## 1. YOUR NEW GAME CARTRIDGE

Good News! Your new game cartridge reflects the latest state of the art enhancements to high-level strategy game play. Your CAPABLANCA EDITION of Master Chess is the most recent of a long list of world famous chess programs developed by Applied Concepts. Inc. This CAPABLANCA EDITION is one of the strongest chess programs commercially available today; and, when played in conjunction with its companion cartridges — Gruenfeld Edition of opening book moves and Morphy Edition of mid-game strategies — the Great Game Machine's contiguous play function, it is absolutely unmatched in strength of play and strategic excelience!

# The Master Series of Machintelligence Games

Applied Concepts, Inc. has long had a commitment to continue updating the level of play of its artificial intelligent games. This commitment has never been more evident than in this Master Series. Our programmers have researched the great masters of chess, checkers, reversi, knegspiel and blackjack, and incorporated into our new games the techniques and strategies employed by these Masters.

## About Jose Raoul Capablanca

World Champion, 1921-1927, (Born November 19, 1888, Died March 8, 1942)

Wherever chess is played seriously the name of Capablanca is known and revered; he was truly one of the greatest chess prodigies and chess geniuses of ail time.

Capablanca learned the game at the age of four simply by watching his father play. By the age of 12 he had won the championship of his native Cuba.

As a young man Capablanca attended Columbia University in New York City, where he quickly established his superiority over the leading American Masters of that day.

In 1921, Capablanca defeated Dr. Emanual Lasker in Havana for the world chess championship, winning 4 games, drawing 14 and losing none. At Buenos Aires in 1927, an over-confident Capablanca lost the title to a much better prepared Alexander Alekhine in a marathon match: The score was 6 wins, 3 losses and 25 draws in Alekhine's favor. For the rest of his life Capablanca sought a return match, which Alekhine understandably avoided. Other than the championship match, Alekhine had only one career victory to show over Capablanca against eight losses.

Capablanca was not of a particular "school" of chess, he instead drew upon his awesome innate talent to consistently find the strongest move in each

position. He was never very knowledgeable in the openings, but Capablanca played the middle game and endgame with unequaled precision and accuracy. He preferred simple positions and excelled, even from childhood, in the endgame. His insight and purity of vision was evident in the endgame as in no other phase of the game.

It is in the spirit of this chess immortal that the Capablanca endgame cartridge is dedicated.

(6)

#### II. THE GAME OF CHESS

### The History of Chess

In the fifth century A.D., a game called "chaturanga" made its appearance in historical records in northwestern India. "Chaturanga" as it was played then is easily recognizable, with few differences, as our modern chess. The game spread west into Persia, and from thence along the ancient trade routes to the shores of the Mediterranean, reaching Europe by about 1000 A.D. The Norman Conquest brought chess with it into England; the Spanish soldiers and French explorers introduced it first into the New World of the Americas. By the 17th century chess had developed the exact form we enjoy today, although slight rule variations have been added, and fashions in strategy continue to change from decade to decade.

#### The Game

Chess is the classic game of maneuver and control. It is played on an 8x8 board between two players, each with initial armies of 16 pieces set up as shown (Figure 1):

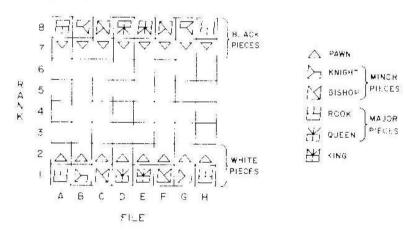


FIGURE 1

The players take turns, starting with White, each moving one piece per turn with the goal of capturing the enemy king. Only one piece can occupy a square at a time, and an enemy piece may be *captured* by occupying its square and removing it from the game.

The eight columns or *files* of the board are lettered A-H and eight rows or *ranks* are numbered 1-8 as shown. Each square is identified by its file and rank; thus the Black King is initially on square E8.

### The Pieces

There are six kinds of pieces as shown, each with its own pattern of movement:

The Pawn, represented by an arrowhead, can advance along its file in the direction of its arrowhead one square per turn onto an unoccupied square, as shown by the solid arrow in Figure 2. It is, however, able to capture an enemy piece diagonally ahead of it, as shown by the dotted arrows, and is the only chess piece to move and capture differently. The pawn is the foot soldier of chess, needing support from the other pieces to advance safely, but vital in holding territory. See also Double Advance, En Passant, and Queening below.

