TREASURY PAK

Treasury Pak is a collection of games for the Tandy Color Computer I or II.
The cassette PAK is composed of two tapes and the disk PAK is composed of two
diskettes. A minimum of 16K RAM is required for each game and some of the
games are machine language. Figure one may be used to determine if the game
is BASIC or machine language (mach. lang.). Once the program type is known the
following general loading instructions should be used:

Program type	To load, type	When loaded, then type
cassette/Basic	CLOAD"FILENAME" (enter)	RUN (enter)
cassette/mach. lang.	CLOADM"FILENAME" (enter)	EXEC (enter)
disk/Basic	LOAD"FILENAME" (enter)	RUN (enter)
disk/mach. lang.	LOADM"FILENAME" (enter)	EXEC (enter)

Once loaded, a program may behave oddly. This may be caused by loading the
game into a system with insufficient memory. If a program is misbehaving, you
should check Figure 1 to make sure that you have enough memory (RAM) for the
program you are loading.

You may also run into problems by loading a game, playing it and then loading
another game and playing it. Occasionally it may be necessary to turn the
power to the computer off between games or to type 'NEW'.

TROUBLE:

Cassette: If you encounter an FM Error, you are probably trying to load
a BASIC program with CLOADM or a machine language program with CLOAD. Use CLOAD
for BASIC and CLOADM for machine language games. If you encounter an I/O Error,
try loading another copy of the program; there is a duplicate copy of the
game on the reverse side of the type.

Disk: If you encounter an ?FM Error while loading, you are either trying to
LOAD when you should use LOADM or using LOADM when you should use LOAD or RUN.
Machine language programs (with a BIN extension) need LOADM and EXEC. Basic
programs (with a BAS extension) need LOAD or RUN. If you get an ?IO Error, it
doesn't necessarily mean the disk is bad. Try loading other programs not saved
by your drive. Continual errors may suggest servicing (alignment) or cleaning
of the drive.

REPLACEMENT POLICY

1.	Replace defective tape	$3.00 each
2.	Replace defective disk	$5.00 each
3.	Replace tape with disk	$6.00 each

	GAME NAME	File Name	Mach. Lang.	EXT BASIC REQ'D	RAM REQ'D CASS	RAM REQ'D DISK	DISK GRANS USED	TAPE COUNTER
1.	COSMIC SUPERBOWL	COSMIC	Yes	No	16K	16K	3	006-016
2.	ALCATRAZ INSTRUCT.	INSTALCA	No	Yes	16K	32K	4	017-031
	ALCATRAZ II	ALCATRAZ	No	Yes	16K	32K	5	033-050
3.	YAHTCC	YAHTCC	No	Yes	16K	32K	3	052-065
	SCORECARD	SCORECRD	Yes	---	---	---	3	066-079
4.	SPACE TRADERS	TRADER	No	Yes	16K	32K	4	080-094
5.	LASER COMMAND	LASERCOM	No	Yes	16K	32K	3	096-109
6.	BATTLE FLEET	BATTLE	No	Yes	16K	32K	4	111-126
7.	C-TREK	C-TREK	No	No	16K*	32K	6	128-152
8.	LOTHAR'S INSTRUCT.	INSTLOTH	No	Yes	16K	32K	5	154-176
	LOTHAR'S LABYRINTH	LOTHAR	No	Yes	16K	32K	4	178-196
	STATES	STATES	No	Yes	16K	32K	3	198-214
	WORLD	WORLD	No	Yes	16K	32K	3	216-234
	NAMES	NAMES	No	Yes	16K	32K	4	236-254

TAPE/DISK II

	GAME NAME	File Name	Mach. Lang.	EXT BASIC REQ'D	RAM REQ'D CASS	RAM REQ'D DISK	DISK GRANS USED	TAPE COUNTER
9.	ARTILLERY DUEL	ARTILL	No	No	4K	16K	1	005-010
10.	SPACE HOGS	SPACEHOG	No	No	4K	16K	1	011-015
11.	WHIRLING DERVISH	DERVISH	No	No	4K	16K	1	016-020
12.	HANG-TWELVE	HANG12	No	No	4K	16K	1	022-025
13.	EYEWITNESS	IWITNESS	No	No	16K	16K	2	026-032
14.	KLONDIKE	KLONDIKE	No	No	16K	16K	2	033-041
15.	B-INVADERS	B-INVDRS	No	Yes	16K	32K	3	042-054
16.	ECOD	ECOD	No	Yes	16K	16K	2	056-065
17.	LEMONS	LEMONS	No	No	16K	32K	3	066-079
18.	SAIPAN	SAIPAN	No	No	16K	32K	6	081-105
19.	OIL MAGNATE	OIL	No	No	16K	16K	2	106-113
20.	BATTLETREK	BATTLRK	No	Yes	16K	32K	4	114-131
21.	CONCENTRATE	CONCENTR	No	No	4K	16K	1	132-137
22.	DUNGEONS OF ARITMA	DUN-ARIT	No	No	16K	32K	4	138-156
23.	RENO	RENO	No	Yes	16K	32K	5	158-179
24.	GRABBITT	GRABBITT	No	Yes	16K	32K	3	181-194
25.	KADOINK	KADOINK	No	Yes	16K	16K	2	196-203
26.	TINYCALC	TINYCALC	No	Yes	16K	16K	3	204-216
27.	BOOMBUST	BOOMBUST	No	Yes	32K	32K	5	217-242
28.	GAME OF LIFE	GAMELIFE	Yes	No	4K	16K	1	244-261
29.	COLOROUT	COLOROUT	Yes	No	16K	16K	2	262-273
30.	CROID	CROID	Yes	No	16K	16K	4	274-289

MACHINE LANGUAGE ADDRESSES

GAME NAME	FILE NAME	START	END	TRANSFER
COSMIC SUPERBOWL	COSMIC	&H1D1D	&H3200	&H2E00
SCORECARD	SCORECRD	see YAHTCC instructions		
GAME OF LIFE	GAMELIFE	&H3939	&H3C10	&H3939
COLOROUT	COLOROUT	&H2000	&H2900	&H257A
CROID	CROID	&H1E8F	&H3F17	&H2B5F

these addresses are hexadecimal

* Note: C-TREK will not work in a 16K Extended Basic machine. It
requires 32K in order to function with Extended Basic.

FIGURE 1

1. COSMIC SUPERBOWL

Cosmic Superbowl is a fast action 6809 machine language game using high
resolution graphics and sound. (16K RAM is required). Your teams battle it
out for the championship of the COSMOS. Set up your own interstellar playoff
tournament with participants of your choice. Fast fingers and quick reactions
help you maneuver and penetrate the rapidly moving defenders as the game clock
ticks off the time. You may play for score by yourself or challenge a friend
to a contest. The five levels of play provide a range of challenge for the
beginner to the very skillful. The display provides scores, field of play,
clock, field position, quarter, etc. This game is a Cosmic conflict with a
flavor of Earthly football.

LOADING INSTRUCTIONS: Load the tape into the computer by typing CLOADM and
hitting ENTER. If the game does not autostart, type EXEC and hit ENTER. There
are multiple copies of the game on each side of the tape.

TROUBLE: Occasionally you may encounter an I/O error when loading the tape.
This does not necessarily mean the tape is bad. Adjusting the volume may
correct the problem. If it does not, try loading the second copy on the tape.
If this still does not correct the problem, return the tape to Spectral
Associates or your dealer for a replacement. If you encounter an FM ERROR, you
are trying to load the tape using CLOAD or trying to RUN the tape once it is
loaded in. You must use CLOADM and EXEC with machine language tapes.

