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HOW TO USE

THE HP-45 CALCULATOR

AS A STOPWATCH OR

ELAPSED-TIME INDICATOR

IF YOU own a Hewlett-Packard HP-45 calculator and would like to use it as a digital stopwatch and elapsed-time indicator the way the more expensive HP-55 programmable can, there's good news. You *can* use your HP-45 for these functions, even though Hewlett-Packard makes no mention of the fact in its Operator's Manual.

To gain access to the clock function in the HP-45, first clear the calculator by operating the gold alternate-function key. Then press RCL and *simultaneously* press CHS *and* the digits 7 and 8, or 5 and 4, or 1 and 2. (It is important that these keys be pressed simultaneously.) The display format will now be

HR MIN SEC 0.01XSEC
00. 00   00   00

To start the clock function, press the CHS key once. Pressing CHS again will stop the count without resetting the display to zero. To reset the display to zero, simply press the CLx key.

When operating the calculator on batteries, you can save power by blanking the last two digits (hundreths-of-seconds) by operating the EEX key. The clock will continue to run without upsetting the count. You can restore the blanked digits by pressing the EEX key again.

Elapsed-Time Indicator. The clock can also be used as an elapsed-time indicator for timing and storing the elapsed times of up to nine separate events. The only constraint is that all events must start simultaneously. This function can be quite handy for measurements of physical phenomena, chemical reaction experiments, etc.

While the clock is running, depressing any 1 through 9 digit key stores the displayed time up to that point in the respective register. The clock keeps running and is not otherwise affected by this action. After stopping the clock by operating the CHS key, pressing any of the digit keys recalls the time stored in the respective register.

Note that the STO key, while the clock is running, and the RCL key, after the clock is stopped, need not be operated. The "store" and "recall" functions are automatically executed, depending on whether the clock is running or stopped. (The CLx key should again be pressed after the last readout of stored time to permit the clock to continue from the reading on the display when it is again started.)

When the clock is no longer needed, you can return the calculator to normal operation by pressing ENTER or turning off and then on the power. The latter method is preferred because it clears the contents of the registers automatically. Even so, the registers don't have to be cleared if you wish to store new elapsed-time data. Whenever new data is entered into a memory location, it automatically clears previous data.

While the clock function is in operation, the only keys that have any effect are CHS, EEX, CLx, . (decimal point), and 1 through 9. All other keys, including the basic arithmetic (−, +, ×, ÷) keys, are inoperative.

Accuracy. It appears that the HP-45 was built with the HP-55 in mind and, hence, uses some of the same circuitry contained in the latter. However, while the HP-55 is "trimmed" for the required oscillator accuracy, the HP-45 is not. The result is that the HP-45, although reasonably accurate, will not be "on the nose." If you determine the percentage of inaccuracy by comparing the HP-45 against a known time standard and make a note of the deviation, you can calculate precise times.

Although the absolute accuracy of the HP-45 as a timer may not be equal to that of the HP-55, the time function used during relative measurements —and particularly for storing up to nine elapse-time measurements —can be very useful indeed. At least you won't have to trade up to a more expensive calculator. ◈