HAYDEN

COMPUTER PROGRAM

Tapes

SARGON II

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F ⅙ SARGON/SYS:1 6100 6214 6200
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USER'S GUIDE TO
THE TRS-80 VERSION OF SARGON II

In the interests of ever-better computer chess, we proudly present
SARGON II. This chess program is greatly improved over the original
SARGON program and includes several additional features that will make
using it easier and more convenient. It is also a much tougher
opponent. For beginners, a level 0 has been included. When playing in
level 0, SARGON's response is much faster than at other levels.

   The actual playing algorithm for the chess game has changed consider-
ably from SARGON I with the result that SARGON II plays a vastly
superior game, and at a quicker speed. During the player's move, the
level of play to which the game has been set is displayed. During the
computer's move, the ply number (as defined on page 3) the computer is
currently at is displayed.

   Since at higher levels of play, the time between moves can be con-
siderable, a flashing asterisk is displayed to indicate that the
computer is thinking and hasn't accidentally hung up. For those
players who need help every once in a while, a special hint mode has
been included that will suggest a good (not necessarily the best) move
that you can make. Finally, setting up the chess board to analyze a
particular situation has been simplified. Insteading of having to step
through each square on the board, any square can now be reached
directly.

HARDWARE REQUIREMENTS

One Radio Shack TRS-80 Level II computer with at least 16K of memory.

LOADING

1. Turn on your TRS-80 in the usual way, set up SARGON II in your tape
   recorder, and depress the play button.
2. To the BASIC prompt, type SYSTEM followed by ENTER. The computer will
   respond with the system prompt *?_
3. Type SARGON followed by ENTER. In a very short time the computer
   will respond with another system prompt.
4. To this second system prompt, simply type / followed by ENTER.
5. SARGON will now load and start execution automatically from this
   point.

USING SARGON II

SARGON II has two modes to choose from at this point which allow you
either to play a game from the beginning or to set up a board position
from which to play. Choose your option when SARGON II asks:

                   NEW GAME OR CHANGE BOARD? (G,C):

Reply with G followed by ENTER for a new game, or C followed by ENTER
to change the board.

IF YOU HAVE CHOSEN NEW GAME

SARGON II will now ask you:

YOUR COLOR? (B,W):

Press B or W as you choose, remembering that the rules of chess specify that white moves first. Complete your choice by pressing ENTER.

SARGON II next asks:

LEVEL OF PLAY? (0-6):

Press the number indicating the level of play you want, followed by ENTER. Each higher level increases SARGON's computation time and playing skill. As pieces are exchanged and the amount of material on the board diminishes, SARGON does *not* take dramatically less time to make a move. Instead, the look ahead increases automatically. (In SARGON I this required a manual change in ply level during the game.) Times per move given are averages. Actual time for a given move may range from about 1/3 to 3 × the stated time.

Level 0	Immediate Response
1	20 seconds
2	1 minute
3	2 minutes
4	6 minutes
5	40 minutes
6	4 hours

To Enter a Move:

Moves must be entered in algebraic chess notation. This means you must tell SARGON the file and rank coordinates of the squares you are moving from and to. The files are lettered A-H and the ranks are numbered 1-8. So the coordinates of the board are:

	A	B	C	D	E	F	G	H	
8	A8	B8	C8	D8	E8	F8	G8	H8	8
7	A7	B7	C7	D7	E7	F7	G7	H7	7
6	A6	B6	C6	D6	E6	F6	G6	H6	6
5	A5	B5	C5	D5	E5	F5	G5	H5	5
4	A4	B4	C4	D4	E4	F4	G4	H4	4
3	A3	B3	C3	D3	E3	F3	G3	H3	3
2	A2	B2	C2	D2	E2	F2	G2	H2	2
1	A1	B1	C1	D1	E1	F1	G1	H1	1
	A	B	C	D	E	F	G	H	

The move itself is entered by typing in the location of the square from which it is starting and the square to which it is going (FF-TT). So to play the king's pawn up two squares you would type:

E2-E4 ENTER

(Actually you can use anything in place of either the "-" or ENTER.)
If SARGON II responded with the corresponding move, it would print:

E7-E5

If you make an error, just press to go back and correct it.
Note that if your particular computer has a keybounce problem, you may
find that the computer sometimes grabs your move early, so be warned.

To Castle:

Just type the king's move and ENTER. The rook will tag along. For
example, if you are white and you wish to castle king's side, type:

E1-G1 ENTER

You will see both your king and rook move. SARGON II lists it as 0-0
or 0-0-0 as in normal chess notation.

To Capture En Passant:

If you wish to capture one of SARGON II's pawns using the En Passant
privilege, enter your pawn's move. After your pawn move is displayed,
SARGON's pawn will blink and then vanish. When SARGON II captures En
Passant, his move is displayed on the graphics board in the same way.
SARGON II prints it in the move list as PXPEP.

Kibitz:

A hint to the player giving what the computer thinks is his best move
is available for most non-book moves. (Ah, but will SARGON II give you
a move it doesn't have an answer for?) To get the computer to look
over your shoulder in this fashion press:

Note: Kibitz was not designed to work at level 0. Although you may
occasionally get it to work at that level, the moves it advises may not
even be legal.

