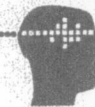
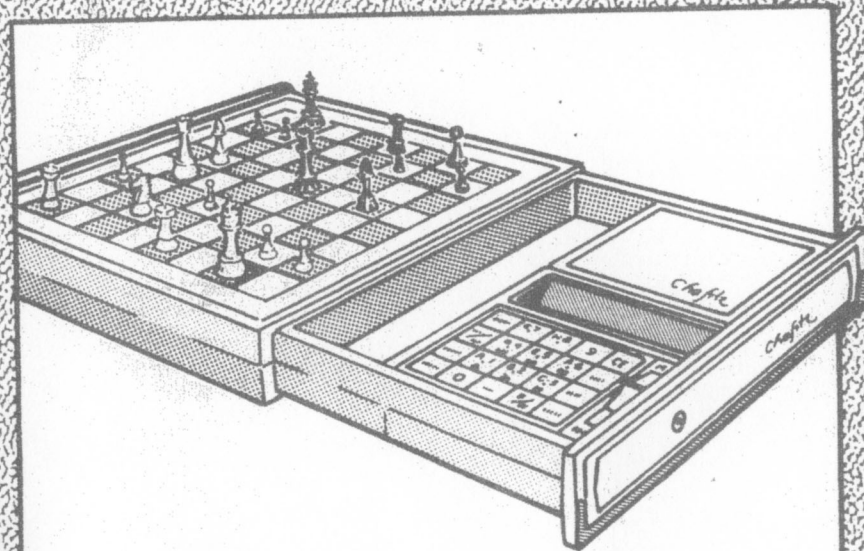


**Chafitz**



The intelligent game people.

# **SARGON 2.5 GAME MODULE**



## **OPERATION MANUAL**

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# I INTRODUCTION

Congratulations! You are now the owner of the revolutionary CHAFITZ MODULAR GAME SYSTEM. Your MODULAR GAME SYSTEM is the most advanced intelligent game system ever made available for home use. This remarkable microprocessor game system will offer you unmatched flexibility while never becoming outdated or obsolete. You are also the owner of SARGON 2.5, the world's strongest microcomputer chess program. SARGON will give you countless hours of mental stimulation and entertainment as you match wits with him at his various playing strengths, study chess games together, challenge one another to mating problems, and even share comments as the game progresses.

This book will take you through the steps of using your CHAFITZ MODULAR GAME SYSTEM and the SARGON 2.5 module. It is designed to serve many users. If you are new to the game of chess, it will introduce you to the rules of the Royal Game and show you how SARGON can help you bypass the awkward learning period and get right into the fun of playing chess. For the veteran player it will explain how the more sophisticated features can enable you to get the maximum enjoyment from your new chess module.

## II MEET SARGON

SARGON is the finest microcomputer chess program available today. In fact, SARGON is generally acknowledged to be the microcomputer chess champion of the world.

SARGON made his debut at the first tournament ever held strictly for microcomputers in March, 1978 at the second West Coast Computer Faire. SARGON won that event with five wins, no draws and no losses.

In December, 1978 an improved SARGON II competed in the 9th ACM North American Computer Chess Championships. There he took on the giants of the computer chess world. In an electrifying fourth round game SARGON defeated Awit, a program running on a five million dollar AHMDAL computer. SARGON tied for third place in that event.

Your new MODULAR GAME SYSTEM brings you SARGON 2.5; improved over its astonishing performance against multimillion dollar machines. SARGON should provide you with countless hours of chess excitement.

# III 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):

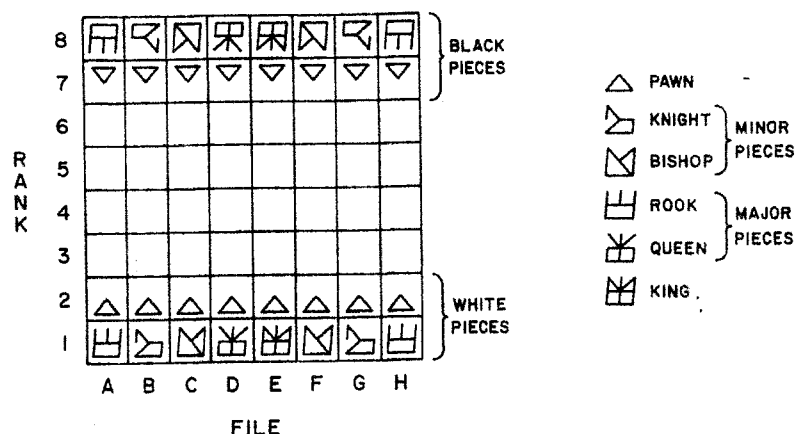


Figure 1

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 diagonal, 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.

