RCA

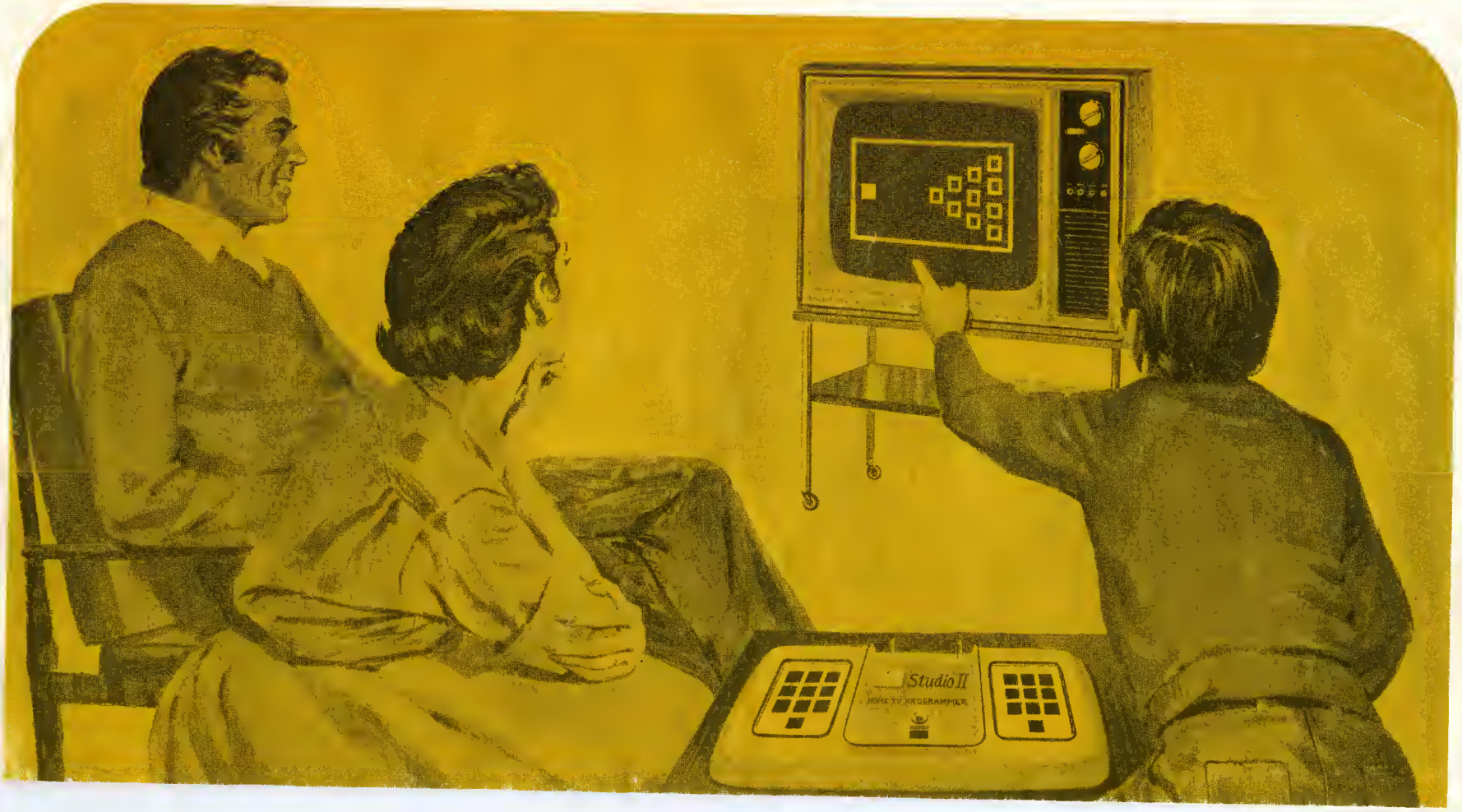
# *Studio II*

## Home TV Programmer

18V100

# Owners Manual

## Installation
## Operation



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# Important

This RCA *Studio II* Home TV Programmer is designed, manufactured and tested to meet Federal Communications Commission Rules and Regulations as of date of manufacture.

In order to prevent possible interference with neighboring TV sets, the Federal Communications Commission regulations require that you, as the owner of this Home TV Programmer:

Do not connect the RCA *Studio II* wires directly to any TV antenna or cable TV outlet. All connections must be made through the Selector Switch box as shown.

