operate cash register and maintain clean area. She receives and displays merchandise and checks quantity and prices.
CAREER AREA IN LARGE RETAIL SALES DISCOUNT OPERATIONS IN GEORGIA, 1972

LEGEND
Average Reported Pay
Highest Reported Pay
Lowest Reported Pay

Sales Aide or Attendant
Sales Clerk
Cashier
Head Cashier
Area Supervisor

Promotion Time Interval Undesignated
Time-on-Job, Responsibility, Performance Level, and Customer Satisfaction

Yearly Pay, if 2080 Hours Worked
Hourly Pay, in Dollars
$4
$3
$2
$1

$8,320
$6,240
$4,160
GENERAL SALES

Occupations in general sales offer many opportunities to those who like to deal with people to find a way to satisfy their needs. Success depends on the ability to satisfy customers and gain repeat business.

Certain personal characteristics are required for success in general sales. Some of these jobs require travel. This sales category includes persons who want salaried employment as well as those who want to own their own business.

Sales activities include selling for manufacturers, insurance companies, other producers of goods and services, wholesalers who stock large volumes for resale and many other products or services which involve personal contact for sales.

Successful salespeople must have the ability to identify the needs and viewpoints of their customers reinforced by a readiness to assist them, as the old adage states that: “The satisfied customer returns with his friends while the unhappy customer does not return and complains to his friends over his unhappy purchase”. Sales work also requires people with poise who are at ease dealing with strangers and often uncommunicative potential customers. Other important attributes in many types of general sales are energy, self-confidence, imagination, ability to communicate and self-discipline. Since money changes hands and the salesperson must often make calculations, some complex mathematical skills are an essential asset. In almost all general sales work the salesperson must have the initiative to locate prospective customers and plan a work schedule.

The accompanying pictures and chart depict two power-mechanical type sales outlets, involving both sales at wholesale and retail. Two career areas are given relative to general sales. These involve sales of industrial and farm tractors and equipment and parts and sales of automobiles and parts. Data on job openings for tractors and farm equipment salesman and automobile salesmen will be found in the main report. The broad outlook on job openings for general sales will be found at the end of this brochure in a summary chart.

Youth who have an interest in a sales career for tractors and farm equipment must have a high school education, be 18 years of age, write legibly and be able to make calculations involving large sums of money and a variety of financial conditions. In order to gain familiarity with the job functions it is preferable that youth interested in selling farm tractors and equipment have at least six months experience initially in the parts department in order to learn significant technical aspects of the great variety of products.

Lines of advance beyond salesman of tractors and farm equipment are assistant manager and manager of company-owned retail outlet; and from there he could move to district sales manager and to higher level management positions with the national company. The factors which identify persons in this line of work who may be expected to move up the Career Ladder to management positions are: makes good personal appearance and impression, is sales-minded and has the ability to organize work functions and supervise people.

(continued on next page)
Youth interested in a career selling automobiles must be a high school graduate and 18 years of age. No courses are specified but it would be extremely helpful for the prospective automobile salesman or even a trainee to take available business administration courses in night school. On the job initially he works with a mature salesman who shows him the details of selling. He also gets one week of sales training put on by representatives of the national company. He is also shown sales training films and reads booklets on how to become a successful automobile salesman. Personal factors required for success are ability to talk up automobiles with contacts and friends, push hard at job and spend long hours mastering all the angles involved in the successful sale.

The lines of advance beyond automobile salesman are sales manager, credit manager and general manager of the dealership, and sales representative for national corporation. The factors which identify salesmen who have the potential for advances along these lines are ability to obtain volume of sales which depend on mental orientation and flexibility to make the proper sales talk to every level of the market; has an aggressive, outgoing personality and makes a nice appearance. He must have the ability also to manage other people in the organization and motivate them to high levels of performance.
TWO CAREER AREAS IN GENERAL SALES

Sales of Industrial and Farm Tractors and Equipment and PARTS

SALESMAN OF PARTS, INDUSTRIAL FARM TRACTORS AND EQUIPMENT, is making parts sale to customer and preparing sales receipt. He keeps track of inventory and orders parts which involve a great volume of paper work.

SALESMAN, INDUSTRIAL AND FARM TRACTORS AND EQUIPMENT, is discussing sales of tractor loader and backhoe with customer. He sells all types of heavy equipment both new and used for use either in urban or rural areas. He sees that it is equipped and serviced to meet customer's needs. In sale he collects down payment or full payment if not financed. He is responsible for sending list to facilitate follow-up on service and to solicit new business.

SALES OF AUTOMOBILE PARTS is discussing sales of parts with customer. The parts warehouse sells wholesale and retail to the public. He prices parts, collects and registers sales, and exchanges or otherwise solves customer complaints. He keeps close check on inventory and orders to replenish stock.