SAVE TO DISK INSTRUCTIONS: Once Cosmic Superbowl is loaded into the computer
from cassette it may be saved as a disk file by typing:
                  SAVEM"COSMIC",&1D1D,&H32ØØ,&H2EØØ

CONTROLS: The game is initiated by EXEC "Enter".

           Input the level of play, '0-4', no "Enter" is required

           Input a 'Y' to input names or 'N' if not desired, no "Enter"
           is required

           When inputing names for the participants, only letters A thru Z
           will be recognized. Ten characters may be input and "Enter" will
           terminate the name.

           Action on the display field is initiated by the three arrow keys:
           up, down and right. These keys are used to move the Penetrator up,
           down, or right, respectively. When the Penetrator reaches the far
           right sector, the next right arrow key will move it back to the far
           left sector with movement continuing until the Penetrator is
           destroyed or scores.

           After a Penetrator is destroyed, the field is reset and updated by
           pushing the "S" key. Defender and Penetrator movement is then
           reinitiated by pushing any of the three arrow keys.

           After a score, worth 6 points, an extra point, worth 1, is attempted
           by pushing the "1" key; if the attempt is good a victory tune is
           played; if no good the tune won't play. Play is then continued by
           pushing the "S" key. The extra point try has a random chance of success.

GENERAL PLAY: The Penetrator always starts on its own 20 sector marker and has four tries to move at least 10 sectors to the right. If successful, four more tries are given; if unsuccessful, the Penetrator becomes a Defender and vice versa. Play then continues utilizing the same control keys with the Defender starting on its 20 sector marker.

Field position is indicated in the bottom right corner of the display. The field of play is similar to a standard football field. When starting, the field position will show 20 with the field marker under the 2 digit, indicating the Penetrator is on its part of the field. As sectors are gained, the field position is incremented until the 50 sector point. The next sector gained will cause the field marker to move under the right digit and the field position will be decremented until a score or the Penetrator/Defender changes from offense to defense.

Each offensive sequence begins at the 20 sector marker. A score is made by gaining 80 sectors without running out of attempts.

The score that will be updated, should a score occur, is indicated by the marker immediately below the field score.

Play is stopped at the end of each quarter, but the Penetrator stays the same; also the field position, etc. when play is reinitiated.

2. ALCATRAZ II:

ALCATRAZ II is an excellent extended BASIC graphic escape game. You are imprisoned deep in a dungeon and must use all your wits to escape while avoiding guard patrols, laser cannons and the dreaded Minotaur. Full instructions are stored in a file named "INSTALCA".

CAUTION Due to a bug in the old Extended BASIC ROMs, ALCATRAZ II may give an SN error the first time it is run after being loaded. When this occurs, just type RUN again and it will execute properly.

3. YAHTCC

YAHTCC is a full feature version of Milton-Bradley's popular dice game, YAHTZEE. Your decisions and strategy on which dice to roll, which to save, and where to use your score make YAHTCC exciting. The computer keeps score, rolls the dice you choose, and alerts you to bonus points.

YAHTCC uses the highest resolution graphics in Extended Color Basic.

PLAY: Choose 1-4 players. The highest score wins. A player has up to three chances at rolling dice within each of 13 turns in order to roll a scoring combination.   To choose dice to roll again on second and third rolls, press the number key(s) corresponding to dice number(s) on the screen (i.e. To roll dice 1 and 3, press keys 1 and 3. Dice 2,4,5 will be saved). These dice number(s) will change color.

SCORING: The scoring combinations and their point values are:

ACE - All "ones are totaled
TWO - All "twos" are totaled
THREE - All "threes" are totaled
FOUR - All "fours" are totaled
FIVE - All "fives" are totaled
SIX - All "sixes" are totaled
3 of a kind - All dice are totaled
4 of a kind - All dice are totaled
FULLHOUSE - 25 points
SMALL STRAIGHT - 30 points
LARGE STRAIGHT - 40 points
YAHTCC - 50 points - All 5 dice are the same number
CHANCE - All dice are totaled
BONUS - 35 points when upper section is 63 or more - The points needed
        to reach 63 will be shown in upper left corner and will be
        current for each player.
        100 points for YAHTCC when appropriate

More than one YAHTCC can be scored in any given game. After first YAHTCC is
scored, subsequent YAHTCC's add 100 points to grand total. Bonus points are
not earned if YAHTCC box has been scratched. Also, if YAHTCC box has 50 or 0
in it, score subsequent YAHTCC's first in any box in lower section. If lower
section is filled, score in matching number section in upper section or
scratch non-matching number in upper section and just take 100 bonus points.

4. SPACE TRADERS

The object of Color Space Traders is to amass the greatest amount of money. This
is accomplished by establishing vast interstellar shipping lanes, and purchasing
stock in the companies that control those trade routes. During the course of
the game, stock appreciates in value as the shipping companies become larger.
Also, smaller companies can be merged into larger ones, and stock in the
smaller firm is converted into stock in the larger one as described below.

Each turn, the computer will present the player with five prospective spaces to
occupy on a 9 X 12 matrix. These spaces will blink very slowly and one will
have a small diamond in it. You may move the diamond to whichever blinking
spot you wish by pushing the space bar. Hitting the "M" key will choose that
space for your outpost. There are four possible moves a player can make:

    a. He can establish an unattached outpost - if he selects a space that is
    not adjacent to a star (large red circle), another unattached outpost, or
    an existing shipping lane, this space will be designated with a white
    diamond. He will then proceed with stock transactions, as listed below.

    b. He can add to an existing lane - if he selects a space that is
    adjacent to one, and only one, existing shipping lane, the space he
    selects will be added to that shipping lane and will be designated with
    the first letter of the company that owns that lane. If there are any
    stars or unattached outposts also adjacent to the selected space, they
    too will be incorporated into the existing lane. Each new square
    adjacent to a star adds $500 per share, and each new outpost adds $100
    per share to the market value of the stock of that company.

c. He may establish a new shipping lane - if there are five or fewer existing shipping lanes established, the player may, given the proper space to play, establish a new shipping lane. He may do this by occupying a space adjacent to a star or another unattached outpost, but not adjacent to an existing shipping lane. If he established a new shipping lane, he is automatically issued 5 shares in the new company as a reward. He may then proceed to buy stock in any active company, including the one just formed, as described below. The market value of the new stock is established by the number of stars and occupied spaces as described in b. above.

d. He may merge two existing companies - if a player selects a space adjacent to two existing shipping lanes, a merger occurs. The larger company takes over the smaller company (if both companies are the same size prior to the merger, then the survivor is determined by alphabetical order of the two company names - the earlier survives). The stock of the surviving company is increased in value according to the number of spaces and stars added to its lane. Each player's stock in the defunct company is exchanged for shares in the survivor on a ratio of 2 for 1. Also, each player is paid a cash bonus proportional to the percentage of outstanding stock he held in the defunct company. NOTE: After a company becomes defunct through the merger process, it can reappear elsewhere on the board when, and if, a new company is established.

Next the computer adds stock dividends to the player's cash on hand (5% of the market value of the stock in his possession), and offers him the opportunity to purchase stock in any of the active companies on the board. Stock may not be sold, but the market value of each player's stock is taken into account at the end of the game to determine the winner. If the market value of a given stock exceeds $3,000 at any time during the game, that stock splits 2 for 1. The price is cut in half, and the number of shares owned by each player is doubled.

