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ABSTRACT

For thousands of years men have transferred skills from one generation to another by apprenticeships. In Egypt, Greece, Rome, Europe, and finally in the United States apprenticeships became an accepted practice. In the United States in the 1700's poor boys 14 years or younger were often indentured to masters who agreed to teach them a trade. They were usually bound to their masters until they were 21 years old, and received training in crafts such as leather work and carpentry. After the time of the industrial revolution, domestic apprenticeships disappeared and wages were paid to employers in growing industries such as iron foundries, ship building, and printing shops. Laws passed in the 1920's and 30's regulate apprenticeships. Today the apprentice is part of a production force, trains on the job and in a classroom, and is paid wages. Apprenticeship is and will continue to be one of the best ways of training skilled craftsmen. Various programs have been set up to aid the disadvantaged in obtaining apprentice training, including information centers, preparatory courses, and prejob programs. (BC)

APPRENTICESHIP
Past and Present

U S DEPARTMENT OF LABOR
Manpower Administration

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U.S. DEPARTMENT OF LABOR
Manpower Administration
Bureau of Apprenticeship and Training

1969
REVISED

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Preface

Most of us know a little about apprenticeship in colonial times, but few of us know much of the history of apprenticeship or how radically apprenticeship has changed under the modern methods adopted through United States industry.

This pamphlet traces the development of apprenticeship from early days up to the present time and points to some directions of future activity.

Apprenticeship — Past & Present

Know all men that I, Thomas Millard, with the Consent of Henry Wolcott of Windsor unto whose custody & care at whose charge I was brought over out of England into New England, doe bynd myself as an apprentise for eight yeeres to serve William Pynchon of Springfield, his heires & assigns in all manner of lawful employmt unto the full ext of eight yeeres beginninge the 29 day of Sept 1640 & the said William doth condition to find the said Thomas meat drinke & clothing fitting such an apprentise & at the end of his tyme one new sute of apparell & forty shillings in mony: subscribed this 28 October 1640

What it was like to be an apprentice in early New England is indicated by these words from a 1640 indenture. As it turned out, apprentice Millard lost out on the cash mentioned. The following statement is made at the foot of the indenture:

Tho Millard by his owne consent is released & discharged of Mr. Pynchons service this 22. of May 1648 being 4 months before his tyme comes out, in Consideration whereoff he looses the 40s in mony wch should have bin pd him, but Mr. Pynchon giveth him one New sute of Aparell he hath at present

Indentures were forerunners of our modern apprenticeship agreements. Today the apprentice's situation is far different from Thomas Millard's. The apprentice is no longer bound body and soul to a master. He no longer lives in a master's house nor is dependent upon a master for handouts of food, a little clothing, or a few uncertain shillings.

Nowadays, the apprentice is a member of a production force as he trains on the job and in the classroom. He is paid wages, works a regular workweek, and lives in his own home rather than in that of a master. His apprenticeship agreement sets out the work processes in which he is to be trained and the hours and wages for each training period. At the end of his apprenticeship, he receives a certificate that is similar to the diploma awarded the engineering graduates of universities.

There are now about a quarter million registered apprentices—an all-time high—in American industry. They are learning, under the guidance of experienced craftsmen, such skilled occupations as: aircraft fabricator, automotive body repairman, bricklayer, carpenter, chemical process operator, dental laboratory technician, draftsman, designer, lithographer, machinist, operating engineer, optical technician, painter-decorator, photographer, printer, tool and die maker, and many more.

Management, labor, and government work together to promote apprenticeship and to develop sound standards for its practice. In many communities, joint management-labor apprenticeship committees conduct and supervise the local programs.

LOOKING BACKWARD

Apprenticeship in Ancient Times

Since time immemorial, man has been transferring skills from one generation to another in some form of apprenticeship. Four thousand years ago, the Babylonian Code of Hammurabi provided that artisans teach their crafts to youth. The records of Egypt, Greece, and Rome from earliest times reveal that skills were still being passed on in this fashion.

When youth in olden days achieved the status of craftsmen, they became important members of society. Their prestige in England centuries ago is reflected in a dialogue from the *Red Book of Hergest,* a 14th Century Welsh Bardic manuscript:

"Open the door!

"I will not open it.

"Wherefore not?

"The knife is in the meat, and the drink is in the horn, and there is revelry in Arthur's Hall; and none may enter therein but the son of a King of a privileged country, or *a craftsman bringing his craft.*"

The status given the craftsmen was well placed. As we all know, craftsmen have outlasted most of the kings.

Indenture Imported From Europe

When America was settled, craftsmen coming to the New World from England and other European countries brought with them the practice of indenture and the system of master-apprentice relationships. Indenture derived its name from the English practice of tearing indentions or notches in duplicate copies of apprenticeship forms. This uneven edge identified the copy retained by the apprentice as a valid copy of the form retained by the master.

Social Security No. _____

APPRENTICESHIP AGREEMENT

Between Apprentice and Employer

The employer and apprentice whose signatures appear below agree to these terms of apprenticeship:

The employer agrees to the nondiscriminatory selection and training of apprentices in accordance with the Equal Opportunity Standards stated in Section 30.3 of Title 29, Code of Federal Regulations,

... in accordance with the terms and conditions of the Brown Machine Company ...
(Name of Apprenticeship Standards)

APPRENTICESHIP WAGE SCHEDULE (*Preferably in percentages*)

Periods	*Rates*	*Periods*	*Rates*	*Periods*	*Rates*
1st . 1000 hours . .	55%	5th . 1000 hours . .	75%	9th	. . . . .
2d . . " " . . .	60%	6th . . " "	80%	10th	. . . . .
3d . . " . . " . . .	65%	7th . . . " . . " . . .	85%	11th	. . . . .
4th . . " . . " . .	70%	8th . . . " . . " . . .	90%	12th	. . . . .

WORK SCHEDULE

Work Processes	Approximate Time
1. Preliminary Experience: Tool room assistant, names and uses of hand tools, rough grinding, power and hand hacksawing, bolt threading, etc.	480 hours
2. Bench work, layout floor work, erection work, maintenance.	1320 hours
3. Electric welding, gas welding and cutting.	320 hours
4. Drilling machines, plain, heavy, radial, portable.	560 hours
5. Heat treating.	200 hours
6. Shaper, planer and keyseater.	600 hours
7. Engine lathes and turret lathes.	2000 hours
8. Jig bore.	320 hours
9. Milling machines, universal, horizontal, vertical.	1200 hours
10. Grinding.	1000 hours
	8000 hours

MODERN MACHINIST APPRENTICESHIP AGREEMENT

Itemized in this modern apprenticeship agreement are the apprentice percentage wage schedule, work process in which the apprentice is trained, and the number of hours allocated to each phase of training.

