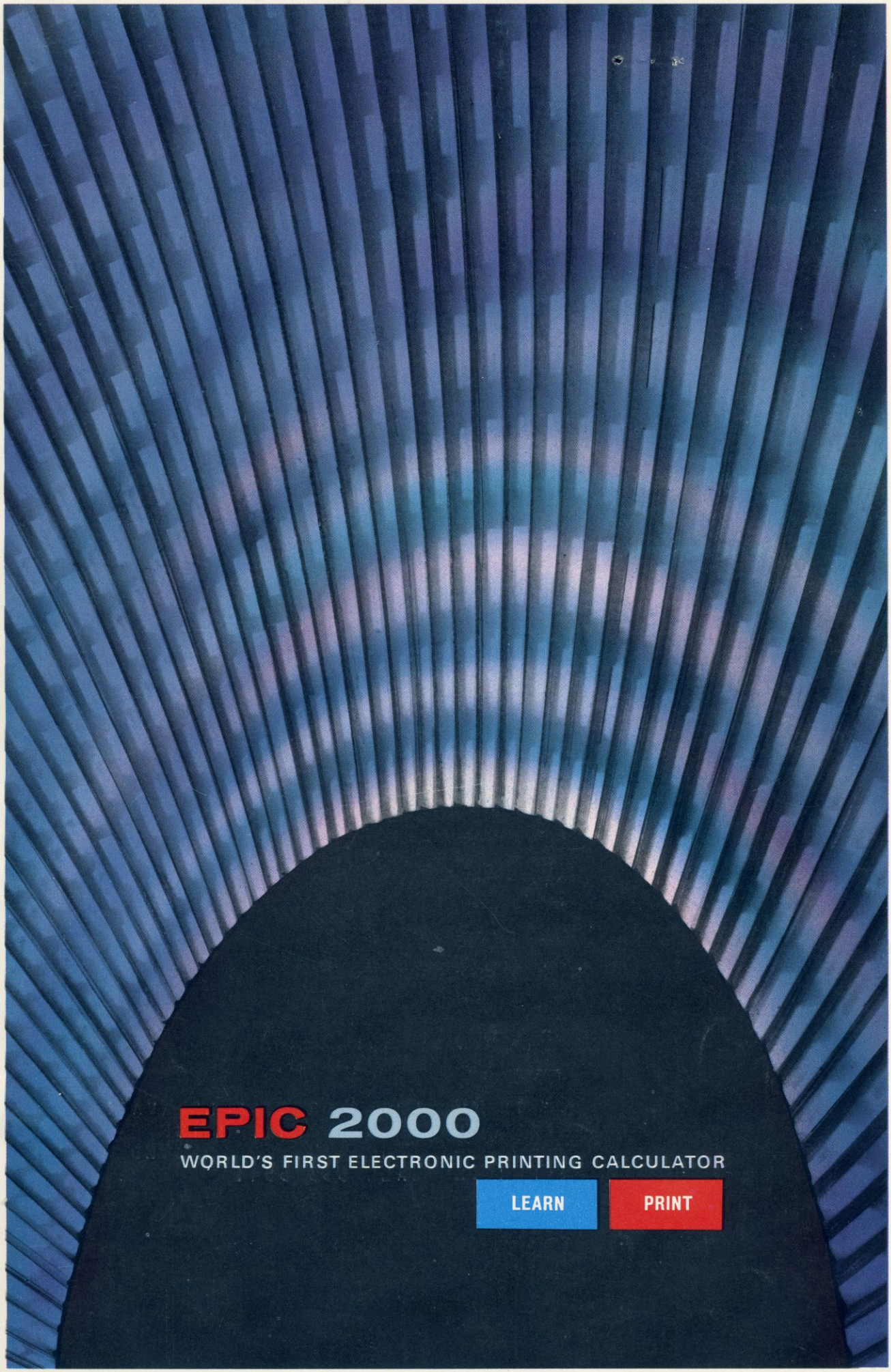


EPIC 2000

WORLD'S FIRST ELECTRONIC PRINTING CALCULATOR

LEARN PRINT

MONROE

A DIVISION OF LITTON INDUSTRIES

The EPIC 2000 . . . a major technological achievement

Only Monroe . . . with more than fifty years experience in the development of fine mathematical machines for the millions who work at desks . . . could have achieved it: this winning combination of every significant advance in desk-top calculators the mathematical world has known.

