



This man is using the smallest "computer" ever made...

Hewlett-Packard
proudly introduces the super-powerful

HP-65

FULLY PROGRAMMABLE
POCKET CALCULATOR





You can quickly learn to operate the HP-65, thanks in part to the common-language abbreviations on the keys. For example, "DSP" stands for "DISPLAY."

This tiny card contains a complete program (sequence of keystrokes) for the amazing HP-65 computer calculator—and you can change programs in just two seconds!

These keys tell the HP-65 to do whatever you want it to do, according to the program you feed in!

To save keyboard space and help make possible true pocket-sized portability, many of the keys perform several alternate functions indicated in blue or gold.

Like a computer, the HP-65 can be programmed with conditional tests (e.g., $X \neq Y$), branches, etc.—but you do *not* have to know anything about computers to operate it!



The HP-65...

the personal
pocket "computer"
that solves your
own unique problems
in seconds...
anywhere!



1

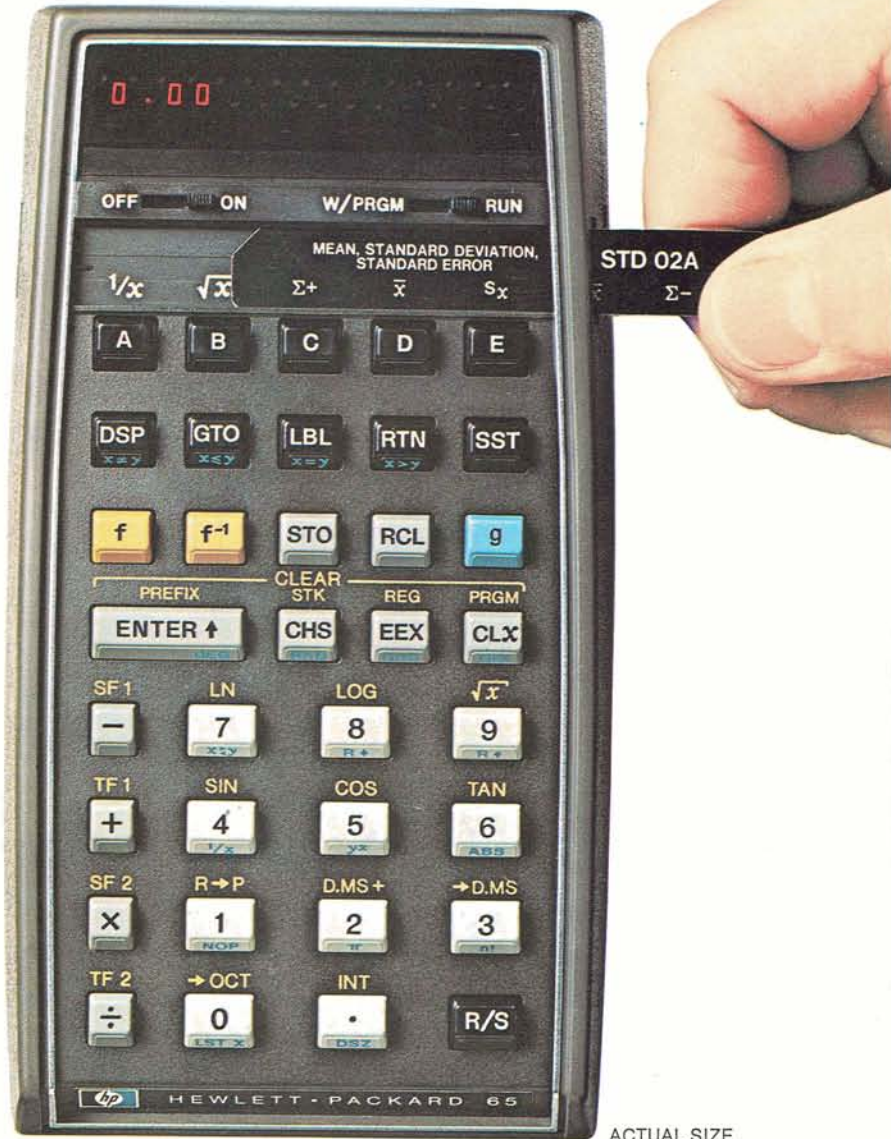
It operates on pre-recorded program cards that turn complex or lengthy calculations into a few simple steps anyone can do quickly...

2

Or you can actually program it yourself—without learning “computer language”—to create your own highly specialized “answer machine”..