In those days, both the original and the copy of the indenture were signed by the master and the parent or guardian of the apprentice. Most of the apprentices were 14 years old or younger. This compares with an average age today of 16 to 24 when apprentices begin training. The modern apprenticeship agreement is signed by the employer, by a representative of a joint management-labor apprenticeship committee, or both, and by the apprentice. If the apprentice is a minor, his parent or guardian also signs.

Crafts in Family Tradition

Today's apprenticeships are keeping alive a knowledge of many crafts and skills which were, in other times, largely dependent on family tradition. Fathers taught their sons the crafts in generation after generation. This is exemplified still in stonecutting, one of the most ancient of the crafts.

That noted equestrian, Paul Revere, was a member of a famous family of silversmiths. Paul and his younger brother, Thomas, learned their craft from their father. Two of Paul's sons, in their turn, served an apprenticeship in the family's Boston shop.

Paul Revere's fine craftsmanship in silver can still be seen today. As many as 500 of his pieces are known to exist. He had, during his lifetime, produced a great quantity of church silver, flagons, christening bowls, tankards, cups, spoons, tea sets, and trays.

He also became a coppersmith and cast church bells which may still be heard in New England cities. He founded the U.S. copper and brass industry when, at the age of 67, he set up in Canton, Mass., the first copper rolling mill. This mill remained in operation under its original name for 100 years. Later the business became part of the present-day Revere Copper and Brass Co. In many of the plants of this company, apprenticeship programs in the metalworking trades are conducted today.

A famous contemporary of Paul Revere's, Benjamin Franklin, was indentured in 1718 at the age of 12 to his elder brother, James. Their father paid James 10 pounds to teach the printing art to Benjamin and to pay for Benjamin's food, lodging, and other "necessaries."

1832 CARPENTER APPRENTICE INDENTURE

That the formalized indenture had been adopted in the building trades in 1832 is shown by this document. The carpenter apprentice was scheduled to complete his training in 1837, exactly 100 years before Congress enacted the National Apprenticeship Law.

This Indenture Witnesseth, That John Slocum of Dartmouth in the County of Bristol, yeoman

doth by these Presents bind Lyman Slocum, his son, a minor above the age of fourteen years, and with the free will and consent of the said Lyman he is hereby bound an Apprentice to Thomas Remington of New Bedford in said County of Bristol, House-Carpenter,

to learn the art, trade or mystery of a House-Carpenter and with him the said Remington, after the manner of an Apprentice, to serve from the day of the date of these Presents, until the twenty third day of September, which will be in the year of our Lord one thousand eight hundred and thirty seven, when the said Apprentice will arrive at the age of twenty one years: During all which time, the said Apprentice his said Master well and faithful shall serve, his secrets keep, his lawful commands duly obey. He shall do no damage to his said Master, nor suffer it to be done by others, without giving seasonable notice thereof to his said Master. He shall not waste the goods of his said Master, nor lend them unlawfully to any. At cards, dice, or any other unlawful game, he shall not play. He shall not absent himself, by day or by night, from the service of his said Master, without his leave; nor haunt or frequent ale-houses, taverns, or gaming places. He shall not contract matrimony within the said term; nor shall he commit any acts of vice or immorality which are forbidden by the Laws of the Commonwealth; but in all things, and at all times, he shall carry and behave himself towards his said Master, and all others, as a good and faithful Apprentice ought to do, during all the term aforesaid.

And the said Thomas Remington doth hereby covenant and promise to teach and instruct, or cause the said Apprentice to be instructed, in the art, trade or calling of a House-Carpenter by the best way or means that he may or can (if said Apprentice be capable to learn;) and during the said term, to find and provide unto the said Apprentice comfortable & suitable clothing, board & diet, lodging & washing, & also to allow & provide for said Lyman three months Schooling annually, during the winter season, in the Evening, & to find & give him a set of Carpenter's tools when he is twenty one years of age

In TESTIMONY WHEREOF, the said Parties have to this, and one other Indenture, of the same tenor and date, interchangeably set their hands and seals, the second day of February, in the year of our Lord one thousand eight hundred and thirty two –

Thomas Remington

Signed, Sealed and delivered in Presence of us,

Alden Bonney

John Slocum

Lyman his + mark Slocum

The indenture provisions were especially generous for those days. They specified that Benjamin was to receive a journeyman's wage in the last year of his apprenticeship just before he became 21 years old—if he remained on the job that long. Moreover, when the precocious Benjamin was 15 years old, he arranged for a cash payment for his food. This was a big financial advantage to him because he had become a vegetarian and found vegetables and fruit cheaper than meat. Out of his savings he was able to buy books. He says in his autobiography that he was frequently able to subsist with only a "bisket and a stick of bread, a handful of raisins, a tart from the pastry cook's, and a glass of water." Benjamin quit, however, before he completed the 9 years of apprenticeship specified in the indenture because of quarrels with James who, he says, sometimes beat him. He adds, "Thinking my apprenticeship very tedious, I was continuously wishing for some opportunity of shortening it."

Printing was also the trade of Daniel S. Glackens, who became father and grandfather to noted craftsmen. Glackens published the newspaper, *The Lafayette,* in the 1820's and 1830's in Pottstown, Pa. One of his sons, Henry O. Glackens, became a craftsman in the shops of the Pennsylvania Railroad after serving an apprenticeship and later was a manufacturer and business executive. Another son, William J., was engaged in art plastering and worked on the Capitol building in Washington, D.C. Among the early printer's grandchildren were William J. Glackens, a celebrated artist, and Louis Glackens, cartoonist and illustrator for the magazine, *Puck.*

The bricklaying trade has been well represented in the McGlade family of Waterloo, Iowa. Eight bricklayers had appeared on the family tree by the middle of this century after starting with an Irish stonemason who settled in Cedar Falls, Iowa, during the last part of the 1800's. Bricklaying has also been carried forward by the McKenna family of Philadelphia. There have been six bricklayers in that family, one of them for many years a member of the Bureau of Apprenticeship and Training's field staff.

