ABBREVIATED INSTRUCTIONS

For complete details, refer to the Manual

POWER: FOR AC OPERATION, CONNECT AC ADAPTER/CHARGER TO JACK AND TURN ON. FOR BATTERY OPERATION, JUST TURN ON.

DISPLAY INDICATORS:
"E" = ENTRY MORE THAN EIGHT DIGITS
"O" = ANSWER MORE THAN EIGHT DIGITS
"–" = NEGATIVE ENTRY OR BALANCE

CALCULATIONS: ALWAYS PRESS C BEFORE CALCULATING. USE CE TO CLEAR ENTRY MISTAKE (DOES NOT CLEAR MEMORY).

FOR NORMAL CALCULATIONS AS SHOWN IN EXAMPLES, PLACE CONSTANT SWITCH IN "DOWN" POSITION.

A + B = C, ENTER A, +, ENTER B, =; READ C
A – B = C, ENTER A, +, ENTER B, –=; READ C
A X B = C, ENTER A, X, ENTER B, =; READ C
(–A) X B = C, ENTER A, –, X, ENTER B, =; READ C
A X (–B) = C, ENTER A, X, ENTER B, –=; READ C
A ÷ B = C, ENTER A, ÷, ENTER B, =; READ C
A ÷ (–B) = C, ENTER A, ÷, ENTER B, –=; READ C

CONSTANT OPERATION: TO MULTIPLY OR DIVIDE BY A CONSTANT, PLACE CONSTANT SWITCH IN K OR FORWARD POSITION.

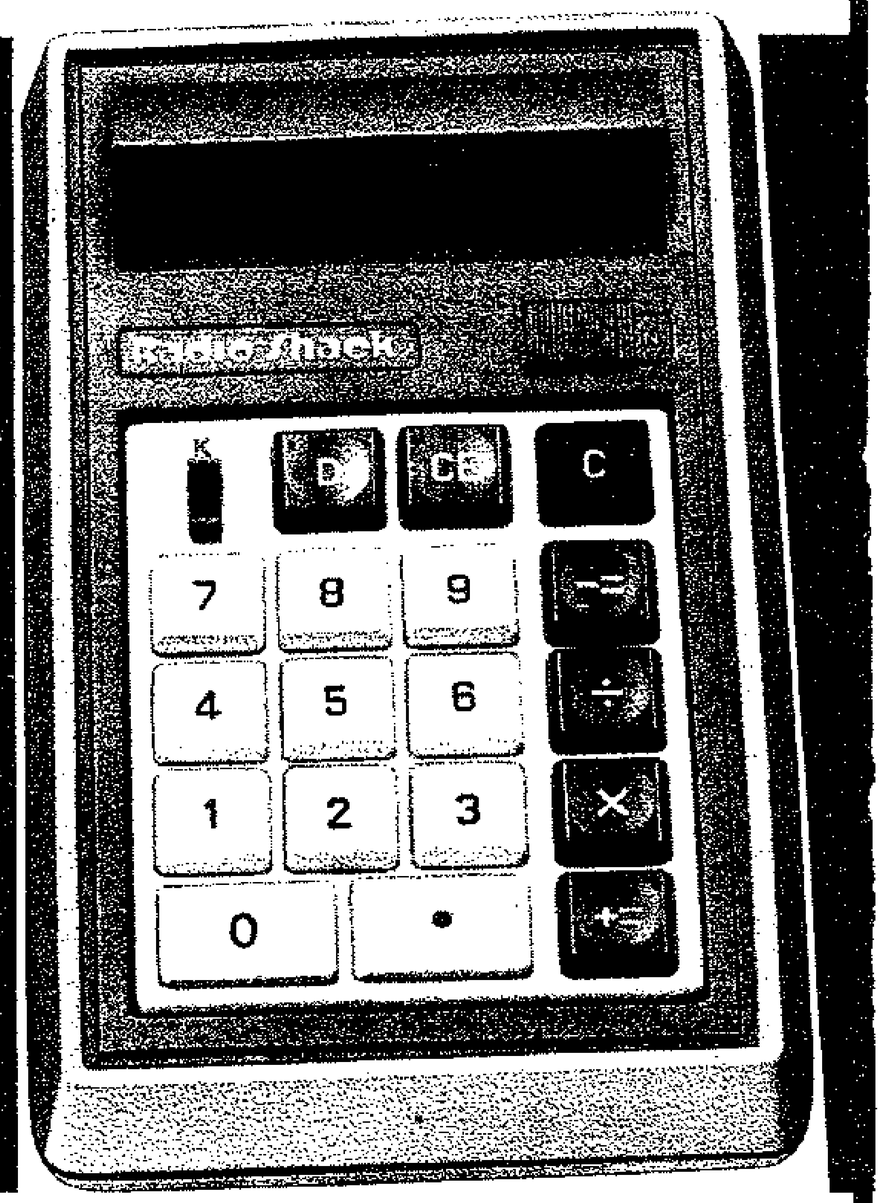
WHEN DISPLAY DISAPPEARS AFTER 30 SECONDS OF NON-USE, PRESS O TO REDISPLAY.

