

REJUVENATING ANTIQUE RADIOS IS A CINCH

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Radio-Electronics

THE MAGAZINE FOR NEW IDEAS IN ELECTRONICS

COVER STORY

CAPACITANCE METER

4-digit display reads out any capacitor value between 1-pF and 9999- μ F. Measures ceramics, paper, tantalum and electrolytics. Story starts on page 37

Antique Radios - 60

PINK-NOISE TESTING

Setting up a graphic equalizer is not easy. But when you have a pink-noise source, it can be done quickly and accurately. The how-to procedure starts on page 44

VIDEO MODULATORS

Individual reports on all of the modulators that we could locate. Must reading if you are planning to buy one to use with your computer or TV game or TV camera. Turn to page 47

BUILD FLUE BUG

Protects against heat loss through an open fireplace flue. This device warns you to close the flue once the fire is out.

PLUS

- ★ Hobby Corner power supplies
- ★ Computer Corner 8253 programmable interface timer
- ★ R-E Tests RG Dynamics Pro 16
- ★ R-E Tests Leader Audio Analyzer
- ★ State-Of-Solid State
- ★ CET Test Review
- ★ Equipment Reports
- ★ And much more



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EQUIPMENT REPORTS
continued from page 32

tool and the transistor dropped out of the underside, with the holes left looking neat and clean.

The *model SD5 Solder/Desolder System* comes in different sizes: with 16-gauge solder, \$12.66; with 18-gauge solder, \$12.86; and with 21-gauge solder, \$13.74. You can get the *model D5 Desoldering Tool* with a .06-inch wick, \$2.29; with a .10-inch wick, \$2.45. Wick refills are obtainable: .06-inch size, \$1.49; .10-inch size, \$1.65. Prices are suggested retail prices. All are available from Chemtronics, Inc., 45 Hoffman Avenue, Hauppauge, NY 11787. **R-E**

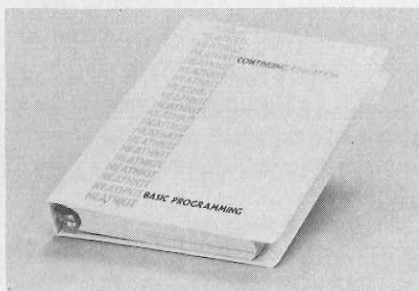
**Heathkit's Model EC-1100
BASIC Programming
Course**

THE HEATHKIT BASIC (BEGINNER'S ALL-PURPOSE Symbolic Instruction Code) course consists of a packed, 14-section manual plus appendixes in loose-leaf form, a programming workbook and a final examination in a sealed envelope. (The course was developed by Heath Company, Benton Harbor, MI 49022.)

The manual is different from most other BASIC manuals in that it doesn't try to impress you with introductory concepts that discourage you from going any farther. The text is written in an uncomplicated, bright manner, making learning fun rather than a chore. A semiprogrammed approach presents

information that is closely followed by related questions. The correct answers are camouflaged in dark red boxes, and if you have no willpower, the answers can be totally covered with a card. However, like all self-study courses, you are on your honor and you will only get out of the course what you are willing to put in. Certain places in the text direct you to the workbook in which you answer additional questions and write program segments based on your accumulated knowledge at that point. Those who already have Heathkit or other computers with a BASIC interpreter perform the experiments detailed in the workbook. Hands-on experience gained by actually running programs is an extremely powerful supplement to the written material.

The workbook includes some simple but interesting programs, such as "Name the State Capital," how to calculate parallel resistances and how to plot random number distributions. The appendixes include background information on converting from one number system to another, plus the details of Benton Harbor BASIC and extended Benton Harbor BASIC.



CIRCLE 50 ON FREE INFORMATION CARD

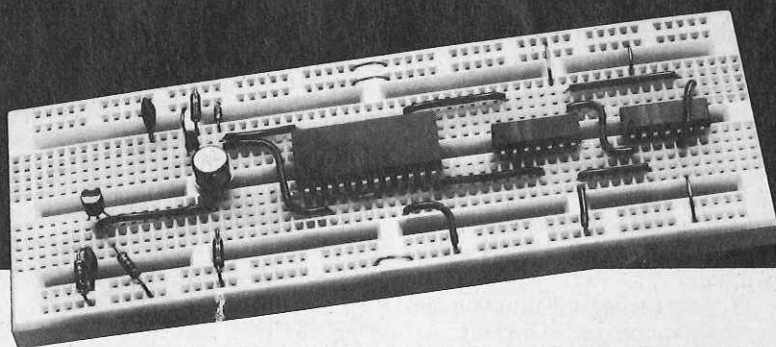
As soon as you have enough fundamentals under your belt, you are introduced to flow charts and you learn how to break down programs into smaller, more easily handled segments or subprograms. The emphasis is on planning your work by carefully defining the problem before actually writing a program.

The overall philosophy of this course concerns building—starting with a "one-room doghouse," proceeding through a "kennel" and up to a "monument." After working through statements, lists, arrays and strings, you arrive at the "monument"-building section, where a problem of moderate complexity is traced from its initial concept all the way through the bells and whistles.

The program developed in this section is Blackjack. In discussing card arrangement, modulus arithmetic is explained and used to represent the 52 cards of the deck. The cards are assigned numbers that can be converted into their individual values and suits. The BASIC random function RND is used to "shuffle" the deck. When you are finished, you have a BASIC listing for a deluxe version of Blackjack. To run the program on any particular computer some minor changes may have to be made. By that point you should be competent enough to implement these changes easily. In addition to knowing BASIC, you must be familiar with the way the operating system of your computer is initialized, how the BASIC interpreter is called up and the way BASIC language programs can be stored and recalled in memory or on tape or disc.

The *model EC-1100* course (which sells for \$29.95) is particularly useful in view of the nearly universal acceptance of BASIC by microcomputer buffs. **R-E**

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