Poor Children Indentured

To help provide for poor children in colonial New England, many youngsters less than 10 years old whose parents could not support them were indentured to masters who agreed to teach them a trade. This practice was legalized by the poor laws. The indenture quoted below, for example, required a youthful apprentice in 1676 to serve more than 12 years to learn masonry. As apprentices then were usually bound to masters until they were 21 years old, apprentice Nathan Knight apparently began

his service when he was about 8½ years. These were the conditions of his servitude:

> *This Indenture witnesseth that I, Nathan Knight . . . have put myself apprentice to Samuel Whidden, of Portsmouth, in the county of Portsmouth, mason, and bound after the manner of an appr ntice with him, to serve and abide the full space and term of twelve years and five months . . . during which time the said apprentice his said master faithfully shall serve . . . he shall not . . . contract matrimony within the said time. The goods of his said master, he shall not spend or lend. He shall not play cards, or dice, or any other unlawful game, whereby his said master may have damage in his own goods, or others, taverns, he shall not haunt, nor from his master's business absent himself by day or by night, but in all things shall behave himself as a faithful apprentice ought to do. And the said master his said apprentice shall teach and instruct, or cause to be taught and instructed in the art and mystery as mason; finding unto his said apprentice during the said time meat, drink, washing, lodging, and apparel, fitting an apprentice, teaching him to read, and allowing him three months towards the latter end of his time to go to school to write, and also double apparel at end of said time. . . .*

Even though this apprentice probably did not get a chance to go to school until he was about 20 years old, his master showed a sense of community and civic responsibility, for schooling of some sort—even though limited to reading and writing—was desperately needed in the colonies. Although the school instruction for an apprentice at that time was absurdly inadequate, it may be considered another link with present-day apprenticeship, which provides technical classroom instruction to supplement on-the-job training.

Exploitation of Poverty-Stricken

One chapter in the history of apprenticeship caused a stigma difficult to outlive—the exploitation of poor men, women, and children as indentured servants who were given little or no opportunity to learn a trade. It was a system that can hardly be classified as apprenticeship.

The practice of indenturing servants, some of them former prisoners imported from abroad, took place largely in the Southern States, where labor was needed on the plantations. Workers paid off the cost of their transportation by serving as so-called apprentices. Tempted into the traffic in these workers were the ships' captains and bartering agents who profited by it. This exploitation of unfortunates was finally erased after public sentiment brought about regulative acts.

Leatherwork—An Early Craft

The development of craftsmen in the early leather industry is reflected in the indenture of Gould Brown:

> *North Kingston, April the 7th 1792. We the subscribers this day have mutially agreed that I Gould Brown, am to work with Mr. Benjamin Greene the term of twenty four months, for the sum of three pounds lawful silver money to me in hand paid at the expiration of said time; and the said Benjamin is to allow the said Gould Brown the Privilege of Tanning and Curring Six Calves Skins and two large sizes only tan'd; and is to find him two pair of thick Double Sould shoes, and as many frocks and trousers to ware as he needs in the tan-yard to work, and to Board him the said Gould Brown and Wash his Clothes the said time. Further, I the said Gould Brown, Do agree to Bring with me One Sett of Shoemakers tools for to work with, and Mr. Benjamin Greene agrees to let him have another Sett to Bring away with him When his time is Expired*

Apparently, the apprentice named in this indenture had to make shoes during his spare time as he agreed to bring with him a set of shoemaker's tools to work with.

It was a great deal to expect of an apprentice boy, for "tanning and curring" were tiring tasks. Usually both the tanning vat and the tanning mixture had to be made. The vat was made by sinking boxes of planks into the ground. The mixture was made of bark ground up by rolling great boulders over it, twigs, and leaves. After skins were salted down and dried, they were thoroughly garnished with this mixture and piled on top of one another over the vat. The whole glorious mess was then swamped with quantities of water and left in the enclosure to soak and smoke for half a year.

Gould Brown may have known how to make shoes, for the indenture does not say that he was to be shown how. He may have been a journeyman craftsman in the shoemaking trade who wanted a chance to learn how to make leather.

An Early Carpentry Apprenticeship

That the construction industry, which has led apprenticeship activities in this country in recent years, used the formalized indenture more than a century ago is shown by the indenture of a "house carpenter" in 1832. This indenture bound a 16-year-old apprentice in New Bedford, Mass., to his master until 1837—exactly 100 years before the enactment of the National Apprenticeship Law (Public Law 308, 75th Congress). The indenture states that John Slocum "doth by these Presents bind Lyman Slocum, his son, a minor . . . to Thomas Remington . . . to learn the art, trade, or mystery of a House-Carpenter." The master promised "to teach and instruct, or cause the said Apprentice to be instructed, in the art, trade or calling of a House-Carpenter . . . (if said Apprentice be capable to learn)."

Craftsmanship in Apprenticeable Trades

Very little is recorded on exactly how apprentices were trained in the early days. But whether or not craftsmen acquired their skills in training here or abroad or through their own devices, they apparently deserved the title. They were amazingly skillful judging by such examples as the excellent workmanship and condition of many of the buildings erected in this country over 100 years ago.

The traditions of such craftsmanship are still carried on. A contemporary columnist, Rudolph Elie of the Boston Herald, vividly set forth his observations of this craftsmanship in an article written in 1954:

"For the last half hour," Elie said, "I have been standing, mouth ajar, down on Arch Street watching them lay bricks in the St. Anthony Shrine now 'abuilding,' and I have come to the conclusion that laying bricks is a fine and noble and fascinating art. It must be a very ancient art . . . and those fellows down on Arch Street are the inheritors of an old tradition. And, curiously enough, to watch them work you get the notion that they are somehow aware of it. . . .

"The bricklayer has a sort of rhythm and grace and fluency in his work. . . . Apparently they can execute the most intricate designs in brick, though there certainly seemed to be no blueprints in evidence."

The undersigned agrees to the selection, employment and training of apprentices in accordance with the standards named herein:

R. T. Smith Construction Company
(Employer)

Newark, New Jersey
(Address)

(Employer)

(Address)

Social Security No.