Only Monroe . . . backed by the advanced electronic capabilities of Litton Industries, could have pioneered it: this modern-day miracle that extends your human intelligence with its electronic memory . . . performing independently a sequence of mathematical calculations . . . and providing a complete line-by-line printed record.

Only Monroe has the EPIC 2000 . . . making advanced electronic techniques available to millions of workers who perform mathematical tasks . . . whether varied or repetitive, complex or elementary—but who insist upon utmost simplicity of operation.

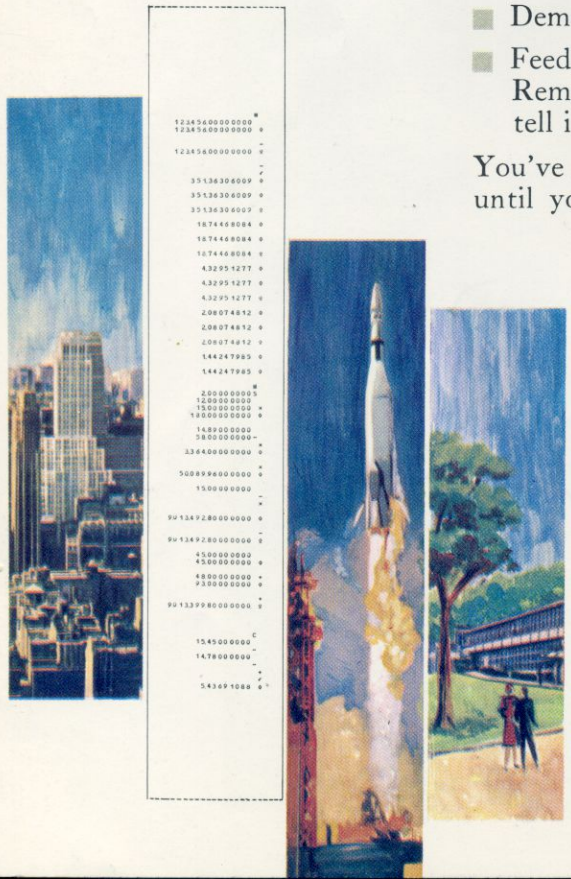
Only Monroe gives you this ease of operation, coupled with the most sophisticated technologies of today.

With Monroe, you can count on being a logical stride ahead.

