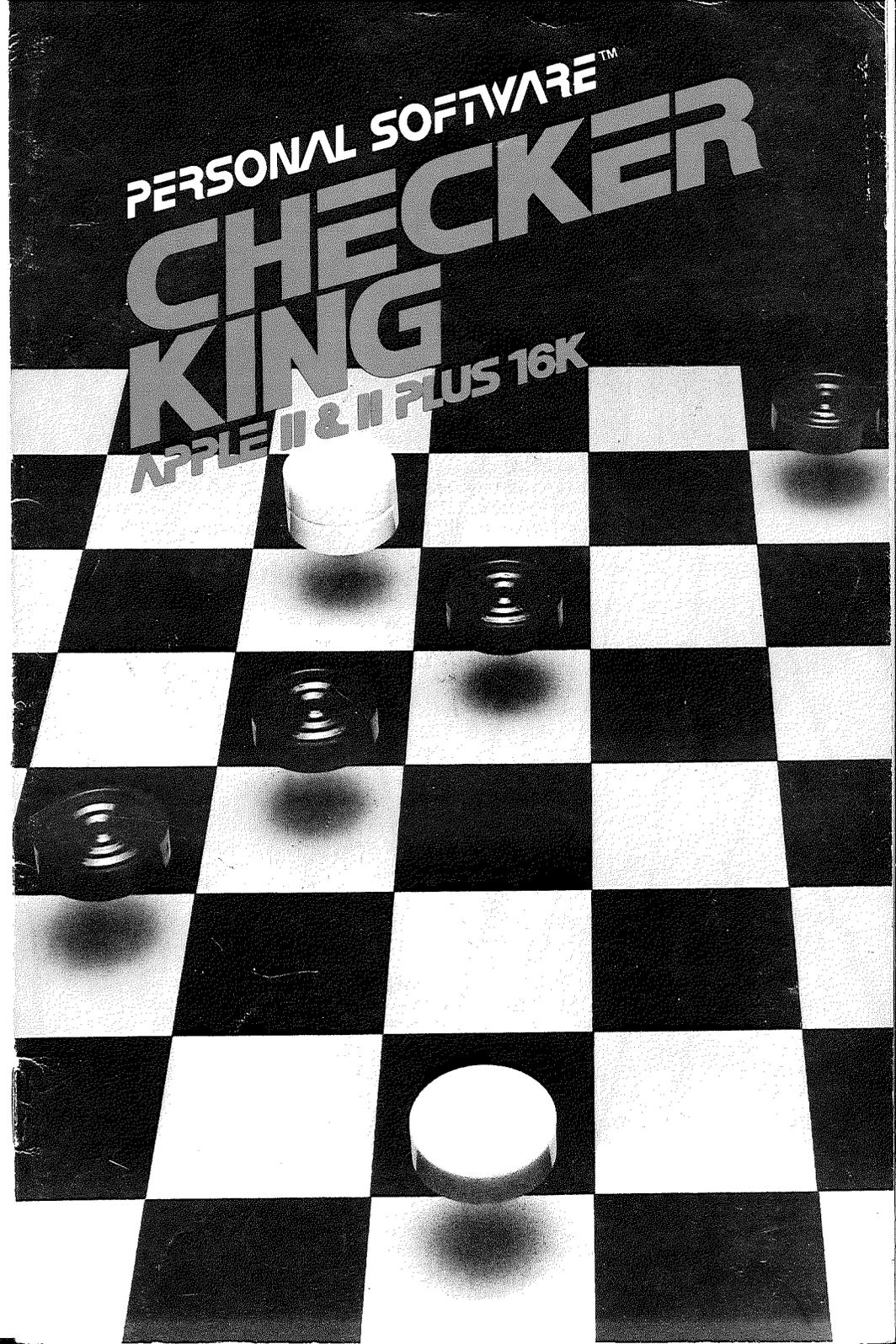


PERSONAL SOFTWARE™

CHECKER KING

APPLE II & II PLUS 16K



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CHECKER KING For the Apple II

Written by Michael Marks and Brad Templeton

Whether you are a novice learning to play checkers or an expert looking for a challenging opponent, Personal Software™ Checker King will provide a capable and willing competitor.