The computer randomly determines whose move it is and presents the information in the pattern of dots at the upper right hand side of the graphic display. There is one dot to the extreme right of the display for each player in the game. The dot beside row one is for player one, row two is player two, etc. One of the rows will have two dots in it. That signifies whose turn it is.

NOTE: The player may look at his portfolio at any time during the course of his turn by typing "S".

5. LASER COMMAND

LASER COMMAND uses the highest resolution Extended BASIC graphics to simulate a laser attack on your cities. You must use your defensive laser blasts to intercept the approaching attack missiles. Just when you think you have the attack missiles under control, a cruise missile will appear. Cruiser missiles are more dangerous and harder to hit than the attack missiles but are worth more points.

The missiles come in waves of 15 and you have 30 laser blasts each wave. The number of laser blasts remaining is displayed underneath the laser base. The score for hitting missiles increases after you have destroyed a certain number of waves and after each 10,000 points, a bonus city is awarded.

PLAY - The game uses the right joystick to control the target and the right joy-stick button to fire missiles.

LOADING INSTRUCTIONS - Load using the CLOAD command. The file name is LASERCOM. *CAUTION* Due to a bug in the Color BASIC ROMs, LASER COMMAND may give an SN error the first time it is run after being loaded in from a cassette. When this occurs, just type RUN again and it will execute properly.

6. BATTLE FLEET

TRS-80 Color Battlefleet makes you Fleet Admiral in command. You declare war, either against a human opponent or, if you dare, you can challenge Rear Admiral TRS-80CC himself. You choose the parameters of the battle and even decide the rules of the game.

Both players begin equally with a fleet of nine ships. The premliminary object of battlefleet is to stragetically position your ships to protect them from your opponent's missles. The object of play is to sink your enemy's fleet to win control of the sea.

TRS-80CC Battlefleet features two types of play - both of which still give you the choice of opponent and playing field. In game 1, a player's turn continues until you miss your target whereupon your opponent's playing field comes on the screen. In game 2, each ship afloat is allowed one miss so that during a player's turn, he fires an entire volley of missiles. This simulation of sea-battle challenges your naval tactics to their limits since the current battle at hand changes with each ship sunk. The longer you your ships survive, the greater your offensive attack.

TO ENTER YOUR SHIPS : Use the arrow keys at either end of the keyboard to move the cursor to the square where you intend to begin hiding your ship and press ENTER. The square will remain the color of your grid. Move to an adjacent square and press ENTER again. The ships can be positioned in any of 8 directions and each will turn orange when it is complete. You must enter them in order from largest to smallest. There are 9 ships :

2 Aircraft Carriers	-	4 squares long
3 Battleships	-	3 squares long
4 Destroyers	-	2 squares long

TO GUESS YOUR OPPONENT'S SHIP: The arrow keys, once again, move the cursor and use ENTER key to fire missles. A hit turns orange while a miss remains the color of the grid.

During play press "S" to view the score screen.

At the conclusion of a game, and after the final score is tallied, the positions of the winner's remaining ships will be displayed. At this point you can play another game by pushing CLEAR.

C-TREK is a full feature space combat game. You, as Captain of the U.S.S. ENDEAVOR,
have returned from a five year exploratory mission only to discover a desparate plea
for help: A Targon task force has invaded the Galaxy. It is your task to destroy
all the invading forces before they can launch their attack on the Federation seats of
power. If even one ship survives, all will be lost!

METHOD OF PLAY:

You have complete control of your ship by using nine different 3-letter commands which
correspond to the ship's systems they activate. The commands are:

      SRS   SHORT RANGE SCAN   DAM   DAMAGE CONTROL
      LRS   LONG RANGE SCAN   SHE   SHIELD CONTROL
      NAV   NAVIGATION   COM   LIBRARY COMPUTER
      PHA   FIRE PHASERS   XXX   SELF-DESTRUCT
      TOR   FIRE PHOTON TORPEDOS

THE GALAXY:

The galaxy you must save from destruction is divided into sixtythree "quadrants" (7x9).
Each quadrant is further divided into one hundred "sectors" (10x10). Quadrants may
contain up to seven stars and as many as three Targon warships. A quadrant may or may
not contain a starbase. The galaxy will have between one and three starbases; the
Targon invasion force will consist of between 13 and 26 ships.

THE COMMANDS:

SHORT RANGE SCAN ---(SRS)---shows the quadrant presently occupied by the ENDEAVOR. All
of the objects in the quadrant are displayed in the dark square to the left; an abreviated
report of the ship's status appears to the right. The symbols used by the Short Range
Scan are:

      E-ENDEAVOR   B-STARBASE   T-TARGON SHIP   *-STAR

Although the contents of an individual quadrant remain constant, their positions within
that quadrant do not. That is, if you leave a quadrant and return to it later, nothing
will be where it was before.

LONG RANGE SCAN---(LRS)---shows what is in the quadrants around you. Here is a sample:

                     2:1   ::5   :B1
                     ::1   1:1   ::3
                     ::3   ::2   ::6

Each group of three characters represents a quadrant. The quadrant containing the
ENDEAVOR will always be in the center. For each gorup, the first character position
is the number of Targons. The second character is a "B" if a starbase is present.
The third number is the number of stars. The center quadrant in the sample scan, for
example, has one Targon, no base, and one star. The quadrant above and to the right has
no Targons, one base, and one star. The same mode of display is used by the Library
Computer when it displays the Cumulative Galactic Record, which is updated whenever you
use either of the two scans. If your ship were near the edge of the galaxy, extra-
galactic quadrants would be shown as "===".

NAVIGATION---(NAV)---is how you move your ship. Warp speed refers to the distance your
ship can travel in one stardate. When operating at peak efficiency, your warp engines
are capable of Warp Eight. This is equal to the width of eight quadrants. Warp One

will move you just one quadrant, and Warp 0.1 will move you just one sector. It takes
twenty units of power to move at Warp Eight. Course headings are.expressed as a number
between 1 and 8, inclusive. You will be shown a compass rose each time you call the NAV
function to help you determine the heading for the diredtion you want to go. The same
diagram is used for aiming photon torpedos. FRACTIONAL HEADINGS ARE VALID. Warp engines
will automatically shut down if moving into the next sector would cause a collision, so
be careful. Since you use a stardate every time you move your ship, nvavigational
errors waste valuable time.

PHASER BANKS---(PHA)---must be used at very close range in order to be effective. Ranges
of more than two or three sectors are usually a losing proposition. Aiming the phasers
is best done for you by the Library Computer; you must determine how many units of energy
to fire. Phaser fire is divided between the number of targets in the quadrant.

PHOTON TORPEDOS---(TOR)---are extrememly effective at long range, but are also very hard
to aim. Be careful about shooting all of them too fast, because the ENDEAVOR can only
carry ten of them at a time. When you run out, you will have to dco with a starbase
to get more. Because the Library Computer uses the Short Range Scan to guide the torpedos
once they are fired, the torpedo tubes become inoperable if the Short Range Sensors
are out. Once a torpedo leaves the quadrant, it is lost.

SHIELD CONTROL--(SHE)---will absorb the attacking ship's desruptor beams, and will consume
one unit of energy for each unit they absorb. If the Targons hit hard enough, they
can cause damage to your ship's systems, but this does not usually happen if the shields
are kept well-fed.

