

AARDVARK

TECHNICAL SERVICES

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(313) 669-3110

NOVEMBER 1981



\$1.00



ADVENTURES FOR TRS-80 & COLOR-80 & OSI

16K TRS-80

16K COLOR-80

8K OSI

ADVENTURES are interactive fantasies. It's like reading an exciting book, except that you're one of the characters. You explore a new world as you try to think or fight your way out of a jam. You give the computer plain English commands such as "look in the coffin" and "light the torch" and it carries out your bidding.

Each ADVENTURE normally takes from 15 to 30 hours to play, spread out over several days. If the FDA ever catches us, we are going to have to add a warning label. These are definately addictive!!!

These ADVENTURES are in Basic-but they are full featured, full plotted, fast action adventures. They come with listings and, as they are in Basic, you can modify them yourself. ADVENTURES ARE \$14.95 EACH.

*** ESCAPE FROM MARS (by Rodger Olsen)

This ADVENTURE takes place on the RED PLANET. You'll have to explore a Martian city and deal with possibly hostile aliens to survive this one.

*** PYRAMID (by Rodger Olsen)

This is our most challenging ADVENTURE. It is a treasure hunt in a pyramid full of problems. Exciting and tough!

*** TREK ADVENTURE (by Bob Retelle)

This one takes place aboard a familiar starship. The crew has left for a good reason-but they forgot to take you, and now you are in deep trouble.

*** CIRCLE WORLD

We got kzinti and Puppets and Problems. Our newest and biggest adventure. Requires 12K. OSI only (TRS-80 AND COLOR 80 NOV 15)

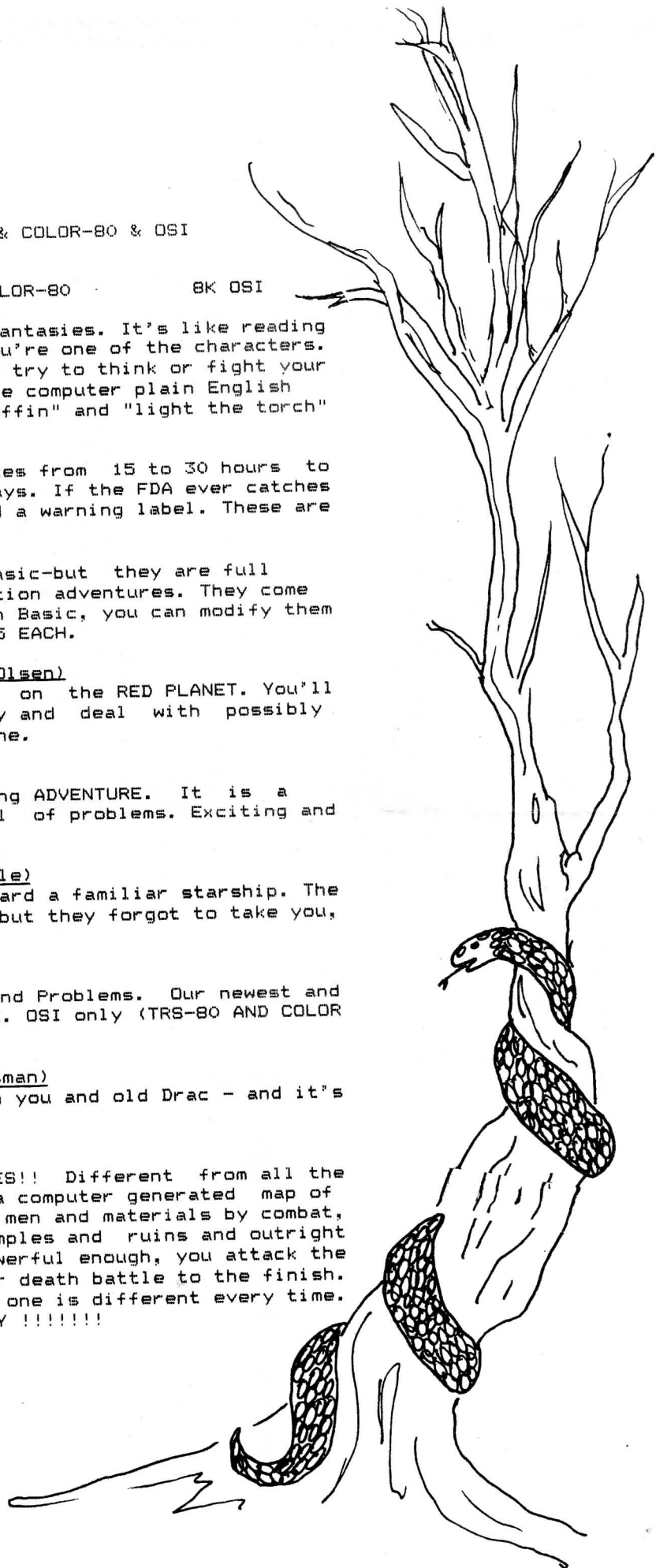
*** VAMPIRE CASTLE (by Mike Bassman)

This is a contest between you and old Drac - and it's getting a little dark outside.

** QUEST ** NEW **

A new concept in ADVENTURES!! Different from all the others! QUEST is played on a computer generated map of Alesia. Your job is to gather men and materials by combat, bargaining, exploration of temples and ruins and outright banditry. When your force is powerful enough, you attack the citadel of Moorlock in a life or death battle to the finish. Playable in 2 to 5 hours; this one is different every time. QUEST FOR TRS-80 & COLOR-80 ONLY !!!!!!!

\$14.95 EACH



ARCADE GAMES FOR TRS & COLOR -80 & OSI

* SPACE SHUTTLE *

ONE OR TWO PLAYER HIGH RES JOYSTICK GAME - Your mission is to dock with an orbiting space platform - but you may have to land on the planetary surface for refueling first. A real value in a high res real time game.
\$9.95

** BLACKJACK AND ACEY DUCEY **

REAL BLACKJACK!! This program shuffles 52 cards so that you can't get 5 Jacks in a row and plays all the real and current Vegas rules such as Insurance, Splitting a pair, and Double down. Accurate enough to test betting systems (and with a pretty display too!). Acey Ducey is a 1 - 4 player High low game. A ball for all - Fun for adults and playable by children
\$15.95 for both

16K LEVEL II, THESE ARE IN BASIC, FAST, AND FUN. THEY COME WITH COMMENTED LISTINGS THAT SHOW HOW WE DO IT.