Sales of Automobiles and PARTS

AUTOMOBILE SALESMAN is discussing sale of new, expensive model with customer. He sells new and used automobiles on premises of dealer agency, compiling information on various car models and credit terms to achieve sales. He uses customer follow-up in order to maintain contact with reference to service and possible new orders. He is responsible that complaints against warranty are solved to the satisfaction of the customer by the service manager.
STOCK CONTROL

Business which attempts to satisfy the public begins with selection and control of stock. In order to satisfy customers and gain a repeat business the right stock must be ordered, received, stored and displayed for customer choice. Records of stock on hand must be compiled and maintained. Knowledge in accumulating, storing, displaying and marking stock for sale is essential for progress of the business and also for advancement up the Career Ladder.

A high school student 16 years old can obtain part-time stock work employment in the warehouse. For one who hopes to make a career in retailing, a high school education is preferred; no specific high school courses are required, however. The youth hired for stock control initially is placed with an experienced stock clerk in a "buddy" arrangement. He learns from him and is taught by the more experienced worker until the newly employed worker can handle work alone and become a full-fledged stock clerk.

For advances up the Career Ladder the stock clerk is rotated from one commodity to another in a grocery if this is the area of work. Then he is evaluated by the store manager, district manager, and personnel director and if passes successfully is assigned as management trainee. Then he is rotated to different departments for experience and learning, including office, in order to learn office procedures and bookwork.

Work attitudes important for success in an entry level job as stock clerk are positive attitude and outlook, aggressiveness towards the job and leadership ability. These attitudes will enable the worker, through the types of training programs offered, to make up for shortcomings in knowledge of stock flow in and out of warehouse or storage area.

Company requirements for advances up the Career Ladder are adequate knowledge of the business and products, leadership and a positive attitude towards work and job. The factors which identify workers in initial steps on the Career Ladder who will be able to advance into upper management are: above average performance in present job, demonstrated leadership ability, keenness of interest and aggressiveness to go beyond what the job requires, doing also what appears to need doing even though not specifically instructed. The real test shows what the worker will do on his own initiative above and beyond what is obviously his job or what he has been instructed to do. This builds an element of great personal success for advances up the Career Ladder and it also reinforces business success strongly and continuously.
ASSISTANT STORE MANAGER is ordering an electronic ordering system. He supervises store personnel in meeting sales goals and profit objectives through effective product ordering, display and merchandising. He is responsible for the grocery department and front operations.

STOCK SUPERVISOR is assisting stock clerk in stocking shelves. He has the responsibility for supervising stock clerks, and may assume the position second in command in small volume stores or is in charge of the night stocking crew in larger volume stores.

STOCK CLERK is marking prices on frozen food items. Other functions include assisting in unloading, storing, stocking, price marking, maintaining displays, receiving and checking merchandise. He may help also as checker and bagger.
STORE MANAGER is answering customer questions on a grocery item. He directs and supervises the operation of the entire store and collaborates with store department managers to realize satisfactory sales, profits and service.

DISTRICT MANAGER is looking over some store sales figures. He directs the management of a group of stores and coordinates between stores and division headquarters to realize satisfactory sales results of each store as a complete unit. He works closely with each store manager.
CAREER LADDER FOR STOCK CONTROL IN GEORGIA, 1972

LEGEND
Average Reported Pay
Highest Reported Pay
Lowest Reported Pay

Hourly Pay, in Dollars

Yearly Pay, if 2080 Hours Worked

Dryer Pay, in Dollars

District Manager
Manager of Store
Assistant Manager
Salaried Personnel

Stock Supervisor
Stock Clerk

Average Months Promotion Time

Time-on-Job, Responsibility, and Performance Level
DATA PROCESSING

Jobs in data processing concern data coding and data processing, including complex manipulation and calculation of data pertinent to business or scientific research. The operation requires input of data punched in cards or put on tapes by various electronic techniques and printed output of the processes results. Punching of data in cards involves keypunching of data by persons trained to operate a keypunch machine. Analysis of data and preparation of output in form of statistical tabulations require the services of a programmer who prepares coded instructions for computer manipulation of data in the cards. The computer operator follows the programmer's instructions and after loading the computer with tapes, discs and cards, he manipulates switches and observes numerous lights to get the output which the programmer has set up.

The entry level job for this line of work is key-punch operator which requires a high school education and, preferably, a person 20 years of age. The girl interested in this Career Ladder must have typing skill of 40 words per minute, knowledge of adding machines and pass a six-part aptitude test. This includes office terms, numbers, perception, memory, dexterity and parts of machine. Training includes on-the-job training under direction of key-punch supervisor and tele-training at work location. Work attitudes required for success in entry level job are dependability, loyalty and stability.