APPRENTICESHIP AGREEMENT

Between Apprentice and Joint Apprenticeship Committee

THIS AGREEMENT, entered into this 3rd day of July 1969

between the parties to Newark Carpenter Joint Apprenticeship Committee
(Name of local apprenticeship standards)

represented by the Joint Apprenticeship Committee, hereinafter referred to as the COMMITTEE, and

Thomas M. Curtis (Name of apprentice), born June (Month) 1 (Day) 1948 (Year), hereinafter referred to as the APPRENTICE, and (if a minor) ..... (Name of parent or guardian), hereinafter referred to as his GUARDIAN.

WITNESSETH THAT:

The Committee agrees to be responsible for the selection, placement and training of said apprentice in the trade of Carpentry as work is available, and in consideration said apprentice agrees diligently and faithfully to perform the work of said trade during the period of apprenticeship, in accordance with the regulations of the Committee. The apprenticeship standards referred to herein are hereby incorporated in and made a part of this agreement.

Term of apprenticeship 8000 hours Probationary period 500 hours

Credit for previous trade experience 1000 hours Term remaining 7000 hours

Other conditions .....

This agreement may be terminated by mutual consent of the signatory parties, upon proper notification to the registration agency.

/s/ Thomas M. Curtis (Signature of Apprentice)

/s/ John P. White (Joint Apprenticeship Committee), *Chairman*

2216 Grant Road, Newark, N.J. (Address)

/s/ Horace B. Roberts (Joint Apprenticeship Committee), *Secretary*

(Parent or guardian)

Registered by Bureau of Apprenticeship and Training, U.S. Department of Labor
(Name of registration agency)

Date July 15, 1969 By (Signature and title of authorized official)

BAT 07 (Rev.)

A MODERN CARPENTER APPRENTICESHIP AGREEMENT

Apprentices in the building trades today are indentured to an area joint apprenticeship committee, which transfers them from one employer to another and one construction job to another, so that they may have experience in all kinds of work performed by journeymen.

Apprentice Masterpieces

In England, early apprentices were required to make a masterpiece or test piece after completing their apprenticeships. This sample of workmanship was submitted for inspection by a group of masters to gain guild recognition of their status as "freemen." In the textile trade, for example, apprentices were required to produce several pairs of silk stockings before being freed. Shoemaker apprentices were required to make shoes, and needlemakers submitted examples of needles of various sizes that they had made.

Since modern apprentices in U.S. industry start producing almost immediately, and each job they do is carefully inspected, the production of a final test piece is not generally considered necessary. Moreover, the care with which apprenticeship candidates are selected and the entrance tests they are required to pass help to assure that those accepted for training will become true craftsmen.

A modern equivalent of the early masterpiece, however, exists in the Chicago areawide apprenticeship program in which apprentices are trained in patternmaking for the production of foundry castings. As part of the final examination, each apprentice is required to produce, without supervision, a contract job ordered by a customer or a patternmaking shop. This job is judged by the area joint labor-management apprenticeship committee in charge of the program before the completion certificate is awarded.

Products made today by apprentices competing in national and area contests may also be likened to the final masterpiece of apprentices in early days. In the bricklaying, electrical, sheet metal, painting, foundry, and some of the other trades, cash prizes are awarded to apprentices who produce the best example of the craft in which they are trained. Public demonstrations of apprentices' abilities are also made in convention exhibits and at county fairs. The largest annual contest held for apprentices in the United States is sponsored by the union and employers' associations in the plumber, pipefitter, and sprinklerfitter trades. Held at Purdue University, the contest is entered by winners in each of the crafts from all 50 States and most of the Canadian Provinces.

APPRENTICESHIP UNDERGOES CHANGE

With the expansion of industry following the industrial revolution, the apprenticeship system was revolutionized to apply to the new machine age. The early system of "domestic apprenticeship," in which the apprentice lived with his master and was dependent upon him for food and clothing as well as shelter, disappeared.

Compensation was changed by employers to the payment of wages which were, although insignificant compared with today's wages, graduated in accordance with a predetermined scale. The term "master," however, was continued in some trades and "master machinist," and "master plumber," are familiar terms to us all.

Apprenticeship systems in keeping with the new era were gradually developed in the growing industries, at first in the iron foundries and shipbuilding yards, and later in machinery and electrical equipment plants, government arsenals, navy yards, and printing shops.

Not until the latter part of the 19th century were any apprenticeship systems begun that were at all comparable with those of our day. But the number of plants in which apprentices were trained was limited and the training was, for the most part, somewhat sketchy when measured by modern standards. The great majority of skilled workers still came from abroad. Most of the workers who acquired their skills in this country learned on their own by watching and getting the advice of experienced men, by sheer persistence, and by trial and error.

Graduated Wages for Apprentices

An 1865 indenture used by the Pennsylvania Railroad provides one of the first examples of the graduated wage scale paid apprentices. It prescribed 50 cents for a 10-hour day in the first 620 days of training, 60 cents a day in the next 310 days, and 80 cents a day for the balance of the apprenticeship term.

A bonus of $124 was paid if and when an apprentice completed his training.

In the late 1960's, the starting wage for maintenance-of-equipment apprentices employed by railroads averaged $2.54 an hour—more than five times the starting wage for 10 hours in 1865—and increased to $2.94 during the final period.

Wage Rates Lag

Although the machine age brought rapid advances in production, working conditions and wages—especially for apprentices—lagged behind the times. What it was like to apprentice in an industrial plant in 1883 is described by a man who began his career in this way—Fred H. Colvin, later the editor of the *American Machinist* and a technical consultant and author. In his book, *60 Years With Men and Machines,* he says:

> An apprentice in the machine shops of 1883 faced a situation not wholly unlike that of the craft guilds of the Middle Ages. In many cases the boy's parents had to reimburse the shop owner for teaching him the secrets of the trade.

He said of the Philadelphia machine shop in which he worked:

> A revolutionary new system was in effect—the shop owner actually paid the apprentice wages. He was careful, of course, not to turn the apprentice's head with money. In my own case, I began at the rate of 5 cents an hour for a sixty-hour week; or, to put it more impressively, I was paid $3 in cash every Saturday night. . . . All overtime was paid at the regular straight-time rate of 5 cents an hour for young apprentices like myself. . . . At the end of the first month's apprenticeship, the wages were boosted by 16⅔ percent, which meant a half a dollar a week extra in the pay envelope. What with promises of an additional 50-cent raise every six months thereafter, a young apprentice could see himself developing into a substantial citizen if he but lived long enough.