* TIMETREK - REAL TIME REAL GRAPHICS TREK. The classic game of Star Trek taken to its ultimate in 8K. No more scrolling displays or forgetting where the Klingons are. TIMETREK presents you with FULL TIME GRAPHICS display of a starship control panel. Sensors, scans, status and damage levels are displayed simultaneously (except for the C1 Galactic Map and Battle Computer which just wouldn't fit). Ship and torpedo movement is animated, so you see your torpedos hit. TIME TREK is in REAL TIME! On-screen Stardate clocks run continuously, so your tactical decisions must be made quickly. The Klingons don't wait for you to make a move- they keep shooting back! If you like STAR TREK, you'll love TIME TREK. \$14.95

* STARFIGHTER - This real time space war game is one of our best. You will pilot a cruiser on a mission where you will face up to ten alien vessels. You will be armed with a variety of weapons with realistic characteristics. STARFIGHTER features a full visual display of the alien vessels and working instrumentation. Your speed, range, weapons status and damage status are displayed continuously. It also has ten levels of difficulty built in. Due to the complexity of the display, this one comes in several versions. PLEASE SPECIFY SYSTEM! \$9.95

BATTLEFLEET - This is a battleship grown up. One player against the computer and NO LUCK INVOLVED. You shoot volleys of 6 shots at a time at a fleet of two dimensional ships of various shapes. Harder than it sounds, this is probably the toughest game we have ever published. Full GRAPHICS.
\$9.95

SLASHBALL - A thinkers arcade game. Real time graphics game in BASIC. One or two person game with 20 levels of difficulty. \$9.95

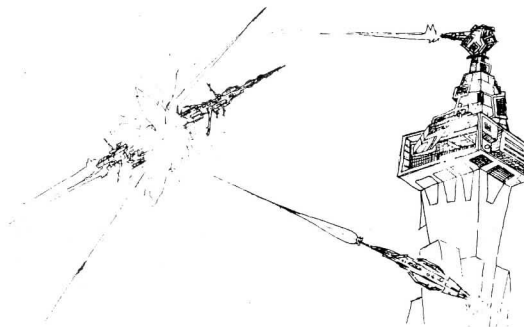
* KILLERBOT *- Real time action as you run, sneak, and dodge your way through a bloody field of death traps and radar equipped killer robots. Get across or die! Joysticks or keyboard 16k Color 80 \$9.95

** NOTE 4K COLOR-80 VERSIONS AVAILABLE FOR KILLERBOT, SLASHBALL, BATTLEFLEET, STARFIGHTER, AND SPACE SHUTTLE.

***** MACHINE CODE GAMES FOR THE OSI C1P *****
*** BY DAVE EDSON ***

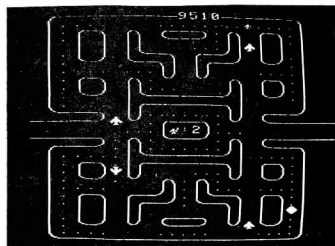
INTERCEPTOR \$15.95 (C1P ONLY 8K)

An all machine code program as fast and smooth as the arcades. You defend your cities from hordes of enemy invaders with your Interceptor. A pair of automatic cannons help out, but the action speeds up with each wave of incoming ships. The fastest and most exciting C1P game yet!! (cassette only)



MONSTER MAZE \$12.95 (C1P ONLY 8K)

Another all machine code goody. This one pits you against a mass of munching monsters. Continual action and impressive graphics keep the kids happy and the smooth action and planning keeps Dad playing. A good choice for a family game. (Cassette only)



COLLIDE \$9.95 (C1P ONLY 8K)

Fast paced lane switching excitement as you pick up points avoiding collisions. 8K of assembler code gives fast action and smooth graphics. (Cassette only)

THE EDSON PAK - All of Dave's super smooth programs described above - INTERCEPTOR, MONSTER MAZE, and COLLIDE. A \$38.95 value - for only \$29.95.

SURFACE ATTACK \$14.95

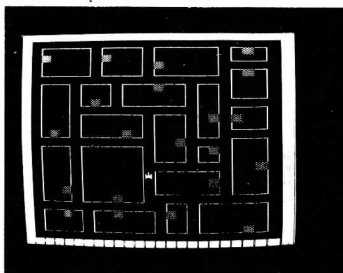
Another machine code game for the C1P. Similar to Defender, this has the highest speed and most complex graphics ever presented on the C1P. (Cassette only)

THIEF \$14.95

Another fast machine code game from Dave in which you use mobile cannon to protect the valuable jewels in the middle of the screen from increasingly nasty and trigger happy thieves. Fast action and fun for one or two players. (Cassette only)

VENTURER \$14.95 Tape or Disk C1P ONLY!!

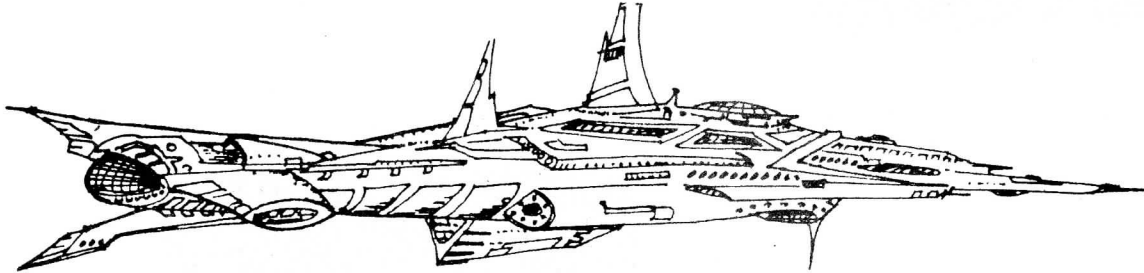
Blast monsters and steal treasures in 21 different rooms. All machine code.



**** GALAXIA IS HERE!!! ****

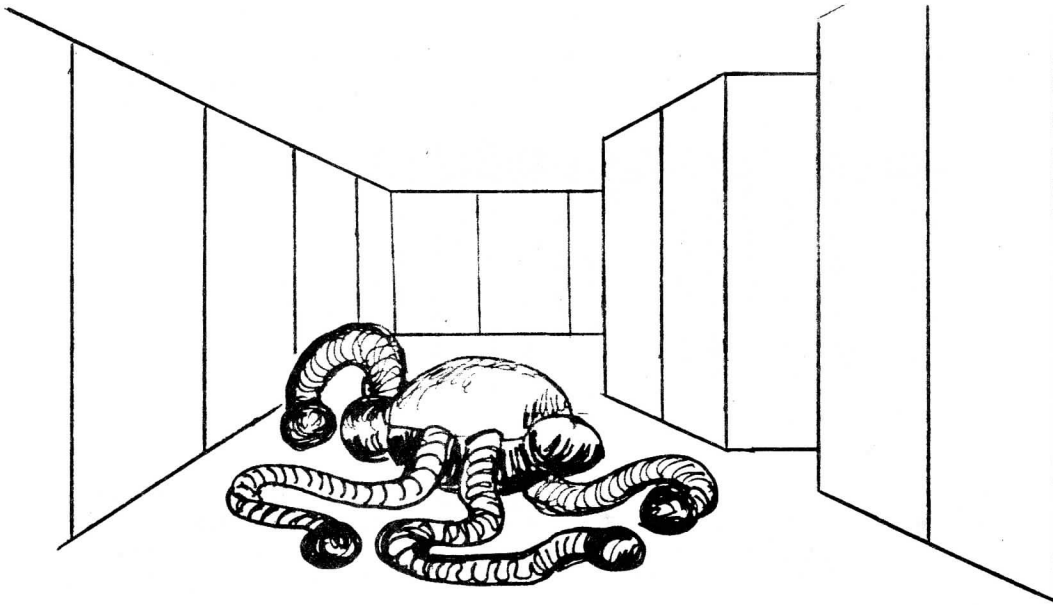
GALAXIA \$9.95 - cassette \$12.95 - 5-1/4" disk

The finest, fastest, neatest arcade game ever written for the OSI! Features row of evasive, hard hitting, dogfighting aliens thirsty for your blood. A great all-machine-code game for those who loved (and tired of) ALIEN INVADERS. (p.s. This is our usual give-away pricing. Similar, but not so neat, games for other systems sell for as much as \$24.95.)