The Knight, represented by a horse, moves obliquely, 2 squares laterally and 1 to either side, as shown in Figure 2. It does not travel directly over any other squares and therefore cannot be blocked, making the Knight ideal for behind-the-lines raids. It is worth about three pawns.

the Bishop, represented by a miter, moves diagonally any number of empty squares as shown in Figure 2. It may capture an enemy encountered on the magonal, but cannot continue beyond an occupied square. A Bishop can never encounter its brother since they are confined to squares of opposite color, but it is a nimble piece, able to cross the board in a single move. It is worth about three pawns.

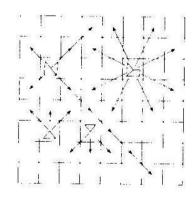


FIGURE 2

The Rook, represented by a castle, moves laterally any number of empty squares as shown in Figure 3. It may capture any enemy encountered, but cannot continue beyond an occupied square. Although too valuable and confined brisk in the opening game, it is a powerful piece, able to force checkmate of a one enemy king. It is worth about five pawns. See Castling below.

he Queen, represented by a diadem, moves diagonally or laterally any

number of empty squares as shown in Figure 3. It combines the moves of Bishop and Rook and is the most powerful piece by far, but must be used carefully since its uncompensated loss is generally fatal. It is worth about nine pawns.

The King, represented by a crown, moves one square in any direction as shown in Figure 3. It is vulnerable to attack if exposed, but must nonetheless be ready to play an active role once the major pieces have been captured. It is of course invaluable; any other piece must be sacrificed if necessary to save the King. See Castling below.

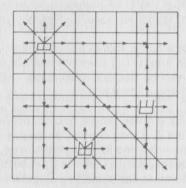


FIGURE 3

If a player moves so that he could capture the enemy king with his next move, the king is said to be in *check*, and it is customary to warn the opponent of this. It is illegal for a player to expose his own king to check, or to leave it in check when it can be saved. If it cannot be saved, the check is *checkmate*, and the game is then ended before the king is actually captured. A game is considered a draw if neither player can proceed to checkmate. A player must move when it is his turn, but if every move would expose his king to capture and thus be illegal, the game is considered a *stalemate* or draw; achieving this may be the strategem of last resort for a losing side.

# Special Moves

In the seventeenth century, the following special moves were added to the game of chess:

Double Advance and En Passant. For faster development, a pawn may advance two squares, provided they are unoccupied, from its initial position However, this is not intended as a move to bypass an enemy pawn that would have been able to capture had a single advance been made. In such a situation (Figure 4), the double advance is permitted, but the opponent has the *en passant* option, for his next turn only, of returning the pawn to a single advance and capturing it there.

Queening. If a pawn successfully reaches the opposite edge of the board, it is promoted to any other piece, except a duplicate king. The choice is usually a queen, and this dramatic increase of power makes the advance and queening of a pawn the critical feature of the end of many games.

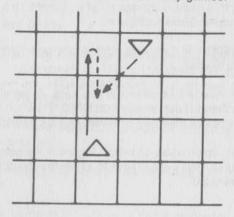


FIGURE 4

Castling safeguards the king while centralizing the rook. If a previously unmoved rook can move next to the previously unmoved king and be unattacked there, the player may place the king on the other side of the rook (Figure 5). Castling out of check is not permitted.

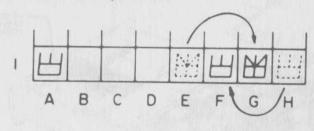




FIGURE 5

### III. HOW YOUR GAME CARTRIDGE WORKS

### Game Cartridge Concept

As discussed earlier, this game cartridge must be played on a separately purchased Applied Concepts' Game Computer.

This CAPABLANCA EDITION Cartridge comes packaged with an operation manual and keyboard overlay.

Game Cartridges are inserted as shown in Figure 6. To remove pull the cartridge to the left and then lift out. Insure that ON/OFF switch is either in OFF or MEMORY position before inserting or removing this cartridge.

Keyboard overlays are inserted as shown in Figure 6. Remove the overlay by slipping a fingernail under the overlay next to either the top or bottom half and bowing the overlay outward.

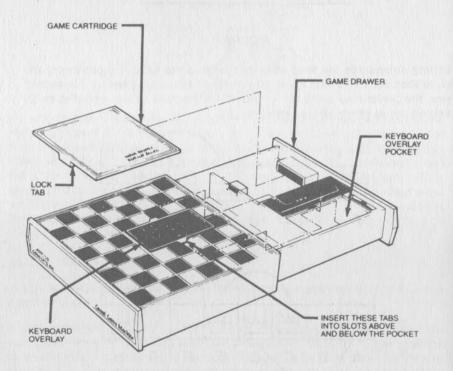


FIGURE 6

# Important Do's and Don'ts

DO read the manual for the Game computer upon which you will play this game cartridge. The features set out in the operation manual for your game computer will give you valuable information as to how best to get the maximum from this game cartridge.