A similar experience was that of John P. Frey, president of the AFL metal trades department for 16 years and a labor member of the Federal Committee on Apprenticeship, the national body recommending policy to the Bureau of Apprenticeship and Training. He began his career in 1887 as a molder apprentice. In his first year of training, he was paid 75 cents for a 10- to 12-hour day, 6 days a week. His wage was increased 25 cents a day in his second year and 25 cents in his third and last year as an apprentice. From the beginning of his apprenticeship, he did practically the same work as helpers who then received $1.50 a day.

But both Fred Colvin and John Frey fared better at the start of their training than some other apprentices of the time. The 1895 indenture of Harley F. Nickerson, who later became a general vice president of the International Brotherhood of Machinists, shows that he worked for nothing during a probationary 3-month apprenticeship period. In the next 9 months, he was paid $3 a week. His earnings from then on were about the same as Colvin's were 12 years before. No agreement was made to teach the youthful Nickerson the trade of machinist, nor was there any commitment on the part of the employer to do anything except pay the rates agreed upon for time actually worked and $100 when and if the apprenticeship was completed.

Important Careers Begin With Apprenticeship

Many other industrial and government leaders began their working careers in apprenticeable trades. One was Charles E. Sorensen, a skilled patternmaker and son of a patternmaker who became a production genius.

Sorensen for many years was Henry Ford's right-hand man and, according to the *New York Times,* "He formulated the concept of the moving assembly line, worked out on a blackboard the economics of the $5 day, and built the River Rouge plant. He also built the mile-long Willow Run bomber plant which turned out a B-24 bomber every hour during World War II."

Ralph E. Flanders of Vermont, who became a distinguished U.S. Senator, began his working life as a machinist apprentice in 1897. He worked 10 hours a day and received 4 cents an hour in the first year, and a few cents more during the second and third years of his apprenticeship. His annual wage in his last year of training was $295. He has described his apprenticeship as an old-fashioned one because he was legally indentured. His father was required to post a cash bond to be forfeited if the training was not completed. Young Flanders successfully finished his training, however, and later received degrees from various universities. He had an extensive industrial career before entering public life.

Patrick V. McNamara of Michigan was another apprentice who became a U.S. Senator. Encouraged by his father, he began as a plumber apprentice in 1913 with a wage of only 9 cents an hour for an 8-hour day. By his third year he was paid 14⅛ cents an hour, or $1.12 a day. He completed his apprenticeship a year ahead of schedule by working additional hours on special assignments. Following his apprenticeship in the plumbing trade, he worked as journeyman and then as a foreman on construction jobs. He was active in labor affairs, and served for 20 years as president of the Detroit branch of the United Association of Journeymen and Apprentices in the Pipe Fitting Industry.

First Apprenticeship Legislation

The first legislation in the United States to promote an organized system of apprenticeship was enacted in Wisconsin in 1915. The law placed apprenticeship under the jurisdiction of an industrial commission. This followed the enactment of State legislation requiring all apprentices to attend classroom instruction 5 hours a week.

In the 1920's, there was a concerted effort initiated by national employer and labor organizations, educators, and Government officials for a national, uniform apprenticeship system. In the forefront of this movement were representative groups of the construction industry.

The need for comprehensive training of apprentices had become a vital necessity in the boom days following World War I. There was curtailment of immigration after the war and a reduction in the number of skilled workers coming from other countries.

The combined effort of the various groups led in 1934 to the participation of the Federal Government in the national promotion of apprenticeship. The Federal Committee on Apprenticeship, composed of representatives of Government agencies, was appointed by the Secretary of Labor to serve as the national policy-recommending body on apprenticeship in the United States. It was to assume the responsibilities with respect to

TERMS OF APPRENTICESHIP

TO THE

Brown & Sharpe Manufacturing Company,

PROVIDENCE, R. I.

Manufacturers of Fine Machinery and Machine Tools, &c.

This Agreement, made and entered into this 14th day of January A. D. 1897, by and between the BROWN & SHARPE MANUFACTURING COMPANY, a corporation duly incorporated and located and doing business in the City of Providence, of the first part Ralph E. Flanders of Lincoln, R. I. of the second part, and Albert W. Flanders of Lincoln, R. I. of the third part.

Witnesseth, That whereas the party of the second part is desirous of becoming an apprentice to said party of the first part, for the purpose of acquiring the art or trade of machinist, the said party of the first part, in consideration of the sum of One Hundred Dollars to it paid by said party of the third part, hereby accepts said party of the second part as an apprentice in the art or trade of machinist, in accordance with and subject to the "Terms of Apprenticeship" hereto annexed and made a part hereof.

And the party of the second part, in consideration of such acceptance, hereby agrees to become the apprentice of said party of the first part in the machinists' art or trade, in accordance with the "Terms of Apprenticeship" hereto annexed, and to faithfully conform with the provisions thereof.

And the party of the third part, in consideration of the execution of this agreement by said party of the first part, for himself, his heirs, executors and administrators, covenants and agrees to and with said party of the first part, that the party of the second part shall well and truly conform to and abide by all the provisions of said "Terms of Apprenticeship," and in case said party of the second part shall in any wise violate any of the provisions thereof, or shall abandon such apprenticeship before the expiration thereof, without the consent of said party of the first part, to pay to said party of the first part the sum of One Hundred Dollars as ascertained and liquidated damages for such breach of contract.

And the parties of the second and third parts respectively, for the considerations above set forth, also hereby covenant and agree to and with said party of the first part, that in the event that said apprentice shall be discharged for unfaithfulness, non-conformity with the rules and regulations which are or may be adopted for the good government of the shop, want of diligence, indifference to his business, or improper conduct in or out of the shop, or shall abandon such apprenticeship before the expiration thereof, without the consent of said party of the first part, all wages then earned by said party of the second part, and unpaid, shall be forfeited.

And the party of the first part further convenants and agrees, that in the event that said party of the second part shall remain its apprentice during the full term of apprenticeship (including the making up of lost time), as provided in the annexed "Terms of Apprenticeship," and shall in all respects comply with the provisions of said "Terms of Apprenticeship," and shall not be discharged by reason of non-compliance therewith, to pay to said party of the third part, in consideration of such faithful service on the part of said apprentice, the sum of One Hundred Dollars.