For advances up the Career Ladder which follows the line from key-punch operator to verifier operator, key-punch supervisor and computer operator there must be continuation of the intense, relevant on-the-job instruction and also training in special IBM school or in many of the Area Vocational-Technical schools. It should be noted, however, that in large data processing organizations and also in some large corporate organizations with strong emphasis on data processing, the Career Ladder for key-punch operator would generally involve several grade levels for keypunching work, based on higher levels of skills and experience with comparable pay ranges for each grade level. The most advanced step on the Career Ladder is programmer which requires a certain ability to combine logical analysis with the technical characteristics of the computer. The experience and potentials of such persons in data processing work will find the training required in the IBM school or an Area Vocational-Technical School.

The factors which identify workers in the early stages on the Career Ladder for data processing who may be expected to advance to key-punch supervisor are ability to improve performance in technical aspects of the job and display leadership characteristics. Those having potentials for advance to computer operator and then on to programmer must demonstrate strong aptitudes for the upper level skills and including particularly leadership, responsibility and supervisory skills.
CAREER LADDER IN DATA PROCESSING

VERIFIER OPERATOR verifies accuracy of data punched on tabulation cards, using a keyboard machine to reject incorrectly punched cards.

DIGITAL-COMPUTER OPERATOR operates and controls the computer, maintains control of keyboard and exterior components, such as the card reader, tape units and printer.

PROGRAMMER writes programs that will be punched on cards and fed into a reader to direct the computer. The programmer translates information into special computer languages.

KEY-PUNCH OPERATOR operates alphabetic and numeric key-punch machine to transcribe data from source material onto punchcards, producing pre-punched data.

VERIFIER OPERATOR verifies accuracy of data punched on tabulation cards, using a keyboard machine to reject incorrectly punched cards.
CAREER LADDER FOR DATA PROCESSING OCCUPATIONS IN GEORGIA, 1972

LEGEND
Average Reported Pay
Highest Reported Pay
Lowest Reported Pay

Undesignated Promotion Intervals
Time-on-Job, Responsibility, and Performance Level

Yearly Income
$14,400
$12,000
$9,600
$7,200
$4,800
$2,400
$0

Monthly Pay
$1,200
$1,000
$800
$600
$400
$200
$0

Programmer
Digital-Computer Operator
Key-Punch Operator
Verifier Operator
Key-Punch Supervisor

Yearly
— $14,400 Programmer
— 12,000
— 9,600
— 7,200
— 4,800
— 2,400

Monthly
$1,200
$1,000
$800
$600
$400
$200
$0

Panel 30
NET NUMBER OF JOB OPENINGS YEARLY, 1971–76, FOR SPECIFIED CAREER AREAS IN BUSINESS AND DISTRIBUTIVE OCCUPATIONS IN GEORGIA

<table>
<thead>
<tr>
<th>Career Area</th>
<th>Number of Job Openings Yearly</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>800</td>
</tr>
<tr>
<td>Bookkeeping</td>
<td></td>
</tr>
<tr>
<td>General Clerical</td>
<td></td>
</tr>
<tr>
<td>Secretarial</td>
<td></td>
</tr>
<tr>
<td>Data Processing</td>
<td></td>
</tr>
<tr>
<td>General Sales</td>
<td></td>
</tr>
<tr>
<td>Retail Selling</td>
<td></td>
</tr>
<tr>
<td>(Specialities)</td>
<td></td>
</tr>
<tr>
<td>Stock Control</td>
<td></td>
</tr>
</tbody>
</table>

LEGEND
Entry Level Job
 Experienced Worker

Entry level jobs are estimated to equal 5,063 jobs yearly for the years 1971–76 or 20 percent of the 24,778 job openings yearly for the 7 career areas shown. The largest entry level job openings yearly will be for Stock Control Clerk with 2,355 jobs yearly. Job openings yearly for other specified entry level jobs, represented in the career areas, are as follows: Billing Clerk, 685; Typist, 671; Sales Attendant or Sales Clerk in general sales, 626; File Clerk, 466; Salesperson men's and Boy's Garments, 148; and Verifier Operator, 112.
HOW YOUR SCHOOL CAN HELP YOU FIND A CAREER IN BUSINESS AND DISTRIBUTIVE OCCUPATIONS

I. If you are in the middle grades (7th, 8th, or 9th grade).

This is your opportunity to EXPLORE the world of work. In the middle grades you have the opportunity to test yourself in a number of different kinds of careers and occupations. Your school may offer some of the following programs that you can use to explore your occupational interest.

Through the Program of Education and Career Exploration (P.E.C.E.) you can explore business occupations by actually visiting real workers as they do their job.