DO follow all the recommendations set out in the game computer operation manual and this manual.

DON'T attempt to insert and remove this cartridge with the ON/OFF switch in the ON position!

DON'T close the game drawer on your game computer with the power ON! Overheating may result and severely damage this game cartridge.

DON'T mishandle this cartridge. The programs that it contains are highly sensitive and can be damaged if dropped or placed in wet or extremely hot conditions.

### IV. PLAYING THE ENDGAME WITH CAPABLANCA

There are two ways which you can get the most out of playing with your CAPABLANCA EDITION Endgame Cartridge:

- 1. Playing from the midgame cartridge using Memory (See below)
- 2. Setting up endgame positions from the OFF position (See page 11)

### Playing from the Midgame Cartridge Using Memory

When Morphy's endgame indicator light comes on, you have the option of completing the game with Morphy, or continuing the game with the CAPABLANCA EDITION endgame cartridge. NOTE: CAPABLANCA has a special Mate-Finder feature built into his program at level 0 (see Mate-Finder in the Special Feature section). Any game already in progress with Morphy at level 0 will automatically step up to level 1 with CAPABLANCA. (Note: CAPABLANCA will not allow you to play a game from an illegal position. Any time you try to enter the playing mode from an illegal position, CAPABLANCA will refuse to play and will scan "PLEASE ENTER CORRECT POSITION" and then step up to rank 1 automatically so that you can change the board set up.)

Please read these instructions carefully before trying to change game cartridges.

- After Morphy's endgame indicator light comes on (a dot to the lower right of the move indicator — see special features), and it is your turn to move, put Morphy into the rank mode by pressing [RANK].
- Move the ON/OFF switch to the MEMory position; remove the Morphy cartridge; insert the CAPABLANCA; and move the ON/OFF switch back to the ON position.
- CAPABLANCA will briefly display the word "MOVE?" and will then await your next move by displaying the hyphen and move counter:



Continue the game by entering your next move just as you did earlier with the Gruenfeld and Morphy cartridges.

- 4. CAPABLANCA will display CK, and MT, in place of the move counter where he checks or mates you. If you make an illegal move, CAPABLAN-CA will refuse to accept it. After displaying ILLEGAL, he will redisplay the move coordinates so that you can see why the move was illegal.
- 5. CAPABLANCA recognizes a draw by the 3 move repetition rule (looking up to 8 moves deep) and the 50 move repetition rule (this occurs if after consecutive moves have been made without a checkmate, capture, or pawn moved) and will scan "DRAWN" across the display screen immediately after the move causing the draw. He may then display the move coordinates but he will always display DR in place of the move indicator.

# **Entering Special Moves**

Queening. CAPABLANCA automatically turns a pawn into a queen when it reaches its far rank. You can override this if you wish; see Underpromotions in the Special Features section.

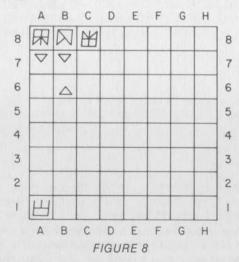
En Passant. Enter the move of your capturing pawn. CAPABLANCA will automatically remove his captured pawn.

Castling. Enter the move for the king only; CAPABLANCA will automatically move the appropriate rook. CAPABLANCA tells you in a similar fashion when he has decided to castle.

### Setting Up Endgame Positions — From the OFF Position

The CAPABLANCA EDITION is the first computer program devoted solely to the chess endgame. Set up your favorite endgame positions on CAPABLANCA's internal board, and watch him solve them easily. Try the following mate-in-two problem, and see Level 0 — The Mate Finder in the Special Features section.

White to mate in two:



Switch CAPABLANCA from OFF to ON. After displaying "MOVE?"
 CAPABLANCA will beep and display "PLEASE ENTER CORRECT POSITION", followed by automatically stepping up to the first rank. Pressing

any key interrupts these messages and automatically steps up to rank one.

- 2. Press the [ H ], creating a White rook on Al.
- 3. Press [RANK] repeatedly to advance to the sixth rank.
- 4. The hyphen is now used to locate pieces on the desired file. On each file, the hyphen starts out in the left-most square. Pressing [—] moves the hyphen to the right. Remember that the [B/W] key can always be used to locate the hyphen without moving it. Press [—] once to advance to file B on rank 6. Press [ ] to create a pawn on B6.