In Witness Whereof, the parties aforesaid have hereunto set their hands and seals (the party of the first part by Lucian Sharpe its Treasurer duly authorized for that purpose,) the day and year first above written.

Executed in presence of

George Hunter Jr.

Brown & Sharpe Mfg. Co.
L. Sharpe Treas.

Ralph E. Flanders

Albert W. Flanders

This is to certify that Ralph E. Flanders has served his full term of apprenticeship according to the above agreement

Feb 1, 1900 Brown & Sharpe Mfg. Co. R. Wallace, Supt.

APPRENTICE INDENTURE OF RALPH E. FLANDERS

apprentices and their training under industrial codes formulated by the National Recovery Administration.

National Apprenticeship Law Is Enacted

In 1937 Congress passed the National Apprenticeship Law. This law, popularly known as the Fitzgerald Act, was enacted "to promote the furtherance of labor standards of apprenticeship. . . . to extend the application of such standards by encouraging the inclusion thereof in contracts of apprenticeship, to bring together employers and labor for the formulation of programs of apprenticeship, to cooperate with State agencies in the formulation of standards of apprenticeship." It is an enabling act in every sense of the word and is without mandatory injunctions.

Modern Apprenticeship Programs

As a result of the Fitzgerald Act, the Federal Committee on Apprenticeship was reorganized and enlarged to include equal representation of employers and labor, plus a representative of the U.S. Office of Education. The Apprentice-Training Service (now the Bureau of Apprenticeship and Training) was established as the national administrative agency in the Department of Labor to carry out the objectives of the law guided by the recommendations of the Federal Committee on Apprenticeship.

Since 1937, the Bureau of Apprenticeship and Training has worked closely with employer and labor groups, vocational schools, State apprenticeship agencies, and others concerned with apprenticeship programs in U.S. industry. It has field representatives in the 50 States. Its functions are advisory and promotional. It does not itself conduct training programs.

A major means for promoting apprenticeship is through a wide exchange of information on the advantages and methods of well-organized and well-run apprenticeship programs. The Bureau of Apprenticeship and Training disseminates this information widely through newspapers, industrial periodicals, discussions at annual conventions of employer associations and unions, and through multi-State apprenticeship conferences held annually on the eastern seaboard and in the Southern States and periodically in the Western States.

About 350 apprenticeable occupations—most of them in the construction, manufacturing, transportation, and service industries—are covered in registered programs. Hard at work in these programs are about 240,000 registered apprentices, the largest number there has ever been.

CERTIFICATES OF COMPLETION

Certificates of Completion of Apprenticeship, awarded apprentices when they have finished their training, are issued by the State apprenticeship agencies or, in those States not having such an agency, by the Bureau of Apprenticeship and Training in accordance with standards recommended by the Federal Committee on Apprenticeship.

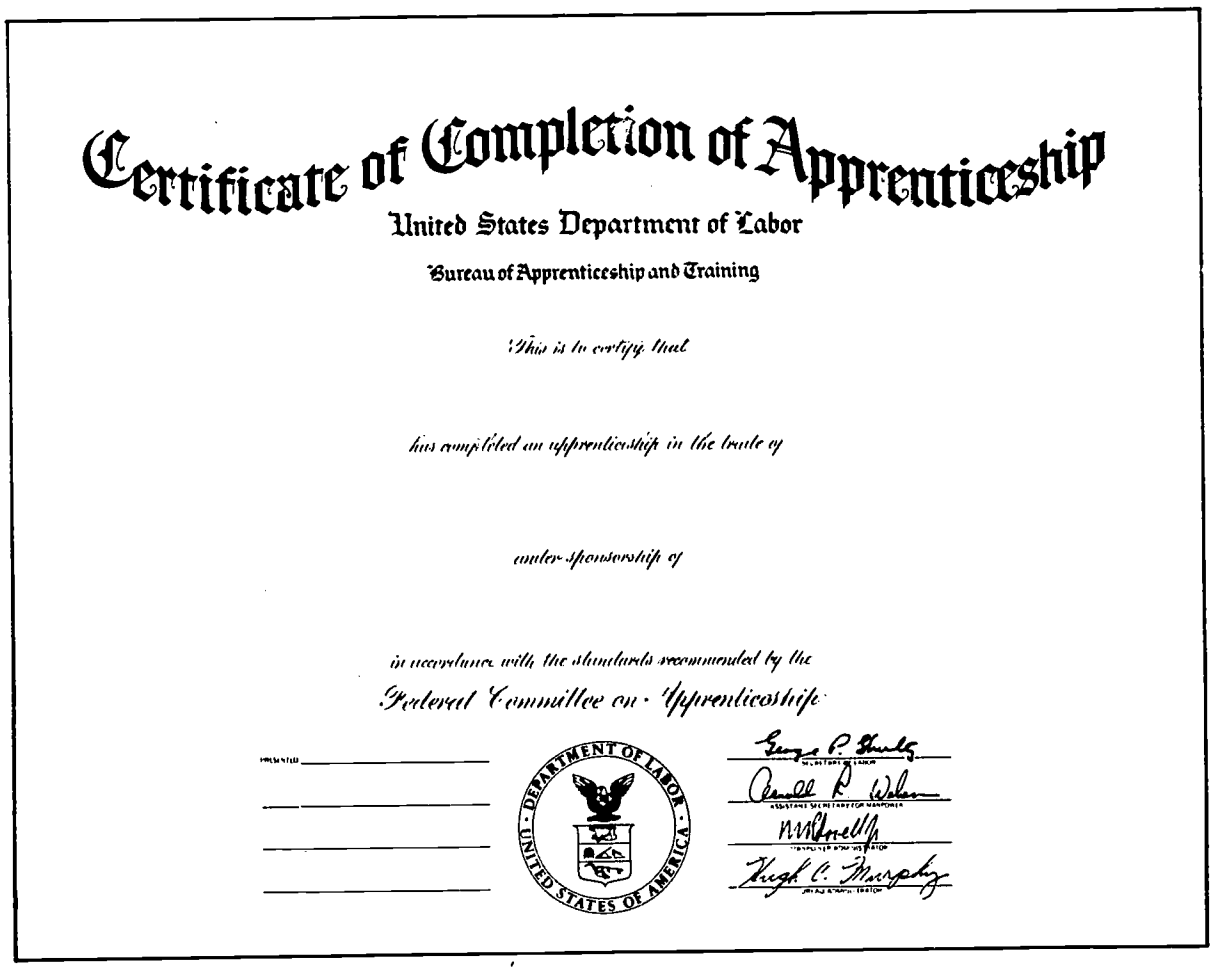
Joint Apprenticeship Committees

These committees, composed of representatives of management and labor, work together for the development and administration of local apprenticeship training programs. In addition to local groups there are national trade committees representing national organizations. The national committees formulate, with Bureau of Apprenticeship and Training assistance, national policies on apprenticeship in the various trades and issue basic standards to be used by affiliated organizations.