Your Checker King program has powerful, flexible features:

- It can play at different levels of skill from 1 (easy) to 8 (a real challenge).
- All moves are displayed graphically and numerically.
- Moves are shown in official checker notation.
- You can modify the board by removing and adding pieces to set up special situations.
- Checker King will switch sides with you.
- You can have Checker King play a game against itself.
- You can take back a move to correct a mistake.
- Up to three board positions can be saved and recalled later for study and play.
- A Bonus: Three checker puzzles to test your ingenuity are contained in the program.

Checker King for the Apple II is a machine language program using the same advanced artificial intelligence techniques that have made Personal Software's Microchess program the first "gold record" (50,000 units) best seller.

You can use the diskette or cassette version of Checker King on any 16K Apple II, Apple II Plus or Apple II using the Language Card.

The Checker King program on cassette has been recorded twice to provide you with a backup copy. Please treat your Checker King cassette or diskette with care and carefully read the instructions for loading Checker King from the storage medium into the computer you are using before you begin.

Checker King is produced and marketed by Personal Software Inc. For a catalog of other Personal Software products, see your Personal Software dealer or write us, giving your complete address, your computer configuration (brand, memory size, program storage hardware, etc.) and your most wanted software products.

LOADING CHECKER KING FROM CASSETTE

Since Checker King is written in machine language, the procedure for loading it from cassette is somewhat different from those of regular BASIC programs. To load the Checker King program from your cassette, read the instructions first and then follow them exactly. If you make a mistake when typing in the commands, use the left arrow key (←) to back up until the blinking rectangle is situated on the incorrect character, and resume typing in the command.

1. Insert your Checker King cassette into your recorder and rewind it to the beginning.
2. Turn on your computer and press the key marked **RESET**. If there is an asterisk (*) on your screen with a blinking rectangle, called the "cursor", beside it, go on to Step 3. If yours is an Apple II Plus, you'll see the Applesoft prompt on the screen (>). Type the following command, excluding the first character (I).

]CALL -151

Press **RETURN** and you should now have the asterisk (*) on your screen.

3. Now type the characters below exactly as shown, excluding the asterisk:

***3Ø.3FFFR**

Don't press **RETURN** yet.

4. Start the Checker King tape by pressing **PLAY** on your recorder, and then press the **RETURN** key on your Apple. The cursor disappears while the program is being loaded, and you'll see the copyright notice appear. Then your Apple will beep at you at the completion of loading; press **RETURN** and the checker board will appear on the screen with Checker King waiting for you to begin.

You should rewind the Checker King cassette and put it away. Once Checker King is loaded, you can play as many games of checkers as you want, using the commands described later. To go on to some other program, though, you will have to turn the power off and then on again. With the Apple II, pressing **RESET** will erase the copy of Checker King in memory and you'll have to reload the program. To recover from pressing **RESET** on an Apple II Plus or an Apple with the Language Card, press **RETURN** and then type **GØ** to return to the game you were playing.

DIDN'T IT WORK?

If your cassette does not load properly on the first try (i.e., if nothing happens, or if you get a message **ERR** or **MEM ERR**), your volume setting is probably wrong for this cassette. Follow the procedure outlined in your *Apple Integer BASIC* manual or your *Applesoft Tutorial* manual to find the right volume setting, using an Apple-supplied program cassette. Then try to load Checker King again. Once you find the correct volume setting, it is a good idea to make a note of this on the cassette to save yourself time in the future.

On some cassette players, you may get an **ERR** message even though you think the volume is set properly. If this happens, repeat the procedure outlined above with the Apple's plug removed from the **EARPHONE (MONITOR)** jack through

Step 3. After pressing **PLAY** in Step 4, wait until you hear the steady high-pitched tone and then quickly insert the plug and press the **RETURN** key.