LABYRINTH \$13.95 \$15.95 on disk

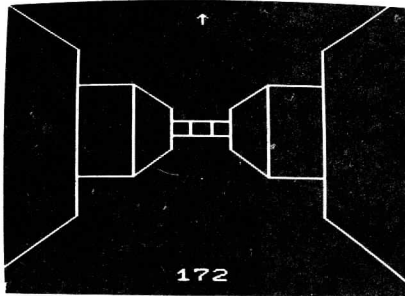
This has a display background similar to MINOS as the action takes place in a realistic maze seen from ground level. This is, however, a real time monster hunt as you track down and shoot the mobile monsters. Checking out and testing this one was the most fun I've had in years!!!



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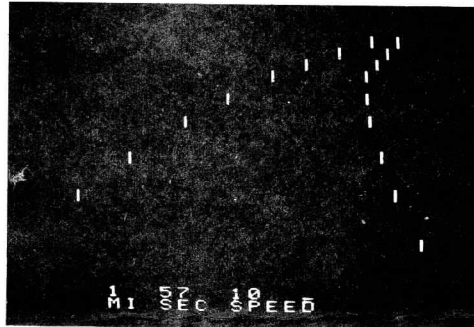
MINOS \$12.95 - \$14.95 on disk

This one is hard to believe. The computer shows you a maze from above (up to 20 X 20 on a C1P, 20 X 40 on a C2/4/8). The screen blanks and when the picture clears, you are in the maze - at rat's eye level. You get full 3D graphics real enough to cause claustrophobia. You see down long halls, look down side corridors and see the outside world - if you can find it.



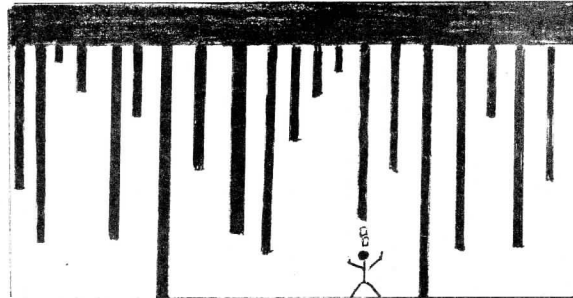
NIGHT DRIVER \$14.95

Night Driver is a hybrid BASIC/Assembler game which puts you on a twisting road at night and gives an excellent simulation of high speed driving. One of the authors best efforts. (Cassette only)



CAGE \$8.95

A neat, cute game. Bars are falling on you everywhere as you fight for freedom. With fast reflexes and good planning, you can beat them back and hold on - at least a little while longer. It comes with six variations, making it cage.



OSI GRAND \$8.95

The original tasteless working name was "DEAD BABIES". A hotel fire is burning out of control as people mill around the roof. Your job is to catch them in a net and bounce them into a waiting ambulance. S&R's usual good graphics with fast action and gory SPLAATTTS when you misss. Yuchhh - but good.

SPACE DEBRIS \$10.95

Fast action Blast and Fly your way through the fast moving debris game. Lots of variations and complications. Takes a long time to master. The best of genre.

TINY COMPILER \$19.95 on Tape or Disk

This compiler takes your BASIC program and turns it into a fast running machine code program. You write and debug the program BASIC and then run it at machine code speeds. The Compiler turns out native, relocatable, transportable 6502 code.

It does have some limitations. It compiles a very small subset of BASIC and it is memory hungry. 8K is the absolute minimum needed to write short routines and I recommend more. They keywords it recognizes are:
FOR...NEXT...IF...GOSUB...GOTO...[,],<>,...PEEK...POKE...RETURN...
REM...STOP...END...USR(X)
ARITHMETIC OPERATORS ARE +,-,*,/
LEGAL VARIABLES ARE A-Z,

It recognizes positive integers from 0 to 64K. Tiny Compiler is written in BASIC and is modifiable by the user. In fact, if any user writes and submits to us a unique addition or change, we will refund his purchase price and give a gift certificate from \$25 to \$100 depending on the modification. Tiny Compiler comes with a 19 page manual and a line by line commentary.

ASTEROIDS FOR THE C1P!!! ALL MACHINE CODE \$12.95!!

AT LAST - As asteroid game good enough to be published by Aardvark. 4K all code - 7 levels of difficulty. A bargain in a fast fun arcade game.

LUNAR LANDER \$4.95

I know that you probably have a lunar lander that you copied out of a magazine as one of your first programs, but does yours work in real-time and have a full graphics display? This one does! If you really want a Lunar Lander, this is the one.

SEAWOLFE \$6.95

This one looks like it just stepped out of the Arcades. It features multiple torpedoes, floating mines and exploding ships. It even has separate levels of play for beginners and experts.

FIGHTER PILOT \$5.95

This started life as a fairly simple get-him-in-the-crosshairs-and-blast-him arcade game. All it had going for it was high speed and a realistic feel. Then we got carried away and added a choice of Joystick or Keyboard controls, real-time score and time displays, ten levels of difficulty and an option for automatic fire control.

BREAKTHRU \$5.95 COLOR & SOUND \$6.95

This has the best of Pon and Pinball. It has a standard (but very well done) Breakthru game and an option for Pinball-like bumpers that add a new dimension to the action. You can use keyboard or Joystick controls.

ROBOTANK \$5.95 COLOR & SOUND \$6.95

This one pits your fleet of tanks against a fleet of radar equipped and computer driven tanks. Just for variety, we included a two man version that allows you to play a human opponent and set it up to use keyboard or Joystick controls. It includes some of the neatest graphics that I have ever seen in a tank game.

TEN TANK BLITZ \$9.95 COLOR & SOUND \$10.95

In this top of the line game, each player maneuvers up to five Juggernauts at a time through a forest of ironwood trees. Each tank is armed with three launch racks that fire steerable missiles. The tanks have tough armor and can handle from one to five hits before being disabled - but each hit is more dangerous than the last one. It can be played as a simple tank shoot-em-up game, or can be played at levels of strategy that approach Risk and Blitzkrieg in complexity. The whole thing runs in real time and fits in 4K with 14 spacious bytes left over. Color version takes 5K.

BOMBER \$6.95 COLOR & SOUND \$7.95

Dogfight with oncoming aircraft and bomb moving targets that come in everchanging patterns below. Time and score are continuously displayed and no two games ever play quite the same. Includes both regular and master's levels of play.