In the eighth grade you can take part in the new mini pre-vocational course in business occupations. This will allow you to explore the many jobs offered in office and sales occupations right in your own school. These programs generally last from eight to twelve weeks.

You may also enroll in a year long pre-vocational course in your school. This will give you the opportunity to try out, under real job conditions, the many different kinds of work roles available to students who choose to enter jobs in the field of office and sales occupations.

II. If you are in senior high school (10th, 11th, 12th grade).

This is your opportunity to train for an entry level job in the field of business. Your high school offers a number of opportunities to help you gain the skills required for an entry level job in sales or office occupations.

You might choose to enroll in the office occupations cluster in your school. One to two years of study in your chosen cluster program will provide you with the skills required to obtain an entry level job in either of these occupational fields.

Cooperative programs or work study programs offer another means of preparing oneself to enter the business field. Vocational Office Training and Distributive Education are examples of the cooperative programs. The VOT or DE coordinator in your school can arrange with a local company for you to attend school part time and work on an actual job part time.

III. If you are about to graduate or are already out of school, your school's GUIDANCE AND PLACEMENT OFFICE can help you with your next step in life.

If you still plan to enter the business field, your counselor can provide information about the options you now have.

If you want further training, there are the area vocational-technical schools. Your counselor can help you identify your interests and gain entry into one of the business courses offered at the area school nearest you. Georgia's area vocational-technical schools offer 56 courses at 25 different locations in the state. The area schools offer training programs for those interested in becoming secretaries, accounting clerks, and data processors as well as programs that would equip one to enter the sales field or middle management.

Another option available to you is to go directly to work. Your school’s Guidance and Placement Office can provide information on how to proceed in your “Job Search”.

SUMMARY STATEMENT PREPARED BY OFFICE OF VOCATIONAL AND ADULT EDUCATION
ACKNOWLEDGEMENT

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Bagby Elevator & Electric Co., Inc.
Decatur, Georgia

O. W. Gardner & Sons
Sheet Metal Company
Atlanta, Georgia

Life Insurance Company of Georgia
Atlanta, Georgia

Bob Bailey's TV & Appliances—
Sales & Service
Decatur, Georgia

Georgia Game & Fish Commission
Atlanta, Georgia

Marriott Motor Hotel
Atlanta, Georgia

R. A. Banks & Company
Atlanta, Georgia

Georgia Institute of Technology
Physical Plant Division
Atlanta, Georgia

Munford, Inc.
Atlanta, Georgia

L. D. Barber, Company
Tucker, Georgia

Georgia Power Company
Appliance Repair & Service
Forest Park, Georgia

Pike Nurseries, Inc.
Atlanta, Georgia

Carrier Air Conditioning Company
Atlanta, Georgia

Gold Kist, Inc.
Atlanta, Georgia

Pittman Highway Contracting Co., Inc.
Atlanta, Georgia

A Child's Place
Atlanta, Georgia

Green Brothers Nurseries
Decatur, Georgia

Richards & Associates, Inc.
Carrollton, Georgia

Colonial Stores, Inc.
Atlanta, Georgia

Herren's Restaurant
Atlanta, Georgia

Rich's, Inc.
Atlanta, Georgia

DeKalb County Recreation and Parks Department
Decatur, Georgia

Hyatt Regency Atlanta
Atlanta, Georgia

Rome Plow Company
Cedartown, Georgia

Delta Corporation
Atlanta, Georgia

International Harvester Sales & Service Branch
Decatur, Georgia

Southern Cross Industries, Inc.
Atlanta, Georgia

Dixie Engine Company
Atlanta, Georgia

ITT Rayonier, Inc.
Jesup, Georgia

Union Camp Corporation
Savannah, Georgia

Edwards and Rosser, Inc.
Atlanta, Georgia

Kennestone Hospital
Marietta, Georgia

U. S. Soil Conservation Service
State Office For Georgia
Athens, Georgia

Estes Heating & Air Conditioning, Inc.
Mountain View, Georgia

Lanier Flower Shop
Decatur, Georgia

Wade Ford, Inc.
Atlanta, Georgia

First National Bank of Atlanta
Atlanta, Georgia

Wiring, Inc.
Forest Park, Georgia
CAREERS FOR YOUTH IN BUSINESS AND DISTRIBUTIVE OCCUPATIONS

Training programs are available in:
Comprehensive High Schools
Area Vocational-Technical Schools
Special Company or Business Schools
On-the-Job Training in Companies

The Work attitudes for success are:
Dependability and reliability
Dedication to the job and the company
Aggressiveness in voluntarily tackling jobs that need to be done
Neat Appearance and pleasant personality
Recognize the importance of customer relations
Serious interest in requirements of job in order to learn more and speed up promotions