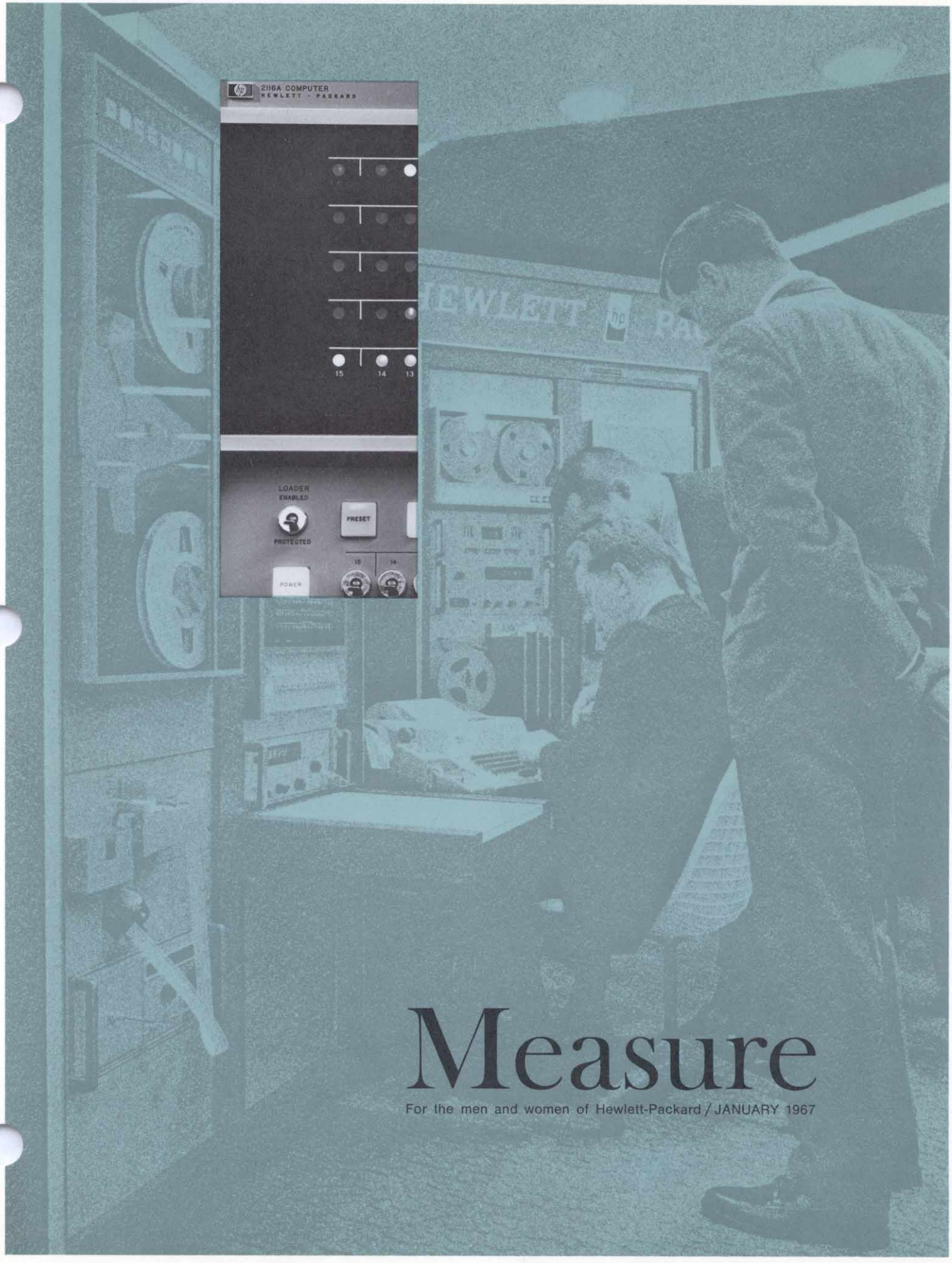
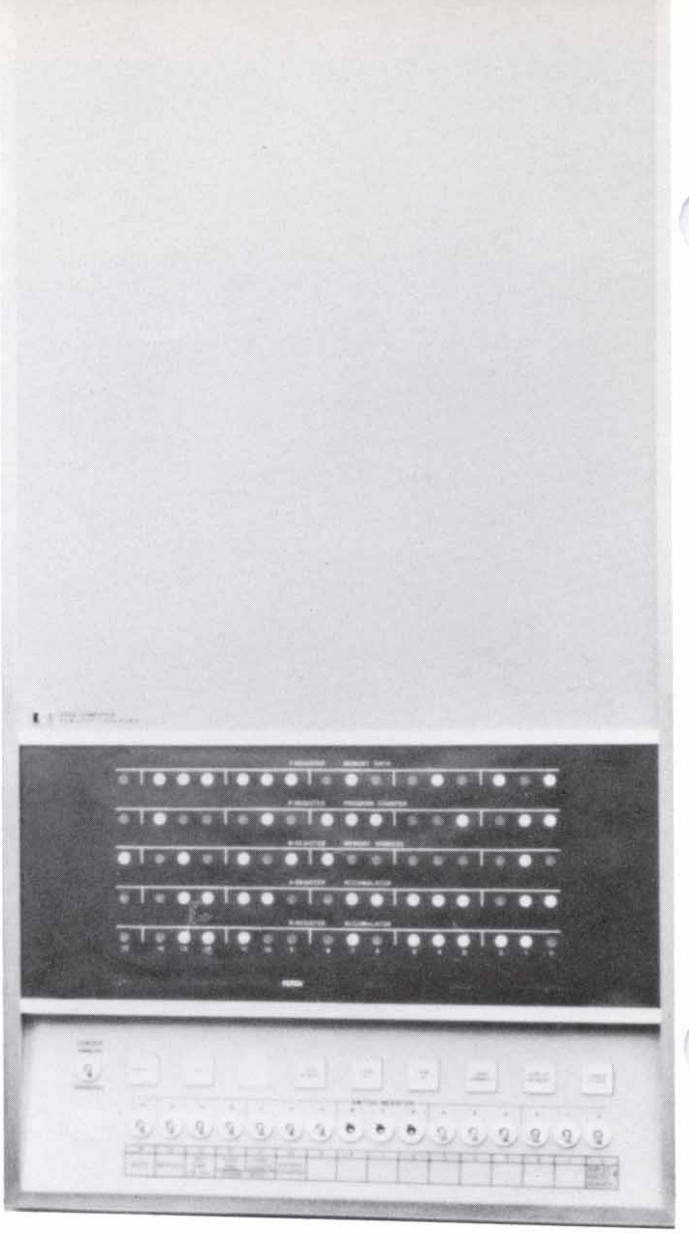