LIBRARY COMPUTER---(COM)---This performs a number of useful functions. To a degee, it
aims your weaponry for you. It keeps, for your use, a Cumulative Galactic Record of
everyplace you have either been or scanned, giving you a map of the known galaxy. It
can also give you a complete ship status report on demand so you can see how you are
doing. If it becomes damaged, the map update function goes out immediately, so it is a
good idea to keep this system in good repair.

DAMAGE CONTROL---(DAM)---provides a complete list of all ship's systems, together with
their current states of repair. In most cases, the worse a system is damaged, the worse
it will function. Damage Control also allows you to make repairs on damaged systems,
without having to dock at a starbase. It costs 20 units of energy to restore only 1%
efficiency. Also, no system may be repaired beyond 100%, so too many units spent on repairs
are wasted andare non-recoverable.

SELF-DESTRUCT---(XXX)---If your luck is running poor, you may appreciate this system's
ability to function no matter how badly damaged it is. Self-destructing sets all states
of repair to zero when the ship blows.

STARBASES---Starbases provide a means of completely repairing and resupplying your ship.
Docking is accomplished by plotting a collision course with the starbase, and brings
all ship's levels and states of repair to maximum. While docked, the ENDEAVOR is
unconditionally protected for Targon attack. However, no weaponry may be employed while
docked.

TARGONS--- Whenever the ENDEAVOR enters a quadrant occupied by Targons, they will waste
no time in attacking. Targons are mobile within their quadrants, but will not move from
one quadrant to the next. When attacking, they will try to close the distance between
themselves and the ENDEAVOR if it is at all possible. Targon attack at close
range can be lethal, so avoid it if you can.

8. LOTHAR'S LABYRINTH

LOTHAR'S LABYRINTH is an excellent version of the classic word search puzzle. You may use the built-in list of words, load in one of three standard lists or generate your own custom word list. Full instructions are stored in a file named "INSTLOTH".

CAUTION Due to a bug in the old Extended BASIC ROMs, LOTHAR'S LABYRINTH may give an SN error the first time it is run after being loaded. When this occurs, just type RUN again and it will execute properly.

9. ARTILLERY DUEL

OBJECT: You must destroy the computer's artillery piece before the computer destroys yours.

HOW TO PLAY: The program will present you with two artillery pieces facing each other but separated by a mountain. The computer will begin firing at you immediately and you can fire back by pressing the "F" key. You can control the muzzle velocity and elevation of your gun. The up arrow and down arrow keys control the elevation of the gun and the "1" and "2" keys control the muzzle velocity. The "D" key will destroy your shell in flight and allow you to refire immediately. This feature is especially useful when trying to shoot down an incoming round. The first side to destroy the opposing artillery piece wins.

KEY	FUNCTION
F	Fire Shell
2	(+) Muzzle Vel
1	(-) Muzzle Vel
D	Destruct
UP ARROW	(+) Elevation
DOWN ARROW	(-) Elevation

10. SPACE HOGS

OBJECT: The Space Hogs aren't just invading your space, they're "hogging" it! You must try to blast the mother ship, but she is being protected by her brood, who are dropping bombs in your direction.

HOW TO PLAY: The mother ship appears at the top of the screen. Just beneath her, the protecting ships are moving toward the left and right of the screen. Between these ships are spaces just large enough to squeeze through your shots. Your "blaster" is at the bottom of the screen. You may move horizontally by using the joystick to avoid being hit by the bombs. Use the joystick button to fire your blaster. Ten points are registered in the upper left corner of the screen each time your shot gets through. When the score reaches 100, the ships will speed up their back and forth action and their bombing attacks against you. If you are hit by a bomb at any point, you'll explode and the game will end. You may record your score and press the @ key or joystick button to play again. Beware, if you try to gain the edge by holding your fire button down constantly, you'll cause a "meltdown" and lose by default.

11. WHIRLING DERVISH

OBJECT: The Whirling Dervish won't whirl until he gets fed, and this Whirling Dervish eats jumping beans. You must guide four jumping beans through several rooms to feed the dervish the beans in the least amount of time.

HOW TO PLAY: Eight rooms of different sizes are drawn on the screen. The Dervish sits in the lower right room. Four jumping beans will appear (one at a time) in the upper right room. You need to get the four beans to the Dervish's room. Hitting the space bar will open the doors to all the rooms - the proper path to the Dervish's room must be found. You want to avoid having the beans enter the wrong rooms or backtrack. After the Dervish has eaten all four beans, and has "whirled" four times, the game is over. Your approximate score-time will appear on the screen. Can you beat your best time? One word of caution - there are a couple tricky spots in this game!

12. HANG-TWELVE

OBJECT: Hang-Twelve is a version of the popular "Hangman" game. The first player "hides" up to 25 letters, numbers or characters to make up a word or phrase so the opposing player can try to uncover the puzzle - in 12 turns or less.

HOW TO PLAY: The program will ask the player for the word or phrase to be entered. Type it in and press ENTER. The phrase will disappear and be replaced by hyphens. (Above the hyphens will be 12 colored boxes indicating how many turns remain). An arrow will point to the first hyphen indicating the starting point. The player doing the guessing can then enter any letter, number or character above each hyphen representing the phrase. If you wish to back up and change any letter, number or character, the left and right arrow keys may be used to back up or skip over any position. When you have the answer entered the way you want it, press the ENTER key. Each correct letter, number or character will remain in place - the others will be erased and reappear in the "used list" at the top of the screen. Repeat the routine of entering a letter, number or character for each hyphen space that is blank until you have used up all 12 turns. The 12 boxes represent each turn and will change color as each turn is used.

13. EYEWITNESS

Test your powers of observation and recall in a competition that
requires memorization of shapes and locations which have been ran-
domly created by the computer.

OBJECT: Each player picks two numbers per turn uncovering, if correct,
the matching patterns. Each correct selection gives player two points
plus another immediate turn. The playing board consists of numbers
01-54 arranged in nine columns of six rows. "Behind" the numbers are
27 pairs of graphic patterns.

HOW TO PLAY: The computer will ask for number of players (1-4) to be
entered. The playing board will be drawn and then briefly replaced
by randomized graphic patterns so the player(s) get a peek. The
numbers of the playing board will then "cover" the graphic patterns
and play can begin. Each player, in turn, keys in two 2-digit numbers.
(Player 1 plays 03 & 24.) You now get a peek at at the graphic patterns
behind the two numbers keyed in. If you guess wrong, the numbers will
again cover the patterns. If you are correct, a colored block (differ-
ent color for each player) will flash and then remain for the rest of
the game.

Sound effects add interest to this game. The left arrow key will
erase a partial entry (1 digit). To play again, press ENTER.

14. KLONDIKE

Like the classic card game of solitaire, Klondike is a brain teaser
in that to win you must think ahead several moves and be prepared to
change your stategy several times during the game.

OBJECT: The game will initialize itself by developing a "card deck"
of 52 randomized cards made up of two strings of ACE to KING in BLUE
suit and two like strings in RED. Seven cards will be placed in a row
across the top of the screen. You attempt to play the remaining 45
cards onto the screen board. You win when all 52 cards are on the
board in four columns with KINGS at the top and all other cards have
been played in descending sequences under each KING and in alternating
colors (K-BLUE, Q-RED, J-BLUE, etc.).