Do not use any additional antenna wire between switch box and TV set than is supplied with RCA *Studio II* .

Do not attach any other wires to the antenna terminals of the TV set when using RCA *Studio II* .

# Introduction to RCA *Studio II*

RCA *Studio II* brings tomorrow's world of home video entertainment to you today. With the *Studio II*, you transform the TV set in your home into an electronic entertainment and educational center for the entire family.

The heart of the RCA *Studio II* is a 100% solid-state micro-miniature computer called COSMAC. It is smaller than a fingernail and contains over 6,000 transistors. Other solid-state devices provide over 20,000 bits of memory which are used to store programs.

Five different built-in creative, educational and action programs are included with the *Studio II*. Additional programs are available in plug-in type cartridges.

Additional new and different games and educational or creative programs will be made available allowing you to enhance your *Studio II* library of entertainment.

# Connecting *Studio II* to your TV set

RCA *StudioII* attaches easily to the 300 Ohm VHF antenna terminals on color or black and white TV sets.

Packed with your Studio II is a small unit called the Selector Switch. This switch will allow the *StudioII* to be received on Channel 2 or 3 of your TV set just as if it were another TV station. Moving the switch to the "*StudioII*" position will turn on the power to the game and connect it to your TV. With the switch at the "TV" position, the game will be turned off and your TV set returned to normal operation.



## Selector switch connections

The method of connecting depends on the antenna system used for your TV. There are two basic types of systems, "300 Ohms" and "75 Ohms". You can tell which type of system you have by the type of connection to the TV set. 300 Ohm systems use screw terminals for connection of a pair of wires, while 75 Ohm systems use a single connector to attach a round cable directly to the back of the set, as shown in Figure 1B.

### A. Selector Switch Connection to Sets with 300-Ohm Systems (Figure 1A.)

1. Remove existing antenna wires connected to "VHF" terminals. Attach these wires to the terminals marked "ANTENNA" on the Selector Switch unit. (See note below for portable TV sets.)
2. Connect the short length of antenna wire coming from the Selector Switch unit to the "VHF" terminals of the TV set.

**NOTE:**

Most portable TV sets with built-in antennas will have two wires coming from inside the set connected to the VHF terminals. Disconnect these two wires and connect them to the "ANTENNA" terminals on the Selector Switch unit. It may be necessary to pull extra wire out from inside cabinet to make this connection. Then connect switch antenna wire as described in Step 2 above.

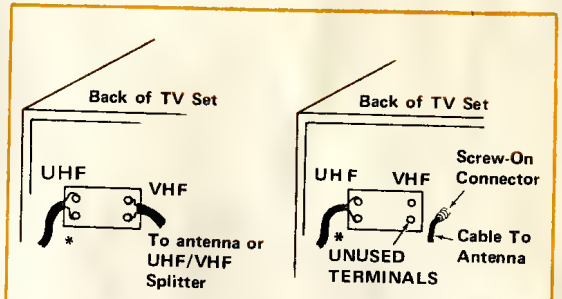



*Figure 1A. Typical 300 Ohm Connection*

*Figure 1B. Typical Direct 75 Ohm Connection*

*If used

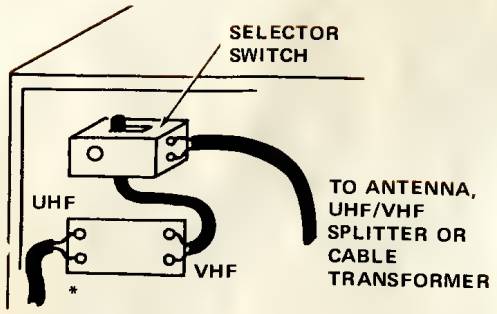



*Figure 2. Typical Installation; 300 Ohm System*

## B. Selector Switch Connection to Sets with Direct 75-Ohm Systems (Figure 1B)

**NOTE:**

In this installation it will be necessary to obtain a coaxial 75 Ohm to 300 Ohm matching transformer (such as the RCA types 10G215 or 10G228).