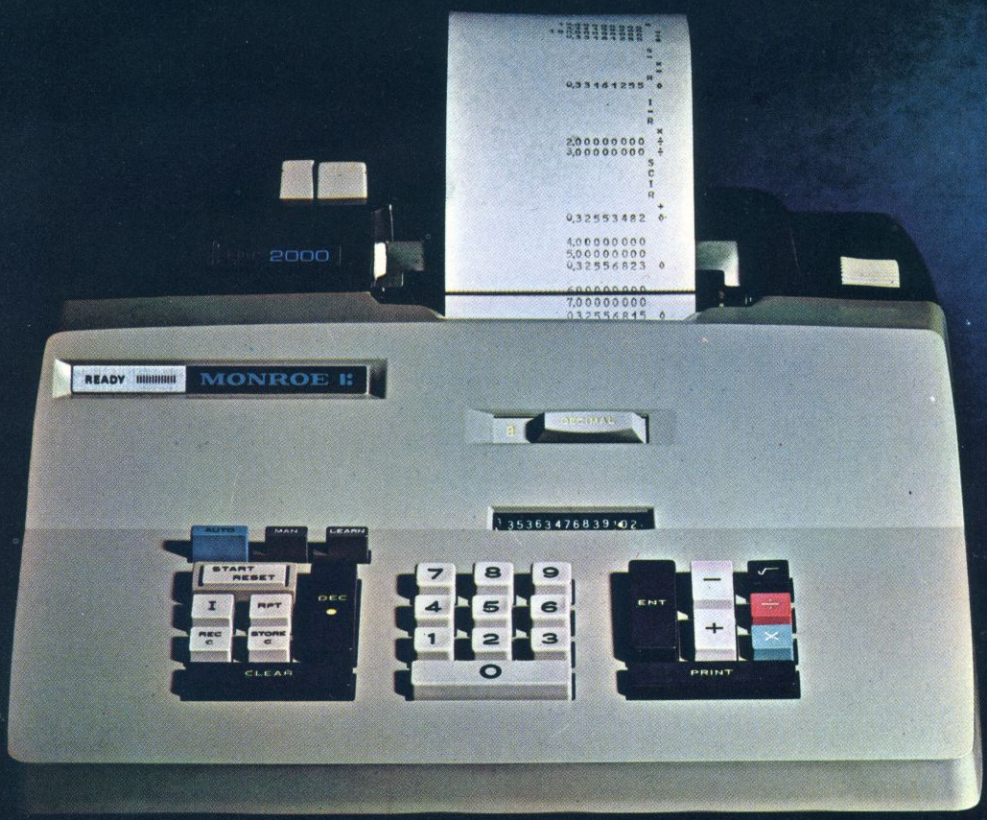
The EPIC 2000 has significantly advanced the art of calculator design: for the first time, a Monroe calculator brings the dazzling speed of electronics within reach of everyone who works with figures. For the first time, a complete record of every lightning-fast electronic calculation is provided . . . in familiar line-by-line adding machine format. For the first time, a calculator that is as effortless in operation as an adding machine . . . can be taught to perform the kind of calculations you need . . . no matter what mathematical process is involved.

- You'll never have to repeat your instructions, with this fast-learning mathematician by Monroe International.
- Demonstrate the problem once . . . and the EPIC 2000 gets the message.
- Feed in new figures, and it will remember the routine you've taught. Remember—and deliver: print-perfect . . . point-perfect . . . until you tell it to forget.

You've never really experienced true mastery of mathematical calculations, until you've used the unprecedented **EPIC 2000**



THIS CALCULATOR WILL BE AVAIL
ABLE FOR DEMONSTRATION THE
WEEK OF JAN 24TH. INTERESTED
PARTIES CALL 533 5541


2000
READY
MONROE
MAN
LEARN
START
RESET
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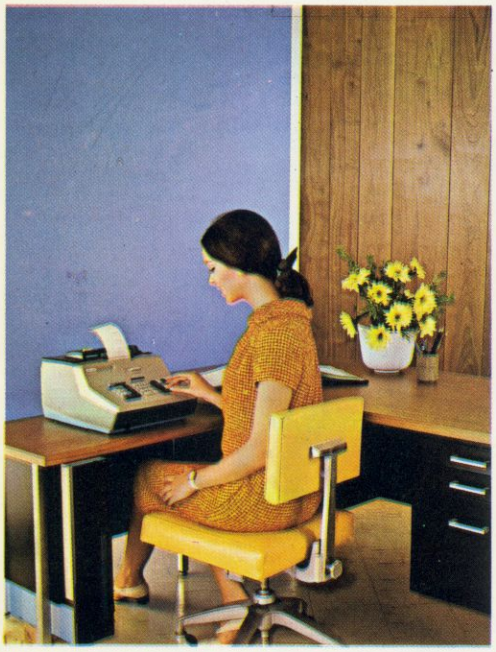
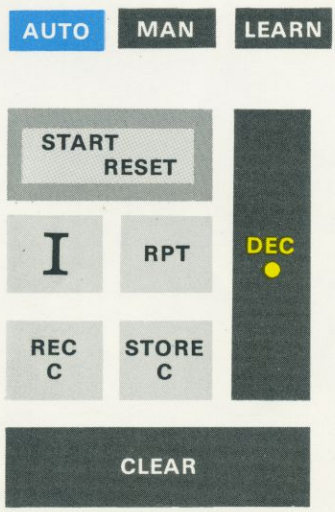


DESK-TOP CONVENIENCE

In size and appearance, the EPIC 2000 resembles electro-mechanical desk-top calculators. It is easily placed in position for convenient operation, or rolled to one side when not in use. The electronic unit is separate and located unobtrusively off the desk top.