- 7. Press [ENTER] to exit from rank mode and return to play.
- Set the level. CAPABLANCA can solve any mate-in-two problem at level
   3.
- To see the solution, press (B/W] and CAPABLANCA will display the solution (A1-A6) and announce MATE IN ONE. Press [B/W] twice more and see the final moves to CHECKMATE.
- 10. Steps 1-7 are used to enter and play from any endgame position.

### V. SPECIAL FEATURES

### Contiguous Play Option

The CAPABLANCA EDITION MASTER CHESS ENDGAME CARTRIDGE allows you unparalleled master endgame strategies when used in conjunction with the Gruenfeld Edition Master Chess Openings Cartridge and the Morphy Edition Master Chess Cartridge.

This is how it works. When the Morphy program has completed midgame play, he will signal you with a dot on the extreme lower right hand side of the feedback/move indicator. The dot will appear just to the right ad bottom of the move number as shown below.



At this point you may either continue playing, utilizing Morphy's endgame, or switch to the CAPABLANCA EDITION of end-game strategies. To do this, first depress the RANK key to stop Morphy's internal computing, move the ON/OFF switch to MEMORY, remove Morphy and insert CAPABLANCA. When you move the ON/OFF switch back to ON, you can complete your contiguous play with a fine end-game match.

CAUTION: When moving the ON/OFF switch from MEMORY back to ON insure that you do not move past the ON to the OFF position. In that event, you have lost all previous moves from your computer.

#### Audio ON/OFF

This cartridge is equipped with a feature that allows you to turn off the audio responses should you desire. Just press [AUDIO] to stop the sound. Depress it again and the sound will return.

#### • Best

The \*Best key allows you to choose between two modes of play for CAPABLANCA. When you press [\*BEST], CAPABLANCA displays a small dot to the right of the hyphen. In this mode, CAPABLANCA will always play one of a few single moves that he consideres exactly equal. Very little variety is included in his play. When this feature is not in effect, no dot is displayed. In normal mode CAPABLANCA will not always make the same response to any given move. Instead he selects a move from a number of moves which he considers to be about equal.

#### Restore

CAPABLANCA'S RESTORE feature allows you unmatched flexibility in your endgame analysis. Each time [RESTORE] is pressed, CAPABLANCA steps back to just before YOUR LAST MOVE (up to 16 ply). This allows you to examine various paths of play.

In the mate-finder mode, RESTORE serves a dual purpose.

Pressing RESTORE while **CAPABLANCA** is computing halts his searching and in addition restores the internal board to it's original position.

The Restore feature allows you to avoid blunders during the endgame as well as analyze different angles of play. Although technically this is cheating, it can be very instructive.

Modifying the board erases **CAPABLANCA'S** memory of all previous moves. Therefore, the Restore key will not function immediately after modifying the internal board.

#### Level

CAPABLANCA has several levels of play designed to challenge players of various strengths and/or patience.

CAPABLANCA will automatically pick up where Morphy left off, retaining all of the information, including time, internal board position, and level of play, with the exception of Level 0 (see Mate Finder), which CAPABLANCA will automatically step up to Level 1 when playing with Morphy at Level 0.

The levels and their meanings are as follows:

# Level Description

- O A special mate finder level used for quickly solving any mate-in-one up to mate-in-eleven problem. Some problems may take hours or days.
- 1 At power-on CAPABLANCA is set to Level 1. A fast paced game.
- 2 The whole game should last about 1 hour (if you move at CAPABLAN-CA'S pace).
- 3 CAPABLANCA can solve any mate-in-two problem at this level.
- 4 CAPABLANCA should have no trouble making 40 moves in 90 minutes at this level.
- 5 CAPABLANCA can solve any mate-in-three problem at Level 5. For the patient player, CAPABLANCA provides good solid chess.
- At level 6 playing CAPABLANCA is more like postal chess. A single game could last up to a month. At this level CAPABLANCA can find some mate-in-four problems.
- 7 Tournament Level designed to play 30 moves per hour.

#### The Mate Finder

The CAPABLANCA EDITION is the first computer chess endgame program to contain such a unique feature. Program in any mate-in-one to mate-in-eleven problem, and watch CAPABLANCA solve it easily. Try the mate-in-two problem on page (11) — CAPABLANCA solves it instantly. Step up to any other level to follow through to the solution, or enter your own move and he will give you the next move to the solution.