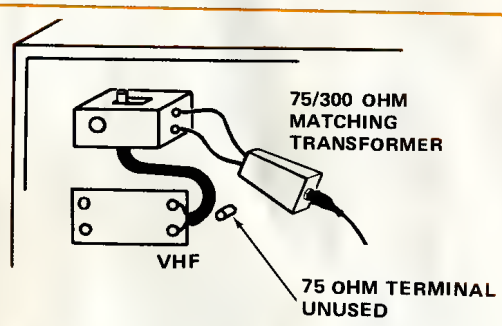



*Figure 3. 75-Ohm Antenna Connection*

1. Unscrew coaxial cable connector from socket on the back of the TV set, then connect it to similar socket on the matching transformer. Use care not to bend center wire in cable.
2. Connect the two wires from the matching transformer to the terminals marked "ANTENNA" on the Selector Switch unit.

**IMPORTANT:**

Most sets will have a switch or jumper leads for changing from a 75 Ohm system to a 300 Ohm system. Check the instructions provided with your TV set for the proper way to do this.

3. Connect the short length of antenna wire coming from the Selector tch unit to the previously unused VHF minals on the TV set.

## C. Selector Switch Attachment

Select location on the back of th so that the switch is convenient with area allowed by the wire connections. Pee off the protective paper and press the exposed adhesive surface onto the back of the set.

# Power connections

1. Plug the Power Supply cord into the Selector Switch receptacle marked "power".
2. Plug the Power Supply into a 120 volt AC outlet.
3. Carefully unroll the cord from the *StudioII* console and plug into the Selector Switch receptacle marked "console cord".

The RCA *StudioII* is now completely installed. You can place the Console at any convenient location within the limit of the 18 foot cord. Once installed, the Selector Switch can be left on the TV set. You can unplug the console cord whenever you wish to remove the console.

**Additional Selector Switches (stock #18V102) and Power Supply Units (18V101) can be purchased from your RCA Dealer.**

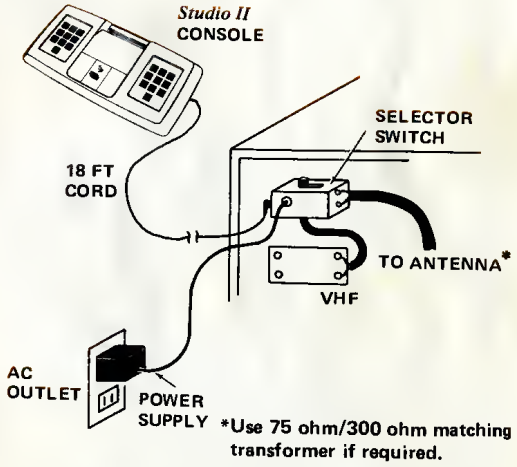



*Figure 4. Complete Installation*

# Getting ready to play

1. Turn on your TV and set the dial to channel 3. (See "Channel Selection" section.)
2. Turn TV set volume all the way down. The *StudioII* Console provides its own sound. (See "Sound" note.)
3. Set Selector Switch to *StudioII* position. Red indicator light on *StudioII* Console will glow.
4. Press *StudioII* Console "Clear" button, then press key #3 on Keyboard A to obtain a pattern for adjustment purposes. Adjust TV set brightness for the best picture (clear white pattern on black background). It may be necessary to adjust fine tuning, especially if the game channel is unused in your area and the set has not been previously adjusted. On some sets, it may also be necessary to turn off "automatic fine tuning" (usually marked "AFT" or "AFC") and any automatic color controls to obtain proper brightness and contrast.



# Channel selection

*StudioII* when shipped is set to operate on Channel 3. It may be changed to Channel 2 if there is a strong Channel 3 TV station in your area which causes interference with the game. (Lines running through the game picture display.) To do this, turn the *StudioII* Console upside down and locate the opening in the bottom marked "CH. SEL.". By inserting the tip of a ballpoint pen or small screwdriver down into this opening, the black switch slider can be pushed from the "3" to the "2" position.

# Sound

If desired, sound from the *StudioII* can be turned off. The opening in the bottom of the console marked "SOUND" contains a switch which operates in the same manner as the channel select switch explained above.

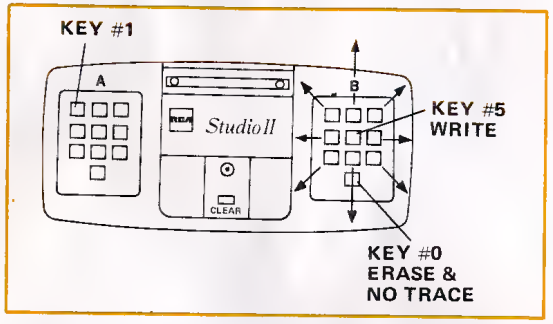
# Now– Have fun with *StudioII*

# When play is finished.

When you are through playing, always set the TV/ *StudioII* Selector Switch to "TV". This removes power from the *StudioII* unit and permits normal TV viewing.

