HP-35. Data entry keys include the digits 0 through 9, the decimal point, the ENTER↑ key used for entering values into the four-register operational stack, and the EEX (enter exponent) and CLx (clear display) keys.

Keys in the top row, labeled A, B, C, D, and E, stand for user-definable functions or subroutines. In the second row, the GTO (go to), LBL (label), RTN (return), and SST (single step) keys are used for programming. The DSP (display) key is used for formatting the display. Numbers can be displayed either in fixed-point notation or in scientific notation with a selected number of digits after the decimal point.

Keys in the third row, labeled f, f^{-1}, STO, RCL, and g, are all prefix keys. They have to be followed by one or two more keystrokes to complete a command.

At the lower right corner of the HP-65 keyboard is the R/S (run/stop) key. Pressing it begins program execution. Execution of a running program halts if an R/S step is encountered in the program.

User-Definable Keys

When power is first applied to the HP-65 the top-row keys (A,B,C,D,E) call for the functions 1/x, $\sqrt{x}$, y^x, x⇆y, and R↓ (roll down the operational stack). However, the functions of these keys can be changed, either by keyboard programming or by inserting a previously recorded magnetic card into the HP-65's reader slot. The new functions of the keys can be written on the card and the card inserted into the window above the top row of keys to show the new functions.

With the five definable keys, the user can readily change the HP-65 into a specialized calculator tailored to his needs. For example, Standard Pac program 11A, a compound interest program, changes these keys to n (number of periods), i (interest rate), PV (present value), FV (future value), and COMPUTE, similar to keys on the HP-80 financial calculator (see Fig. 2). Standard Pac 06A, a π-network impedance-matching program, converts the HP-65 into an electrical engineer's calculator. Given input and output resistance, frequency, and Q, the program computes the values of the two shunt capacitors and the

Cover: *In the background is Model 9100A, HP's first calculator, a huge success when it was first introduced in 1968. The HP-65 in the foreground rivals the 9100A in computing power, but it fits in your pocket and costs only one-sixth as much. Of course, the HP-65 doesn't work with a printer or other peripheral devices. Perhaps that's the next step.*

In this Issue:

COMPOUND INTEREST

COMPOUND INTEREST — **STD 11A**

n i PV FV COMPUTE

This program computes the answers to compound interest problems using the basic formula:

$$FV = PV\ (1 + i/100)^n$$

where:
n = Number of time (compounding) periods.
i = Interest rate per time period (in percent).
PV = Present value (value at the beginning of the first time period).
FV = Future value (value at the end of n time periods).

Any three of the variables (n, i, PV, FV) can be inputs. The program computes and stores the fourth variable. Input variables can be entered in any order and need not all be reentered to change one variable.

HP-65 User Instructions

STEP	INSTRUCTIONS	INPUT DATA/UNITS	KEYS	OUTPUT DATA/UNITS
1	Enter program			
2	Initialize		RTN R/S	
3	Input three of the following			
	n	n	A	n
	and/or i	i(%)	B	i(%)
	and/or PV	PV	C	PV
	and/or FV	FV	D	FV
4	Compute the remaining variable			
	n		E A	n
	or i		E B	i(%)
	or PV		E C	PV
	or FV		E D	FV
5	To modify problem go to 3 and			
	change appropriate input(s).			

Fig. 2. *Users may write their own programs and store them on blank magnetic cards, or may take advantage of many preprogrammed cards. This compound interest program converts the calculator into a financial calculator.*