Basic Standards for Apprenticeship

Programs registered by the Bureau of Apprenticeship and Training must provide that—

- the starting age of an apprentice is not less than 16
- there is full and fair opportunity to apply for apprenticeship
- selection of apprentices is based on qualifications alone
- there is a schedule of work processes in which an apprentice is to receive training and experience on the job
- the program includes organized instruction designed to provide the apprentice with knowledge in technical subjects related to his trade (a minimum of 144 hours per year is normally considered necessary)
- there is a progressively increasing schedule of wages
- proper supervision of on-the-job training with adequate facilities to train apprentices is insured
- the apprentice's progress, both in job performance and related instruction, is evaluated periodically and appropriate records are maintained
- there is employee-employer cooperation
- successful completions are recognized
- there is no discrimination in any phase of apprenticeship employment and training


Certificate of Completion of Apprenticeship

United States Department of Labor

Bureau of Apprenticeship and Training

This is to certify that

has completed an apprenticeship in the trade of

under sponsorship of

in accordance with the standards recommended by the

Federal Committee on Apprenticeship

PRESENTED

DEPARTMENT OF LABOR · UNITED STATES OF AMERICA

SECRETARY OF LABOR

ASSISTANT SECRETARY FOR MANPOWER

DIRECTOR BUREAU OF APPRENTICESHIP AND TRAINING

CHAIRMAN FEDERAL COMMITTEE ON APPRENTICESHIP

A CERTIFICATE OF COMPLETION

A Certificate of Completion of Apprenticeship, awarded an apprentice when he has completed his training, is issued by the State apprenticeship agency or the Federal Committee on Apprenticeship in States in which no such agency is established.

Apprenticeship Values for Youth and Industry

For young persons just starting out in the world of work, apprenticeship has important advantages. It offers an efficient way to learn skills, for the training is planned and organized and is not hit-or-miss.

The apprentice earns as he learns, for he is already a worker. And when apprenticeship is completed, a youth is assured of a secure future and a good standard of living because training is in the crafts where skills are much in demand. Opportunities for employment and advancement open up with the recognition that he is now a skilled craftsman.

Industry, too, benefits greatly. Out of apprenticeship programs come all-round craftsmen, competent in all branches of their trades and able to work without close supervision because their training has enabled them

to use imagination, ability, and knowledge in their work. When changes are made in production, these workers provide the versatility needed for quick adaptation of work components to suit the changing needs. An adequate supply of skilled workers with these qualities is vital to industrial progress.

One important way that apprenticeship-trained workers contribute to industry is in supervisory positions. It has been widely recognized that apprenticeship provides not only many supervisors on our production lines, but also many top-level officials in American business. A survey conducted by the Associated General Contractors of America showed that many top officials of construction companies (fully 90 percent of those replying)—presidents, vice presidents, owners, and partners—began their careers as apprentices, and that many of the project managers, superintendents, and foremen employed by those companies also began as apprentices.

In another survey conducted by a large manufacturer of electrical and automotive equipment, it was learned that 40 percent of the 300 apprentice graduates still on the company's payroll held important supervisory and executive positions.

Apprenticeship has become a dependable resource to meet industrial needs for both shop supervisors and top-line staff.