### Changing Sides

You may change sides with CAPABLANCA at any time during a game. Just press [B/W] when it is your turn to move. CAPABLANCA will immediately begin thinking with colors reversed. If you wish to play Black from the start of the game, press [B/W] instead of an initial move.

#### Hint

You can use **CAPABLANCA** as a Chess Tutor, to see what he would do in your place. When it is your turn to move, press [HALT/HINT]. **CAPABLANCA** will suggest a move on the feedback/move indicator. To play the suggested move, press [ENTER]. No hint is available immediately after modifying the board.

Although the HINT feature is not an active function of Level 0 with either the Gruenfeld Edition or the Morphy Edition cartridges, press [HINT] with CAPABLANCA (in Level 0) and he may whimsically suggest that you "RESIGN".

#### Halt

While CAPABLANCA is thinking he flashes the best move he has found so far. You can halt CAPABLANCA'S thinking and force him to make that move by pressing [HALT/HINT]. The Halt feature is useful if you have set CAPABLANCA on a high level and are now tired of waiting for his move, or if you discover that you have just made an error. Note: Halt is not a feature of the mate-finder mode, see RESTORE for further instructions.

# Thinking on the Opponent's Time

If you have CAPABLANCA set to Level 1-8, CAPABLANCA will continue thinking while you are deciding on a move. CAPABLANCA assumes that you will make the move suggested in the Hint and begins at once to compute his reply. This may result in CAPABLANCA responding instantly if you make the Hint move. Unlike Morphy, pressing [RANK] does not stop CAPABLANCA'S internal

thinking. Only modifying the board will cause a change in CAPABLANCA'S computing after returning to the ENTER mode.

Timer

CAPABLANCA is equipped with an automatic timer. The Timer keeps track of the amount of time the player or CAPABLANCA has spent on the current move and the total time each has taken so far in the game

If it is your turn to move, pressing [TIME] will show you how much time you have taken for this move.

For example the feedback/move indicator will display:



This display would indicate that you have been considering this move for 3 minutes and 5 seconds.

The timer continues to count times while it is being displayed. To find out the total time you have used in the game so far, press [TIME] and hold it down:

For Example:



You have used 1 hour, 28 minutes, and 44 seconds so far in the game.

To find out how much time CAPABLANCA has used, press [B/W].

When CAPABLANCA is thinking, pressing [TIME] gives CAPABLANCA's time. Your time can be displayed by pressing [B/W]. In any case the position of the hyphen shows who's time is being displayed.

WHITE'S TIME



Recalling the Board

CAPABLANCA is constantly altering his internal board as you play, so that he always knows where all the remaining pieces are. You may recall CAPABLANCA's internal board for display at any time by using the [RANK] key. This steps through the board from Rank 1 to Rank 8, showing the rank number while the key is held down, and the pieces in position on the rank when released. The symbols used are described in Section II. The display returns to showing rank 1 following display of rank 8. To return to showing the moves press [ENTER].

# Modifying the Board

When it is your turn to move, any piece can be added to or removed from the board as follows:

- Step up to its rank using the [RANK] key. Clear the rank if necessary using the [CE] key.
- Step across to its square using the [—] key. The [—] starts with file A and advances one square when pressed. After reaching the right-most square, the hyphen returns to the left.
- 3. Change the color of the piece located at the hyphen by using the [B/W] key if necessary; note the hyphen will form the base of the new piece. The [B/W] will invert the hyphen, displaying it while pressed, and may be used to find the hyphen without advancing it.
- Create the new piece using the [ △ ]-[ ► ] keys. The [0] key erases
  the piece on a square. They hyphen is then advanced to the next square
  automatically.
- 5. Return to Step 1 or 2 for further modifications. When finished, return to playing mode by pressing [ENTER]. IF THE LAST PIECE YOU ENTERED WAS WHITE, CAPABLANCA ASSUMES THAT IT'S WHITE'S TURN TO MOVE NEXT. IF THE LAST PIECE YOU ENTERED WAS BLACK, CAPABLANCA ASSUMES THAT IT'S BLACK'S TURN TO MOVE. CAPABLANCA SHOWS THE SIDE TO MOVE BY THE POSITION OF THE HYPHEN. (UP-BLACK, DOWN-WHITE).

This modifying procedure can be used to correct an inadvertent error on your part, to set up a particular chess problem, such as a mate in three problem, or to play out a variation on any game.