BACKGAMMON (BK) \$9.95

This has an excellent graphics display and plays good backgammon just as it comes. However, as no two people agree on how backgammon should be played, we included exceptionally detailed documentation so that you can try out strategies of your own.

CANNONEERS \$5.95 cassette only

This one gives real time "sit on the edge of your seat" action as you and your opponent exchange artillery salvos across a rugged and always different terrain. Moving shells, explosions, and constantly changing mountains highlight the display.

ALIEN II (WITH MACHINE CODE MOVES) Tape \$10.95 5-1/4" disk \$9.95

The ALIENS are back! Meaner and nastier than ever, faster than you believed possible. This is our best ALIEN yet. The disk version is so fast that we had to add selectable speeds to make it playable. (not available on 8")

ALIEN IV C1P ONLY \$12.95 (cassette only)

All machine code invaders - 4K. One to four players at a time. Exactly like the arcades.

BERRZERRRK \$9.95 on Tape \$11.95 on Disk

Race through rooms of nasty androids. They shoot faster and get nastier as you go on. Quick reflexes, good peripheral vision, and fast decision making are rewarded. A nice arcade game. Color & Sound on C4P's (B/W on C1P).

RTTY FOR THE C1P \$14.95

This program allows you to transmit and receive in Baudot or Murray code at selectable baud rates from 40-120. The screen driver can also be used to drive you RTTY machine as a regular printer. *NOTE* This program requires some interfacing and is definately for the advanced hobbyist.

MORSE CODE CONVERTER FOR THE C1P \$14.95

This program decodes MORSE. It requires a hook-up of your system to a receiver. We will include a diagram of the necessary hardware. It should cost less than \$10.00 to build, but it is definately for the experienced HAM or hobbyist.

***** NEW NEW NEW NEW *****

** MICROSOFT BASIC SOURCE CODE \$24.95

The 100 page commented source listing is for the Microsoft BASIC as it appears in the 8" 65D disk. It is virtually identical to the 5-1/4" BASIC and very similar to the BASIC-IN-ROM system. To forestall any questions on the topic - THE SOURCE IS NOT AVAILABLE IN MACHINE READABLE FORM.

*** BUSINESS PROGRAMS ***

BOOKKEEPING THE EASY WAY - WITH BUSINESS I

Our business package 1, is a set of programs designed for the small businessman who does not have and does not need a full time accountant on his payroll.

This package is built around a GENERAL LEDGER program which records all transactions and which provides monthly, quarterly, annual, and year-to-date PROFIT and LOSS statements. GENERAL LEDGER also provides for CASH ACCOUNT balancing, provides a BALANCE SHEET and has modules for DEPRECIATION and LOAN ACCOUNT computation.

GENERAL LEDGER (Loan Depreciation and Loan Modules) \$129.95

PAYROLL is designed to interface with the GENERAL LEDGER. This one will handle annual records on 30 employees with as many as 6 deductions per employee.

PAYROLL \$49.95

ACCOUNTS RECEIVABLE

This program will handle up to 420 open accounts. It will age accounts print invoices (including payment reminders) and give account totals. It can add automatic interest charges and warnings on late accounts, and can automatically provide and calculate volume discounts. 24K and OS65D REQUIRED, Dual Disks recommended.

ACCOUNTS RECEIVABLE \$99.95 SPECIFY SYSTEM

WORD PROCESSING THE EASY WAY - WITH MAXI PROS

This is a line oriented word processor designed for the office that doesn't want to send every new girl out for training in how to type a letter.

It has automatic right and left margin justification and lets you vary the width and margins during printing. It has automatic pagination and automatic page numbering. It will print any text single, double or triple spaced and has text centering command. It will make any number of multiple copies or chain files together to print an entire disk of data at one time.

MAXI-PROS has both global and line edit capability and the polled keyboard versions contain a corrected keyboard routine that makes the OSI keyboard decode as a standard typewriter keyboard.

MAXI-PROS also has sophisticated file capabilities. It can access a file for names and addresses, stop for inputs, and print form letters. It has file merging capabilities so that it can store and combine paragraphs and pages in any order.

Best of all, it is in BASIC (OS65D 5-1/4" or 8" disk) so that it can be easily adapted to any printer or printing job and so that it can be sold for a measly price. SPECIFY SYSTEM. Requires polled keyboard video based system.

MAXI-PROS \$39.95 with learning guide and manual

***** TEXT EDITORS *****

C1 CURSOR CONTROL VER. #2 (CURSOR II) \$11.95 (cassette only)

Virtually identical to the original CURSOR CONTROL, but uses up less than 20 bytes of your free RAM. For BASIC in ROM systems.

C2/4 CURSOR CONTROL \$9.95

Everyone said it couldn't be done (including us), but we did it! A Pet-like cursor control for the C2/4 using 388 bytes of free ram. Enter or edit text from anywhere on the screen. For BASIC in ROM system

*** MACHINE CODE UTILITIES ***
** ESPECIALLY FOR THE MACHINE CODE PROGRAMMER **

TRACE - SINGLE STEPPER FOR 6502 5-1/4" or 8" Disk \$24.95

The ultimate debug and training tool. This program allows you to single step or breakpoint your way through machine code programs. The system displays the contents of the X,Y,A and STATUS registers continuously along with the values in the program counter and stack pointer. You can change any of those values at any time to facilitate debugging. All machine code, uses about 1K RAM. (Tape available after Feb. 15th - \$19.95 - sat at top of Bth K of RAM)

MINI ASSEMBLER (8K) (CASSETTE ONLY) \$9.95

A miniature two-pass assembler that supports indirect addressing and labels. Uses all of the standard MOSTEK neumonics, assembles programs up to 256 bytes long and outputs them as DATA statements or self loading 65V machine code format.

AUTOLOADER (CASSETTE ONLY) \$5.95

One of the most frequent questions we get is "How do I store machine code programs?". This tape is the HOW! It generates a self-loading machine code tape of your program.

***** MODEMS *****

DISK DUMB TERMINALS (MODEM DRIVERS)

C4MF (5-1/4") \$12.95

C8DF (8") \$15.95

SEMI-INTELLIGENT TERMINALS FOR BASIC IN ROM (Cassette Only)

These contain a dumb terminal which will drive a modem to allow conversations with other computers, and also have the capability to up load or down load programs to and from a host computer (main frame).

C1 OR C2/4/8 \$14.95 Specify system!

*****DISKS *****
**** (5-1/4") & (8") ****
*** DISK UTILITIES ***
***** FOR OSI *****

SUPERDISK C1 or C2/4/8 1 - 5-1/4" disk \$24.95 1 - 8" disk \$26.95

Contains a complete BASIC text editor that allows midline insertion, deletion, and correction of BASIC lines. Also has the AARDVARK BEXEC*, RENUMBERER, SEARCH and VARIABLE TABLE MAKER. For POLLED keyboard only!! (See BEXEC* description below)

SUPERDISK II 1 - 5-1/4" disk \$29.95

This disk contains a new BEXEC* that boots up with a numbered directory and which allows creation, deletion and renaming of files without calling other programs. It also contains a slight modification to BASIC to allow 14 character file names!