3

And it's also an advanced scientific pocket calculator—with numerous functions built in!



ACTUAL SIZE

It's whichever you want it to be!

The HP-65 is the closest thing yet to a personal, portable computer! Like a computer, it accepts and memorizes programs (fed in via the keyboard or tiny, magnetic program cards) . . . it executes programs (up to 100 steps long) with just a few keystrokes . . . and it uses computer logic to solve even extremely complex problems in seconds with exceptional accuracy.

Once the HP-65 is programmed to solve a problem, you can run the program any number of times with different data. And, since you can feed in a new program card in only two seconds, you can rapidly customize the HP-65 to meet your specific needs of the moment.

Yet you don't have to know a thing about computers to operate it!

The HP-65 is as versatile—or as specialized—as you want it to be. And, in its spare time, this “pocketful of miracles” serves as a keyboard-controlled advanced scientific pocket calculator.

The problem-solver of tomorrow is here today . . .

1071 46167

1



Pre-recorded program cards

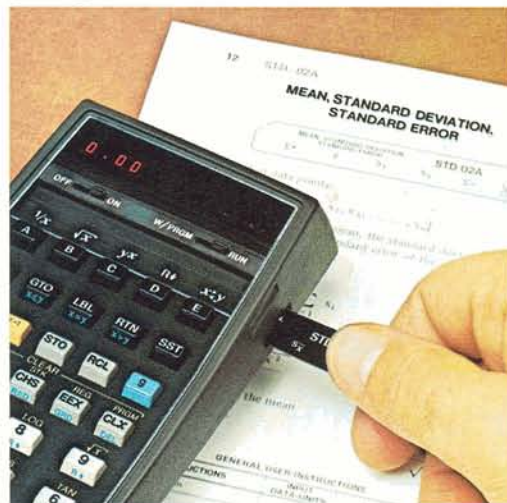


ACTUAL SIZE

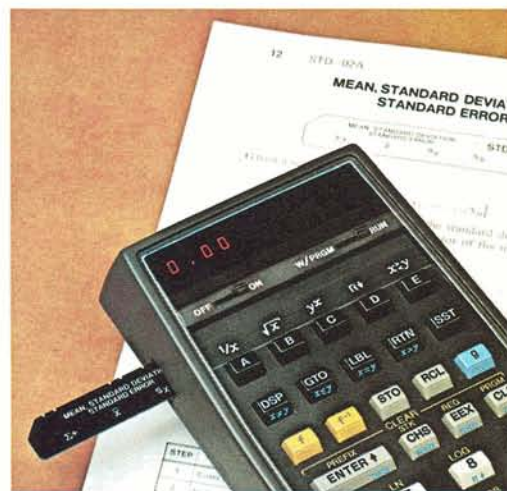
quickly transform the HP-65 into a special-purpose calculator...

to solve your complex problems at just the touch of a few keys!

Here's how easy it is to load a pre-recorded program card into the HP-65



Simply insert the card into the HP-65's magnetic card reader, and in less than two seconds . . .



. . . the card's entire program is duplicated in the HP-65's program memory. Then the card exits for further use whenever you need it again.

Like a computer, the HP-65 can be programmed so that it goes through a step-by-step routine at just the touch of a few keys—to solve even extremely complex, lengthy or repetitive problems quickly, easily and accurately.

But instead of bulky reels of tape or stacks of keypunch cards, the HP-65 uses tiny, magnetic program cards, less than one-half inch by three inches in size.

Each card contains a complete program (up to 100 steps long) directing the HP-65 to perform a predetermined routine to solve a specific problem or series of problems.

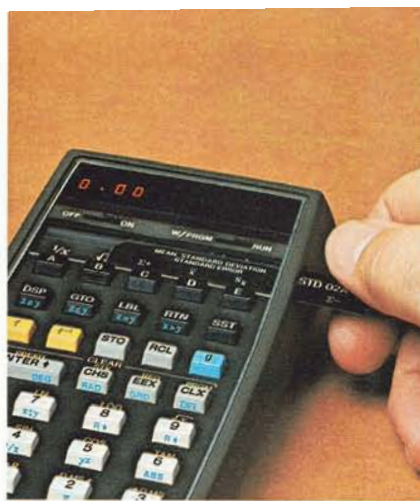
(On most occasions when a program greater than 100 steps is required, it may be placed on two or more program cards.)

A particular program can be a relatively simple or intricate sequence of steps. Because the program card has all of the steps pre-recorded, you only have to feed in the known data—the HP-65 will do the work!



