

BLACKS AND HIGH TECH FOR BLACK CHAMPAIGN COUNTY

by Paul E. Parker

From "The State of Black Champaign County, 1984," The Urban League of Champaign County.

Paul E. Parker was an assistant dean in the UI College of Engineering, and director of its Minority Engineering Program since 1973. He was also a member of the Champaign County Urban League.

To understand high technology in Black Champaign County we should first focus on the concept of high technology itself. Quite obviously we can accept the concept, but we will need a good definition and an awareness of high technology. Also, important at this stage will be the links between understanding technology, preparing for technology, and implementing technology.

Approximately two decades ago high technology was associated with the push to get man into space. A number of special devices, important to the Black way of life, emerged. Space exploration required small or light-weight components, fast responding devices, and temperature sensitive units, among other experimental assemblies.

Small component requirements led to rapid and extensive development of the transistor, and, later, small radios. Suddenly, the portable radio was available at a reasonable cost. Smaller televisions, along with lower cost color televisions, became the byproduct of the spaceage search for the future. Faster responding electrical units required more sophisticated manufacturing techniques and new materials .

These early devices led to the electronic computer, stereophonic communications, automatic assembly lines , and space-age medicine. Manufacturing developments became a new interest area. We had to be more effective in our quality control, more aware of quality assurance, and had to develop different interpersonal skills to cope with a highly trained manufacturing employee .

With the reduction in space exploration during the late sixties many specialists began to shift their product development to meet the specifications of the consumer. This changed the emphasis on developing a product for use by a trained specialist to a product that could be utilized by an unskilled or semi-skilled employee. At the same time, the consumer was being conditioned to expect device s for the home that were either electronic or required a specialist to fix. What we now call high technology had arrived.

We tend to simplify the concept of high technology and to relate it to the development and use of computers. However, the concept of high tech must be broad enough to include the skills necessary to produce the computers, and hence specialized manufacturing and new materials.

If we focus on the computer industry for our discussion on high technology, we should begin by noting that Black Champaign County must look forward to producing key entry operators, computer operators, programmers , or systems analysts. If Champaign County employment in these areas was similar to the national statistics, about 17% of the key entry operators would be Black, and 5% of the systems analysts would be Black. Although the county breakdown is not available at this time, I feel certain that the systems analysts percentage has not been reached. This low percentage is linked to the kind of preparation necessary for high technology .

The Black population is unprepared to enter the systems analysts and programmer fields primarily because of the rejection of mathematics at the high school level. This means that Black Champaign County must content itself with entering the fields of key entry operators and computer operators. These two fields are expected to grow at the rate of about 4% per year for key entry and 14% per year for computer operators during the 1980s. Although this sounds good, we must realize that the rate for key entry operators is only about one-h a l f the rate of growth experienced during the 1970s, and, the computer operator group includes clerks who operate word processors and microcomputers.

To compete in the high technology area of computers, Black residents of Champaign County must reach into their storehouse of knowledge and prepare themselves as programmers and systems analysts. These will be the challenging assignments in the 1980s, and the Champaign County population can be prepared to implement high technology as it relates to computers. In contrast to what the news story "Hi-tech burglars find challenge in break-ins, " by John Erickson and Mike Howie in the November 20 , 1983 issue of the News-Gazette, preparing computer programmers for t he future will be the objective of sd1001 systems and colleges. Toward this end they will offer mathematics programs as we ll as moral, ethical, and security awareness.

If Black people in Champaign County are to enter high technology, then not only should they prepare for computer careers but also for manufacturing. The News-Gazette reported in November, 1983 that some high technology firms in the county were having difficulty finding executives and that it was just as difficult to entice

prospective officers to move to Champaign. A few companies were even leaving the area. Given this condition for manufacturing experience where will Black Champaign County obtain experience in management? Preparation in manufacturing technology needs to be a goal. The manufacturing skill might be applied to computers but, more important, it is consistent with upward mobility and community development.

Currently in Champaign County high technology tends to be reflected in research and development at the University of Illinois or in the manufacturing of electronic or electronic-related components by small and growing companies. This kind of employment means assembly line type functions with high emphasis on quality control and reliability. Although the employee can be trained to perform on the assembly line, mobility between industries will be limited because Champaign County is not supporting very many of these types of industries. Not only is mobility a factor for the top level executive, but every employee becomes concerned about job change and promotion.

The predominant employment area in high technology for Black Champaign County, outside of data processing, is manufacturing and repair. The related industries in the area are developing electronic components which require trained employees but, more importantly, trainable employees. There will be a growing tendency to search for college graduates, or at least those with two years of college, for the better jobs as installation and maintenance specialists. Manufacturing specialists will also be trained in college. This means more migration of Blacks to the area or the job positions will resemble the pattern mentioned earlier for systems analysts. Even though the University of Illinois and Parkland College are available for educational development, the number of local students from the Black community pursuing these careers has been small. Those who have selected high technology careers have sought employment outside the county. During the last decade Blacks in careers related to high technology have migrated to the University and a few industries in the research park. However, the numbers are dismally small.

Preparation for high technology begins early in life, and parents must be involved in the development of the child's quest for knowledge. Children can develop if we expand their horizons beyond our own and expect them to exceed the constraints on our own lives. High technology will require the inquisitiveness of mathematicians, chemists, biologists, marketers, and many other specialists. To enter these fields, a solid preparation at the secondary school level is necessary, followed by graduate level study in a specialized area. Black Champaign County can begin to prepare for the expanding industry while realizing that most of the new organizations will be research oriented and will need technicians and higher levels of preparation. This implies that Parkland College should enroll a larger percentage of Blacks in the technician programs and less in the data entry programs. The University of Illinois should enroll more Blacks in programs like material science, nuclear engineering, and mechanical engineering. Then, as students complete these programs, the community and industry can entice the high technology professionals to remain in Champaign County.

When that happens Black Champaign County will be in a position to implement high technology. Traditionally we have been consumers of advances in science. Very seldom have we been involved in the engineering, design, and manufacturing of those advances. Computer software, which allows for computer-aided-manufacturing (CAM), could permit us to implement technology if we worked in that environment. Within Champaign County there has been little opportunity for Blacks to become involved in this area of progress. Most of the developments in computer-aided-manufacturing occurred where research was being conducted in nearby cities like Decatur and Danville.

When computer-aided-design (CAD) began to enter to county, Blacks were still displaced because, again, the technology was research oriented. Computer-aided-design allows the designer to accomplish tasks rather rapidly and to tie into the computer-aided-manufacturing systems. With the extension of the computer as a major tool in analytical studies as well as design, Black Champaign County can join this phase of technology if they are prepared.

The computer can serve as the link between understanding, preparing for, and implementing high technology. The technical characteristics associated with electronics become clear when we focus our discussion on the computer, but we must always recall that the computer is only a tool. It must be instructed to function. It is fast, dependable, and will repeat itself for as long as the instructions determine. We can use the computer to motivate the young to prepare themselves better academically. Computers are entering the pre-school classroom and homes to assist in that preparation. When we are prepared we can utilize the computer to design and manufacture products for the consumer and for industry.

We will have entered the high technology environment by utilizing the computer as a tool.