HOW TO PLAY: Choose difficulty level of 2-7. If 2 is chosen, every
time you press the X key you will be able to play the second card
down in the deck. If 3 is chosen then you can play every third card,
and so on.

```
  1  2  3  4  5  6  7          N7 is your deck. To move card
  A                            from deck to board space A2, type
  B                            N7(-)A2. To move cards on board,
  C              CDS           type its present position and then
  D              REM=          where you want it. (A1-B3 moves
  E                            card from top of first column to
  F                            second row of column 3.) This
  G                            card and all cards under it will be
  H                            moved. You should always play to
  I                            a blank space under a valid card.
```

```
J                          .           .·          When a board to board move is ex-
K                              .                    ecuted, the topmost position left
L                          N7                       vacant is automatically replaced by
                                                    the visible deck card which, in turn,
                                                    is replaced by the next sequenced
                                                    deck card.
```

The number of cards remaining in your deck is displayed in the upper
right portion of the screen as CDS REM = nn.

RULES:
1. Once a play is made it cannot be withdrawn.
2. If you have keyed any data in error up to the 3rd character, you
can retract it by depressing the left arrow key.
3. The ENTER key is not used to read keyboard data. The data reads
automatically after the last character is entered.
Press the ENTER key only if you wish to restart a game.
4. Many edits have been built into Klondike but if a non-recoverable
error occurs you will be asked to restart the game.
Hit the CLEAR key while holding shift down to start a new game.
STRATEGY:
Keep the following points in mind as you play:
1. You will always have the end card available to play regardless
of which difficulty level you are using.
2. Playing a card from the deck (N7) alters the pattern of playable
deck cards remaining in that pass.

15. B-INVADERS

Protect your ships from the B-INVADERS! Press ENTER to start each game, then press
ENTER again to start the action. Use the right joystick to control the gun's position.
Fire by pressing any key. Scoring is as follows:

 5 points   20 points

 10 points   20 points

 15 points   25 points
                                                            Hit this one square to score.

One extra point is awarded for each row shot down. If you stay in one place for more
than x seconds, the B-INVADERS will use a laser cannon to destroy your gun. The time x
decreases as the game progresses so that by the sixth row you must by constantly moving.

16. ECOD

ECOD the fish devours garbage! Use the right and left arrow keys to control the position
of the fish. The space bar is used to make ECOD snap at the garbage. One point is
scored for each peice of garbage eaten and one point is deducted for each piece of garbage
that ECOD snaps at but misses. The game ends if youdrop 3 pieces of garbage, eat a
bomb, or are next to abomb when it blows up. Can you reach the winning score of 999
points? Game "B" is more difficult than game "A".

17. LEMONS

The goal of this capitalistic game is to make lots of money in one of two ways:
1. Sell glasses of lemonade at a profit.
2. Speculating successfully on the prices of supplies.
Both of these methods seem straightforward, but carful thought and detailed planning are
often required to beat out the competition. Players start with $7.50 in cash and they
play for a pre-determined numbered of days (1-30). Each day they must make decisions
based on several reports.

PRICES: Daily cost of sugar and lemons needed for lemonade (everyone uses Grandma's
recipe of two lemons and one sugar per glass).
WEATHER: Anything from rainy to hot and dry, effects the total number of customers
available on a given day.
SUPPLIES: Number of lemons and sugar carried over from previous days. Not all supplies
need be used at once for lemonade. Lemons can spoil if kept too long.
AVE COSTS: Weighted average of price paid for supplies on hand.
CASH: Amount available for purchases.
ASSESTS: Cash plus fair market value of supplies.
M.S.: Market share is the percent of total customers drawn by player on his last turn.
Each day a player must make four key decisions:
  1. How many lemons and sugars to buy.
  2. How many advertising signs to purchase at 25¢ each.
  3. How many glasses of lemonade to make (two lemons and one sugar per glass).
  4. How much to charge per glass.
These entries are not displayed directly on the screen to protect each player's secret
strategies. You are given the opportunity to re-enter all data if you wish. When all
players have had a turn, the results of the day are displayed showing actual glasses
sold, profit, and market share for each player.

At the end of the game, all supplies are bought back at 60-100% of their fair market
value. The player with the most cash (or the only player left if all others go bankrupt
is the winner.

Some general hints are 1) don't make more glasses of lemonade than you can sell, 2)
reduce your average costs by buying supplies when they are cheap, 3) use advertising
carefully since one sign can offset the profit from many glasses of lemonade, 4) vary
your prices to keep your opponents off-guard, but don't price yourself out of the market
and 5) try to use all your supplies by the end of the game to avoid the 60-100% trade-i
values. GOOD LUCK.

18. SAIPAN
Type PCLEAR 1 before loading the game.
The object of the game is to make a million dollars during the turbulent years of the
1800's by trading (or pirating) goods on the high seas of the Far East. You may choose
to start play as a trader with a ship which can hold 5 units of cargo. It is safer to
attempt to earn $1 million as a trader! A pirate can only acquire cash by attacking
other ships initially, but once a larger ship is purchased, a pirate may also do some
trading.

Your home base is Hong Kong where you have a warehouse, a bank, and a monylender. The
warehouse can be used to store goods in order to speculate on price increases. The banl
will not loan you money (too risky). The moneylender will loan to you
up to twice your amount of cash at an interest rate of 10% per month, but he can be
very harsh when he collects his due! In Hong Kong you also have the opportunity to pay
tribute to the chief pirate, Li Yuen, so that he will leave you alone. For all un-
armed traders, this is a wise move!

You may buy the four basic goods (general cargo, arms, silk,opium) in Hong Kong or one of several other ports. The trip between ports takes one month and exposes you to atta by pirates (both Li Yuen's armadas and independent pirates) and to storm at sea. At random times, you will be given the opportunity to purchase more sins (if you can hold them -- a gun counts as 10 units of cargo) or a bigger ship. The guns help you defend yourself against pirates and a bigger ship can carry more cargo or guns. Beware, however, that a bigger ship attracts more pirates. When attacked by pirates, it is prudent to run (by typing "R") unless you have as many guns as there are attacking pirates hips (type "F" to fight).

Each port has different prices for each type of goods. Sometimes special circumstances cause prices to be very high or low. When trading, the first initial of a word may be used (i.e. "B"=BUY, "G"=GENERAL) and if you wish to buy all that you can afford, you may type "A" for ALL. You may have enough cash to buy more than your ship can hold. In tha case, you will not be allowed to leave port with an overloaded ship and you must sell some cargo (or transfer it to the warehouse when you're in Hong Kong).

At first, you can only afford to trade inexpensive cargo such as general or arms, but you should move up to silk and opium as quickly as possible. Whenever you return to Hong Kong with $1 million or more, you will be given the chance to retire. You may choos to increase you wealth still further, but beware the wages of greed! When you retire, you will be rated based on your wealth and the time it took you to acquire it.

19. OIL MAGNATE: For 2 players.

Each of two players represents and manages a major oil company. Type in the name of your oil company and your opponent will type in the name of the committing oil company. The ledger will be displayed on the screen and contains:

NET WORTH: Your cash plus the value of your oil reserves. The player with the highest net worth at the end of the game wins.
CASH: If your cash drops to zero, you are bankrupt and lose.
WELLS: The total number of successfull oil strikes.
OIL FLOW: The total number of barrels being pumped from all successful strikes. The flow from each well gradually drys up.
OIL RESERVES: The number of barrels in storage tanks or tanker ships.
OIL SALES: The number of barrels being sold at your current price (depends on total amount of oil and price of your opponent's oil).
PRICE: The amount you charge for 100 barrels of oil.
DRILLING COST: The amount it costs to drill 2,000 feet.
NET PROFIT: Profit as a percent of operating costs.
DRILL DEPTH: Depth of latest well.