# Underpromotion

CAPABLANCA automatically promotes a pawn to queen when it reaches the eighth rank. If you want to promote a pawn to a lesser piece than a queen, you may perform your move by modifying the board. Remove your pawn on the seventh rank and create the promoted piece on the eighth rank.

# Memory

This feature has a dual purpose. The first is to allow contiguous play of game cartridges. As you are finished play of one cartridge and want to continue play on another, (with Morphy only you first stop the computer's thinking by depressing the [RANK] key), slide the ON/OFF switch to the memory position, remove the first cartridge, insert the second, and then move the ON/OFF switch back to ON.

NOTE: Contiguous play is offered on this CAPABLANCA cartridge, However, it is not offered with all of Applied Concepts' game cartridges.

The Memory position feature also allows you to interrupt a game in progress for continuation at a later time. Slide the ON/OFF switch to the MEMORY position until you are ready to continue the game. CAPABLANCA does not require that [RANK] be pressed before going into memory. Then slide the ON/OFF switch back to ON and you will be ready to pick up play with CAPABLANCA where you left off.

CAUTION: Power MUST be maintained to the game computer at all times during the MEMORY position function. Otherwise this feature will not work. If the unit does not have the optional battery pack, then the power adapter/charger must be plugged in.

### Watching CAPABLANCA Compute

While **CAPABLANCA** is analyzing the board, you can see the moves he is contemplating flashing in his display. He will select the best move he has reached when his response time has elapsed.

### Illegal Moves

If CAPABLANCA appears to make an illegal move, you and he have probably read a move differently. During play, be sure to wait for CAPABLANCA to display his responses before you move his pieces; do not try to anticipate him, even on the most obvious capture moves. CAPABLANCA may not have chosen an obvious move, and second-guessing may cause problems later in the game.

The feedback/move indicator is designed to be viewed from directly in front of it. If you look at the display from an angle, it is possible to misread a board position and move a piece incorrectly. This will result in ILLEGAL MOVE displayed at a valid later move, because the computer has the pieces at one position and you have them at another.

When illegal move confusion occurs, use the [RANK] key to view CAPABLAN-CA's board and restore it to the position before the error occurred. Be sure to leave the hyphen on the correct side before leaving RANK mode. Key in your move if it is your turn, and press [ENTER] or if it is CAPABLANCA's turn, just press [B/W]

If CAPABLANCA rejects your move as illegal, again be sure you and he do not disagree on the position. Remember CAPABLANCA will not allow you to move your king into check or leave him there. Also, CAPABLANCA will not allow you to move his pieces, so be sure the hyphen is set for your side of the board.

# **Factory Service**

If CAPABLANCA does not perform as described and you are following the instructions, try using a different electrical outlet.

Applied Concepts, Inc. 207 North Kirby Garland, Texas 75042 (214) 494-0281

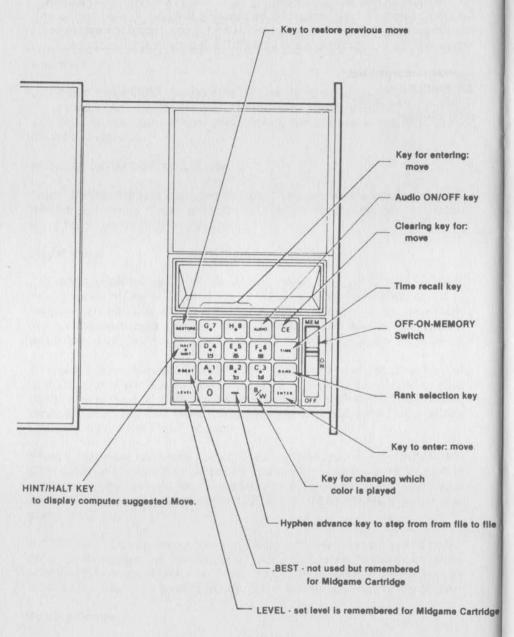


FIGURE 8

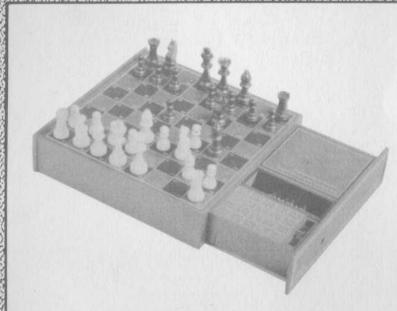
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APPLIED CONCEPTS INC

Presents

Capablanca Edition master chess endgame



**OPERATION MANUAL** 

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