New Training Tools

Help in Technical Training

Two products from Brodhead-Garrett combine computer technology and woodworking tools to provide technical students practical software-assisted instruction in operating lathe and bench mill tools.

A desktop DNC training system that links a mini-lathe to a microcomputer, *Starturn* is a compact and complete system designed to teach all the essential skills required for operating larger production lathes.

Featuring variable speed drive, the system includes a floppy disc, cassette tape and an RS 232C interface for connection with microcomputers. Software controls feature circular interpolation and screwcutting with specified pitch (standard or metric measure). Programming also can be inch or metric, absolute or incremental.

Starturn has standard ISO input and memory size up to 100 blocks with full edit mode. Other functions include a do-loop facility which enables repeat cycling for turning, facing, pecking and grooving, plus a dwell function.

High resolution toolpath graphics for program verification can be produced on the microcomputer and programs can be transmitted to a printer if hard copy is required.

Starturn comes with tooling and chucking as well as accessories and operating instructions.

Ideal for technical colleges and training centers, *Triac*, a three-axis CNC bench mill, features a 5-inch anti-glare programming VDU and 12-inch TV monitor to display toolpath graphics. The alpha-numeric, profiled keyboard allows full manual data input, with single step and audio selector for programs.

ISO format allows 'G' and 'M' code programming, with optional full code listings on the VDU. The control system provides circular interpolation on the X-Y plane, a repeat facility for drilling and pocket milling cycles and a programmable dwell function.

Triac includes a built-in solar powered calculator and step-by-step audio cassette to assist students. In addition, *Triac* offers full off-line microcomputer programming with high resolution color toolpath graphics and an RS 232C computer link.

As standard equipment, a tool kit, necessary guards and an instruction manual are included.

For complete information and pricing, contact **Brodhead-Garrett Co.,** 4560 East 71st Street, Cleveland, OH 44105. 1-800/321-6730.

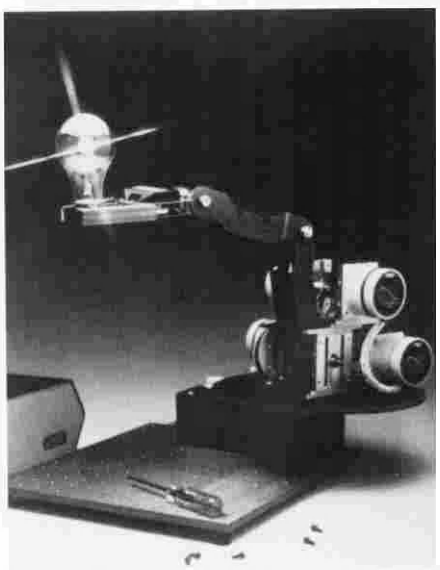
High-Tech Education and Training

Success in today's employment market means constant adapting to new technologies. Learning the ins and outs of robotics is the focus of these offerings from Heathkit/Zenith Educational Systems and Lab-Volt.

Through a series of hands-on building exercises, Lab-Volt enables students to use the *Dissectible Robot System* to study robotic fundamentals and assemble a fully functional five-axis robot mechanism. At each step, students are able to program robot motions by using the system's electronic controller module with either a teach pendant or a computer. Students can assemble the five-axis robot in less than 30 minutes.

Modularity allows instructors to use this mechanism to teach students the basics of stepper motor control and both linear and geometrical arm motion. Next, the student studies the use of optical encoders for feedback. Finally, the student adds turret and gripper to study three-dimensional robot movement and programming.

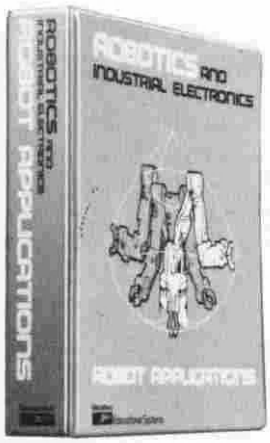
The system's electronic controller uses the IEEE 696 bus (S-100). A 16-bit cpu sequences robot movements, while 8-bit microprocessors control individual stepper motors. Extra bus slots permit the instructor to broaden control exercises or experiment with different control technologies.



Lab-Volt has adopted a broad-based "core" robotics program of electricity, electronics, fluid power and controls

based on the marrying of its Model 348 Microprocessor Training System to both its electric and pneumatic robot mechanism trainers.

For further information, write to Nick Carcich at **Lab-Volt,** P.O. Box 686, Farmingdale, NJ 07727, or call (outside N.J.) 800/223-1057 or 201/938-2000 (in N.J. or outside the U.S.).