# Doodle
## 1 player–Keyboard B

DOODLE transforms your TV set to an electronic blackboard. Have hours of fun drawing pictures, words, or just "doodling".




1. Press "clear" key.
   Press key #1 on Keyboard A. A white dot will appear in the lower left corner of the TV screen.
2. Start moving the dot by pressing any of keys 1, 2, 3, 4 and 6, 7, 8, 9 on Keyboard B. Trace will move in direction shown by small arrows next to each key. (Key 2, up; key 6, right, etc.)

   If you hold the key down, the trace will continue in the selected direction.
3. Press key #5 on Keyboard B, and you're ready to write.

## To erase or move spot without leaving traces

Erasing is easy. Just press key #0 on Keyboard B then move marker back over the trace. After key #0 is pressed, you can also move spot anywhere you wish on the screen without leaving a mark.

Press key #5 to resume doodling.

Note: *If spot or trace moves off doodle area, it will reappear on the opposite side.*

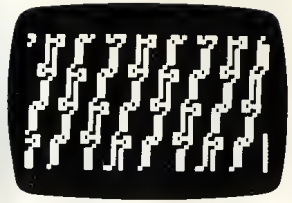
## For added fun

By combining the functions of DOODLE and PATTERN, you can reverse the image, making your Doodle turn from a white drawing on a black background to a black drawing on a white background. Or, make just part of the screen white. You can even start another pattern and have the *Studio II* print over your Doodle. Here's how.

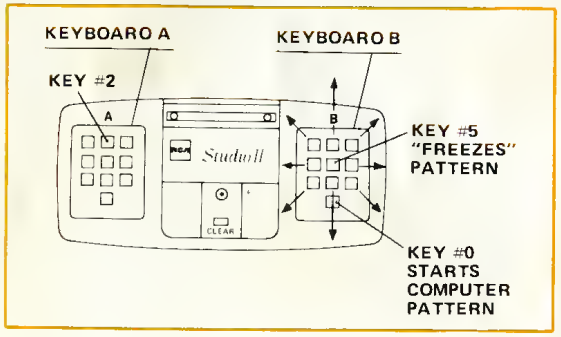
After you finish your Doodle, press key #2 on Keyboard A.
To reverse the image, first press key #6 on Keyboard B. Then press key #0 on Keyboard B and the screen will start to "paint" itself white, making the Doodle black. If allowed to continue, the screen will become black again. You can "freeze" the picture any time by pressing key #5 on Keyboard B and start it again with key #0.

*Studio II* will form other patterns over your Doodle by following Pattern instructions on next page – But start by pressing only key #2. Do not press "clear" or the doodle will be erased.

# Patterns
## 1 player–Keyboard B



The *Studio II* computer can help you design millions of interesting and attractive patterns. Its not only creative, but fun and relaxing.




1. Press "clear" key.
   Press key #2 on Keyboard A.

**Note:** *No spot will appear until an entry is made on Keyboard B.*

2. Form a simple basic design with the keys 1, 2, 3, 4 and 6, 7, 8, 9 on Keyboard B. Small arrows next to keys indicate trace direction (key 2, up; key 6, right, etc.)
3. Press key #0 on Keyboard B and watch the computer form the pattern by repeating your design over and over.

To "freeze" pattern. The patterns can be stopped at any time by pressing key #5 on Keyboard B. Start pattern again by pressing key #0.

## Pattern tips

- It's not necessary to start with a complex pattern. Try a simple pattern, and the computer will do the work for you. If you make more than 130 key entries, the computer will start to form the pattern even if you do not start it with the #0 key.
- If you move the spot off the pattern area, it will reappear on the opposite side.
- To erase part of your basic design, just trace back over it in the reverse direction.
- Try these sample patterns:

  Press keys 3-0 and watch the screen be painted white.

  Press keys 6-6-6-2-2-0, then sit back and watch.

  Press keys 3-3-3-6-6-0.

  Press key #2 fifteen times, then 6-0.

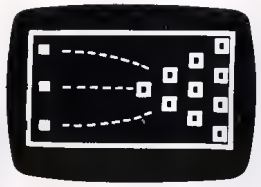
  Press key #6 seven times, then 2-2-0.