The disk contains a disk manager that contains a disk packer, a hex/dec calculator and several other utilities.

It also has a full screen editor (in machine code on C2P/C4P) that makes corrections a snap. We'll also toss in renumbering and program search programs and sell the whole thing for a ridiculously low, low price.

SUPER COPY 5-1/4" Disk C1 or C2/4 \$15.95

What else can you call a single disk copy program copies from 4 to 10 tracks at a time (depending on the size of your memory), makes multiple copies at the same time, and copies track zero? You just gotta call it SUPER COPY!!!

FANTASIC COPY 5-1/4" Disk C1 or C2/4 \$24.95

This one is nothing short of fantastic - it's all machine code and fast. Features efficient disk and head movement and copies track zero without any additional steps. It's so good that we use it here for production - it's actually faster than using dual disks!

ASCII FILE/TEXT EDITOR 65D - \$39.95 65U - \$49.95

This program allows you to edit files containing ASCII data. That includes data "written and read" by BASIC programs via PRINT and INPUT statements, plus BASIC and ASSEMBLER programs that have been edit commands. Can merge files. Runs on polled and serial systems requires 24K on 5-1/4" and 32K on 8" disk systems.

DISK CATALOG (65D ONLY) 5-1/4" and 8" Disk \$14.95

This program reads all your disks (once) and makes up a master file of all your programs and what disks they are on. It produces alphabetical lists of the programs and their locations. It, of course, contains options for adding or deleting disk, updating disk entries or changing individual entries.

MACHINE CODE RENUMBERER \$15.95 C2/4 MF ONLY!!!

Super fast renumberer will renumber all or any part of a program just as fast as you can type in the command.

AARDVARK BEXEC* 1-5-1/4" Disk \$11.95 1 - 8" Disk \$12.95

A people-engineered BEXEC*, runs a numbered directory on power-up, allows selection of any program with single number input. Has CREATE, DELETE, and CHANGE on the same track as the BEXEC* (all BASIC utilities available with only one track reserved.) Other tracks have RENUMBERER, SEARCH and VARIABLE TABLE MAKER UTILITIES. SPECIFY System and Disk size.

DISK SPEED ANALYZER 5-1/4" ONLY C1 or C2/4 \$8.95

A great diagnostic disk! It reads out disk speed accurately to 1/2 %.

***** UTILITIES FOR OSI *****

* SUPERUTILITY \$12.95

Our SUPERUTILITY package contains three programs to help you write programs. RENUMBERER lets you renumber a BASIC program at your choice of starting line number and at whatever increments you specify. It also rennumbers the GOTO, GOSUB, and THEN statements. VARIABLE TABLE MAKER generates a table of the variable names used in a program and lists which lines they appear in. Very handy for long programs. SEARCH, as its title implies, searches a program for a variable name, value or command (i.e., it can find GOSUB2000) and lists the lines it appears in. If you have ever had to search through 90 lines of code to find where you put something, you are gonna love this one.

PACKER \$12.95

This little gem is one of the most amazing utilities that we offer. The program packs your program into the smallest possible memory by removing all spaces (except those in remarks and print statements) and combines lines wherever possible. This is the cure for a lot of OM errors. With this program and a renumberer, all your programs will look professional and run as tight as possible.

DISASSEMBLER-PLUS \$12.95 (Cassette only)

This is an exceptional disassembler. It not only disassembles the code, it will also output assembler compatible code, make a tape and feed it back to the assembler for changes and reassembly.

WORD PROCESSOR II \$19.95 (Cassette only)

This is a machine code tape based word processor for the C1P and SUPERBOARD. It has right and left margin justification, line editing and other features for word processing. A very handy little program at a dirt cheeeep price. Specify ROM (OSI,C1E,C1S)

SHORTHAND FOR THE C1P \$9.95 (Cassette only)

This program allows single keystroke entry of all the BASIC commands. It is a machine code program that resides in normally empty space on page 2. No usable RAM is taken up, and you can type normally at any time! Words are displayed as they are entered.

HIGH SPEED SAVE/LOAD FOR THE C1P \$12.95

This is a token rather than ASCII loader. Used as it is, it cuts tape load time as much as 40%. It will, however, also support a software selectable 300/600/1200 baud cassette interface that you can install in about 10 minutes for about a buck. Plans for conversion included.

← MACHINE CODE RENUMBERER FOR TAPE BASED MACHINES \$9.95

Super fast renumberer will renumber all or any part of a program just as fast you can type the command.

***** THE FIRST BOOK OF OSI \$15.95

This book is not for beginners. It is a 65 page description of ROM BASIC. It includes decoding of the jump tables, descriptions of variable storage, locations of the major sub-routines, flow charts of the warm start, execution and decoding of BASIC routines, and much more.

**** THE AARDVARK JOURNAL 6 ISSUES (1 YEAR) \$9.00 (OVERSEAS \$14.00)

If you think our catalog is good—we've gone it one better and put out the AARDVARK JOURNAL. It's a how-to-do-it type journal for the computerist who wants to improve his programming techniques, add hardware modification, and improve his software library. We print tutorials, hardware changes, and at least one program an issue. It is tutorial rather than chatty and we've run articles such as Hooking a Cheap Printer to an OSI Saving Memory in Basic". You can still order the first year (Vol.1). Please specify if you are ordering, Vol. 1, or Vol. 2 second year.

OSI BASIC IN ROM \$9.95

Ed Carlson's book on Ohio Scientific Microsoft BASIC, covers all the syntax of the BASIC language, programming hints, and much more. Its the text that you wish OSI had packed with your computer in the first place.

***** DATA SHEETS *****

GRAPHICS INSTRUCTIONS \$4.00

13 pages on how to add Klingon killing type graphics to your programs. Detailed instructions on how to POKE ships, torpedoes, put scores onto your screen, move them around and detect when you hit something.

CLOCK BOARD FOR THE C4P \$4.00

Get your cassette interface working right at 300,600 or 1200 baud. Takes three chips. Wire wrap or use included PC board layout.

600 BAUD CASSETTE/PRINTER CONVERSION FOR THE C1P 4 Sheets \$2.00

Two methods of increasing the baud rate to 600.

RS232 CONVERSION FOR THE C1P AND SUPERBOARD 5 Sheets \$3.00

Detailed instructions and diagrams for adding the printer interface.

JOYSTICK INSTRUCTIONS AND PLANS \$3.00

You can buy joysticks locally about anywhere in the U.S. and install them in about an hour on any polled keyboard OSI system. They will cost about \$10.00 a piece and take about an hour to install. We will also include a sheet on how to make a simple pair of home made joysticks and do the whole job for about \$2 a joystick on either C1 or C2.

