THE design of most commercial synthesizers is based on the original RCA and Moog systems—a series of keyboard-controlled vco's and vcf's interconnected through patch cords, matrix switches, relays, or stop-like fixed presets. The majority have only one- or two-note-at-a-time capability, although the latest designs are beginning to go truly polyphonic.

At present, synthesizers fall into several broadly defined categories: studio models, live-performance models, economy build-it-yourself kits, and individual modules.

**Studio Models.** Synthesizers for recording studios are the most expensive, featuring as much in performance and variations as can possibly be offered. However, they are not really suitable for live performances. Typical of the synthesizers in the studio category are several custom Moog units (see box on page 51 for manufacturer and supplier addresses), the Synthi 100 from Electronic Music Studios, and the ARP 2500 from ARP Instruments.

Live-performance synthesizers are usually offered through music stores for retail prices ranging from a low of about $900 to a high of $3000 or more. Currently popular versions are the ARP Odyssey and Soloist, the Minimoog, and EMSA's Electrocomp 101 (made by Electronic Music Labs, Inc.), and the Ionic Performer.

Prices for these synthesizers are somewhat high, but they are comparable to what you would have to pay for other quality musical instruments, and much less than for most electronic organs. At present, the prices are high because the synthesizers are sold and serviced by retail music stores, because much engineering cost must be
MORE EM BOOKS

Organ Building, R.L. Eby. This is a complete handbook on electronic organ and synthesizer parts and pipe-organ materials. It costs $3 from Newport Organs, 486 Production Place, Newport Beach, CA 92660.

Musical Acoustics, C.A. Culver. Discussed in this book are the basics of all musical instruments, timbre, tone production, harmonic structures, etc. The book was published by McGraw-Hill Book Co. in 1956.

Music, Physics, And Engineering, H.F. Olsen. An updated version of the out-of-print Musical Engineering; it includes material on much of the original RCA synthesizer experiments. The book was published by Dover Publications in 1967.

Psychology of Music, C.E. Seashore. Published by McGraw-Hill Book Co. in 1938; you may have to hunt through the shelves of a large library to find a copy of this book. In it you will find discussions on instruments, their tonal structures, and how music is interpreted.

SYNTHESIZER MANUFACTURERS

The following is a list of addresses of the manufacturers and suppliers of commercial synthesizer products mentioned in the text:

ARP Instruments, 320 Needham St., Newton, MA 02164
Electronic Music Laboratories, Inc., Box H, Vernon, CT 06066
Electronic Music Studios, 460 West St., Amherst, MA 02164
Eu Systems, 3455 Homestead Rd. #59, Santa Clara, CA 95051
Ionic Industries, 128 James St., Morristown, NJ 07960
Moog Music, Inc., Box 131, Williamsville, NY 14221
PAIA Electronics, Box 14359, Oklahoma City, OK 73114
Southwest Technical Products Corp., 219 West Rhapsody, San Antonio, TX 78216
Total Technology, Box 828, Belmont, CA 94002

The EMSA Synthi 100 (opposite) is complete professional studio model ($20,000 up).