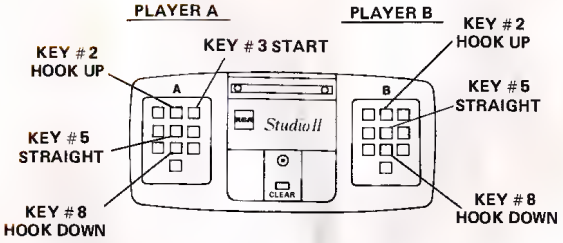
  Press key #6 fifteen times, #2 four times, then 0.

Design your own Indian Blanket; press #2 fourteen times, #6 fourteen times, #8 thirteen times, #4 twelve times, #2 eleven times, #6 ten times, #8 nine times, #4 eight times, and #2 five times. Then press key #0 to start the pattern.

# Bowling

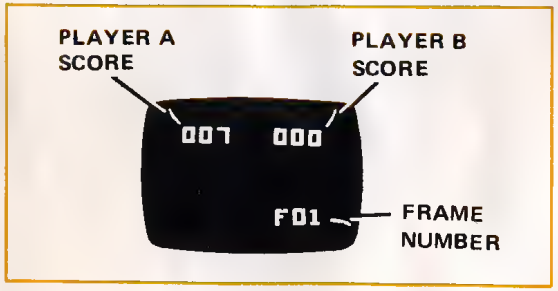
## 2 players–Both Keyboards

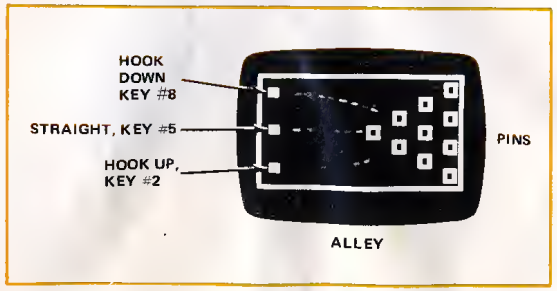





*Studio II* computer bowling provides hours of challenging fun. You can make spares, strikes (and misses) just like in real bowling,

1. Press "clear" key. Press key #3 on Keyboard A. Player's score and frame number will appear briefly on Player A's side of the screen. The bowling alley with "ball" moving up and down at left will appear on the screen.
2. Player on Keyboard A goes first and gets two tries (if player bowls a strike, there is no second try). Ball is released by pressing either key #2 (hook upward), #5 (straight) or #8 (hook downward).
3. Player A's score appears, and frame number is shown on Player B's side of the screen.
4. Second player now bowls on Keyboard B.
5. After ten frames are played, player's total scores are displayed, and word "END" appears.




**Note:**

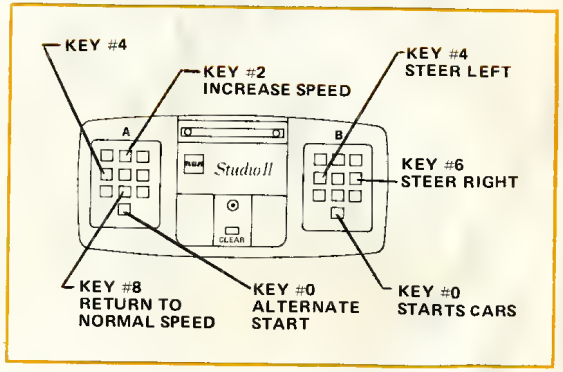
- Ball continues to move up and down until a #2, #5 or #8 key is pressed on the player's keyboard.
- The word "MISS" will appear if no pins are hit. If you bowl a spare, you score 15 points, and "SP-15" appears on the screen. If you bowl a strike, you score 20 points, and "ST-20" appears on the screen. 200 is a perfect game score.
- You'll improve with experience. Decide the type shot you want, pick your spot, and concentrate on your timing.

## Good Bowling!

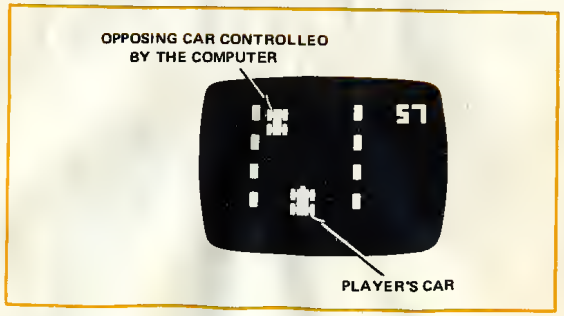
# Freeway

## 1 or more players– one at a time. Keyboard B

You're racing in a timed 2-minute run. It's you against the clock. But, you must steer your car to avoid collisions with an opposing car controlled by the computer. Accidents slow you down and lower your score. It's a fast, thrilling test of your reaction time and coordination.




