WARRANTY

Bowmar/ALI, Inc. warrants to the purchaser of this new Bowmar Calculator that if the machine or any part thereof in the judgment of Bowmar is proven to be defective in material or workmanship within one year from date of original purchase, such defects will be repaired or replaced (at the Company's option) free of charge for parts and labor.

This warranty does not apply to any product which has been damaged by accident or which has been misused, abused, altered, or repaired by anyone other than Bowmar.

This warranty is in lieu of all other warranties expressed or implied, and no person is authorized to assume for Bowmar any other liability in connection with the sale of this product.

To obtain repairs, the Calculator should be delivered, prepaid, to Bowmar/ALI, Inc. at address shown below. In-warranty units will be returned postage prepaid.

BOWMAR/ALI, INC.
531 MAIN STREET
ACTON, MASS. 01720
INTRODUCTION
Your calculator is light enough and small enough to be used in one hand, but it provides a standard keyboard and a light emitting diode (LED) display that is easily read at home or in the office.
The eight digit display and the full floating decimal allow the calculation of any problem without sacrificing accuracy.
Whether you want to solve engineering or budget problems, your calculator has the ability with features such as clear entry, automatic squaring, and a manual constant register that will perform integer powers, reciprocals and fractions as well as chain and mixed calculations.
The battery will recharge in seven hours and operate the calculator for three, but with the charger/power supply no useful time will be lost since it operates the calculator while charging it.
We suggest that this programmed Instruction Manual be read with the calculator in hand. Performing the operations as you read them will increase your familiarity with them. For a quick reference, an outline of operations is on the back of the calculator.

OPERATION
AC Operation:
Connect the Charger unit to any standard 120 Volt electrical outlet and plug the connector into the Calculator. After the above connections, the power switch may be turned on and operation started. (While connected to AC, the internal batteries are automatically charged whether the power switch is "ON" or "OFF").

Battery Operation:
Disconnect the Charger cord and turn the power switch "ON". With normal use a full battery charge can be expected to supply about 3 hours of working time.
NOTE: When the low battery indicator (L) on the display is lighted, do not continue battery operation. This indicates need for a battery charge.

Battery Charging:
Simply follow the same procedure as in AC operation. The Calculator may be used during the charge period if desired. In order to fully charge a battery which has been completely discharged, 7 hours is required. In most cases, an overnight charge should be adequate if the batteries have not been fully discharged.
NOTE: Although no damage will result from prolonged periods with the Charger connected, it is advisable to remove the Charger cord when the Calculator is not in use after a full recharge cycle.

CAUTION: To avoid possible damage, use only the charger provided with the calculator.
CONTROLS & INDICATORS

1. "ON" Switch: Turns Calculator "ON" & "OFF".

2. "K" Switch: Slide switch with 2 positions; in the up position, the 'K' operation is in effect. Use of 'K' allows a number to be entered and retained as a "constant" for series multiplication or division.

3. "C" Key: Clears the Calculator and the display of all numbers.

4. "CE" Key: Clears display of the previous keyboard entry.

5. "X" Key: Enters a "multiply" command.

6. "÷" Key: Enters a "divide" command.

7. "=" Key: Adds the entered number, or carries out a previously entered "multiply" or "divide" command.

8. "−" Key: Adds a minus sign to an entry. Subtracts the entered number or completes a previously entered "multiply" or "divide" command.

9. "×" Key: Enters a decimal point.

10. "0" - "9" Keys: Enter digits of a number (limit 8 digits).

11. Charged cord socket.

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overflow Indicator</td>
<td>Indicates a calculation result that contains more than eight digits. Appears as -</td>
</tr>
<tr>
<td>Low Battery Indicator</td>
<td>Warns of need for battery charge during battery operation. Appears as L</td>
</tr>
<tr>
<td>Minus Sign Indicator</td>
<td>Activated by the ( - ) key for operations with negative numbers. Appears as ( - )</td>
</tr>
<tr>
<td>Decimal Point Indicator</td>
<td>Automatically appears to the right of any number entered, unless inserted in another sequence by use of the Decimal key. With fractional numbers, it will be preceded by a zero.</td>
</tr>
<tr>
<td>Error Indicator</td>
<td>Indicates an entry of more than 8 digits. Appears as E</td>
</tr>
</tbody>
</table>

**BATTERY NOTES**

1. With normal use at room temperature, a full battery charge can be expected to supply about 3 hours of accumulated working time.

2. The Calculator may be used while its battery is charging.

3. Batteries that have been neither used nor charged for as long as 2 or 3 months will suffer substantial loss of operating time through a tendency to self-discharge. As a general rule, batteries lose about 1% charge per day due to self-discharge, at normal temperatures.

4. For optimum performance and long life:
   a. Alternate frequently between Battery and AC power.
   b. Operate at or near normal room temperatures.
   c. Charge as soon as possible upon appearance of the Low-Battery indicator.

5. Recharge time is 7 hours for a fully discharged battery.

6. The Low-Battery indicator is designed to appear as soon as battery voltage drops to the lowest value that will support optimum performance of the Calculator. Should further discharge occur, through continued operations or self-discharge, the Low-Battery indicator may fail to appear. Do not continue to operate on batteries when this condition is noted, or a damaged battery may result.

7. As a general rule, if improper operation occurs, first try the Calculator with its charger connected. If operation is then normal, this indicates the batteries are low.