You may choose one of five transactions:
1. R&D to find a way to a) reduce drilling costs to a minimum of $50,000 per 2,000 feet, b) cut operating expenses up to 50%, and c) reduce the probability of hitting a dry hole.
2. EXPLORE to provide a geologist's report which gives a) the dry hole probability for the new well, b) the expected depth of oil (could be wrong by 2,000 feet either way), c) estimated flow (within 50%), d) the estimated total volume in barrels (within 50%), and e) the cost of the report (paid whether you drill or not).
3. DRILL another 2,000 feet on latest well.
4. REPRICE your charge for 100 barrels of oil. You can only change your price when both companies are pumping oil.
5. PASS to continue operations as is.

There are two types of disasters which count as a turn. A BLOW-OUT (5% chance each 2,000 feet) is an explosion during drilling which ruins the well and costs $75,000 per 1,000 feet already drilled. A TANKER SPILL (8% chance each turn) causes a random number of barrelss to be lost with a clean up cost of $20.00 per barrel.

The game ends when one player goes bankrupt or a random number of turns (selected by the computer) takes place. The game usually lasts 20-40 minutes. It is usually wise to spend $300-$700,000 initially on R&D and to increase that amount to $2,000,000 after striking some oil. Remember the predicted depth to strike oil. If you go 2,000 feet beyond that depth without striking oil, it's a dry hole. Don't let your oil reserves build up too much because you increase your chances for a tanker spill, but if your reserves fall to zero, your price is probably too low.

20. BATTLETREK:

The BattleStar is on station and is to defend itself from attack from the dreaded aliens in the T-Fighter. The BattleStar has an X-Fighter which is launched by hitting the space bar. The battleStar has a laser which is aimed by the right joystick and fired by the right joystick button. The X-Fighter is flown and its laser aimed by the left joystick. The X-Fighter laser is fired by the left joystick button in the the direction of movement.

Enter skill level 1 (novice) to 5 (expert). The game will run automatically if a skill level is not entered in 10 seconds. The score is displayed at the upper left of the screen Shoot a T-Fighter for 25 points, loss of an X-Fighter costs you 10 points, and loss of the Starship costs you the game. A score of 1000 wins the game.

21. CONCENTRATE:

Match pairs to show your concentration skills. Press the number key of the corresponding block that you want to see first, then press the number key of the block you think matches the first. The computer will keep score and display quick views of the patterns in the blocks.

22. DUNGEON OF ARITMA:

Before loading the program type : PCLEAR 1.

To play this educational adventure game, you must find your way through the two level dungeon encountering different monsters along the way who will ask math questions. The second level is harder than the first. You receive gold for correct answers and lose gold for incorrect answers. You will encounter obstacles such as pits and thieves who steal your gold. Find the enchanted key to enter the second level. Gather as much gold as you can. Find the hidden map on each level and look at it by typing "M". You will lose the map if you go to a different level of fall down a pit from the top level. Map symbols key: Pl - Your location, M - Monster, NS - North-South Corridor, EW - East-West Corridor, UP - Passage to the upper level, O - Empty room, ? - Unknown.

INTRODUCTION: "RENO" is a gambling "Board" game for up to four players. It
features graphics for dice, slots, roulette and blackjack, and has automatic
player-moves, scoring, transfer of funds, card shuffles and dice throws.

The playing board is made up of casino properties which are initially owned
by the M.O.B. (Miserable Old Banker) and can be bought, lost and gambled in
by each player.

Initialization: On start-up the gambling option menu will appear. Options of
1,2,3, or 4, if requested, will select a specific gambling game of CRAPS,
ROULETTE, SLOTS or BLACKJACK to be played at each casino. Option 5 will direct
the computer to select one of the four games of chance randomly at each
player's casino stop (During play, if all players agree, this option may be
recalled by pressing a "C" between turns).

The next menu will request the "number of players" to be entered. Entries of
2,3, or 4 will pit all players against each other as well as against the M.O.B.,
whereas 1 indicates that one player will be challenging the M.O.B. singlehandedly.

Next, the players will enter their names via prompts from the computer. Upon
completion of this step, the playing board will appear with the first player's
colored piece sitting in the "start" casino box.

The Play: Hitting the space bar at this time will display the "scoreboard"
showing initial distribution of 10 million dollars with the M.O.B. in possession
of 8 million and the other 2 million shared equally by the players. This
display can be recalled during the game to check on who's winning -- or losing.

Players move their pieces, in turn, by pressing a key from 1 to 8. That in
itself is a gamble because the player has about a 50% chance of actually moving
that number of casino boxes. Upon completion of the move, the player will: .

>   a) Automatically buy the casino from the M.O.B. if not owned by
>   another player.
>   OR
>   b) Have a 1-in-10 chance of automatically buying the casino from
>   the M.O.B. even if already owned by another player
>   OR
>   c) Gamble there

In any case, the purchase price or amount of the bet will be determined by the
computer according to the location of the property. Casinos across the top
have a cost (or place bets) of up to $24,000. Down the right side, up to
$49,000; across bottom, to $74,000; up the left, to $99,000. Purchases are
instantaneous and are automatically credited to the appropriate player along
with a color-coded marker in the casino.

Gambling proceeds as follows depending on the gambling option in effect:

>   CRAPS: Dice are thrown and the player loses if the first roll is a
>   2, 3, or 12. A first roll of 7 or 11 wins paying off at 3-to-1
>   odds. Otherwise the first roll total is compared against sub-
>   sequent rolls until either a 7 loses or a match is thrown to win
>   at 2-to-1 odds on a 6 or 8 or 3-to-1 on any other match.

ROULETTE: A wheel of 16 colored markers begins to spin. The player presses either an "R", "Y" or "B" key to select a red, yellow or blue marker. The wheel will slowly come to a stop and one of the 3 colors will be showing. A red or yellow match to the player will pay even. Blue pays 7-to-1.

SLOTS: Three windows will display changing patterns. The patterns will stop one at a time left to right. Two matches will pay off at 2-to-1. Three matches pay off at 7-to-1.

BLACKJACK: Four cards will be dealt, two to the player (top) and two to the "house". One of the house's cards will be face down. the player will try to attain a card value higher than the house's without exceeding 21 which automatically loses (10, Jack, Queen and King all count as ten). The player requests a "HIT" by pressing H and "STAYS' by pressing "S". The player wins automatically upon having 5 cards with a value up to 21 (3-to-1 odds). when the player stays, the house will draw cards while its card value is less than 17. All ties are won by the house; otherwise, the player's win pays 2-to-1.

Bonus: Whenever a player completes a full pass of the board and passes the "start" casino, the player is awarded a bonus amount of up to $99,000.

Winning: The winning player will be the one who first wins $500,000 above his/her starting bankroll.

24. GRABBITT

Introduction:
"GRABBITT" is a two-player game that will try the patience of even the best of friends. Each player builds a score by "grabbing" letters from the CRT screen to be matched against four-letter words supplied by the computer. In the process each player has several optional ways to clobber his opponent's progress while enhancing his own chances of winning.

The Play:
In advance, the players decide on color choice and how many winning "rounds" to shoot for (usually a multiple of 5).

Upon running, the computer will select two four-letter words at random- one for each player- and print them at the bottom of the screen. At the same time, random letters will appear at borders and random locations on the screen above. Some letters will remain "fixed" in place while others will be moving from top to bottom, bottom to top, left to right or right to left. The screen will "cycle" out and be randomly refreshed when the moving letters reach the other sides of the screen.