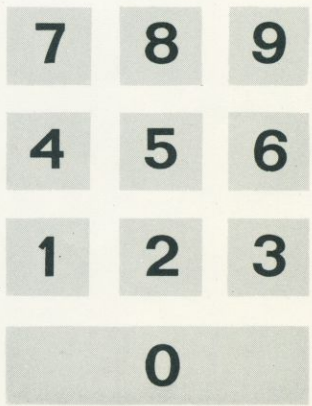
ABILITY TO LEARN

The EPIC 2000 was designed to be as easy to use as a 10-key adding machine. To teach the EPIC 2000 a figuring routine the operator does a calculation once. The EPIC 2000 remembers the routine so that thereafter all control key selections are automatic.



SIMPLE TO USE

To produce the most advanced machine for figuring is one thing. To make it simple enough for anyone to operate is something else again. The EPIC 2000 was designed to be as easy to use as a 10-key adding machine. To teach the steps of a problem, just press a key marked LEARN.



$$I_b = 14.6 \times 10^{-6} \times \frac{1}{r_a} \times E_b^{3/2}$$

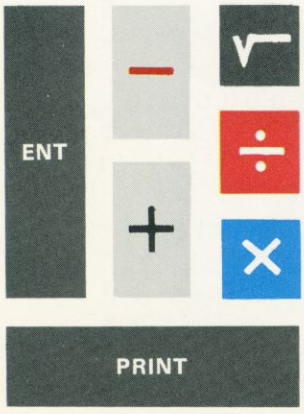
$$\sum_{i=1}^{i=n} x_i \qquad \sum_{i=1}^{i=n} x_i^2$$

$$e = 1 + \frac{x}{1!} + \frac{x^2}{2!} + \frac{x^3}{3!} + \ldots$$

$$L = \sqrt{(X_2 - X_1)^2 + (Y_2 - Y_1)^2}$$

ELECTRONIC SPEED

The EPIC 2000 performs an average division operation in ¼ of a second, 20 times faster than any electromechanical calculator. Multiplication takes 3/10th of a second. Addition and subtraction takes 4/1000th of a second. Because each process is electronic, there are no wheel and gear limitations. Being "number independent," the EPIC 2000 multiplies 16-digit or single-digit numbers with the same remarkable speed.




```
                 12.0000
                 23.0000  +
                 15.0000  +
                 78.0000  -
                 28.0000  ◊

                 12.0000
                  1.4500  ×
                 17.4000  ◊

                 25.0000
                  0.7500  ×
                 18.7500  ◊

                          +
                 36.1500  ◊

            123.456.7890
            654.321.7412  ×
  80780.461.141.4410  ◊

                144.0000
                 12.0000  ÷
                 12.0000  ◊
```

CLEAR PRINT-OUT

All entries and selected answers are printed out on paper tape. Unnecessary intermediate answers are not printed. Minus results appear in red, others in black. You see an identifying symbol that tells you whether a percentage is an increase or decrease. No chance for error in copying figures from a miniature TV tube.

UNATTENDED–ATTENDED

For some types of repetitive figuring, the EPIC 2000 operates unattended, once the program is entered. In repetitive figuring involving changing amounts in each new problem, the operator merely enters the variable figures. No control keys are used since the EPIC 2000 always remembers the computing routine.

The EPIC 2000 learns from you

SINE EXPANSION

$$\text{Sin } X = X - \frac{X^3}{3!} + \frac{X^5}{5!} - \frac{X^7}{7!} + \cdots$$

...THE FIRST TIME

With Monroe's EPIC 2000, you can calculate the value of a sine directly without using tables or interpolation. It is equally easy to find the cosine with the same method by using the complement of the angle or by the relation $\text{Cos}A = \sqrt{1 - \text{Sin}^2 A}$.

```
                                  ▮
  19.00000000
   3.14159265   ×
 180.00000000   ÷
   0.33161255   ◊

                  S
                  ··
                   ×
                   −
                  R
                  I
```

The calculations shown on the printed tape illustrate how the LEARN feature of the EPIC greatly simplifies the sine expansion. While the operator computes the values of the first two terms, the EPIC learns the routine.