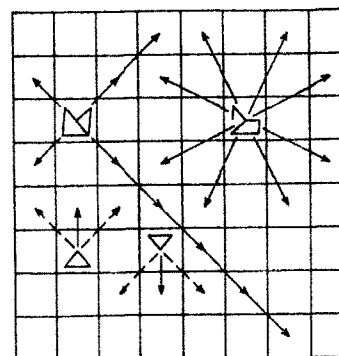


Figure 2

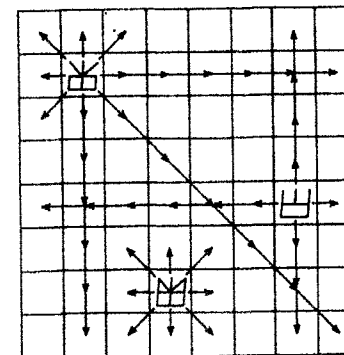


Figure 3

*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 to risk in the opening game, it is a powerful piece, able to force checkmate of a lone enemy king. It is worth about five pawns. See Castling below.

*The 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.

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.

*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.

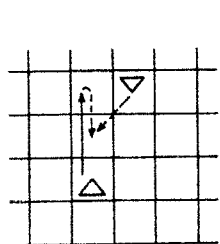


Figure 4

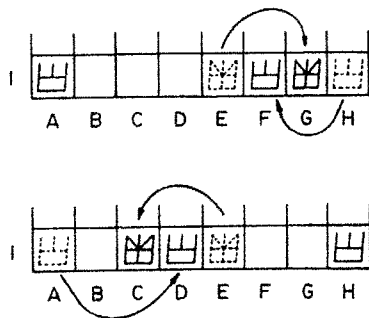


Figure 5

## IV BASIC OPERATION

### The game module package

The SARGON 2.5 Module package consists of: the game module, magnetic chess pieces, operation manual, and a keyboard overlay.