Hundreds of pre-recorded program cards, packaged in Application Pacs (shown above), are available from Hewlett-Packard. Each Pac contains up to 40 pre-recorded programs plus a manual with step-by-step instructions for running each program.

Individual Application Pac programs and programs contributed by HP-65 owners are available through the HP-65 Users' Library. (For details, see the inside back cover of this brochure.)



Here's how easy it is to operate the HP-65 with pre-recorded program cards

After loading a program into the HP-65 (see opposite page), insert the program card in the window slot directly above the "User Definable Keys" (top row) to identify them.



Key in your known data and run the program as described by the instructions furnished for the program. No additional hardware is necessary . . . no special training is required. Anyone can do it.



The HP-65 will perform its calculations and give you the answers in seconds, with accuracy up to 10 digits. It couldn't be any faster . . . or any easier!



If you want to run the program with new data, simply enter the new data and rerun the program.

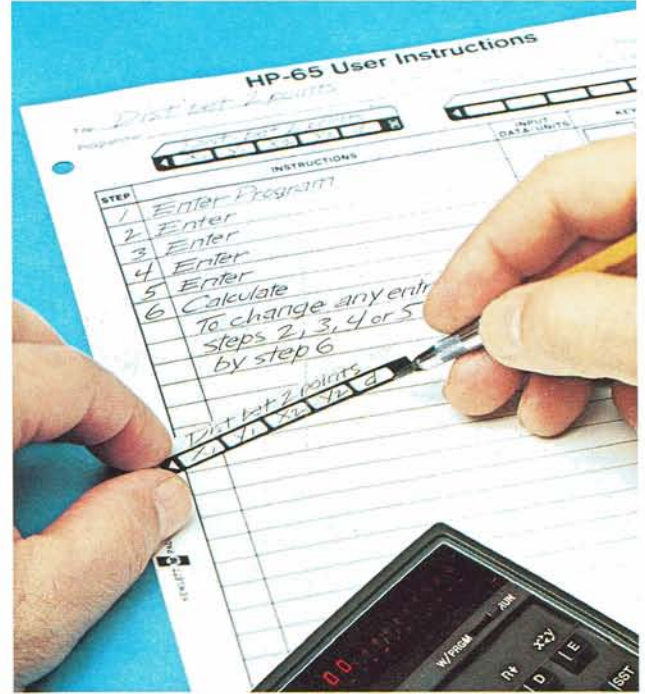


Hundreds of pre-recorded program cards are available, or...

2



Create
your own
time-saving
programs,
without
learning
"computer
language"...
and save them
on blank
cards!



Although the Hewlett-Packard collection of pre-recorded program cards is constantly growing, only you know your specific needs. Since the HP-65 is a *personal* "computer," you can easily create your own program cards—and you don't have to learn "computer language" to do it!

Whatever your field of interest, you can write your own programs, incorporating the specific equations, constants and/or procedures you need, for easy and rapid calculations of all types of numeric problems. You can even incorporate any of the HP-65's powerful built-in functions (see Section 3 of this brochure).

Once a program is created, you can store it on one of the blank program cards supplied with each HP-65. Then you—or anyone—can simply insert the card, "customizing" the HP-65 for the job at hand.

Because entire sequences of keystrokes can be stored as programs, then executed by merely pressing a few keys, the chance of manual keystroke error is substantially reduced. So in addition to saving time and effort, the HP-65 program cards greatly insure accuracy—no matter who is using the machine.

And you can create *all types* of programs. The only limit is your imagination!

No separate keyboard needed... nothing to keypunch

The only thing you need is the HP-65 itself.

And if you want to save your program for future use, just insert a blank magnetic card into the HP-65 and run it through the card reader—a two-second operation.

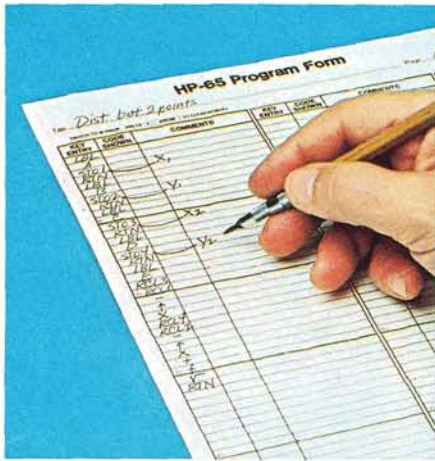
The HP-65's programming system is based on plain common sense. Its keys are labeled with either recognized symbols (e.g., \sqrt{x}) or abbreviations for words or phrases (e.g., "LBL" means "LABEL" and "GTO" means "GO TO").