LEARN

```
                  ··
                  R
                   ×
   2.00000000   ÷
   3.00000000   ÷
                  S
                  C
                  I
                  R
                   +
   0.32553482   ◊

                  I
```

...REMEMBERS THE NEXT TIME

Then the operator depresses the AUTOmatic key, enters 4, 5,--6, 7, and successively closer approximations print automatically.

In this example the sine value is also used to compute the cosine and the tangent by $\text{Cos}A = \sqrt{1 - \text{Sin}^2 A}$ and $\frac{\text{Sin } A}{\text{Cos } A} = \text{Tan } A$. The three functions are found without a single re-entry of figures —all in 45 seconds with the EPIC 2000.

```
                  4.00000000
                  5.00000000
                  0.32556823   ◊

                  6.00000000
                  7.00000000
SINE              0.32556815   ◊

                  C
                  C
                  S
                  ··
                   ×
   1.00000000
                  I
                   −
                   √
COSINE            0.94551857   ◊

                  R
                  I
                   ÷
TANGENT           0.34432761   ◊
```

Its matchless simplicity of operation and its lightning-like electronic speed make the EPIC 2000 the finest, most efficient calculator for complex mathematical operations. Because it can be programmed to perform a difficult calculation, the EPIC 2000 reduces complex repetitive problems to a simple matter of entering the factors. The operator must enter only the factors of an equation as she would feed numbers to a 10-key adding machine, and EPIC performs the programmed computations in sequence—including supplying stored constants where needed.

Here's how an operator could get the answer to some typical problems, once the EPIC has "learned" them:

COMPUTING THE DISTANCE BETWEEN TWO POINTS

$$L = \sqrt{(X_2 - X_1)^2 + (Y_2 - Y_1)^2}$$

Enter: Values for X_1, Y_1, Y_2 and X_2

Print: Answer.

COMPUTING VALUES

$$\sum_{i=1}^{i=n} x_i \qquad \sum_{i=1}^{i=n} x_i^2$$

Enter: $X_1, X_2, X_3 \ldots X_n$.

Print: $\sum_{i=1}^{i=n} x_i$ $\sum_{i=1}^{i=n} x_i^2$.