CHARGING: CONNECT AC ADAPTER/CHARGER TO JACK: NI-CAD BATTERIES FULLY CHARGE IN ABOUT 12 HOURS.

RADIO SHACK A TANDY CORPORATION COMPANY
FORT WORTH, TEXAS 76107
RADIO SHACK MODEL EC-200

SERIAL NO. A2

Operating Instructions
RADIO SHACK EC-200 ELECTRONIC CALCULATOR



RADIO SHACK A TANDY CORPORATION COMPANY
FORT WORTH, TEXAS 76107

Your Model EC-200 Electronic Calculator incorporates the very latest solid-state designs and engineering. The calculator circuitry is a single-chip MOS/LSI (metal-oxide-semiconductor/large-scale-integration) with the equivalent of over 6,000 transistors plus other parts. The display readouts are high-output light emitting diodes (LED's).

The keyboard has a unique design, providing a positive feel and button action in conjunction with protection against false input caused by "key bounce" or other error-producing conditions.

Other superior features include: internal power circuit regulation permitting operation from 4 to 7 volts, replaceable batteries (use standard carbon-zinc, alkaline or rechargeable Ni Cads), battery saving automatic cut-off of LED display after approximately 30 seconds of non-use (immediately redisplayed by a touch of the "D" key), automatic full-floating decimal operation, chain operation, constant operation, automatic credit balance, automatic round-off, automatic overflow entry indication, and automatic overflow result indication.

The EC-200 comes complete with AC adapter/battery charger — no need to spend extra money for an accessory.

OPERATING NOTES

After you turn the EC-200 "on", always press C before performing any calculations.

If you turn the unit on and press keys at the same time, one of two things may occur:

1. The "zero suppression" feature may be defeated resulting in a 00000000 display, which cannot be cleared with the "C" key.
2. Numbers may be displayed incorrectly.

To correct 1, turn off and on.

To correct 2, press "C" key.

PREPARING FOR OPERATION

Your electronic calculator is designed to operate either from internal batteries, or from AC power using the AC adapter/charger supplied.

Four type "AA" penlight cells are required for battery operation. Remove the base of the calculator (remove two screws) and snap the batteries into the battery holder — TAKE CARE TO OBSERVE CORRECT BATTERY POLARITY. We recommend you purchase four Radio Shack Nickel-Cadmium rechargeable batteries (catalog number 23-125). You can recharge these batteries hundreds of times using the AC Adapter/Charger. Or, use triple-life NOVA Cells (catalog number 23-453).

CAUTION: BE CERTAIN THAT THE BATTERY SELECTOR SWITCH, LOCATED IN THE BATTERY HOLDER, IS SET IN THE CORRECT POSITION AS MARKED ON BATTERY HOLDER. Improper switch setting may damage your calculator. Replace base and fasten with the two screws.

Recharging (or battery replacement) will be required when the LED display intensity has become extinguished or is too dim to read easily. For recharging, plug the AC adapter/charger into the jack located on the back edge of the unit and the other end into a source of 120 volts, 60 Hz AC power. Recharging will be accomplished in 10-12 hours (overnight). Recharging will function when the AC adapter/charger is plugged in as just stated and calculator is in the OFF position.

You will obtain three to six hours of calculating time before recharging is required for Ni-Cad cells (or replacement of regular "AA" penlight cells is necessary).

For AC operation, merely plug the AC adapter/charger into calculator and AC outlet as described above and turn calculator to the ON position. Batteries will also charge during this operating cycle. It is not necessary to insert batteries for AC operation.

THE KEYBOARD

On-Off Switch: Turn the calculator "on" and "off" with this switch.

Numeral Keys: 6 Press to enter digits on visual display.

Decimal Key: • Press to enter decimal point at appropriate position in the display. After a number is entered completely, further pressing of this key will return decimal point to the extreme right; thus, do not repress until you are entering the next numeral display.

Minus/Total Key: −= Press to enter a minus sign to a numeral just entered. This subtracts the entered numeral or completes a previous command (entering a minus sign with the command).

Divide Key: ÷ Press to enter a "divide" command.

Multiply Key: X Press to enter a "multiply" command.