REVERSE VIDEO FOR THE C1P \$3.00

Detailed instructions on how to add switch selectable reverse video to a C1P or Superboard. Parts cost about \$1.00 and it takes about one hour.

WIRE WRAP EPROM BOARD \$6.00

Designed as an add-on-to our C1P 8K memory board with PIA. This board will burn 2716 EPROMS (and with minor modifications 2758 and 2732's.) Requires only 3 chips. Includes Software listing and diagrams for an EPROM Memory card.

VIDEO MOD II - THE GOURMET DELIGHT - PLANS \$7.95

True 32 X 32 Mod for C1P Model 1. Requires replacement of the original crystal with a new \$3.00 one. to do this one. Fits on the proto area of the 600 board or on separate protoboard. Has the advantage of making the system run at 1.4 MEG for faster games and easier 600/1200 baud cassette operation. A nice mod - rock stable and the best we have ever seen.

**** NOTE **** Use of the full 32 characters for print requires a new video driver. We include a listing for a tape based driver but recommend that the C1S ROMS be used.

We can provide the crystal for Video Mod II - \$3.25. For C1P Model 1 only. Not recommended for Disk systems.

****** DATA SHEETS FOR THE OSI ******

C1 TAPE CONTROL \$3.00

Put your tape recorder under Software control. Includes instructions for hardware modifications.

IMPLEMENTING THE SECRET SOUND PORT ON THE C1P \$4.00

Ever wonder how to get sound out of the "noise port" on the schematic? Here's how to do it for about a dollar in parts and in about 30 minutes. Includes USR routines for implementation of Music.

LIGHT PEN \$4.00

Instruction on how to build a light pen for your OSI computer. Includes software listing.

C1P SOUND BOARD \$5.00

Plans for wire wrapping a sound board using the TI sound chip, plugs into the 40 pin expansion connector. Material cost about \$15.00 a weekend project.

G.T. CONVERSION \$2.00

Double the speed of your C1 with a switch and wire. Takes about 10 minutes, but may require the replacement of a couple of your slower memory chips.

SAVING DATA ON TAPE \$4.00

Instruction for several methods of generating tape based files.

ADAPTING THE BASE II PRINTER FOR THE C1P 7 Sheets \$4.00

CHEAP MONITOR CONVERSION \$3.00

Convert the SANYO model 21T50 12" B/W, AC/DC portable TV for direct video and sound. This conversion should take about 15 minutes and save a lot of money on direct video.

SUPER I/O BOARD FOR THE C1P \$6.00

Data sheet for wire wrapping an I/O Board to provide 2 parallel ports. 2 programmable interval timers, serial to parallel/parallel to serial shift register. Audio amplifier for sound generator real time clock/calendar. Program listings for 24 hours digital clock, the Starwars theme and the CANTINA song. Detailed instructions for assembly. Troubleshooting and use.

CENTRONICS PRINTER INTERFACE FOR C1P \$4.00

Includes 2 methods - software or hardware - to interface a Centronics printer to the C1P.

**** DATA SHEETS FOR DISK USERS ****

OS65D DISASSEMBLED AND COMMENTED LISTING \$19.95

This is not *repeat* NOT, just a disassembled listing, but an 83 pg. commented listing of the 65D operating system. Includes source code.

OS65U V1.2 DISK BASIC SYNOPSIS \$4.95

An 11-page synopsis of OS65U disk BASIC including features, special characteristics, codes, disk commands, level III commands, statements, math functions, system flags, PEEKs and POKEs, and much more.

OS65D IO FUNCTIONS \$9.95

A detailed explanation of the DISK IO functions for 65D.

OS65D MANUAL SYNOPSIS \$5.95

A mini-manual for the OS65D Disk BASIC, contains 11 commands and procedures in compact form. Handy reference while programming.

MULTI-PURPOSE MEMORY SORTING SCHEME WITH EXAMPLES \$4.95

This 12-page data sheet defines an extremely simplified and compact general purpose BASIC subroutine that provides the nucleus for sequencing memory resident or "direct access" file resident records containing one or more fields of data in either ascending or descending order-without disturbing the original record contents. Includes example programs illustrating various applications.

BASIC PROGRAM EDITING USING 65 DISK DATA FILES \$3.00

You don't have to use the "indirect file" for LISTing BASIC programs to perform simple line oriented edits; you can list directly to a 65D disk data file for greater flexibility. This is a "how-to" data sheet with examples-a must for anyone interested in utilities for program development.

HOW TO USE BASIC COMMAND FILES \$1.00

How to prepare, store and invoke a BASIC command file. Saves having to key in the same BASIC command sequence a number of times.

PEEKs AND POKEs FOR OS65D \$9.95

Approximately 500 memory locations (including all of page zero) for the OS65D operation system - an invaluable tool for programming and understanding your disk system.

* [C4 DISK CONVERSION \$7.00

Add disk capabilities to your C4 via the 470 board. Retains cassette capabilities. Step by step instruction for all necessary modifications.]

* → SUPPORT ROMS FOR BASIC IN ROM MACHINES!!!
C1S/C2S \$39.95

24 pins
This ROM adds line edit functions, software selectable scroll windows bell support, choice of OSI or standard keyboard routines, two callable screen clears, and software support for 24 64 characters per line video. Has one character command to switch model 2 C1P from 24 to 48 character line. When installed in C2 or C4 (C2S) requires installation of additional chip. C1P requires only a jumper change. SPECIFY SYSTEM.

C1E/C2E \$59.95

For C1/SUPERBOARD or C2/4/8 BASIC IN ROM machine. This ROM adds full screen editing, software selectable scroll windows, keyboard correction (software selectable), and contains an extended machine code monitor. It has breakpoint utilities, machine code load and save, block memory move and hex dump utilities. A must for the machine code programmer. C2E version (for C2/4/8 systems) requires the additional of another chip and some jumpers. SPECIFY SYSTEM!

STRING BUG FIX ROM (RB#3) \$19.95

(Replaces BASIC ROM chip #3) All this chips does is to replace the third BASIC ROM and correct the errors that were put into the ROM mask. Requires an inverter chip and some jumpers.

PRINTED CIRCUIT BOARDS

8K RAM AND PIA FOR C1 (bare board) \$29.95

AARDVARK'S new memory board supports 8K of 2114's and has provisions for a PIA to give two parallel ports! The board comes with complete instructions for assembly. Plugs into the expansion connector on the 600 board.

16K RAM BOARD (bare board) \$39.95

Supports 16K of 2114's. Plugs into the expansion connector on the 600 board. Does not contain any ports.

REAL SOUND FOR THE C1 (bare board) \$15.95

This board uses the TI sound chip to give real arcade type sound. The board goes together in a couple of hours with about \$20.00 worth of parts. Includes sample program.

EPROM BURNER FOR THE C1P (bare board) \$24.95

ASSEMBLED AND TESTED \$75.00

Burns single supply 2716's. Software listing enclosed.

MOTHER BOARD (bare board) \$9.95

Expand your expansion connector from one to five connectors or use it to adapt our C1P boards to your C2/4/8.