VOLTAGE CURRENT CHARACTERISTIC OF A THERMIONIC DIODE

$$I_b = 14.6 \times 10^{-6} \times \frac{1}{r_a} \times E_b^{3/2}$$

Enter: E_b, 1, r_a,

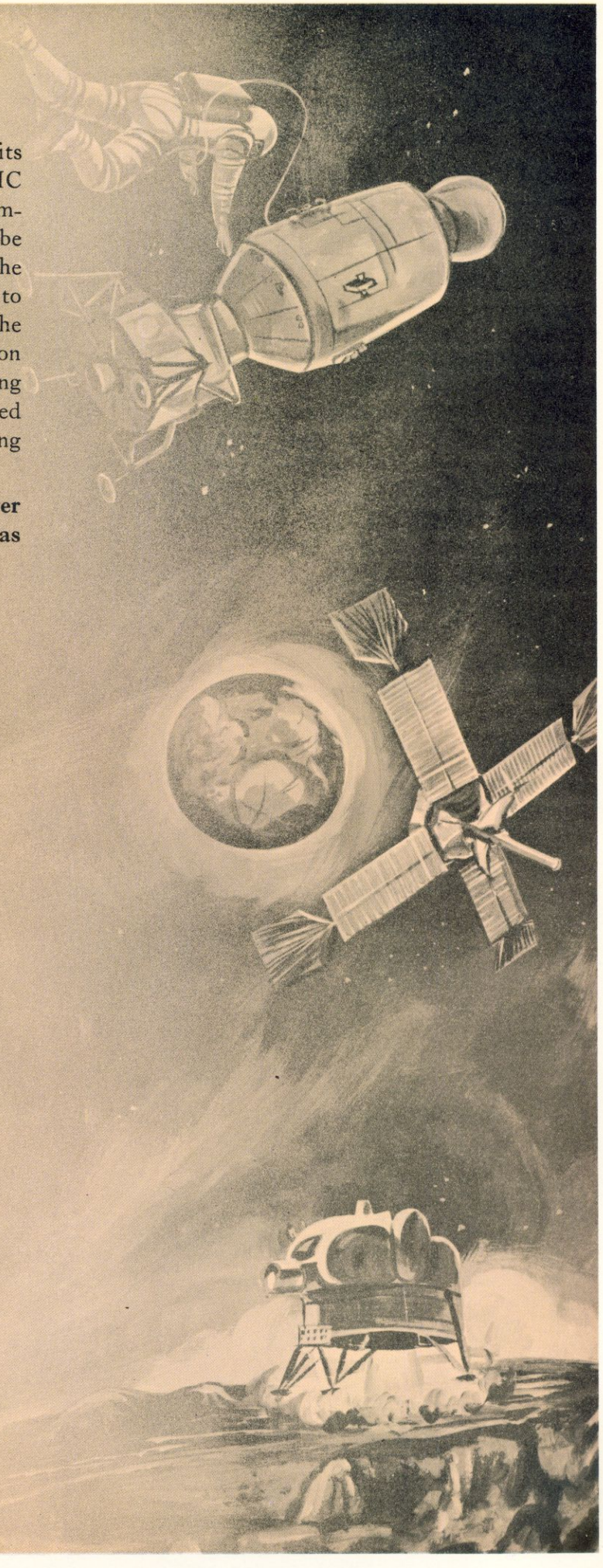
Print: I_b

EVALUATION OF THE EXPONENTIAL FUNCTION BY ITS POWER SERIES EXPANSION

$$e = 1 + \frac{x}{1!} + \frac{x^2}{2!} + \frac{x^3}{3!} + \ldots$$

Enter: 1, 2, 3, 4, 5, 6, . . .

Print: Successively closer approximations

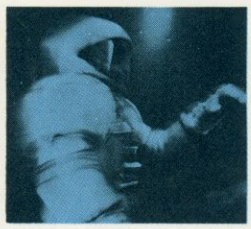


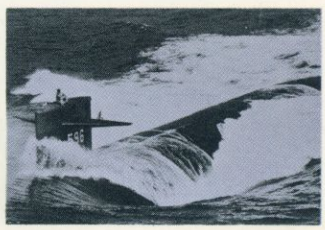
The ingenious design of the EPIC 2000 was carefully planned for the utmost in convenience and trouble-free use. The compact, lightweight keyboard printing unit takes up no more space on your desk than any other calculator, while the computing unit is positioned handily off the desk. Either unit may be replaced without affecting the other.

The EPIC 2000 is virtually maintenance-free. It has been subjected to rigorous tests under sub-normal or extremely high temperatures. It requires no special atmospheric conditioning: no humidifiers, air conditioners or other devices.

No special wiring is required for the EPIC 2000: plug it into any conventional business or household circuit, over a range of 95 to 135 volts. Beyond these limits, an error light will be activated to warn you.

You'll never need to call on Monroe International to replace a battery or tube in your EPIC 2000: it hasn't any. However, the same skilled staff of technicians who have made service a by-word for Monroe quality is available to service the EPIC 2000 anywhere it is sold. At Monroe International, professional service is an integral part of every machine sold.





LITTON'S ADVANCED TECHNOLOGY IS ALSO EVIDENT IN SUCH DIVERSE AREAS AS MICROWAVE COOKING, SPACE EXPLORATION, INERTIAL GUIDANCE SYSTEMS, UNDERWATER OIL EXPLORATION AND NUCLEAR SUBMARINE CONSTRUCTION.

MONROE

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