A new robot applications course designed to teach the concepts and technologies that are shaping today's industry is now available from Healthkit/Zenith Educational Systems.

The course briefly reviews the basic concepts of robotics and then introduces new ideas and technologies that are being used to create the robots of the future. The factors governing the selection of an industrial robot (tasks involved, payback, reliability, quality) are covered with particular emphasis given to different types of vision, tactile and environmental feedback sensor systems. The course also covers present and future robot applications, computer-aided manufacturing (CAM) and nine hands-on course experiments which can be performed using HERO I, the Health Educational Training Robot. These experiments include constructing a variety of sensor systems.

The self-instructional robotics application course includes binder, text and experiments. The course is available also in a classroom version which consists of student text, workbook, instructor's guide and parts kit.

For more information about the Robot Applications Course, send for a complimentary Heath education catalog. Write **Heath Company,** Dept. 570-435, Benton Harbor, MI 48022. 616/982-3210.

Multi-Media, Multi-Image Programmer

A new generation of multi-image programming computers incorporating the Society of Motion Picture and Television Engineers (SMPTE) time code has been announced by AVL. The new computer, the AVL Genesis, also substantially reduces the time needed to create custom projector formats as well as permits the incorporation of cues into any multi-media program.

The Genesis has been designed so shows already produced using AVL's Eagle I and Eagle II devices can be updated to incorporate videos without having to reorganize cues substantially. The unit is compatible with AVL programs, and uses Procall X(GX-1) and version 5 software. The SMPTE time code is used to mark and drive video tape decks, audio decks and other electronic devices designed to interface with video.

New Procall GS software used in the AVL Genesis reduces by approximately 80 percent the time required for custom formatting of up to 30 projectors. This is done through the use of on-screen visual "placement" of projectors to simulate the actual projector layout. Custom formats previously required complex question-and-answer menu-driven routines.

AVL's Posi-trak syncing system and Clock-trak cueing techniques are also incorporated. The Genesis CPU is a 16-bit MS-DOS system using 8088 and Z80B dual processors at 4.77 MHz and 6MHz, respectively, for rapid processing of instructions. It contains 256K of RAM, with two 5¼" double-density disk drives for programming and production cueing.

The Genesis requires 20½" x 13" of desk-top space and weighs 42.5 pounds, including the monitor. Its 84-key keyboard features 10 function keys, a numeric touchpad and LEDs for cap/num locks, is connected to the CPU by a 4' coiled cable and stores under the front of the CPU when not in use. A free-standing 12" high-resolution monochrome (green/black) monitor with a glare-free screen can be conveniently positioned by the operator for optimum visibility.

Outputs include two RS232 serial ports for printer and modem connections, a Centronics-compatible parallel printer port, RCA and XLR jacks for sending program data to Dove X dissolve units. RCA and SLR jacks are also used for incoming data. Programmers may load programming information into AVL Genesis from mag tape, or play through the AVL Genesis using the mag tape bypass mode. A Kodak remote cue jack is also provided for manual advancing or reversing of cues from a remote location.

For more information call Marla Suttenberg, **AVL**, N.J., at 201/544-8700.

Management Training

Very few are born managers. Managerial effectiveness may well be a matter of training. Three new courses from Resource, Inc., *Managing Risk in Changing Times, Participative Management Skills* and *The Meeting File*, address important leadership skills. *Managing Risk in Changing Times* introduces managers to the basic concepts of risk taking. It is designed to help managers at all levels analyze risk situations, assess their own risk-taking styles, turn risk into opportunity, take appropriate risks and better manage change.

Implementing participative decision making is the focus of *Participative Management Skills*. This course is designed to help team leaders and managers improve communication among members, develop the problem- solving skills of all team members, produce creative solutions to conflicts and share and increase the power available to the team. Both courses are available in seminar or computer based form. The seminar package includes a facilitator's guide with video tapes, participants' manuals, participants' review guide and audio tapes. In computer-based form, the package includes participants' manual and computer lessons.

Finally, *The Meeting File* demonstrates practical steps to conducting productive, enjoyable meetings which lead to problem solving and results. Through this 37-minute program, available in full motion color video cassette, viewers learn how to provide a comfortable environment, conduct lively discussion and encourage participation.

For information regarding these courses, contact **Resource Inc.,** 14007 North Dale Mabry, P.O. Box 27150, Tampa, FL 33688. 813/961-4290.