COMPUTER SUPPLIES

2114 MEMORY CHIPS \$3.95 8T28 BUFFER CHIPS \$2.99
350 ns. Brands may vary

COMPUTER CASSETTE TAPES C10 (5 min per side).65 C20 (10 min ps) .85

High quality data tapes. Same as we use for our programs.
Hard cases - .15 each

DISKS 5-1/4" \$3.25 8" \$3.50

Single sided, soft sector. Brand may vary.

*****SORRY, NO Discounts on the hardware (chips, disks, cassettes, ROMS, and PC boards on this page*****

OSI COMPATIBLE HARDWARE
BY D & N MICRO PRODUCTS, INC.

** 10-CA 10X SERIAL PORT \$125.00

ACIA based RS-232 Serial printer port. DIP SWITCH selectable baud rates of 300-9600. Handshaking (CTS) input line is provided to signal the computer when the printer buffer is full. Compatible with OS-65U V1.2 and OS-65D.

** 10-CA9 PARALLEL PORT \$175.00

Centronics Standard Parallel printer interface for OSI computers. The card comes complete with 10ft. of flat ribbon cable. Compatible with OS-65D and OS-65U software.

** 10-CA9D DIABLO PARALLEL PORT \$175.00

DIABLO 12 BIT WORD Parallel port for use with word processor type printers. Complete with 10ft. cable. Compatible with OS-65U software.

** 10-LEVEL 3 MULTI-USER EXPANSION \$450.00

Provides 3 printer interfaces currently supported by OSI-Serial, Centronics Parallel, Diablo Parallel. 4K of memory at D000 for Multi-user executive. 4 port serial cluster. The LEVEL 3 card allows expansion of an OSI C3 machine up to 4 users with appropriate additional memory partitions.

** 24MEM-CM9 \$380.00 16-MEM-CM9 \$300.00 8MEM-CM9 \$210.00

24K memory card is available at 3 different populated levels. All cards are fully socketed for 24K of memory. The card uses 2114-300ns chips. DIP SWITCH addressing is provided in the form of one 16K block and one 8K block. Also supports DIP SWITCH memory partition addressing for use in multi-user systems. All MEM cards include unpopulated disk controller section for 5 1/4 or 8" disk drives. Add \$150 for populated disk controller section and specify 5 1/4 or 8" drives.

* FL470-FLOPPY DISK CONTROLLER \$180.00

OSI-Type floppy disk controller and real time clock. Will support 5-1/4" or 8", single or double-sided drives. Requires drives with separated data and clock outputs. Expandable to include 24K RAM.

** B10-1600 BARE I/O CARD \$50.00

Super I/O card. Supports 8K of 2114 memory in two DIP SWITCH addressable 4K blocks. 2 16 Bit Parallel Ports may be used as printer interfaces, 5 RS-232 Serial Ports with CTS and RTS handshaking. With manual and Molex connectors.

** BMEM-CM9 BARE MEMORY CARD \$50.00

Bare 24K memory card, also supports OSI-type real time clock and floppy disk controller. With manual and Molex connectors.

** #96 PROTOTYPE CARD \$35.00

Prototype board holds 94 14 or 16 pin IC's. Will also accommodate 18,24 or 40 pin IC's. Row and column zone markings, easy layout. 1/16" epoxy glass P.C. board.

** C1P-EXP EXPANSION INTERFACE \$65.00

Expansion for C1P 600 or 610 boards to the OSI 48pin Buss. Uses expansion socket and interface circuitry to expand to 48 pin backpane. Requires one slot in backpane.

** BP-580 BACKPLANE \$47.00

Assembled 8-slot backplane with male Molex connectors and termination resistors.

** DSK-SW DISK SWITCH \$29.00

A circuit when added to OSI Mini-floppy systems extends the life of drives and media. Accomplish this by shutting off Mini-floppy spindle motor when system is not accessing the drive. Complete KIT and manual.

** PW-5-6 POWER SUPPLY \$29.00

Power One brand supply 5V - 6 amps with overvoltage protection. Reg \$49.95

*** COMPUTERS AND STUFF WITH GREAT PRICES!! ***

WE CARRY THE FULL LINE OF OSI COMPUTERS. THESE ARE THE CURRENT PRICES:

1. SUPERBOARD MODEL II - \$299.00
2. C1P MODEL II - \$479.00
3. C4P - \$849.00
4. 610 BOARD WITH 8K - \$289.00

All come with a free CURSOR CONTROL program !!!
(If this catalog is over 6 weeks old, phone for our current prices)
*** Sorry, but the 5% and 10% volume discounts do not apply to hardware.***

** MONITORS REAL MONITORS! CHEEP!!

TECO 12" MONITORS - BLACK & WHITE OR GREEN - SHARP CLEAR PICTURES WITH NO OVERSCAN.

GREEN PHOSPHUR \$119.95 BLACK & WHITE \$ 99.95

**** SPECIAL DEALS ****

JOYSTICK PACKAGE \$19.95

This contains KILLERBOT, TANK J, BARRIERBALL, FIGHTER PILOT, and plans for the Joystick conversion. (Will not run using OSI joysticks). Regularly \$26.80

BATTLEPAK \$17.95 (Add \$2.00 for 3 c/s, 1 b/w on cassette or \$4.00 for c/s disk.)

For the battlebuff, this package contains STARFIGHTER, BATTLEFLEET, SEAWOLFE, and BOMBER. Regular cost \$24.80

SUPERBATTLEBAK \$39.95 (Add \$3.00 for 6 c/s, 2 b/w on cassette or \$5.00 for the same on disk).

For the battlebuff who just can't get enough! Has STARFIGHTER, ALIEN INVADER, BATTLEFLEET, SEAWOLFE, BOMBER TEN TANK BLITZ, ROBOTANK, and BATTLEFIELD. Regular cost \$58.75

*** GAMES DISKS ***

**** GAMES DISKS (DISK GAMES require 540 Board and Polled keyboard)

GAMES DISK #1 (COLOR & SOUND) 5-1/4" - \$21.95 8" - \$24.95

Includes STARFIGHTER, SEAWOLFE, ROBOTANK, TEN TANK BLITZ, and BOMBER. Five of our best battle games.

GAMES DISK #2 (COLOR & SOUND) 5-1/4" - \$21.95 8" - \$24.95

Includes ALIEN INVADERS, BREAKTHRU, SLASHBALL, KILLERBOT, and LUNAR LANDER. Five games that require quick thinking and/or reflexes.

GAMES DISK #3 (B/W, SILENT) 5-1/4" - \$21.95 8" - \$24.95

Includes BACKGAMMON, CONCENTRATION, BATTLEFLEET, MASTERMIND II, AWARI, and BLACKJACK. A broad spectrum of games to keep kids (big and little) entertained for hours.

GAMES DISK #4 (the Retelle Disk, B/W, silent) 5-1/4"- \$21.95 8"- \$24.95

All of Bob Retelle's games on one disk. TIME-TREK, U-BOAT, AIR-SEA BATTLE, AND GRAND PRIX.