The program itself is a stored series of keystrokes in operating sequence. It may be easily reviewed, and keystrokes can be added or deleted using the unique editing capabilities of the HP-65.

And the program can be simple or complex, depending on your needs, because the logical decisions can be made with the aid of one of the two flags or one of the four numeric comparison tests available. Therefore, if you want to skip certain steps or branch to another part of the program—based on whether or not certain conditions are met—it can be done. The flags may be controlled either manually or automatically, as you wish.

It does take time to write a program, but you need do it only once.

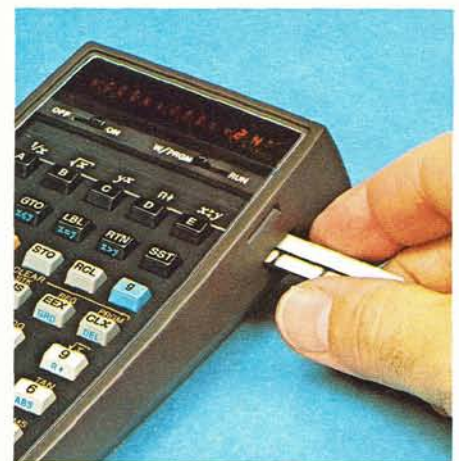
To create your own custom-made program...



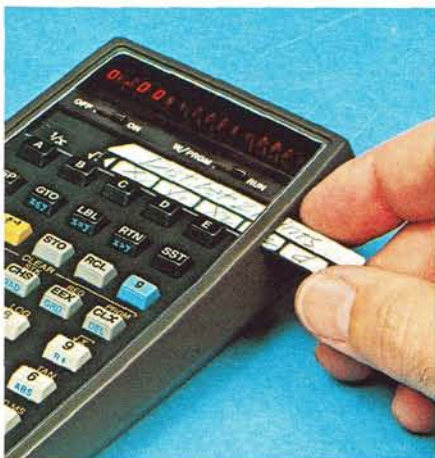
On a piece of paper, or a program form (supplied with the HP-65), make a step-by-step list of the keystrokes needed to solve your problem.



Then, with the HP-65 set in the "WRITE PROGRAM" mode, press the keys in the proper sequence.



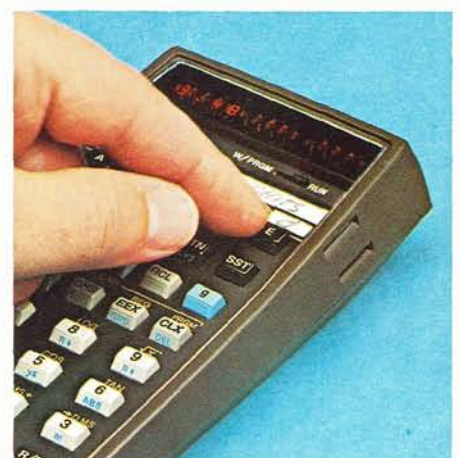
The resulting program is stored in the program memory as long as the HP-65 is left on. It can be permanently recorded by running a program card through the card reader.



Label the program card and insert it in the slot above the User Definable Keys to identify them.



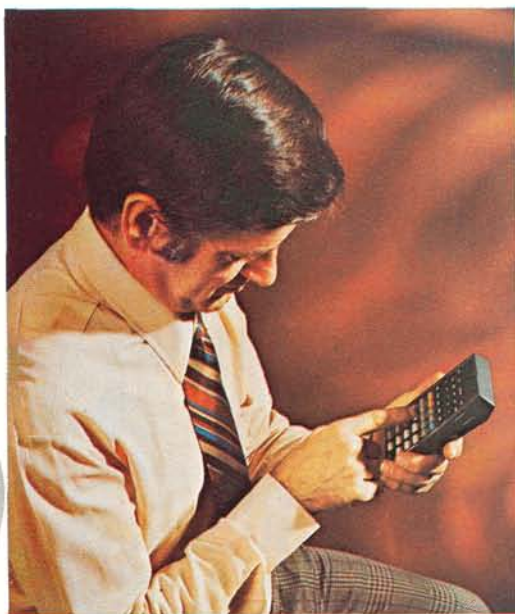
With the HP-65 set in the "RUN PROGRAM" mode, key in the known data for the specific problem you want to solve.