Here's still another suggestion — there are two copies of Checker King on your cassette. If one copy will not load properly, you can still load the other copy. To do this, turn your computer off and try the loading procedure again, but *do not* rewind the tape. Start the tape playing at the point it stopped on your previous attempt to load Checker King.

If even this fails, ask your Apple dealer for assistance.

LOADING CHECKER KING FROM DISKETTE

Since there are a variety of Apples, the instructions below tell you how to load Checker King for each one. You do need a memory size of 16K to run the Checker King program. If you make a mistake when typing in the commands, use the left arrow key (←) to back up the cursor until it is sitting on the first incorrect character, and then resume typing in the command.

1. For an Apple II or II Plus, insert the Checker King diskette into your disk drive with the label facing up and to the right, and close the drive door. For an Apple with the Language System, insert the **BASICS** diskette into the drive.
2. Turn on the power to your Apple. Depending on your computer, one of several things may happen:
 - a. Some Apples have an "auto-load" feature and will immediately begin to whirl the disk drive and automatically load the program. The copyright notice will appear and the drive will stop spinning. Now press **RETURN** and the checker board will appear.
 - b. Your Apple's screen shows an asterisk (*) with a rectangle blinking quietly beside it. You have to "boot" the Checker King diskette as you would "boot the DOS". To do this, press **RESET**, press **6** (assuming your Disk II Controller Card is in slot 6), hold down the key marked **CTRL** and press **K**, and then press **RETURN**. Your disk drive's **IN USE** light should come on and you will hear the diskette spinning. In a minute you'll see the Checker King copyright notice. Press **RETURN** and the checker board will appear.
 - c. After "booting" up with the **BASICS** diskette, an Apple with a language card will instruct you to

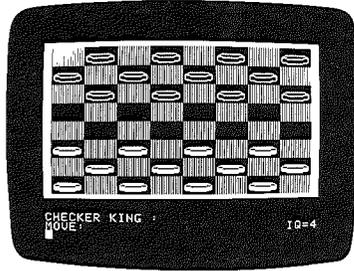
INSERT BASIC DISK AND PRESS RETURN KEY

Remove the diskette labelled **BASICS** and insert the Checker King diskette and press **RETURN**. After loading the program, you will see the copyright notice. Press **RETURN** and the checker board will appear.

Once you have loaded Checker King, you can play as many games as you wish until you turn your computer off. To recover from pressing the **RESET** key, press **RETURN** and then type **GØ** to return to the game you were playing. There are always exceptions — pressing **RESET** on an Apple II will erase Checker King and you will have to reload the program.

THE DISPLAY

Anyone who has played checkers will recognize the board on the screen. On a color TV, the squares appear black and green; on a black-and-white TV or monitor the squares are black and gray. Checker King sets up its own men in black at the top of the board display, and your men in white at the bottom. You will always play with white checkers and Checker King with black, although you can exchange positions at any time. The Exchanging Positions section tells you how to do this.



The area under the checker board is used for communication between you and Checker King. On the left side of this area Checker King will record its moves in checker notation after its name, **CHECKER KING:**. Underneath, the computer prompts you to enter the notation for your **MOVE :** or for a **JUMP :** and the moves or commands you enter will be recorded in this area. Messages from the computer will also be printed here, to assist you in making valid moves.

The blinking rectangle, or "cursor", is at the very bottom of the screen. Whenever it is your turn to move, the cursor will be there blinking. It's the Apple's way of tapping its foot. When Checker King moves its piece on the board, it records the move in this area in official checker notation.

When it is Checker King's turn to move, the cursor disappears and you'll see a dash (-) moving across the screen right under the checker board. Because Checker King takes a great deal of time to plan a move when playing at the higher IQ levels, this indicator is to assure you that it hasn't fallen asleep on you. When it reaches the right edge of the screen, it will appear at the left and resume travelling until Checker King decides its move.