Using "white" and "red" joysticks, each player trys to "grab", in sequence, the letters that match his word. The "white" player uses his "white" joystick and moves a white block on the screen. When his block overlays the proper letter, the corresponding letter of his word will shift color (green on black). Simultaneously, the "red" player will be working on his "red" word. A "round" is completed when either word has been totally color-shifted. The appropriate player will receive a point. (Two points are given if an "*" follows the word).

Strategy:
A "fixed" letter disappears when it is grabbed. Moving letters can't be
destroyed so that they can be used over again during their cycle. Fixed letters
can be destroyed by moving letters.

A player may grab a letter because he needs it or because he wants it destroyed
before his opponent can get to it. If a player grabs the latest color-shifted
letter of his opponent's word, that letter in his opponent's word will revert
back to black-on-green.

Occasionally, a blue block will travel across the screen. If grabbed, the screen
will be recycled immediately.

Every so often the game will hesitate to announce the current leader. At that
point, the game may be continued or terminated.

25. KADOINK

Introduction:
"KADOINK" simulates a little gymnast who is supposed to be kept bouncing on a
trampoline. Unfortunately, he tends to miss a lot, so he needs your help to
stay aloft.

Play:
The first menu option asks if the game is to be played with left-right arrow
keys (K) or joysticks (J). Secondly, the "skill level 0-9" message prints on
the screen. The game won't start until either the @ key or red joystick button
is pressed. Both of the afore-mentioned options are available to the player(s)
after each round (i.e. the player may change to "K" or "J" operation and/or
browse through the various skill levels which will also display the most
current "HI SCORE" for each skill level). If no changes, just press the @
or joystick button.

At this point, the gymnast will appear and mount the trampoline. He'll start
bouncing and you'll have to manipulate the arrow keys or joystick to keep the
trampoline under him.

A point is registered for each bounce. Hitting the ceiling registers extra points
corresponding to the skill level (i.e. level 2 scores 2 extra points, etc.)

Each player has 3 "lives" in which to score. The life-count is graphically
displayed below the trampoline, above the skill-level display.

26. TINYCALC

GENERAL DESCRIPTION: In starting, you are given two options: 1) MAIN
PROGRAM and 2) ARITHMETIC ROUTINE. You can go directly to the arithmetic
routine if you do not wish to tabulate or if you want to immediately do a
continuous calculation (i.e. divide on number by another, and then multiply
the result by a third, ans so on).

In running the main program, you just specify the number of decimal places you wish in the tabulation, and then type in the entries. You may enter single numbers or a combination of two numbers. A constant can be easily set as on a calculator. A subtotal or total can be produced at any time, and a continuous cummulated subtotal and total colum displayed in a detailed printer format if a printer is available. There is always a chance to make revisions, even after a printout.

The arithmetic routine works a bit differently. You cannot submit double entries, but each time a result is produced, it can be worked on again simply by entering an operator and a number. The number can be a new number or it can be a number that is stored in memory if the main program was run first.

MAIN PROGRAM GUIDE: Entries are prompted for. The reply can be a single or double number, unsigned or preceded by a - sign. If unsigned the entry is consedered as +. A double entry consists of two numbers separated by an operator + - X or /. A double entry must contain no spaces and must have only one arithmetic operator, except that the entire entry can be preceded by a - sign (-2.10X32). The last character of the entry can be one of the four codes S T C or E. Again, the entry must contain no spaces.

The code S calls for a subtotal, and it will then set the subtotal to 0 for accumulation of another subtotal. It will also cancel the constant if there is one in use. The code T calls for a final total. If you forget to place an S or T at the end of the entry, you can still call for a subtotal or total by typing S or T for the next entry. The only difference is that you will have and extra entry with 0 in it. T ends the program in that no more new entries are accepted. However, there are still chances for revisions, even after printing. If you have an unwanted entry, you can revise it to 0.

You can list (L) to check or revise anytime when prompted for an entry. But you can only revise an individual line in memory, so you cannot use the constant codes C and E; just revise each line separately. If you are sure you do not want to make any more revisions and want to run new data, press BREAK and type RUN.

When specifying, say 2, for the number of decimal places, the number is rounded to two decimal places before going into the amount, subtotal and total columns. The screen format allows for numbers 9 characters long (including the decimal point and a - sign if there is one), but if the printer is used, a more detailed summary is produced and with 10 characters. There is room for 99 entries, and then you must call for a total. It must be remembered that the computer works on a 9 digit accuracy, and if numbers larger than this are created, the result may be bad. Anytime the number is too large for the space allowed for it, it will be preceded by a %.
These instructions apply to the MAIN PROGRAM only. When running the main program, you are presented with a menu of various options for revisions, output, and an exit to the arithmetic routine. Once you have gone to the arithmetic routine you will be able to work on the amount, subtotal, or total of any entry compiled in the main program.

CODES:

S   SUBTOTAL   T   TOTAL   C   CONSTANT   E   END (THE CONSTANT)

SAMPLES:

```
 8.20        adds 8.20 to the numbers in memory
+8.20        also adds to the memory
-8.20        subtracts from the memory
3.4X2        multiplies 3.4X2 and adds to memory
3.4*2        same thing, you can use X or *
-3X2         adds -6 to memory
6/5          divides 6 by 5 and adds to memory
3+2          adds 5 to memory
4X3C         adds 12 to memory and uses 4 as a constant
  2E         multiplies by 2 and ends the constant
-42X3S       adds -126 to memory and calls for a subtotal
42/2T        adds 21 to memory and calls for a total
L            asks for a list
             (enter L instead of a number)
```

ARITHMETIC ROUTINE :

This sub-program is used to do continuous arithmetic. For example, to add
two numbers, multiply the result by a third, and divide that result by a
fourth. If the main program was run first, then any of those numbers could
have been tabulated earlier.

You may reference a number in memory in the amount, subtotal and total columns,
for any previous entry by designating the column (A-AMOUNT, S-SUBTOTAL,
T-TOTAL), followed by the entry number. For example, the response S18
would refer to the number in the subtotal column for entry 18. The pages
containing the arithmetic routine sample entries gives examples of each
possible entry. You cannot make double entries but must reply to the prompt
math ENTRY ? with a single number or column reference if it is the first
number of an expression, or it may be preceded by an operator (such as +
if it is to be added to the previous result).

You may return to the main menu in the main program by responding M to the   ·
prompt math entry ?. To clear the memory of all data, press BREAK and type
RUN.

SAMPLES:

```
262.22       clears and enters 262.22
A12          clears and enters amount of entry 12
S21          clears and enters subtotal of entry 21
T8           clears and enters total of entry 8
+262.22      adds 262.22 to previous result
-262.22      subtracts 262.22 from previous result
X2           multiplies previous result by 2
*2           multiplies previous result by 2
/2           divides previous result by 2
+A12         adds amount of entry 12 to previous result
-S21         subtracts subtotal for entry 21 from previous result
XT8          multiplies total of entry 8 by previous result
/T8          divides the previous result by total of entry 8
M            returns to main menu
             Pressing enter with no entry will print a line if a printer is used.
```

Introduction:
"Boom or Bust" is similar to the T.V. game show, "Wheel of Fortune", but without
Vana White. The players in this game compete against each other in trying to
guess each other's submitted words, phrases, movie titles, etc., and in so doing,
can win huge amounts of imaginary money. (You can, of course, envision the
decimal points three or four places to the left and play for real dough!)