Start the program and watch the HP-65 use computer logic to solve your problem quickly—with accuracy up to 10 digits!

For information on the HP-65's unique programming keys, see the third page following.

3



The HP-65 is also an advanced scientific pocket calculator, with numerous functions already built in!

Just press the keys!

Built into the HP-65 are conversion routines, the constant for π , plus log and trig functions, and more, so you can perform most commonly used functions at the touch of a key.

Everything from simple arithmetic to complex conversions are handled quickly and easily, without reference to tables and without the need for pencil and paper.

Nine addressable memory registers, a four-register operational stack and a "Last X" register store data and remember intermediate solutions. You can choose any of three operating modes—degrees, radians or grads—and easily convert polar coordinates to rectangular coordinates, or vice versa.

And your answer is displayed with as many decimal places as you desire, up to nine, in either fixed or scientific notation. (The HP-65 always uses and retains its internal accuracy.)

Not only can any of these invaluable functions be used independently, but they may be called upon as part of a program, to further enhance the usefulness of your personal "computer."

Just a few of the built-in functions are shown on these pages.



Unique "shift keys" multiply the functions of many keys, to save space . . .

Many of the HP-65's built-in functions are shown on the keyboard as alternate functions, and are labeled either above a key (in gold) or on the underside of a key (in blue). To activate them, you first press the appropriate prefix "shift" key.

R→P



Polar coordinates in any of the four quadrants can be converted to rectangular coordinates—or vice versa . . .

To convert from rectangular coordinates to polar coordinates, press the "f" key and then this key. Or, to convert from polar to rectangular, press the "f-1" key first and then this key.

D.MS+ → D.MS



Convert, add or subtract degrees/minutes/seconds (or hours/minutes/seconds) just by pressing a few keys...

To convert a decimal angle (in degrees, radians or grads) to d/m/s, press the "f" key and then the "→ D.MS" key. To convert from d/m/s to a decimal angle, press the "f-1" key and then the "→ D.MS" key.

By changing angular modes between these steps you can also convert any decimal angle from one mode to another.

To add degrees/minutes/seconds or hours/minutes/seconds in a calculation, simply press the "f" key and then the "D.MS+" key. To subtract d/m/s or h/m/s, first press the "f-1" key and then the "D.MS+" key.

INT



"X" register contents are easily truncated...

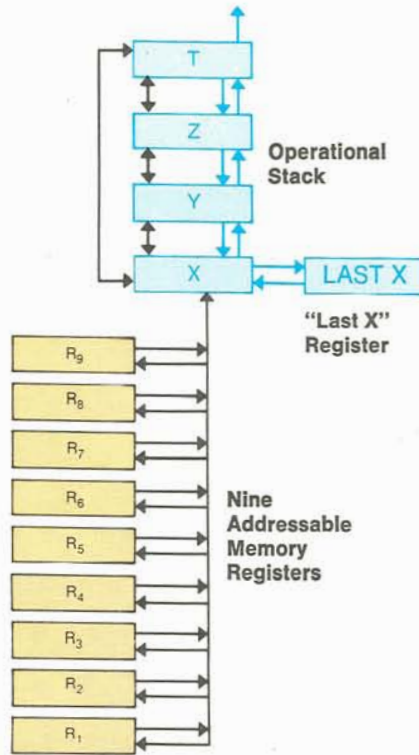
To truncate the contents of the "X" register to an integer, press "f" and then this key. To truncate it to a decimal fraction, first press the "f-1" key. By using the decimal key and this key, you can save storage space by retaining two numbers within a single register.

→OCT



You can quickly convert to or from octal (base 8)...

Press the "f" key first, and then this key to convert a decimal integer to octal. Press the "f-1" key first, and then this key to convert an octal integer to decimal.



Exclusive 4-register operational stack holds intermediate solutions...

This four-register operational stack retains as many as four intermediate solutions in sequence, and automatically positions them for use on a last in, first out basis. The stack design also permits X and Y register exchange and roll-up or roll-down of any entry to the display for review or other operation.

"Last X" register permits error correction or multiple operations...

When a function is performed, the last input argument of the calculation is automatically stored in the "Last X" register. By pressing the "g" key, and then this key, you can recall the argument to correct an error, or to perform another operation using the same number.

Nine addressable memory registers make data manipulations easy...

The HP-65's nine memory registers are addressable, so you can store data in any register... retrieve data from any register... and even do register arithmetic (+, -, ×, ÷), using or modifying data in any register.

DSP

Two display modes offer extreme versatility...