CHOOSING A SKILL LEVEL: The IQ Command

Checker King can play at eight levels of skill from 1 (easy) to 8 (very competitive). When you load the program, Checker King sets the IQ at 4, the middle of its skill range. You can always see the level you are currently playing at displayed at the lower right edge of the screen and you can change it anytime it is your turn to move.

To change the level, type **IQ=**, then a number from **1** to **8**, and press **RETURN**. For instance, if you want to play at an IQ level of 6, type **IQ=6 RETURN**. In the lower right-hand corner you will see **IQ = 6**. For those who like shortcuts, pressing **I**, then **6** and then **RETURN** will do the same thing. After a few games you will find the range of levels which suits you best.

IQ versus Speed. To decide its best move, Checker King first examines all its possible legal moves in a particular situation. It then generates and examines all the reply moves you could make, and then all the continuation moves it could make to your reply. The higher the IQ level, the further ahead Checker King looks. At level 8, Checker King plays a very competitive game, considering each move a very long time. (The moving dash under the board is to let you know it is thinking.) Consequently, the more pieces on the board, the longer Checker King takes to make a decision.

To make the best use of your time available for a game, play the early part of the game at a lower IQ level to speed it up. Move up to a higher IQ level when there are fewer pieces on the board.

THE BOARD NOTATION: The N Command

Press **N** to see the number notation of the board. Following the official checker notation rules, the black squares of the board are numbered consecutively from 1 to 32, starting at the upper left corner of the board and following along each row left to right, to the lower right corner. The numbers will be displayed until you press **RETURN**.

WHO TAKES A TURN: The P Command

Checker King is a courteous player and offers to let you have the first move by waiting for you to enter it from the keyboard. Remember, you play with the white pieces and Checker King plays with the black checkers. You will always know when it is your turn to move because the cursor will be on the screen, blinking away.

At your option, you can have Checker King move first by pressing **P** and then **RETURN**. You can use this command anytime during the game when you want to pass your turn and cause Checker King to move.

TO MAKE A MOVE

To enter a single move, type in the number of the square your piece is on, then a hyphen, then the number of the square the piece is moving to, and press **RETURN**. For example a typical opening move for white might be:

24-19 RETURN

Use the same notation when you are making a single jump over a black checker. Checker King will recognize your capture of its checker and remove it from the board.

To enter a multiple jump in which you capture more than one black checker, enter each stage of the move, separated by hyphens:

25-18-9 RETURN

Playing by the official checker rules, both you and Checker King must make a capturing move when it is available. When you can make a capturing move, the computer prints **JUMP :** in the area where you enter your move. If you try to make a non-capturing move, the computer gives you the message **ERROR** and continues to prompt you to **JUMP :**

When the **JUMP**: prompt is on the screen for your move, and there is only one possible capturing move you can make, try pressing the right arrow key (→) on the keyboard. Then press **RETURN**, and you will see the notation for the move written on the screen and the move carried out. This saves you the trouble of typing in the notation when there is only one move possible. When there is more than one way to make the jump, this command will not work.

TAKING BACK YOUR MOVE: The G0 Command

To take back the last move you made if you change your mind or want to correct a mistake, type **G0** (zero, not an oh) and press **RETURN** when it is your turn. The checkers are returned to the position they were in before your last move and you can make the play again.

THE GREAT ESCAPE: The ESC Key

Does Checker King seem lost in its thoughts while deciding its move? Press the **ESC** key to interrupt Checker King's thinking process. The blinking cursor will reappear and the turn is given to you. Should you just want to speed up Checker King, change the IQ level to a lower number and press **P** and then **RETURN** to tell Checker King to make its play.

Note: it may take a second or two before the computer notices that you have pressed the **ESC** key, so hold it down until the blinking rectangle appears.