**GAME MODULE** — Is inserted as shown in fig. 6 and must be inserted only when the power switch is in the OFF position.

**KEYBOARD OVERLAY** — Is inserted as shown in fig. 6. The overlay may only be cleaned with mild soap and water.

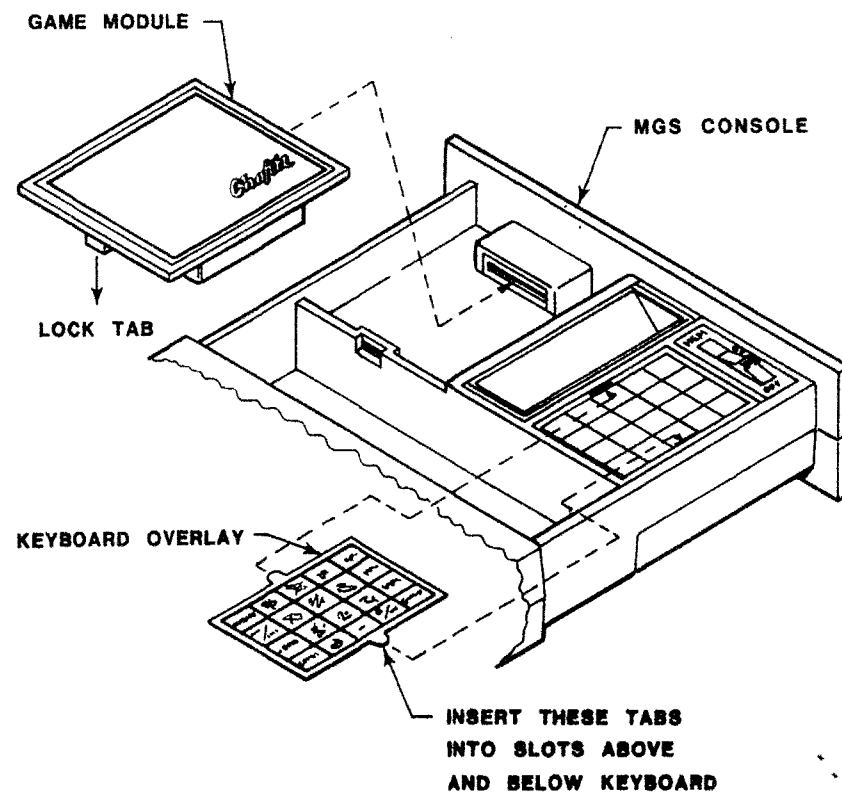


Figure 6

## Description of features

**COMPACT STORAGE POSITION** — Your MGS console will slide into a storage position under the chessboard becoming a compact 9"x9"x2" size, (with the console in play mode the size is 15½"x9"x2"). SEE FIG. 7.

**PIECE STORAGE COMPARTMENT** — For storing the chessmen.

**ALPHANUMERIC DISPLAY** — An extra large alphanumeric fluorescent display for clear viewing.

**POSITION MEMORY** — A game may be interrupted in either A/C or battery operation and memory will hold all chessmen in the proper board position for game resumption at a later time. This feature is activated by sliding the ON-OFF switch from the ON position to the MEMORY position. Storage time in the A/C mode is indefinite and in the battery mode is 24 hours, with a normal battery charge.

**BASIC KEYBOARD** — A blank keyboard which accepts the SARGON 2.5 overlay supplied with the module.

**GAME MODULE COMPARTMENT** — The SARGON 2.5 module snaps into this compartment for game play.

**GAME BOARD** — The top of the unit is a chessboard which is marked with algebraic notation to assist you in game play and keyboard entry.

**BATTERY OPERATED USE** — The optional rechargeable battery pack provides up to six (6) hours of continuous play or 24 hours of memory storage for fully portable use.

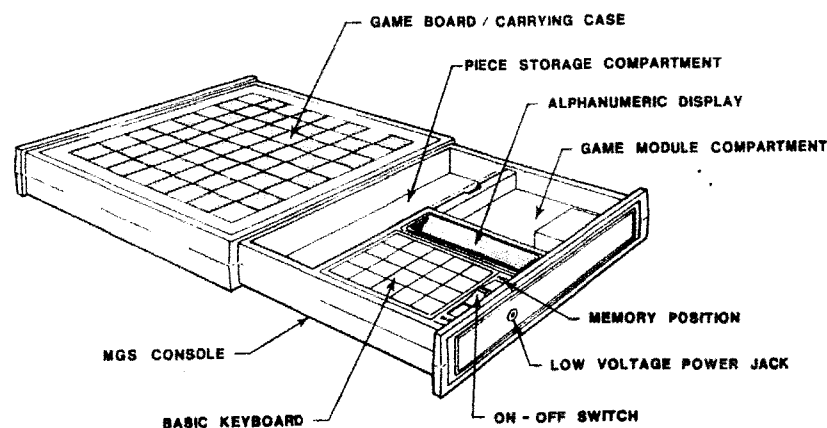


Figure 7

## Playing a Game with SARGON

1. Plug in the unit. Slide the unit open exposing the console. Set up the chess board.

2. Switch SARGON on. He will display: SARGON AWAITS YOUR MOVE.

He will then show:



The 1 is the move number. The hyphen shows the side to move:

WHITE TO  
MOVE



BLACK TO  
MOVE



Since SARGON plays Black, he is waiting for you to enter a move. To make SARGON play White, press [B/W].

3. Each square on the chessboard is identified by a pair of coordinates:

FILE LETTER (A-H)  
RANK NUMBER (1-8)

Each move on the chessboard is identified by a pair of squares:

FROM SQUARE  
TO SQUARE

The MODULAR GAME SYSTEM keyboard has keys identified with both letters and numbers. These keys give SARGON the file-rank coordinates for your moves. Six of these keys are also identified with SARGON's special chess piece symbols. The piece symbols are used to modify SARGON's internal chessboard (see **Modifying the board** in the Special Features section).