You can specify either scientific notation or fixed notation, and the number of decimal places, merely by pressing the appropriate keys.



By pressing the display key and any digit from 1 to 9, you can specify scientific notation rounded to the designated number of decimal places.



If you press the display key, the decimal key and any digit from 1 to 9, you specify fixed notation, with the designated number of decimal places.



Trigonometric functions may be performed in any of three selectable angular modes...

You can perform trig operations in degrees, radians or grads by first pressing the "g" prefix key and then the appropriate mode key.



Built-in log and trig functions eliminate the need for tables...

Just press the appropriate keys and the HP-65 performs calculations using trig functions (sin, cos, tan or their inverses) or log functions (common and natural, including antilogs).

These built-in function keys combined with the program keys on the next page give you the capability to handle complex, lengthy and/or repetitive problems that would be inconvenient, difficult or time consuming to handle without using devices many times larger, much more expensive and nowhere near as portable as your personal "computer."

This is what makes the HP-65 fully programmable...

These keys are the nucleus that provide the HP-65's uniqueness and power . . . that take this machine out of the realm of a calculator and transform it into a highly sophisticated, truly personal "computer."

They set in motion the HP-65's computer logic, to solve even extremely complex, lengthy or repetitive problems in seconds.

And, to make the HP-65 easy to use, these keys utilize common language abbreviations or recognized symbols, so you don't have to learn "computer language."

For writing or running your program . . .

W/PRGM  RUN

Set this switch to "WRITE PROGRAM" (W/PRGM) to enter or change any steps in the HP-65's program memory, without altering any data already stored in the HP-65's operational stack or 9 addressable registers.

To record your program for future use, simply run a blank program card through the HP-65's card reader.

Set this switch to "RUN" for all other operations of the HP-65.

To define your program's functions . . .



These User Definable Keys are just what their name implies—you specify their functions depending on the program you've developed or are using. They are used when writing, editing or running your program.

To structure your program . . .

LBL

This "LABEL" key enables you to indicate and identify a series of steps within your program. Up to 15 labels are available by pressing this key and any digit (0-9) or letter (A-E) key.

GTO

This "GO TO" key, when used in conjunction with a digit or letter key, sets off a search in the program memory for the label with the same digit or letter.

RTN

When this "RETURN" key is pressed it enables you to start at the beginning of your program again.

If this key is used as a part of your stored program, it stops execution of the program and returns control to the keyboard for manual operation.

R/S

When this "RUN/STOP" key is included in your stored program, it will halt execution of the program and return control to the keyboard for manual operation. When used from the keyboard, it can stop a running program or start a stopped program at the next step.

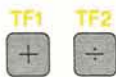


If this "NO OPERATION" key is included in your stored program, it will advance the program to the following step. It is often used in conjunction with conditional-skip instructions.

For including conditional functions in your program . . .



Like a computer, the HP-65 can take alternate computational paths based on the condition of the two flags. With the "SET FLAG 1" and "SET FLAG 2" keys, the flags can be set or cleared manually from the keyboard or automatically by an appropriate program step.



The condition of the flags can be tested manually, or automatically, at any point in your program by using these "TEST FLAG 1" and "TEST FLAG 2" keys to include an appropriate test-flag instruction. Your program will either advance sequentially or skip over the next two steps depending on the condition of the tested flag.

Each of the following keys sets up a logical test of values in the X and Y registers of the operational stack, and allow the HP-65 to perform conditional branches based on the results of the test.



These keys allow you to compare the values in the X and Y registers of the operational stack. If the test condition is not met, the program skips over the next two steps. If the test condition is met, the program continues with the next step.



The "DECREMENT AND SKIP ON ZERO" key subtracts a "1" from the integer previously stored in addressable register 8, then advances your program depending on the value remaining in the register. If the value in register 8 is not equal to zero, the program advances to the next step; if it does equal zero, the program skips over the next two steps.

To edit your program . . .

Even on a machine this compact, with the keys shown below you can perform editing operations. Because the HP-65 lets you single-step through your program and add or delete individual steps at will, it's easy to "de-bug" or modify your program.

PRGM



Using this "PROGRAM" key you clear the entire 100-step program memory so you can begin keying in a new or revised program you have developed.