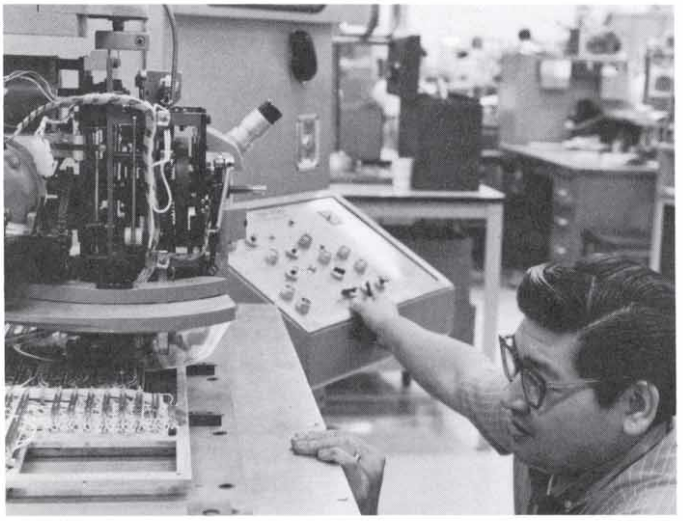
Measure

For the men and women of Hewlett-Packard / JANUARY 1967

Introducing the 2116A

Now an HP computer
for instrumentation systems





Backplane of computer is automatically wired by tape-controlled machine which makes some 4,000 wire connections for over 500 different circuits in 3½ hours, saving days of tedious and highly complex hand wiring. Bob Hoshi is operator.