Plus/Total Key: += Press to add a numeral just entered. This adds the entered numeral or completes a previous command (for example, answering a multiplication or division command).

Total Clear Key: C

Press this key to clear the display and memory. To avoid errors always press this key before starting a calculation. Pressing enters a "0" on the display at the extreme right.

Clear Entry Key: CE

Press this key to clear the entry displayed if made in error. This does not clear the memory, just the entry displayed.

Display Recall Key: D

When operating from battery power, the display will automatically turn off after 30 seconds of non-use, to conserve battery life. Press this key to recall the display. There is no need to press this key if you merely wish to continue your calculations, for the entries remain in the memory.

Constant Switch: K

In the "up" or "K" position the calculator memory maintains, as a constant, the first numeral in multiplication commands and the second numeral in division commands. Thus, calculations can be performed without continually entering a common or "constant" numeral.

Display Indications:

"—" sign at the left indicates a negative number or credit balance.

"E" at the left indicates an overflow entry of more than 8 digits.

"□" at the left indicates an overflow total as a result of the entered calculation (resulting in more than 8 digits). An answer will be displayed with the decimal positioned 8 places to the LEFT of the actual or correct position. Thus, to read the correct answer, move the decimal point 8 places to the RIGHT.

Example:

```
  12345678
+ 98765432
-----------
 1.11111110
```

Moving the decimal point 8 places to the right gives an answer of 111111110. This overflow indication applies to each of the arithmetical functions of the calculator. Use C key to clear the overflow indication.

EXAMPLES OF ADDITION

To calculate 123 + 456

Press C to clear the display and memory

		Display will be
Enter 123		123.
Touch +=		123.
Enter 456		456.
Touch +=	Answer	579.

To calculate 0.31 + 2 + 19.9

Press C to clear the display and memory

		Display will be
Enter .31		0.31
Touch +=		0.31
Enter 2		2.
Touch +=		2.31
Enter 19.9		19.9
Touch +=	Answer	22.21

EXAMPLES OF SUBTRACTION

To calculate 47.52 – 12.00

Press C to clear the display and memory

		Display will be
Enter 47.52		47.52
Touch +=		47.52
Enter 12		12.00
Touch –=	Answer	35.52

To calculate 7 + 13 – 1.43 – 24

Press C to clear the display and memory

		Display will be
Enter 7		7.
Touch +=		7.
Enter 13		13.
Touch +=		20.
Enter 1.43		1.43
Touch –=		18.57
Enter 24		24.
Touch –=	Answer	–5.43

EXAMPLES OF MULTIPLICATION

To calculate 14.6 X 0.52

Press C to clear the display and memory

		Display will be
Enter 14.6		14.6
Touch X		14.6
Enter .52		0.52
Touch +=	Answer	7.592

To calculate 12 X 3.6 X 2.1

Press C to clear the display and memory

		Display will be
Enter 12		12.
Touch X		12.
Enter 3.6		3.6
Touch X		43.2
Enter 2.1		2.1
Touch +/=	Answer	90.72

EXAMPLES OF DIVISION

To calculate 45.55 ÷ 1.45

Press C to clear the display and memory

		Display will be
Enter 45.55		45.55
Touch ÷		45.55
Enter 1.45		1.45
Touch +/=	Answer	31.413793

To calculate 256 ÷ 16 ÷ 4

Press C to clear the display

		Display will be
Enter 256		256.
Touch ÷		256.
Enter 16		16.
Touch ÷		16.
Enter 4		4.
Touch +/=	Answer	4.

COMPLEX CALCULATIONS

To calculate 12.2 X (–0.91) ÷ (–9.68)

Press C to clear the display

		Display will be
Enter 12.2		12.2
Touch X		12.2
Enter .91		0.91
Touch +/=		–11.102
Touch ÷		–11.102
Enter 9.68		9.68
Touch +/=	Answer	1.1469008

To calculate the following:

$$\frac{(0.96 + 5.66 - 4.032) \text{ X } 3.14}{1.6 \text{ X } 9} - 14.7 =$$

Press C to clear the display

	Display will be
Enter .96	0.96
Touch +/=	0.96
Enter 5.66	5.66
Touch +/=	6.62
Enter 4.032	4.032
Touch –/=	2.588
Touch X	2.588

Enter 3.14		3.14
Touch ÷		8.12632
Enter 1.6		1.6
Touch ÷		5.07895
Enter 9		9.
Touch +=		0.5643277
Enter 14.7		14.7
Touch −=	Answer	−14.135673

CONSTANT MODE CALCULATIONS

This convenience feature increases the flexibility of the calculator by allowing the user to multiply or divide a series of numbers by a constant number. With the constant switch placed in the "K" position a number entered immediately before touching the X key is retained as a constant multiplier. The number entered immediately after touching the ÷ key is retained as a constant divisor. The constant is erased by depressing the C key and then a subsequent constant may be entered.