***** PHONING AN AARDVARK *****

** TO CHECK ON AN ORDER OR PLACE A NEW ONE, PLEASE CALL BETWEEN THE HOURS OF 8:00 A.M. AND 4:00 P.M. MONDAY THRU FRIDAY AND 8:00 A.M. THU 12:00 NOON ON SATURDAY TO INSURE PROPER PLACEMENT. SOMETIMES THE RECORDER DOESN'T RECEIVE THE FULL MESSAGE, AND SOMETIMES WE CANNOT READ RODGER'S WRITING! JUDY & CYNDI ARE HERE THEN TO HELP YOU.

QUESTIONS ON PROGRAMMING AND HARDWARE SHOULD BE PHONED IN BETWEEN 3:00 P.M. AND 6:00 P.M. MONDAY THRU FRIDAY ONLY! THANK YOU.

** ON REAL TIME **

Many AARDVARK games, including all of the arcade style games run in "REAL TIME". That term has been often misused, mangled and downright lied about in the software business - so we better explain what we mean by it.

In AARDVARK games, "REAL TIME" means that you move whenever you want to. There are no turns unless they are an integral part of the game. (i.e., "REAL TIME" Chess would be silly). The clock clicks continuously, and if you are playing the computer, it continues to play if you stop to think. It also means that your tank doesn't stop just because your opponent took a shot at you and if your plane drops a bomb, the entire display does not stop to see what happened.

* GUARANTEE *

All AARDVARK products are guaranteed to be functional and to be as advertised. Any product may be returned during the first 15 days for a full and unconditional refund. Returns after the first 15 days require a reason and may be limited to replacement of the product rather than a refund. OSI hardware is warranted by OSI rather than AARDVARK.

All of our tapes are computer originals to insure reliable reads. However, the process of loading the program into the machine each time we run a batch occasionally causes a tape misread. We usually catch the problems with in-house testing, but sometimes one gets through. If you ever get a bad tape from us or a program that doesn't run, please let us know. It could save others from getting the same problems. We would appreciate it if any bad tapes were returned as soon as possible so that we can run them on our systems and find out exactly what went wrong.

* (Remember, the program is taped TWICE, once on each side of the cassette. Try BOTH SIDES before panicking.)

*** MOST AARDVARK PROGRAMS ARE AVAILABLE ON DISK ***

Yep, there is a catch. Disks cost more to make and take more labor. Particularly if it is to be a custom disk. If a program is not listed as "on disk" there will be a surcharge of \$2.00 for the disk and a \$.50 labor charge for each program you want on it.

ABOUT THESE PROGRAMS

THEY HAVE A FEW UNUSUAL CHARACTERISTICS.

FIRST, THEY WORK. WHERE POSSIBLE, THEY ARE DESIGNED TO BE USER MODIFIABLE, BUT NEVER DESIGNED TO REQUIRE USER MODIFICATION. THEY WILL RUN AS WRITTEN AND ON YOUR SYSTEM.

SECOND, THEY ARE ALL WELL DOCUMENTED. LISTINGS ARE PROVIDED WHERE APPROPRIATE AND CONSULTATION ON THE FINE POINTS IS AVAILABLE BY PHONE OR MAIL. THE PROGRAMMERS AND MANAGEMENT ARE NOT ANONYMOUS.

THIRD, AND MOST IMPORTANT, NO AARDVARK CATALOG, DATA SHEET, OR INSTRUCTION MANUAL CONTAINS A DISCLAIMER OF ANY KIND. YOU WILL NOT FIND THE ALMOST UNIVERSAL NOTIFICATION THAT NOTHING IS WARRANTED OR GUARANTEED. WE GUARANTEE EVERYTHING THAT WE PUBLISH TO FUNCTION AS ADVERTISED - NO EXCEPTIONS OR DISCLAIMERS.

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NOVEMBER, 1981



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OVERSEAS SHIPPING (EXCEPT CANADA) ADD \$2.00 EXTRA			CHARGE CARD # _____ EXPIRATION DATE _____
TOTAL			

PLEASE CIRCLE TYPE OF SYSTEM!

CHALLENGER C1P CHALLENGER C2P CHALLENGER C4P CHALLENGER C8P

SUPERBOARD

CASSETTE FLOPPY DISK (IF DISK, IS OPERATING SYSTEM 65D or 65U?)

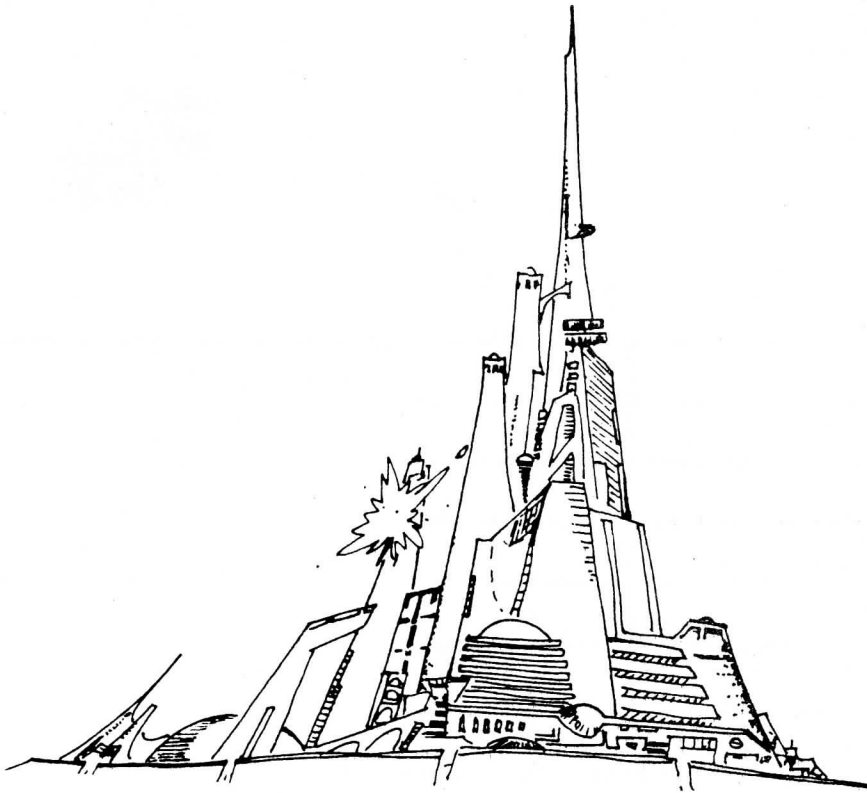
DISK OWNERS ONLY! PLEASE SIGN THE FOLLOWING STATEMENT:

I hereby certify that I own a legal copy of the Disk Operating System for which I am ordering a program.

Signed _____ Date _____

DISCOUNTS: 5% on orders over \$50.00, 10% on orders over \$100.00

**** NOTE **** NO discount on hardware, pc boards, roms, chips, blank disks and cassettes, or special deals. Please subtract these from total before figuring discount.



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