Computer engineering group includes, from left: Bob Gray, memory; Roy Clay, programming; Gene Stinson, logic; Kay Magleby, computer engineering manager; John Koudela, applications (standing); Ed Holland, logic; Dick Reyna, input/output.

□ Fanciful though it may seem, if the same rate at which computers were developed over the past decade could possibly have been applied to automotive improvements, then the world could now have a 30,000 mph car priced at only $1.00 f.o.b. Detroit.

That's just one estimate of how far and fast the products of the computer industry have moved in recent years. Today, electronic computers are everyday tools of business, industry, government, and science. And with its new computer—Model 2116A—HP has helped to expand the field of computer capability further by developing the first system tailored for use with measuring instruments.

The 2116A was first introduced to industry at the Fall Joint Computer Conference in San Francisco last November. In a statement to the press covering the event, Noel Eldred, marketing vice president, said: "What is really different about the HP computer is that it will save thousands of dollars and months of time for the user who wants to computerize his instrument system. We have done this by solving his interface problems for him, in advance. Basically, these interfaces are those between the user and the computer, and those between the computer and the instruments. What is more, we have built this computer to stand up to the same working environment that instruments must face."

The 2116A is highly versatile in terms of the types of instruments with which it will interface. These include such standard laboratory instruments as electronic counters, nuclear scalers, electronic thermometers, digital voltmeters, ac/ohms converters, data amplifiers, and input scanners.

Available along with the basic 2116A computer and peripheral input-output equipment system (keyboards, magnetic tapes, etc.) is a complete and proven inventory of instrument control "software" (prearranged operating instructions for the computer and the instruments — stored on punched paper tape). Also available are the interface hardware and software that permit immediate connection to the input and output devices.

The new computer enables a user to receive measurement data immediately in comprehensible form. Price tags for typical computer instrumentation systems range from $25,000 up to $50,000.

HP's computer project got underway rather quietly about 30 months ago. Dymec, in investigating new directions for data acquisition systems, came to the conclusion that the heart of an instrumentation system should be a computer. During this same period of time, HP Labs had outlined the design of just such a computer. Inter-division discussions that followed led to the decision to proceed with the overall concept, and 17 months ago a number of key people formed the nucleus of the present computer team of engineers, programmers, and manufacturing and marketing personnel.

Two aspects of the 2116A project are considered outstanding. One is the rapid speed of the final development of the hardware—far faster than the industry average for systems of such complexity. Second is the fact that the software has been made available simultaneously with the hardware —a unique achievement, according to observers.

Indications are that the 2116A will be very well received. Field engineering specialists have been trained, assigned to each of the four sales regions, and equipped with a 2116A which is transported in a station wagon for on-location customer demonstrations—a unique approach for computer marketing. Service personnel have also completed training, and a program to provide intensified computer training to each HP field engineer is under development.

Meanwhile, the Dymec computer engineering group headed by Kay Magleby is on the trail of other related computer developments. The 2116A looks like a brilliant beginning in this promising new field of instrumentation. □

Production models of the 2116A are tested near end of manufacturing line. At rear, Computer Production Supervisor Dave Weibel confers with Engineer Harlan Andrews. In foreground, Test Supervisor Larry Dassow checks with Test Technician Tony Hunt.

Donated by HP to Stanford University, this 2116A is used by the school's computer science department. Admiring gift, from left, Dr. John Herriot, department's acting executive head, and Dr. William McKeeman, faculty coordinator, with HP's W. F. Cavier, vice president and secretary.