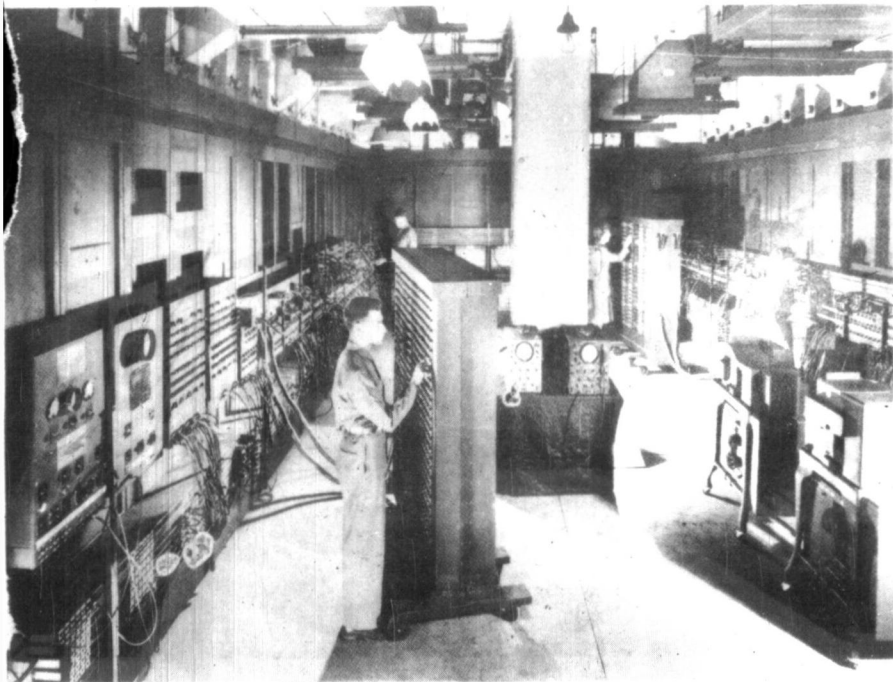
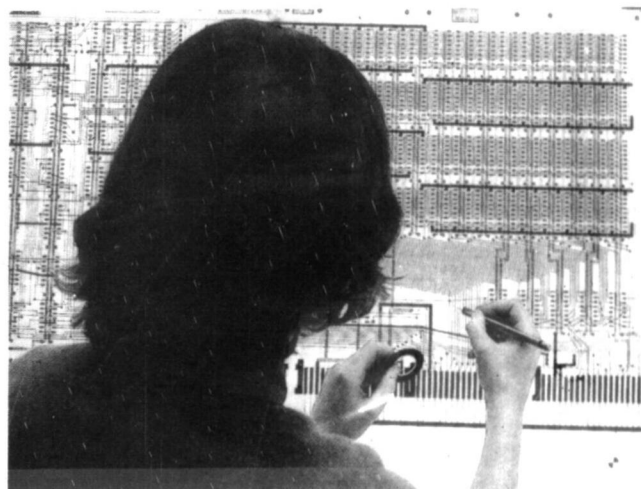
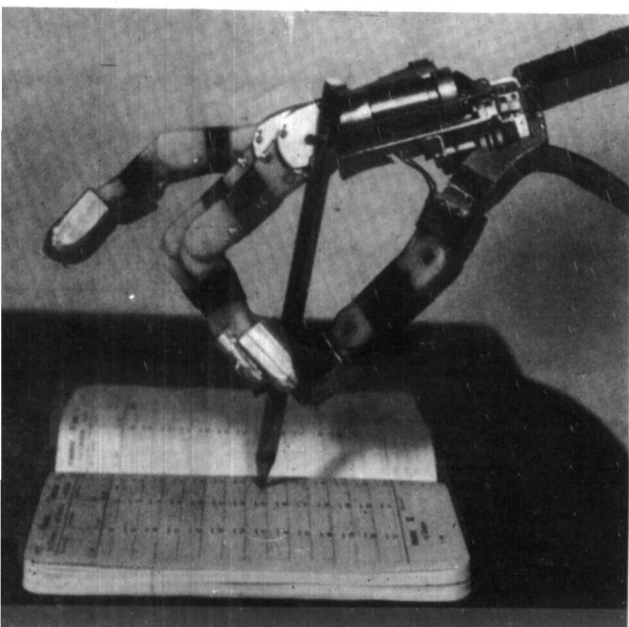


COMPUTER ADVANCES OVER FORTY YEARS

In 1946 two scientists at the University of Pennsylvania designed an automatic calculator where numbers and instructions were represented by electric signals. This machine was completed in 1946 and was referred to as ENIAC. In many ways, ENIAC and Colossus were the first machines to qualify as computers in the sense that we use the word today. The gulf that separates them from today's machines, however, is not simply technical but one of social and psychological awareness. ENIAC meant nothing to the man in the street as for society at large the impact of its work was minimal. Today everyone is aware of computer and virtually everyone comes into contact with their output.

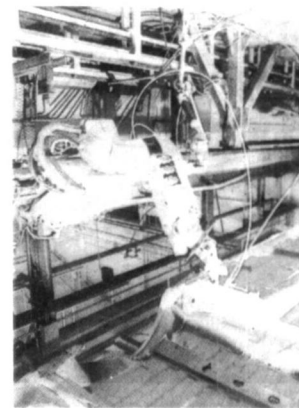


In 1971, the one-chip CPU - or microprocessor - containing 2,250 transistors in an area barely a sixth of an inch long and an eighth of an inch wide was unveiled. In computational power, the micro-processor almost matched the monstrous ENIAC and performed as well as an early 1960s IBM machine that cost \$ 30,000 and required a CPU that alone was the size of a large desk.



Most industrial robots look nothing like the bit of the body they imitate. But this biomechanical hand was specially designed to restore the maximum possible dexterity to an amputee. Electrodes implanted in the limb stump relay muscle contractions to mini-motors in the wrist and fingers. Work is now going on to develop pressure-sensitive artificial skin.

Pictures, Courtesy
Micro man - Dr Gordon Pask.
Macmillan Publishing Co. Inc.



Process control applications

▲ Robots working on British Leyland's Mini Metro.

A designer producing the master pattern for all the circuitry required on a single chip. The design is then photographically reduced to chip size ready for etching by laser onto a wafer of silicon. ▼