8. Do not store the unit in high temperature areas such as the top of radiators or the rear deck of automobiles exposed to the sun. The Calculator will operate satisfactorily over an ambient temperature range of 0 to 50°C (32 to 122°F) and relative humidity to 95%.
CALCULATIONS

1. ADDITION
Example #1: To calculate 16.39 + 9.83 =
Do these steps display will be
a. Touch 0
b. Enter 16.39
16.39
c. Touch +=
16.39

d. Enter 9.83
9.83
e. Touch +=
Answer 26.22

Example #2:
To calculate 16 + 9 + 8.3 + 4.1 =
Do these steps display will be
a. Touch 0
b. Enter 16
16
c. Touch +=
16.00

d. Enter 9
9.00
e. Touch +=
25.00
f. Enter 8.3
8.30
g. Touch +=
33.30
h. Enter 4.1
4.10
i. Touch +=
Answer 37.4

2. SUBTRACTION
Example #1: To calculate 12.81 - 3.6 =
Do these steps display will be
a. Touch 0
b. Enter 12.81
12.81
c. Touch +=
12.81
d. Enter 3.6
3.60
e. Touch -=
Answer 9.21

Example #2: To calculate 23 - 6 + 2.1 - 5 =
Do these steps display will be
a. Touch 0
b. Enter 23
23.00
c. Touch +=
23.00
d. Enter 6
6.00
e. Touch -=
17.00
f. Enter 2.1
2.10
g. Touch +=
19.10
h. Enter 5
5.00
i. Touch -=
Answer 14.1
Example #2: To calculate 3 x 21 x 6.1 =
Do these steps display will be
a. Touch C          0.
b. Enter 3          3.
c. Touch X          3.
d. Enter 21        21.
e. Touch X        63.
f. Enter 6.1     6.1
g. Touch + = Answer 384.3

Example #3: To calculate 31 x 6 =
Use of 'K' Switch
31 x 8.2 =
31 x 7.6 =
Do these steps display will be
a. Touch C          0.
b. Push 'K' on (up) 0.
c. Enter 31        31.
d. Touch X        31.
e. Enter 6         6.
f. Touch + = 1st Answer 186.
g. Enter 8.2      8.2

3. MULTIPLICATION
Example #1: To calculate 29.32 x 56.5 =
Do these steps display will be
a. Touch C          0.
b. Enter 29.32      29.32
c. Touch X        29.32
d. Enter 56.5      56.5
e. Touch + = Answer 1656.58
4. DIVISION

Example #1: To calculate $376 \div 53 = 7.0943396$

Do these steps display will be

a. Touch II
b. Enter 376
c. Touch II
d. Enter 53
e. Touch II Answer

Example #2: To calculate $81 \div 3 \div 9 = 3.76$

Do these steps display will be

a. Touch II
b. Enter 81
c. Touch II
d. Enter 3

Example #3: To calculate $181 \div 15 = 11.7$

Use of 'K' switch

Do these steps display will be

a. Touch II
b. Enter 9
c. Touch II Answer

Example #4: To calculate $76 \div 15 = 5.066666$

Do these steps display will be

a. Touch II
b. Enter 76
c. Touch II

5. MIXED ARITHMETIC
Example #1: To calculate $2 \times (\frac{(-4) \times (-6)}{20} - 8) = \frac{(-4) \times (-6)}{20} - 8$.
Do these steps display will be
a. Touch C 0.
b. Enter 23 23.
c. Touch X 23.
d. Enter 4 4.
e. Touch = 92.
f. Touch + 92.
g. Enter 6 6.
h. Touch = Answer 15.333333
Example #2: To calculate $\frac{(9 + 6 - 5) \times 8}{20} - 8 = \frac{9 + 6 - 5}{20} - 8$.
Do these steps display will be
a. Touch C 0.
b. Enter 9 9.
c. Touch += 9.
d. Enter 6 6.
e. Touch += 15.
f. Enter 5 5.
g. Touch = 10.
h. Touch X 10.
i. Enter 8 8.
j. Touch + 8.
k. Enter 20 20.
l. Touch += 4.
m. Enter 8 8.
n. Touch = Answer 4.

6. EXPONENTS
Example #1: To calculate $(3)^5 = 3^5$.
Do these steps display will be
a. Touch C 0.
b. Push 'K' on (up) 0.
c. Enter 3 3.
d. Touch X 3.
e. Enter 3 3.
f. Touch += 27.
g. Touch += 27.
h. Touch += 81.
7. OVERFLOW INTERPRETATION

The overflow indicator "□" will appear when the display capacity of the Calculator is exceeded.
For example, multiplication of 12345678 × 345678 will give the following display

\[ \boxed{42676.292} \]

The "□" symbol indicates "overflow", or an answer of more than the 8 digits shown. To obtain the correct decimal location, simply record the displayed number and move the decimal point 8 places to the right. The real answer will then be:

\[ 4,267,629,200,000 \]

\[ \text{16 places} \]

This procedure applies to all operations, multiplication, division, addition and subtraction. Use the 'C' key to clear the overflow.

SPECIFICATIONS

Decimal Point: Full floating decimal point.
Capacity: Addition, subtraction, multiplication, division and K register: 8 digits in/16 digits out with underflow.
Power: A.C. operation—110/120V, 60 Hz.
Battery operation—NiCd Batteries (3)

3 hour operation
7 hour charge.

Main Elements: Large scale integrated circuit.
Supplementary Elements: Mos ICs, Transistors, Diodes.
Dimensions: Height 1¾", Width 3", Depth 5¾".
Weight: 9 oz.
Peripherals: Charger/Power Supply, Vinyl Pouch, Programmed Instruction Book.