EXCHANGING POSITIONS: The X Command

You can exchange positions with Checker King at any point in the game when it is your turn to move. Press **X** and then **RETURN**, and the computer will turn the board around so that you can play with Checker King's men and it plays with yours. To avoid confusion, the computer will also change the colors of the checkers when it turns the board around. This way, you will again be playing with white checkers, but they will be arranged exactly as Checker King's black pieces were before the switch.

Checker King will wait for you to make the first move, but you can tell Checker King to move first by using the **P** command.

CHECKER KING VS CHECKER KING: The X and P Commands

Want to see how Checker King would handle your play during a game and learn a few of its tricks? You can make Checker King play a game against itself by using the **X** and **P** commands.

To start the game, press **P** and then **RETURN**. After Checker King makes its first move, press **X**, then **RETURN**, then **P** and another **RETURN**. Wait for Checker King to complete this move and then repeat the dual commands.

SAVING BOARD POSITIONS: The S Command

Sometimes in the middle of a game an interesting position develops. Checker King allows you to save it and then come back to it later for further study. You can save up to three positions at a time during a game.

You use the save command whenever it is your turn to move. To save the first position, type **S1** and press **RETURN**. Type **S2** and press **RETURN** to save the second position, and **S3** followed by **RETURN** to save the third. The **S** command will store the current position in one of three places in the computer's memory. It will remain there until you turn your Apple off or save another position in its place. A saved position is retrieved by using the **G** command, which is explained in the next section.

RETRIEVING SAVED POSITIONS: The G Command

You retrieve a position you saved with the **S** command by entering **G1**, **G2**, or **G3** and pressing **RETURN**. The number entered after the **G** corresponds to the number you entered when you saved that position (**S1**, **S2**, or **S3**). The position saved in that location will be put on the screen and Checker King will wait for you to make the first move.

MODIFYING THE BOARD: The M Command

With the **M** command, you can alter the position of the board or set up a completely new situation by removing pieces and/or adding pieces. Press **M** and then **RETURN** when it is your turn and a series of prompts for five possible kinds of modification will appear on the lower left section of the screen.

REMOVE PIECES: This first prompt allows you to remove any number of pieces belonging to you or Checker King. Just type the number of the square the piece is on and press **RETURN**. To remove more than one piece, list the square numbers, separating each with a comma (**7,22,28,31**) and press **RETURN**.

HUMAN PIECES: The second modify prompt lets you add to your pieces. Type in the numbers of the unoccupied squares where you want to add pieces, separated by commas, and press **RETURN**.

HUMAN KINGS: The third prompt of the series lets you add to your kings. Type in the square numbers where you want to place them, separated by commas, and press **RETURN**.

COMPUTER PIECES: This prompt lets you add to the pieces Checker King has on the board. Type in the square numbers where you want to place them, separated by commas, and press **RETURN**.

COMPUTER KINGS: The last prompt lets you add kings for Checker King. Type in the square numbers where you want to place them, separated by commas, and press **RETURN**.

Press **RETURN** at any modification prompt to bypass it and go on to the next prompt in the series. If you happen to leave out a piece or put it in the wrong

square, press **RETURN** until the end of the series, then press **M RETURN** again and run through the sequence a second time.

When you have finished the modification sequence, it is your turn to move and you can continue the game with the modified board.

CLEARING THE BOARD: The C Command

To clear all the pieces from the board to set up a special situation, press **C** and then **RETURN**. You can then use the **M** command to place pieces wherever you want them.

STARTING A NEW GAME: The R Command

Anytime it is your turn to move, you can press **R** and **RETURN** to end the game in progress. A fresh board will be set up on the screen and Checker King will give you the opportunity to make the first move.

You can return to the old game at the point you left it if you type **G0** and then **RETURN** before you make a move in the new game.

CHECKER KING BONUS: 3 Checker Puzzles

Three Checker puzzles are loaded into your Apple when you load the Checker King cassette. You can play any one of the puzzles anytime during a game, but they will be erased from the computer's memory when you use the **S** command to save board positions. (**S1** erases the first puzzle, **S2** erases the second puzzle, and **S3** erases the third.)