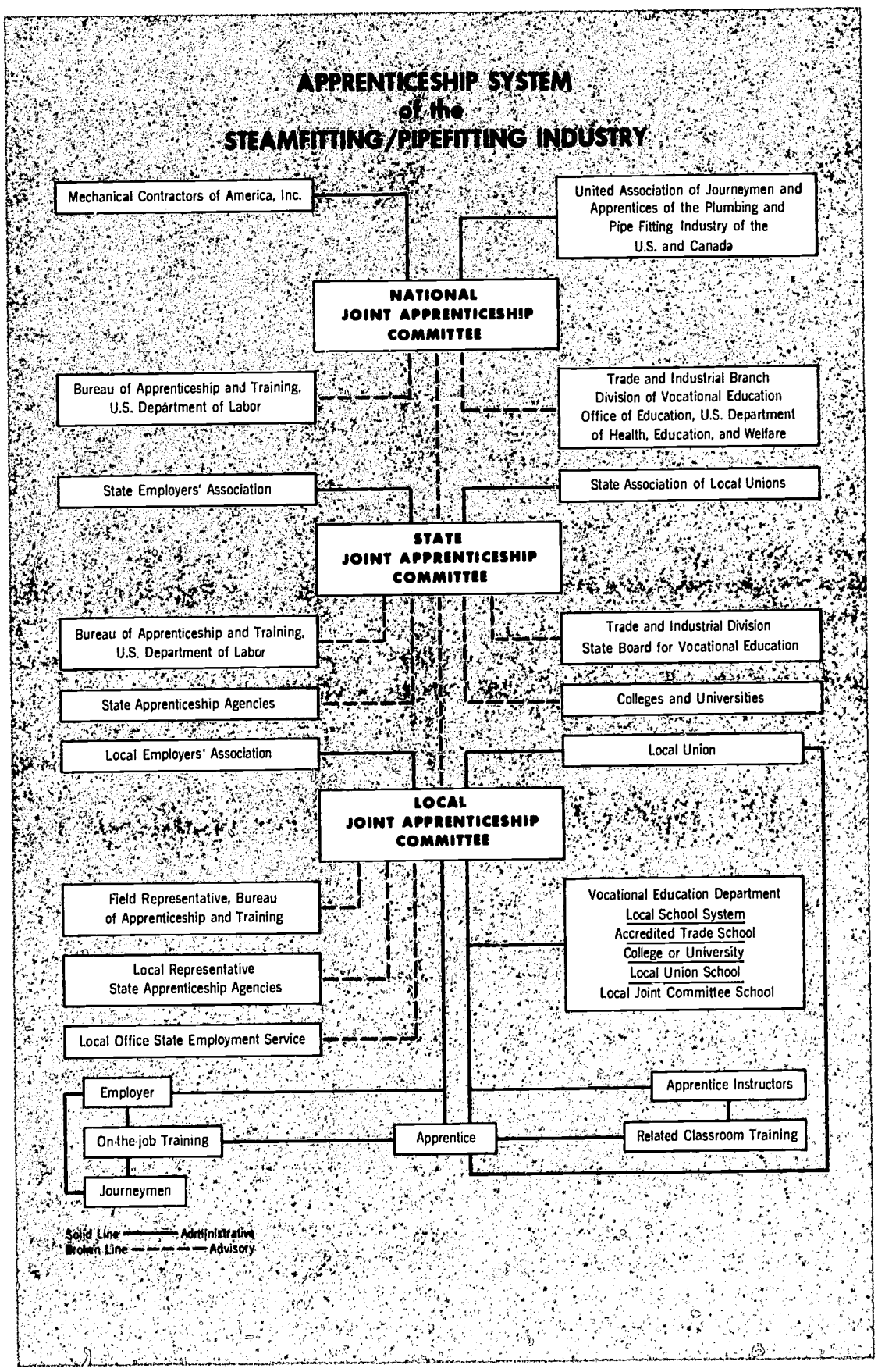
NEW DIRECTIONS IN APPRENTICESHIP

The apprenticeship system has grown up with America. Like America, it is still growing and changing. Today it serves a far different nation from the one of pioneer days. Scientific discoveries, new teaching methods, expanding industry, a booming population, a determination that as a people we will live not only free but equal—these are among the demands of our present-day technological and social systems to which apprenticeship is responding.

To meet the needs for changes in production methods and products, apprenticeships have been set up in new trades, and apprenticeships in many of the older trades have been updated. The newly-created trade of "chemical process operator," for example, is taught in a 3-year program in which apprentices learn reactor and compressor operations, power generation and distribution, thermal cracking, fractionation-distillation, and similar job components.

Increasing numbers of women in apprenticeship reflect some of our changing attitudes about whose hands may do our skilled work.

Another large group of people is being drawn into apprenticeship. These people are the disadvantaged in our society—an important resource the Nation has only begun to draw upon.



Industry and labor work together to form apprenticeship standards in the crafts and trades and to supervise programs. The chart above is an example of how this cooperation works in the steamfitting/pipefitting industry.

Apprenticeships for the Disadvantaged

When the Nation, aware that a vast pool of Americans was being left out of main areas of employment, focused on correcting this deficiency as a national policy, new programs and policies to train and open up improved job opportunities for the disadvantaged were begun. These people were working in marginal, generally low-skilled, and low-paying jobs. Some were out of work. Among them were whites, Negroes, Mexican Americans, Puerto Ricans, and rural workers whose attempts to farm no longer provided them with enough to live on. Many were youth under 22 years old who lacked suitable jobs. The potential of all these people for higher skills had been practically ignored.

To help open the way into the skilled crafts and trades, Federal regulations on nondiscrimination in apprenticeship and training have been put into effect by the Secretary of Labor. These set out policies and procedures for equality of opportunity—without regard to race, creed, color, national origin, sex, or occupationally irrelevant physical requirements—in apprenticeship programs registered with the Bureau of Apprenticeship and Training. Apprenticeship agencies in the States have adopted consistent policies.

But more than regulations are needed. Youth in disadvantaged groups often know little about apprenticeship and how to find openings or how to pass entrance examinations. To meet these needs, apprenticeship "outreach" programs were begun to inform these youth of apprenticeship opportunities and prepare them to compete successfully in apprenticeship examinations for the limited openings. The programs operate under the Manpower Development and Training Act of 1962, as amended, and are carried on under contracts with the Department of Labor by private, interested groups such as building and construction trades councils of the AFL-CIO, the Workers' Defense League, the Urban League, the United Automobile, Aerospace and Agricultural Implement Workers of America (UAW), the Negro Trade Union Leadership Council, and others.

As a result of the new policies and the outreach programs, there has been a gradual but steady increase in the number of disadvantaged youth in apprenticeship training.

Apprenticeship Information Centers

In many key labor market areas, Apprenticeship Information Centers have been set up. Used by thousands of young people, the centers are operated by the State employment services and provide a wide range of information on apprenticeship and also counsel applicants. In addition, the centers prescreen applicants for referral to employers, unions, and the local joint apprenticeship and training committees for final selection of the youth to receive training.

Apprenticeship Preparatory Courses

To attract more able young men and women to apprenticeship in the years when they are making career decisions, apprenticeship preparatory courses are given in high schools, vocational, and technical schools. These acquaint youth with the great opportunities in crafts and trades and give them some theoretical and technical instruction in specific fields.

Apprenticeship Prejob Programs

On-the-job training for 6 to 8 weeks is provided in apprenticeship prejob programs. The purpose is to introduce potential apprentices to specific skilled trades and to determine their suitability for the particular work involved. When students successfully complete the introductory period, they may continue with placement in regular apprenticeship training programs.

Veterans in Apprenticeship

For eligible veterans, apprenticeship offers special opportunities. When they enter approved apprenticeship programs, they may receive—in addition to their wages—a monthly training assistance allowance for up to 3 years under the Veterans' Pension and Readjustment Assistance Act of 1967. The amount they may receive is determined by the period of training they are in and the number of dependents they have.

LOOKING FORWARD

Rapid changes in our industrial systems require backup and fulfillment by a large body of skilled workers who are able to carry out technical specifications and who can supervise less skilled members of the work force.

Projections of employment opportunties show great needs for skilled workers. National projections of skilled worker requirements prepared by the Bureau of Labor Statistics, U.S. Department of Labor, indicate a rise in the number of skilled workers from 9.2 million in 1965 to 11.4 million in 1975.

Apprenticeship has served in many of mankind's stages of development. Today it is clear that this method for teaching and learning skills systems is still one of the best ways of training skilled craftsmen. But there is still much work to do.

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