1. Press "clear" key.
   Press key #4 on Keyboard A.
2. Press key #0 on Keyboard B to start cars.
3. The car that appears at the top of the screen is controlled by the computer. You can steer your car with Keyboard B by pressing key #6 to move right and key #4 to move left. You can speed up by pressing key #2 on Keyboard A, and resume normal speed by pressing key #8 on Keyboard A.
4. After 2 minutes, the race will end and the computer will score you based on your average speed and total mileage.




Now let your challengers try for a better score.

## Racing tips

- For a faster race and to try for a higher score, speed up by pressing key #2 on Keyboard A after race has started.
- Accidents will slow you down. You will get the best score by maneuvering to avoid as many collisions as possible.
- Don't steer more than you have to; the straighter you drive, the faster you go.
- For a more difficult race, in Step 2 start race with key #0 on Keyboard A instead of Keyboard B.

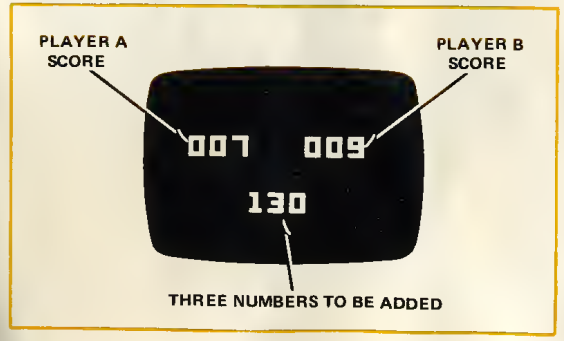
## Scoring

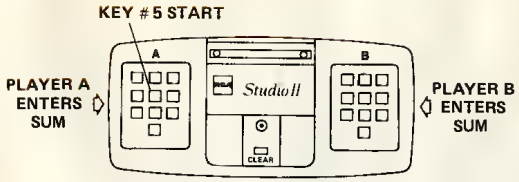
| | |
|---|---|
| Under 40 | License Revoked |
| 40–50 | Student Driver |
| 51–79 | Freeway Expert |
| 80–95 | Professional Racer |
| 96–Up | Championship Driver |

# Addition

## 1 or 2 players– use either or both Keyboards

You have to be smart and fast to score high. Its an exciting and competitive game that will stimulate your mind and reflexes.




1. Press "clear" key.
   Press key #5 on Keyboard A. Each player's score will appear on his side at the top of the screen.

2. **With 2 Players**

   One player uses Keyboard A and the other uses Keyboard B. After a few seconds a 3-digit number will appear on the bottom of the screen. Each player must quickly add the three numbers, then enter the total on the keyboard.

   *For example:* If the numbers 3–0–2 appear at the bottom of the screen, the total is 5, so the first player to press key #5 gets scored.

3. **With 1 Player**

   A single player may use either keyboard and competes with the computer, trying for highest score.

## Remember

- Only the first player to enter the correct total increases his score.
- The faster a player enters the total, the higher the score. 11 points is the maximum possible for any one entry.
- If you press the wrong key, your keyboard is locked out and you lose your turn.
- "ADDITION" is automatically timed. Each group of numbers to be added is shown for only a few seconds, then a new group appears.
- After twenty numbers, the game is over. No more numbers appear, and each player's total score is shown.

## Score

Score mental quickness and reaction time.

220 — Perfect — You're a genius!
200 — Super Fast
180 — Excellent
150 — Average — Try harder.
Under 150 — Use a calculator.

## No limit to your fun and action when you add more cartridges to your *Studio II* library of programs.

### Here's what's currently available:
### TV Arcade Series

**Space War**—two exciting "shoot 'em down" games.

**Fun with Numbers**—puzzles that test your sharpness.

### TV School House Series

Test your level of knowledge in math, social sciences, literature and other areas of interest. Handy instruction manuals included.

**. . . and more on the way!**

Additional Selector Switches (stock #18V102) and Power Supply Units (18V101) can be purchased from your RCA Dealer. These additional items, when installed, permit quick and convenient movement of Studio II console to other TV sets.

## See your RCA *Studio II* dealer.

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SPS-3013 (REV)

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