Make your move on the chessboard. To key it into the MODULAR GAME SYSTEM enter the coordinates of the "from" square and then the "to" square, using the multi-purpose keys.

Example: After advancing your king pawn two squares, press these four keys:

[E] [2] [E] [4]



4. Check that the display shows your move correctly. If there is an error, clear the entry using [CE] and start over.

5. When the display is correct, enter the move using [ENTER]

SARGON will beep his approval. He may then respond instantly or he may begin computing. SARGON will flash the display while he is computing, then beep and show his response.

Example:

E7 \_ E5 \_ \_ 2

Note that SARGON will not always make the same response. The 2 indicates that we are now ready for the second move for each side.

6. Move SARGON's piece, and enter your next move as in step 3. It is not necessary to press [CE] to clear SARGON's move from the display. SARGON will automatically clear the display when you start to enter your move.

SARGON may comment on your moves occasionally, and will show CK, MT or ST in place of the move number when he checks, mates or stalemates you. If you make an illegal move, SARGON will refuse to enter it. After displaying ILLEGAL MOVE, he will re-display the move coordinates for you, so you can note why it is illegal. Simply re-enter your move as in Step 3.

If you checkmate SARGON, he will beep several times. And display CONGRATULATIONS. If you stalemate SARGON, he will also beep several times and display STALEMATE.

To start a new game after checkmate or stalemate, press [ENTER].

### Entering special moves

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

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

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

### Sample game

The following shows the start of a game with SARGON. SARGON is designed to vary his play so he will not always respond with these moves.

Operation	Display	Description
Power-On	_ _ _ _ _ 1	After "SARGON AWAITS YOUR MOVE"
[E] [2] [E] [4]	E2 _ E4 _ _ 1	Player advances King Pawn
[ENTER]	E7 _ E5 _ _ 2	SARGON advances King Pawn
[G] [1] [F] [3]	G1 _ F3 _ _ 2	Player develops King Knight
[ENTER]	B8 _ C6 _ _ 3	SARGON develops Queen Knight
[F] [1] [C] [4]	F1 _ C4 _ _ 3	Player develops King Bishop
[ENTER]	F8 _ C5 _ _ 4	SARGON develops King Bishop
[E] [1] [G] [1]	E1 _ G1 _ _ 4	Player castles, Kingside
[ENTER]	G8 _ F6 _ _ 5	SARGON develops King Knight
[F] [1] [E] [1]	F1 _ E1 _ _ 5	Player moves King Rook
[ENTER]	F6 _ G4 _ _ 6	SARGON attacks with King Knight
[B] [1] [C] [3]	B1 _ C3 _ _ 6	Player ignores threat
[ENTER]	G4 _ F2 _ _ 7	SARGON captures King Bishop Pawn
[D] [1] [E] [2]	D1 _ E2 _ _ 7	Player moves threatened Queen
[ENTER]	F2 _ D3 _ CK	SARGON moves King Knight exposing attack by Bishop on Player's King. "Discovered" check.

# V SPECIAL FEATURES

## Opening book

For your enjoyment, an *opening book* of master moves has been added to SARGON. SARGON selects randomly from a repertoire of over 50 different opening lines. Some lines are played often, others seldom enough to surprise. Included are such favorites as:

Ruy Lopez  
Giuco Piano  
Four Knight's Game  
King's Gambit  
Caro-Kann  
French Defense  
Sicilian Defense  
Queen's Gambit  
English  
Reti

The *opening book* was designed for maximum variety in the style and character of the opening, and in turn of the whole game.

## .Best

The .Best key allows you to choose between two modes of play for SARGON. When you press [.BEST], SARGON displays a small dot to the right of the hyphen. In this mode, SARGON will always play the single move that he considers best. No variety will be included in his play. When this feature is not in effect, no dot is displayed. In normal mode SARGON will not always make the same response to any given move. Instead he selects a move which he considers one of the best moves, though not necessarily the very best.

## Restore

The Restore key allows you to take back moves during the game. Each time [RESTORE] is pressed, both SARGON's last move and your last move will be un-moved. SARGON signals that he has taken back the moves with a two tone Beep-Beep. Up to three pairs of moves may be taken back at a time. After the three, SARGON does nothing when [RESTORE] is pressed.