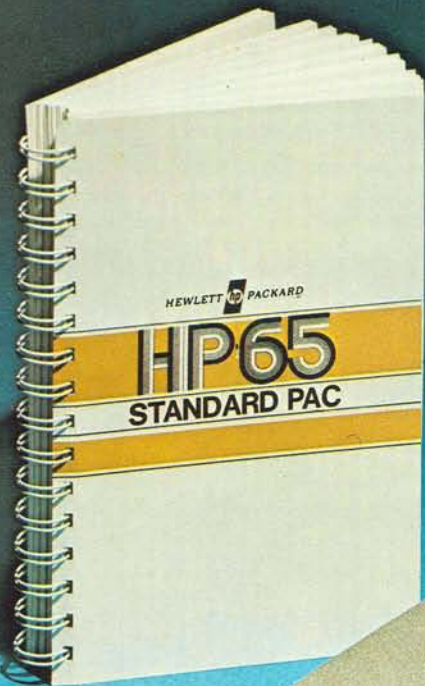


This "DELETE" key erases a single program step and automatically moves the remaining steps up one place in the program memory to fill the resulting gap.

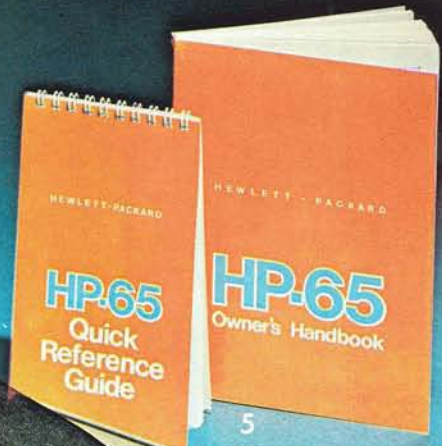
SST

This "SINGLE STEP" key, when the HP-65 is in the "WRITE PROGRAM" mode, lets you step through each program instruction stored in the program memory. As this is done, the display shows a number for each step. This number represents the location (row and column) of the key corresponding to that particular instruction (except digit keys which are represented by the numbers 00 to 09). For example, "34" refers to the key in row 3, column 4 (RCL).

If the "SST" key is used with the HP-65 in the RUN mode, you can execute a program one step at a time.



7



5



3

4



2



1



6



7



PROPERTY OF _____

PROPERTY OF _____

PROPERTY OF _____

PROPERTY OF _____

The complete HP-65 outfit includes:

- 1 Rechargeable Battery Pack** under normal use provides approximately three hours of continuous operation. All functions, including the writing or running of programs, may be performed with battery power.
- 2 115/230V AC Adapter/Recharger** lets you operate the HP-65 on AC while the battery pack is recharging. An 8-foot cord is attached.
- 3 Soft Carrying Case**, with belt loop, holds the HP-65, an Application Pac of program cards, and the Quick Reference Guide.
- 4 Safety Travel Case**, of high-impact plastic, provides further protection against knocks, bumps, etc. It holds the soft case and its contents plus the adapter/recharger, Owner's Handbook and several Pocket Instruction Cards.
- 5 Owner's Handbook and the Quick Reference Guide** supply complete information on operating and programming the HP-65. The Owner's Handbook fully explains how programs are prepared and stored, how data is entered, how the various functions operate, etc. The Quick Reference Guide is a how-to-do-it summary.
- 6 Program Forms**, in a pad of 50, are a convenience for those who wish to write their own programs. Additional forms are available from Hewlett-Packard.
- 7 Standard Pac of pre-recorded program cards** offers a sampling of cards from various Application Pacs, along with two diagnostic cards to check the HP-65's operating condition, a special card to clean the program-reading head, and 20 blank program cards for do-it-yourself programming. Included, too, is a detailed manual on the Standard Pac, plus a set of 20 two-sided blank Pocket Instruction Cards (each having room for two program cards and their program instructions).

To help you
obtain the full potential
of the HP-65...
a continuing program of
information and assistance
has been initiated.

The Users' Library provides a low-cost way to obtain any of the hundreds of individual HP Application Pac programs, and also those programs contributed by HP-65 users, which you can record on blank program cards. *The Catalog of Contributed Programs* lists and describes the programs currently available, and is updated periodically. A year's subscription to the Catalog of Contributed Programs is given free to each HP-65 purchaser.

The HP-65 Newsletter announces new Application Pacs, describes new HP-65 accessories, passes along programming hints and carries other news and information of interest to HP-65 users. You'll receive the HP-65 Newsletter without cost.

Assistance on the Operation of the HP-65 and information on its capability are available from Hewlett-Packard, by phone or by mail, at no charge.