Level # and Ply #:

When it is your turn to move, at the upper left-hand corner of the
screen, just to the left of the word PLAYER, a number will be displayed
which indicates the level you have selected. When it is the computer's
turn, that same number indicates the Ply #. The Ply # is the number of
half-moves ahead of the current move that the computer is currently
searching. A Ply of 3, for instance, indicates that the computer has
already examined its possible moves and your possible countermoves, and
is currently examining its possible replies to your countermoves. The
level # you choose at the beginning of the game, or after changing the
board, represents the *minimum* Ply to which the computer will search.
(In the beginning and toward the end of the game, SARGON II will auto-
matically search more deeply.)
    The exception to all this is level 0, where the computer will only
examine its next move at any stage of the game except where a check is

involved. The blinking asterisk below the Ply # is just to assure you
that SARGON II is in fact thinking, not asleep, out to lunch, or other-
wise bombed.

To End a Game or Take Back a Move:

Wait until it is your turn, then press BREAK. (If you're too impatient
to wait your turn, you can press the RESET button on the back at any
time.) To get out of SARGON II altogether, momentarily turn off the
computer. To take back a move, proceed to the section on changing the
board in this manual, and follow instructions.

IF YOU HAVE CHOSEN CHANGE BOARD

You can now take back a move, or set up the board to play from any point
in a game. If you were already in the middle of a game, the board will
be displayed just as you left it. The lower left-hand corner will
blink. That's your signal that you can change the contents of that
square, using one of the analysis commands as follows:

A leaves the contents of the square unchanged and blinks the
next square to the right on the same row. If you are already at the
rightmost square, it wraps around to the leftmost square in the same
row and blinks that square.

A leaves the contents of the square unchanged and blinks a
square in the leftward direction. It wraps to the rightmost square in
a similar manner.

A leaves the contents of the square unchanged and blinks the
next upward square in the same column. If you are already at the top-
most square, it wraps around to the bottommost square in the same
column and blinks that square.

A leaves the contents of the square unchanged and blinks the
next downward square in the same column. It wraps to the top in a
similar manner.

Pushing the CLEAR button will empty the space.

To place a piece in a square, type in the piece code followed immedi-
ately by the color code and the code indicating whether the piece has
moved.

The piece code is a letter indicating the desired piece.

K - King	B - Bishop
Q - Queen	N - Knight
R - Rook	P - Pawn

The color code is a letter indicating the side the piece belongs to.

W - White	B - Black

The last code tells the computer whether the piece has moved.

0 - The piece has never moved
1 - The piece has moved

Telling the computer whether a piece has moved ensures legal castling and pawn moves, and tells SARGON II for evaluation purposes whether the piece has ever been developed. Some examples:

To place a black pawn on its original square type:

PB0

A white knight in the middle of the board would be:

NW1

A black king on its original square which has, however, moved:

KB1

Depressing the key will terminate the blinking cycle. SARGON II will then ask:

COLOR TO MOVE NEXT? (B,W):

Just type the appropriate letter followed by the ENTER key. The next question will be:

MOVE NUMBER? (NN):

If you don't actually know the move number, try to enter a move number appropriate to the stage of the game you are setting up, as this number is taken into account by SARGON II in choosing strategy that corresponds to the stage of development of the game. If you have changed position during an ongoing game, simply depress the ENTER key three times and that will enter the current move number. Numbers less than 10 require you to use a leading zero. Then comes:

YOUR COLOR? (B,W):

Again type the appropriate letter followed by ENTER. Finally:

LEVEL OF PLAY? (0-6):

When you have typed the appropriate number followed by ENTER, the game will automatically proceed from the point you designated.

We wish you many thoughtful hours of good chess.

QUESTIONS AND COMMENTS

We at Hayden are constantly looking for ways to improve our products. We therefore welcome questions and comments, which should be sent to:

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Attention: Software Editor

SARGON II
Dan and Kathe Spracklen

Here's the program, the best of the micros, that came in third against the big machines (mainframes and maxis) at the 9th North American Computer Chess Championship! "Buy this program when it becomes available . . . unequaled in the end game . . ." *Personal Computing*, July 1979.

SARGON II is able to push passed pawns toward queening, play a strong end game, and range in deep play levels at end game without user direction. The computer displays the levels of play at which it is thinking, and also shows the move it is currently thinking of making. And by a flashing asterisk, it shows that the computer is thinking and has not accidentally hung up. The computer will keep changing the move shown until its final choice is made.

SARGON II has 7 levels of play, and levels 0-3 play in tournament time. It has a randomized opening book for all 7 levels of play through 3 moves. When setting up the board, the user can scan up and down, left and right. And finally, for those players who may need help, a special hint mode is included at all levels of play but 0 that will suggest a good but not necessarily the best move you can make. When you consider the features and play capabilities of SARGON II, it's easy to see why it's the Champ of Champs. Don't settle for anything less!

Other Hayden Computer Program Tapes:
GAME PLAYING WITH BASIC, 3 separate cassettes (TRS-80 Level I, Level II, PET, Apple II)
GRIDIRON: A MICROFOOTBALL GAME (TRS-80 Level II)
MICROTYPING (TRS-80 Level II)
BATTER UP!!: A MICROBASEBALL GAME (TRS-80 Level II, PET)
GENERAL MATHEMATICS-1 (TRS-80 Level II, PET, Apple II)
ENGINEERING MATHEMATICS-1 (TRS-80 Level II, PET, Apple II)
BACKGAMMON (TRS-80 Level II, PET)
COMPLEX MATHEMATICS (TRS-80 Level II, PET, Apple II)
SKETCHMODE (TRS-80 Level II)
KEYNOTE (TRS-80 Level II)

HAYDEN BOOK COMPANY, INC.
Rochelle Park, New Jersey