

28,000 more robots due by 1990

Of all the machines available in our industrial culture, the robot arouses the greatest emotional response and suspicion.

Unlike R2D2 and C3PO of "Star Wars" fame, robots of today are essentially "dumb machines." They are generally immobile. They usually lack visual or tactile sensory perception and therefore cannot adapt to their environment.

Approximately 7,000 robots are employed in U.S. factories today. Industry observers predict that by 1990 there will be more than 35,000.

"Robots are magnificent workers. They never tire, never strike nor ask for raises, and they always do things the same way." So stated John Teresko, in an article appearing in *Industry Week* last year.

General Motors, which now has more than 500 robots in use, expects to have more than 14,000 units installed by 1990. This would be more than twice the number of robots operating in U.S. factories in 1982. GM Chairman Roger B. Smith recently said that "every time the cost of labor goes up \$1 an hour, 1,000 more robots become economical."

THE MATTER of reduced labor costs is an important one. A simple robot may carry a price tag of \$15,000; a highly sophisticated unit may cost 10 times that amount.

The useful life span of an average robot may be eight years, working two shifts. Despite the initial high cost of the equipment, a study conducted by Carnegie-Mellon University shows the hourly cost of a \$40,000 Ultimate robot in 1981 was \$4.50, compared to more than \$15 an hour for human labor.

Robots have their limitations. The estimated number of jobs that could be performed by robots by 1990 is less than 10 percent — and probably less than 5 percent.

In some areas within the automobile industry the impact may be felt more dramatically. The Society of Manufacturing Engineers said that by 1985 robots will represent 20 percent of the labor force used in the final assembly of automobiles. "Robotics is a wave that is coming up on us rapidly," said Wendell Larsen, a Chrysler vice president.

IN 1980, AMERICAN industry spent \$90 million on robots — a 50 percent increase from the 1974



high tech
Ronald R. Watcke

level. Purchases soared again in 1981 to an estimated \$130 million. By 1990, experts predict the U.S. will represent a \$2 billion-a-year market for robots.

Michigan industry is the largest user of robots within the U.S. and has 23 robot manufacturing firms, more than any other state. Although Michigan has a larger number of robot manufacturing firms, they are small firms which require locations close to their users. These firms currently represent approximately 50 percent of the U.S. production of robots.

Nationally, the robot manufacturing industry is dominated by two firms: Unimation in Danbury, Conn., and Cincinnati Milacron in Lebanon, Ohio. The next two largest firms based upon output and sales are Prab Robots and DeVilbiss Co. both located in Michigan.

THE EVIDENCE is overwhelming that robotics

will raise productivity and material rewards to employers and employees alike. New forms of employment can be created to offset any jobs directly lost to robots.

Protection from job loss can come through retraining programs. Working conditions and job safety will improve as robots take over dangerous and undesirable forms of work. Jobs eliminated initially include heavy lifting jobs, heat treating, blast furnace jobs, spot welding, spray painting and jobs requiring the handling of poisonous chemicals and radioactive wastes.

There is little doubt some workers will be displaced as a result of the introduction of robots. Auto workers initially will be most affected. The United Auto Workers union says it historically has not opposed new technology as long as there are safeguards for its members to progress in some way with that technology.

How American industry and labor take up the challenge of robots will determine if U.S. manufacturers can successfully compete in the new world economy.

A Troy resident, Watcke is a dean at Wayne County Community College.

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