There's never been anything like the **HP-65**

It's the first and only personal, pocket-sized "computer" that operates *anywhere*—on rechargeable batteries or AC—to give you answers to complex problems *the moment you need them*.

No computer—and certainly no ordinary calculator—can give you the *portable power* you get with the HP-65. Here, in one compact package, is:

1. An "answer machine" that operates on pre-recorded program cards . . .
2. A personal "computer" you can actually program yourself, without learning "computer language" and . . .
3. An advanced scientific pocket calculator, with numerous functions already built in.

The HP-65 is an extremely *versatile* machine that can become—in just two seconds—as *specialized* as you want it to be, by merely inserting a program card.

Yet it's priced within reach of everyone who should be taking advantage of it.

Hewlett-Packard, designer and manufacturer of the HP-65, invites you to try it.

Discover how astonishingly easy it is to operate. See how it enables you to rapidly and effortlessly handle hundreds of problems that were—up to now—too inconvenient, difficult or time consuming to handle.

Find out how much time it can save you . . . how much old-fashioned drudgery it can eliminate . . . *and how quickly it can pay for itself!*

TRY THE HP65 FOR 15 DAYS!

◀ For details on the complete outfit lift this flap . . .

The HP-65

FULLY PROGRAMMABLE POCKET CALCULATOR

Hewlett-Packard makes the most advanced pocket-sized computer calculators in the world.

The HP-65 is part of the growing family of totally unique Hewlett-Packard working tools for people who measure, compute and analyze.



Sales, service and support from 172 offices in 65 countries
19310 Pruneridge Avenue • Cupertino, California 95014

Pre-programmed Functions:

Trigonometric: Sin x • Arc Sin x • Cos x • Arc Cos x • Tan x • Arc Tan x

Logarithmic: Log x • Ln x • e^x • 10^x

Also: y^x • √x • 1/x • π • x² • n! • Conversion between Decimal Angle, Degrees/Minutes/Seconds, Radians or Grads • Rectangular/Polar Coordinate Conversion • Decimal/Octal Conversion • Degrees(Hours)/Minutes/Seconds Arithmetic • Integer/Fraction Truncation

Other Functions:

Register Arithmetic • Addition, Subtraction, Multiplication or Division in Serial, Mixed Serial, Chain or Mixed Chain Calculations

Features and Specifications

- Display: Up to 10 significant digits plus 2-digit exponent and appropriate signs
- Dynamic range: 10⁻⁹⁹ to 10⁹⁹
- Primary functions activated by single keystroke; alternate functions utilize prefix keys
- Five User Definable Keys
- Four-register operational stack
- Program memory for storage of up to 100 steps
- Single step running and/or inspection of a program
- Unique insert/delete editing features
- Nine addressable memory registers
- "Last X" register for error correction and number reuse
- Two flags for skip or no-skip programming or branching to another part of program
- $x \neq y$, $x \leq y$, $x = y$, $x > y$ relational tests
- Magnetic card reader/writer
- Built-in counter
- Automatic decimal point positioning
- Selective round-off; range: 0-9 decimal places
- Two display modes: fixed point and scientific
- Indicators for improper operations and low battery condition
- Operates on rechargeable batteries or AC
- Solid state electronics
- Light-emitting diode (LED) display
- Tactile feedback keyboard
- Compact, contoured case

POWER:

AC: 115 or 230 V, $\pm 10\%$, 50 to 60 Hz, 5 watts. Battery: 500 mw derived from nickel-cadmium rechargeable battery pack.

WEIGHT:

HP-65: 11 ounces (342g) with battery pack. Recharger: 5 ounces (155 g). Shipping Weight: approx. 3 lbs. (1.4 kg).

DIMENSIONS:

Length: 5.8 inches (14.7 cm). Width: 3.2 inches (8.1 cm). Height: 0.7 to 1.4 inches (1.8 to 3.4 cm).

TEMPERATURE RANGES:

Operating: 32°F to 104°F (0°C to 40°C). Card Reader: 50°F to 104°F (10°C to 40°C)

WARRANTY

The HP-65 is warranted against defects in materials and workmanship for one (1) year from date of delivery. During the warranty period, Hewlett-Packard will repair or, at its option, replace components that prove to be defective when the calculator is returned, shipping prepaid, to a Hewlett-Packard Customer Service Facility.

This warranty does not apply if the HP-65 has been damaged by accident or misuse or as a result of service or modification by any person other than an authorized Hewlett-Packard Customer Service Facility.

No other warranty is expressed or implied. Hewlett-Packard is not liable for consequential damage.