The Restore key allows you to take back blunders without having to change the internal chessboard. Although technically this is cheating, it can be very instructive. The Restore feature is especially valuable for studying chess problems, since different moves can be tried easily.

Another use of the Restore key is to select a particular line from SARGON's *opening book*. If SARGON does not play the desired move, press [RESTORE] and re-enter your previous move and SARGON will choose again.

## Level

SARGON has several levels of play designed to challenge players of various strengths and/or patience. To set the desired level press [LEVEL]. If you have not changed level since power-on, SARGON will display:

LEVEL 1

To change the level press any one of [0]-[6]. The new level number will be displayed in place of the "1". Now press [ENTER].

SARGON's level of play may be changed whenever it is your move in the game. While SARGON is thinking, you may display the current level, but not change it. (Press [ENTER] to return to normal display.)

The Levels and their meanings are as follows:

Level	Description
0 (Instantaneous)	A special beginner's level or used for speed chess. SARGON finds any mate in one at this level.
1 (10-15 Seconds)	At power-on SARGON is set to Level 1. A fast paced game. Playing strength is about USCF* 1000.
2 (20-40 Seconds)	The whole game should last about 1 hour (if you move at SARGON's pace). Playing strength is about USCF 1200.
3 (45-90 Seconds)	SARGON can solve any mate in two problems at this level. Playing strength is about 1400.
4 (2-4 Minutes)	SARGON should have no trouble making 40 moves in 90 minutes at this level. At the 1979 Paul Masson Chess Championships, SARGON earned an event rating of 1641 at Level 4.
5 (20-40 Minutes)	SARGON can solve any mate in three problems at Level 5. For the patient player, SARGON provides solid chess approaching the 1800 level.
6 (2-4 Hours)	SARGON's highest playing strength. At level 6 playing SARGON is more like postal chess. A single game could last up to a month. At this level SARGON can find many mate in four problems.

\*United States Chess Federation Rating System. (See Section VI)

## Changing sides

You may change sides with SARGON at any time during a game. Just press [B/W] when it is your turn to move. SARGON 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 SARGON as a Chess Tutor, to see what he would do in your place. When it is your turn to move, press [HALT/HINT]. SARGON will suggest a move. To play the suggested move, press [ENTER]. The Hint feature is only available on levels 1-6, but not when SARGON is playing from his *opening book*.

## Halt

While SARGON is thinking he flashes the best move he has found so far. You can Halt SARGON's thinking and force him to make that move by pressing [HALT/HINT]. The Halt feature is useful if you have set SARGON on a high level and are now tired of waiting for his move, or if you discover that you have just made an error.

## Thinking on the opponent's time

If you have SARGON set to Level: 1-6, SARGON will continue thinking while you are deciding on a move. SARGON assumes that you will make the move suggested in the Hint and begins at once to compute his reply. This may result in SARGON responding instantly if you make the Hint move.

## Timer

The MODULAR GAME SYSTEM is equipped with an automatic timer. The Timer keeps track of the amount of time the player or SARGON 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:



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

The timer continues to count time 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 SARGON has used press [B/W].

When SARGON is thinking, pressing [TIME] gives SARGON'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.



## Recalling the board

SARGON's micro-processor automatically alters his *internal board* as you play, so that he always knows where all remaining pieces are. You may recall SARGON'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 III. The display returns to showing rank 1 following display of rank 8. To return to showing the moves press [ENTER].

Note that SARGON uses his *internal board* to make trial moves, when he is thinking. You can watch SARGON move the pieces by pressing [RANK] when it is his turn.

## Modifying the board

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

1. Step up to its rank using the [RANK] key. Clear the rank if necessary using the [CE] key.
2. Step across to its square using the [ ] key. The [ ] starts in 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.
4. Create the new piece using the [△] - [♚] keys. The [0] key erases the piece on a square. The 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, SARGON assumes that it's White's turn to move next. If the last piece you entered was Black, SARGON assumes that it's Black's turn to move. SARGON 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 two problem, or to play out a variation on any game. For example, to set up SARGON for the mate in two problem below, follow this sequence:

White to mate in two:

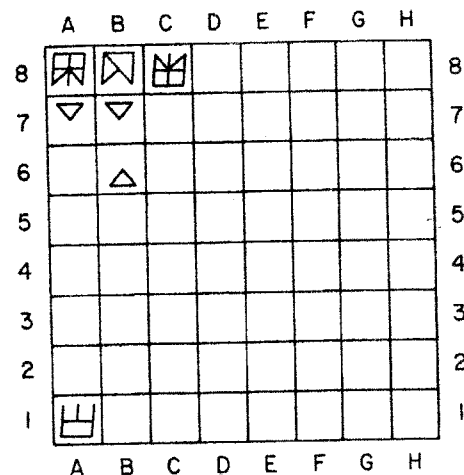








Figure 8

1. Switch SARGON on.
2. Press [RANK] to display the pieces set up on rank 1. Since you need to remove most of the pieces, press [CE] to clear the entire rank. Then press the [  ] key, creating a White rook on A1.
3. Press [RANK] to advance to the second rank, then [CE] to clear the entire rank. 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.
5. Press [RANK] to advance to the seventh rank. Press [CE] to clear the rank. Press [B/W] to indicate that you now want to enter the Black pieces. Enter the two Black pawns by pressing [  ] twice.
6. Press [RANK] to advance to the eighth rank, then [CE] to clear off the rank. Enter the Black king and bishop with the [  ] and [  ] keys. Press [B/W] to indicate that you now want to enter a White piece. Press [  ] to enter the White king.
7. Press [ENTER] to exit from rank mode and return to play.
8. Set the level. SARGON can solve any mate in two problem at level 3, any mate in three at Level 5.

To see the solution, press [B/W] to allow SARGON to make White's move. Press [HINT] for Black's response then [ENTER] to make it. SARGON will reply with the mating move.

## Underpromotion

SARGON automatically promotes a pawn to a 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 piece. Remove your pawn on the seventh rank and create the promoted piece on the eighth rank.

## Memory

The MODULAR GAME SYSTEM is equipped with a unique Memory feature that allows you to adjourn a game and resume it later. In A/C mode the position will be stored indefinitely, in Battery mode for up to 24 hours.

**Important Note:** Press [RANK] before using the Memory feature. This stops SARGON from thinking on your time and insures that the board will be set up correctly when you resume play.

## Playing from a position

You may use the modifying technique to set up an arbitrary position, entering the pieces rank by rank as above. Set the hyphen for your side prior to leaving Rank mode. Key in a move if it is your turn, and press [ENTER].

## Watching SARGON compute

While SARGON is analyzing the board, you can see the moves he is contemplating flashing in the display. He will select the best move he has reached when his response time has elapsed. Press [RANK] while he is thinking, and you can watch him moving the pieces while he is scanning for his best move. If he reaches a decision while you are still holding [RANK] he will automatically override the rank control and display his move.

## Illegal moves

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

SARGON's special display 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 SARGON'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 SARGON's turn, just press [B/W].

If SARGON rejects your move as illegal, again be sure you and he do not disagree on the position. Remember SARGON will not allow you to move your king into check or leave him there. Also, SARGON will not allow you to move his pieces, so be sure the hyphen is set for your side of the board. Of course, if you really have no legal moves, SARGON has stalemated you and the game is a draw.

## Factory service

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

Play verification may be made by letting SARGON play against himself by repeatedly pressing [B/W]. Verify that he makes legal moves for both sides. If a problem is still noted, record the events and moves leading to the problem and contact the factory by mail or phone.

MGS SERVICE CENTER  
207 North Kirby  
Garland, Texas 75042

CHAFITZ SALES AND MARKETING OFFICES  
1055 First Street  
Rockville, Maryland 20850

(301) 340-3300

## VI THE U.S. CHESS FEDERATION

The United States Chess Federation is a non-profit educational, instructional corporation; the official organizing body for chess in this country. The USCF publishes the monthly magazine, CHESS LIFE & REVIEW, administers a national tournament rating system, provides opportunity for postal chess play, and maintains a mail-order department with a large selection of chess books and equipment.