The Play:
After loading and a short wait while the program initializes things, the menu
will ask for the number of players (up to eight) and the players' names. "One"
player is allowed and might be used to keep junior busy at a guessing game while
mom does her housework.

The next set of menus will address each player by name individually but not
necessarily in the order that their names were entered. With the other players'
backs to the screen each player will be prompted to key in a category number from
a list and then the actual word, phrase, title, etc., to be randomly selected
as the "mystery phrase" for one of the other players.

When all the players have entered their selections the game will begin. It will
address the first player by name and display the player's mystery phrase to be
solved. The "phrase" will be shown with asterisks substituted for all alphabetic
characters. Numbers, spaces and special characters will print normally. A
menu at the bottom of the playing screen will allow the player to either:
    (A) press the "ENTER" key to spin the money wheel or,
    (B) press the "@" key to buy a vowel or,
    (C) press the "up arrow" key to attempt to solve the mystery phrase.
After a short interval a TIMER BAR will start to pulse across the top of the
screen. The player will have to make a choice before the timer bar completes its
cycle or else lose his/her turn.

    Notes:
      Initially, players have no money so vowels can't be purchased on the first
      turn.

      The reason for buying vowels is that spinning the money wheel allows
      guessing consonants only.

Spinning The Wheel:
The wheel is divided into twelve sections. Ten of the twelve have money values
of from $100 to $1,000. One section is labeled "BOOM" and has money values of
from "1,000 to $5,000. The remaining section is the "BUST" which, if hit on the
spin, will wipe out some or all of the money pool of the player.

When the player selects to spin the wheel it will appear on the screen, begin
spinning and slowly wind down until it comes to rest on one of the twelve
sections. If it stops on one of the eleven money sections the dollar value will
be put onto the playing screen. The player will be prompted to select a
consonant and the timer bar will start again. If the player selects a consonant
that is hidden within his/her mystery phrase then the current dollar value will
be awarded to the player's money pool- once for each occurrence of the selected
letter- and the player will be prompted to take another turn.

A "BUST" on the wheel spin will cause a loss of some or all of the money in
the player's pool.

Buying a Vowel:

When a player elects to buy a vowel (only valid when the player has at least $200 in a pool money) $200 will be subtracted from the player's pool and the game will prompt the player to enter a vowel. If the selected vowel is hidden within the player's mystery phrase then all occurrances of it will be inserted for view. No money will be awarded but the player will be prompted to take another turn.

Entering The Solution:

When the player takes the option to solve the mystery phrase he/she will be prompted to type in any remaining missing letters. (This option will be mandated if all consonants have been guessed). If the player guesses incorrectly, then his/her money pool will be zeroed and the game will continue on to the next player. If correct, the player's money pool will be won by that player and the amount will be added to his/her winnings while all others' pools will be zeroed. All players' names and winnings thus far will be displayed and the game will prompt to continue or end the game.

Notes:

The game error-checks all keyed entries. That is, it won't let a player key in a vowel after a wheel-spin option; it won't accept a letter already chosen by the player during a prior turn; etc.

During each player's turn letters already chosen by the player will appear on the screen.

28. GAME OF LIFE

The Game of Life was developed over a decade ago by Mr John Conway. It is played on a square matrix of cells with a specific set of rules to determine if a cell is occupied or vacant. These rules are applied over and over again to determine successive "generations".

At the start of each generation, a cell may be a birth cell, a death cell, or a stable cell. Each cell has eight neighbors: one to each side, one above, one below, and four diagonally. The following rules determine what will happen to each cell in the next generation:

1. If a cell is occupied and has two or three neighbors it will remain stable.
2. If a cell is occupied and has zero, one or more than three neighbors, it will die (DEATH CELL).
3. If a cell is empty and has three neighbors, it will be occupied in the next generation (BIRTH CELL).

The following is a list of commands available to control the Game of Life:

```
UP ARROW    :  Move cursor up
DOWN ARROW  :  Move cursor down
RIGHT ARROW :  Move cursor right
LEFT ARROW  :  Move cursor left
I           :  Insert a cell
D           :  Delete cell
G           :  Single step through one generation
K           :  Display continuous generations
E           :  Erase
C           :  Cursor on
X           :  Cursor off
```

The arrow keys are used to move the cursor around the screen. The I and D keys are then used to insert or delete cells. Once the K key is hit, the flow of continuous generations may be stopped by hitting any key. Cells may then be inserted or deleted, if desired.

29. COLOROUT

COLOROUT is a machine language, fast-action, high resolution graphics version of the popular "BREAKOUT" game. You must wipe out all six layers of blocks in order to continue on to a new screen of blocks.

PLAY MODES: COLOROUT may be played with either Keyboard or Joysticks. The "I" key will allow you to Interchange between the two modes. The current mode may be determined by the letter (J or K) in the lower left hand corner of the screen. When first loaded, COLOROUT is in the Keyboard mode.

GENERAL PLAY: The ball is served by pressing the right joystick button (Joystick mode) or the space bar (Keyboard mode). The paddle is controlled by the right joystick (J mode) or the " " and " " keys (K mode). Once the game is over, it may be restarted with the clear key. The paddle will move at double speed when you hold down the fire button (J mode) or space bar (K mode). The ball has seven different speeds and will increase its speed by one each time a higher layer is reached. The speed will be reduced to the slowest speed each time the ball is missed.

OPTIONS: By pressing down the "BREAK" key while in play mode (When the graphics screen is on.) you can get the following options:
1. Multiple ball angles (Y/N)? - "Y" will give you two ball angles, normal and wide. "N" is normal angle.
2. The amount of balls (1-9)? - Choose the number of balls you want.
3. Standard COLOROUT (Y/N)? - "N" answer the ball will always bounce off a brick on way down. "Y" answer the ball will only bounce off a brick on the way down if the ball has hit the ceiling first (Standard level).
4. Random English (Y/N)? - "Y" makes the ball change angles when it is hit while paddle is moving. "N" gives normal angle.
5. Speed (1-4)? - 1 = SLOW The ball speed is always the same.
   2 = MEDIUM The ball starts slow, but increases to medium.
   3 = NORMAL Ball starts at medium speed and increases.
   4 = FAST The ball starts fast and increases speed.

SCORING:

FIRST RED LAYER	10 points
SECOND RED LAYER	20 points
FIRST BLUE LAYER	30 points
SECOND BLUE LAYER	40 points
FIRST WHITE LAYER	50 points
SECOND WHITE LAYER	60 points

If you can clear out all six layers for a total of 3150 points, you can continue on to a new screen of blocks.

30. CROID

CROID is a machine language Eliza-type artificial intelligence program. It is designed to interpret your questions and statements and respond accordingly. You may pose any type of question you wish such as "How are you?", "What's the weather like today?", or "I had a bad day, can you help me?" The computer will listen compassionately and then offer advice.

CROID is an excellent example of the type of artificial intelligence which can be programmed into a computer and will provide hours of fun trying to guess its next response.

LOADING INSTRUCTIONS - Rewind tape, press the PLAY button, type CLOADM and ENTER. When the OK reappears, type EXEC and "enter". Credits will appear for a couple seconds and then the opening question will appear. Simply enter your question (or answer), ending with the ENTER key. CROID will respond almost instantly. There are three special function keys--Backspace, SHIFT backspace, and CLEAR. SHIFT backspace erases to start of logical line.