To play the first puzzle, type **G1** and press **RETURN**. Type **G2** and press **RETURN** for the second puzzle, and **G3** and **RETURN** for the third puzzle.

In each puzzle it is possible for you to win the game in a short sequence of moves. You can try to solve the puzzles at any IQ level. See if you can find the winning series of moves. If you give up, exchange sides using the **P** and **X** commands (described in the Checker King vs. Checker King section) and let Checker King show you how. The three puzzles have different levels of difficulty and Checker King must be set at least at the level of play indicated below. Good luck!

	Minimum Number of Half Moves	Minimum IQ Level for Computer's Play
Puzzle 1	5	3
Puzzle 2	9	5
Puzzle 3	9	7

APPENDIX A: RULES OF CHECKERS

Although you may know the basic rules of checkers, we have set out a full description, including the "fine print" regulations which Checker King follows.

The aim of the game is to capture all of your opponent's pieces, or to trap them in such a way that he or she has no legal move available.

The checker board consists of a square divided into 64 smaller squares, alternately colored dark and light. All play takes place on the dark squares. Each player starts with twelve pieces (also called checkers or men) on opposite sides of the board. The checkers are a different color for each player.

Players may use whatever method they wish to decide who gets the first move. After that they alternate turns.

A player may move any piece diagonally forward one square, if the square on which it will land is vacant. A player must "capture" an opponent's piece which is on a square diagonally forward, if the square beyond it is vacant. A player makes a capturing move by jumping his piece over the opponent's checker, landing on the square beyond, and removing the opponent's piece. If, on landing, his piece is in a position to capture another opposing piece in the same manner, the player must continue to jump as long as the checker's movement is forward on the board. A player can choose freely between capturing moves if more than one is available.

When a checker moves to its opponent's back row without being captured, it becomes a "king" and is crowned by placing another checker of the same color upon it. A king has all the powers of a single checker, plus the ability to move backward as well as forward. However, if a checker reaches the "king" row by jumping, it must stop to be crowned and cannot jump again in the same turn.

APPENDIX B: COMMAND SUMMARY

With the exception of the **ESC** key, the following commands are entered when the blinking rectangle is on the screen in the lower left-hand corner.

Command:	Action:
C RETURN	Clears all pieces from the board.
ESC Key	Interrupts Checker King's "thinking" on its turn. Hold down until cursor appears.
GØ RETURN	Returns board to its position just prior to your last move. Will recover the position if it is used <i>immediately</i> after using the C , R , or M command.
G(X) RETURN	Retrieves any of three board positions saved during a game, where (X) is the number 1, 2, or 3. For example, G1 , G2 , G3 . Also displays any of three checker puzzles. (See S command.)
IQ=(X) RETURN	Sets skill level, where (X) is a number from 1 to 8.
M RETURN	Modifies the board by removing and/or adding checker pieces, using five modification instructions:
REMOVE PIECES:	Enter square numbers of any piece or pieces to be removed.
HUMAN PIECES:	Add one or more of your regular pieces to the square numbers entered.
HUMAN KINGS:	Add one or more of your kings to the square numbers entered.
COMPUTER PIECES:	Add one or more of Checker King's regular pieces to the square numbers you enter.
COMPUTER KINGS:	Add one or more of Checker King's kings to the square numbers you enter.
N	Displays the numbers of the board squares until the next time you press RETURN .
P RETURN	Postpones or forfeits your move by giving the move to Checker King.
R RETURN	Resigns a game in progress and draws a fresh board. Old game can be recovered with the GØ command used <i>immediately</i> .
S(X) RETURN	Saves up to three board positions during a game to be retrieved later with the G(X) command. (X) is the number 1, 2, or 3. (See G command.)
X RETURN	Exchanges positions with Checker King.
→ RETURN	Automatically enters move notation for JUMP: prompt when only one move is possible.