For more information about USCF and how to join, write to:

U.S. CHESS FEDERATION  
186 Rt. 9W, NEW WINDSOR, NY 12550

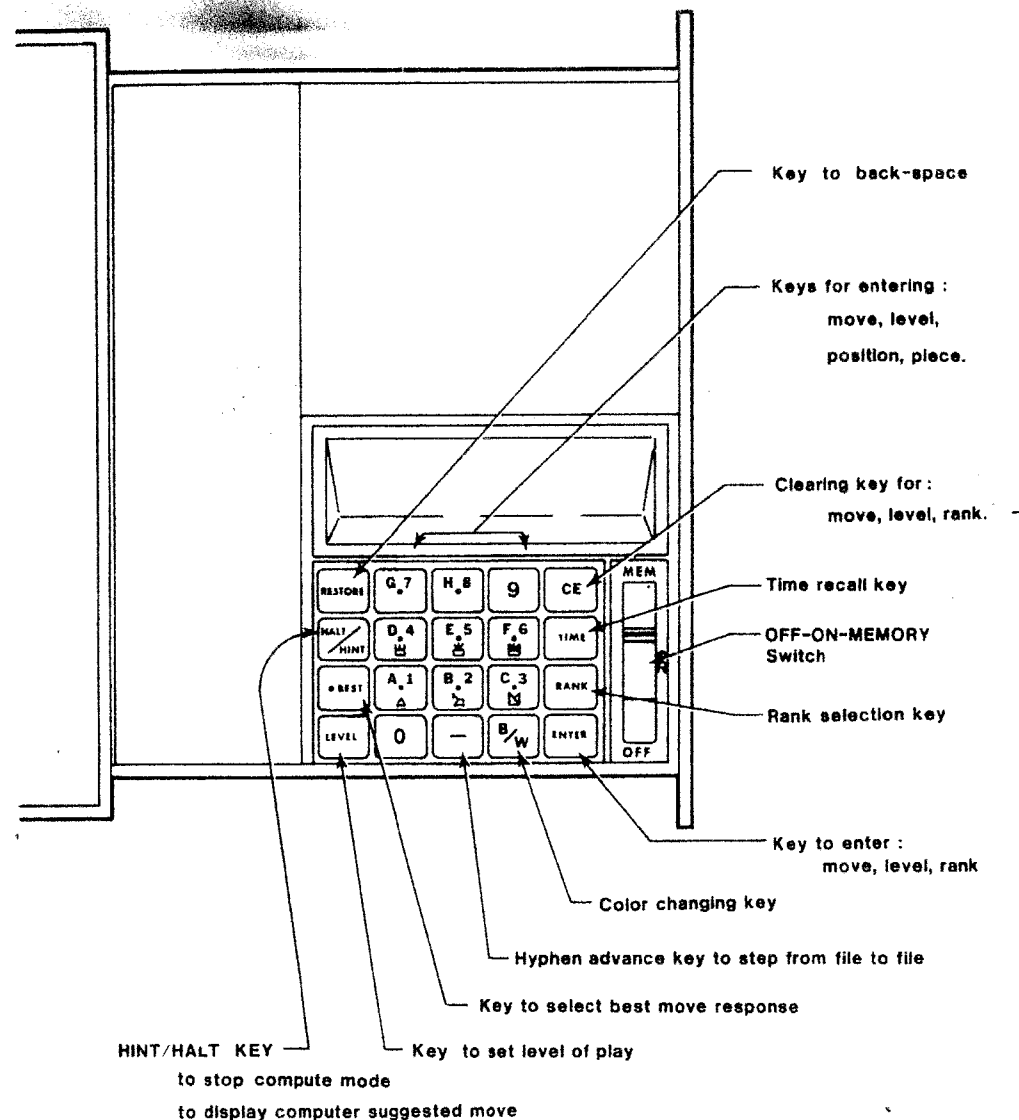


Figure 9

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**IMPORTANT** - Please read before using  
your Sargon 2.5 game module

Because your MGS thinks while awaiting your responses, it is necessary to stop this process before sliding the on-off switch to the "memory" position. This is done by simply pressing the rank key before putting the MGS into the memory mode. Failure to do so will result in incorrect memory storage, and cancellation of the game in progress.

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**\*\*CAUTION\*\***

Before using the "Memory" mode of your MGS, please reference the instructions enclosed with the Game Module you are using. Failure to follow the instructions provided with each Game Module when using the "Memory" mode will result in an incorrect memory and cancellation of the game in progress.