Example: 6 X 4 = 24
6 X 6 = 36
6 X 9 = 54

Place constant key in "K" position (up).

Press C to clear display and memory

		Display will be
Enter 6		6.
Touch X		6.
Enter 4		4.
Touch +=	1st Product	24.
Enter 6		6.
Touch +=	2nd Product	36.
Enter 9		9.
Touch +=	3rd Product	54.

Example: 54 ÷ 6 = 9
36 ÷ 6 = 6
24 ÷ 6 = 4

Press C to clear display and memory

		Display will be
Enter 54		54.
Touch ÷		54.
Enter 6		6.
Touch +=	1st Answer	9.
Enter 36		36.
Touch +=	2nd Answer	6.
Enter 24		24.
Touch +=	3rd Answer	4.

Press K switch down (off).

SQUARING NUMBERS

Squaring of numbers can readily be accomplished on your Radio Shack EC-200 Electronic Calculator.

Examples: 6 X 6 = 36
9 X 9 = 81
15 X 15 = 225

Press C to clear display and memory

		Display will be
Enter 6		6.
Touch X		6.
Touch +=	1st Answer	36.
Touch C		0.
Enter 9		9.
Touch X		9.
Touch +=	2nd Answer	81.
Touch C		0.
Enter 15		15.
Touch X		15.
Touch +=	3rd Answer	225.

RAISING A NUMBER TO A POWER

To calculate 16.4^4

Press C to clear the display

Press "K" switch up (to K)

		Display will be
Enter 16.4		16.4
Touch X		16.4
Touch +=		268.96 (16.4^2)
Touch +=		4410.944 (16.4^3)
Touch +=	Answer	72339.481 (16.4^4)

Press "K" down (off).

NOTE: When working with dollars and cents, you should be aware of the "zero suppression" function. This means the last one or two zeros may not show up when working with dollars *and cents.*

Example: $1,234.56 + $78.44

Press C to clear the display and memory

		Display will be
Enter 1234.56		1234.56
Touch +=		1234.56
Enter 78.44		78.44
Touch +=	Answer	$1313.

The "cents" (last two zeros) do not show up since the "zero suppression" function removed *them as being unnecessary.*

TAKING SQUARE ROOTS

Square roots can be extracted by using the following sequence of calculations, along with a pencil and paper to record the trial results.

$$\sqrt{N} = 1/2 \left[\frac{N}{\text{Trial (1)}} + \text{Trial (1)}\right] = \text{Trial (2)}$$

$$\sqrt{N} = 1/2 \left[\frac{N}{\text{Trial (2)}} + \text{Trial (2)}\right] = \text{Trial (3)}$$

$$\sqrt{N} = 1/2 \left[\frac{N}{\text{Trial (3)}} + \text{Trial (3)}\right] = \text{Trial (4)}$$

Etc.

As an example, let's solve for the square root of 125 and let's use 10 as the Trial (1):

N = 125

Trial (1) = 10

$$\sqrt{125} = 1/2 \left[\frac{125}{10} + 10\right] = \text{Trial (2)}$$

olving for Trial (2):

ress [C] to clear the memory and display.

	Display will be
nter 125	125
ouch [÷]	125
nter 10	10
ouch [+=]	12.5
nter 10	10
ouch [+=]	22.5
ouch [÷]	22.5
nter 2	2
ouch [+=]	Trial (2) Answer = 11.25

o test accuracy, try 11.25 X 11.25 = 126.56.

ot down 11.25 as Trial (2) result.

low insert Trial (2), 11.25, in the formula and roceed as before to solve for Trial (3).

ress [C] to clear display and memory.

	Display will be
nter 125	125
ouch [÷]	125
nter 11.25	11.25
ouch [+=]	11.111111
nter 11.25	11.25
ouch [+=]	22.361111
ouch [÷]	22.361111
nter 2	2
ouch [+=]	Trial (3) Answer = 11.180555

Check accuracy as before. Jot down Trial (3) result. Now, insert Trial (3), 11.18, into the formula and proceed.

Press [C] to clear the display and memory.

	Display will be
Enter 125	125
Touch [÷]	125
Enter 11.18	11.18
Touch [+=]	11.180679
Enter 11.18	11.18
Touch [+=]	22.360679
Touch [÷]	22.360679
Enter 2	2
Touch [+=]	Trial (4) Answer = 11.180339

Now, check accuracy and we should be very close to the original 125. Trial (4) X Trial (4) gives us an answer of 124.99998 — sufficiently accurate for most needs.