AARDVARK
TECHNICAL SERVICES
2352 SOUTH COMMERCE
WALLED LAKE,MI 48088
(313) 669-3110

MAY 1982

master charge
THE INTERBANK

VISA

$1.00

Quest
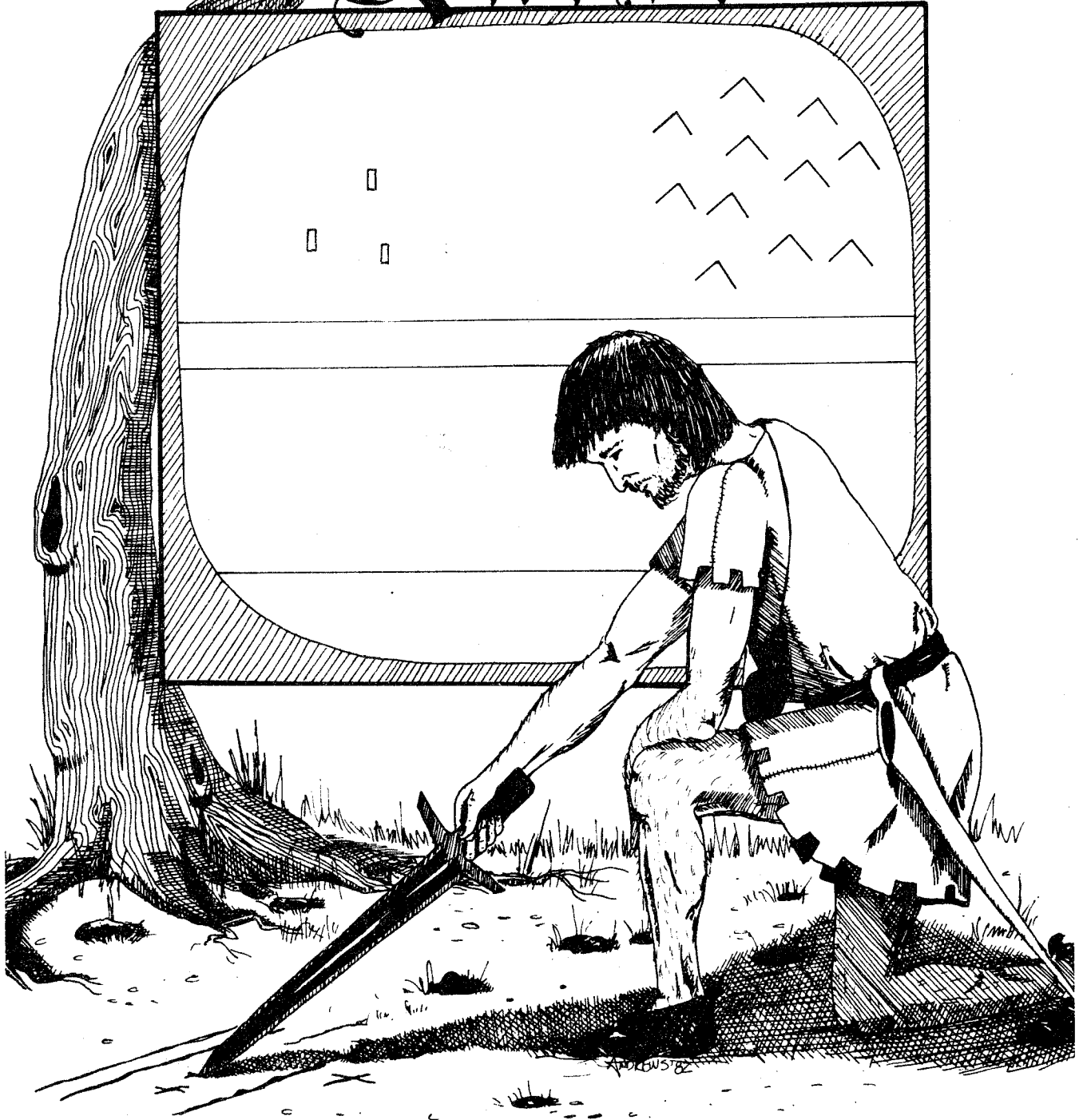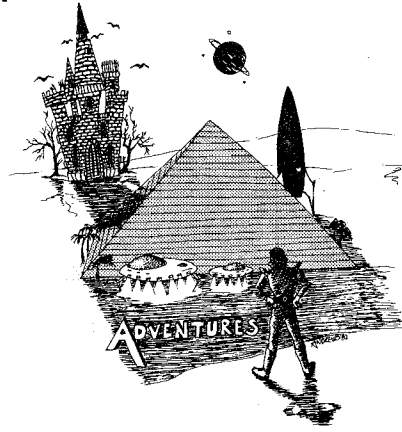
16K TRS-80   16K COLOR-80   8K OSI

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. If you have not played an Adventure before, we recommend this as your first adventure. It is as tough as the others, but laid out to allow players a little more initial freedom of movement.

*** 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 (by Bob Anderson)
We got Kzinti and puppetteers and problems. Our newest and biggest adventure. Requires 12K on OSI and 16K on TRS-80 Color.

*** NUCLEAR SUB (by Bob Retelle)
You are trapped in a nuclear sub at the bottom of the ocean. Escape and even survivial is in doubt. Plotted by three of the most sadistic I mean "creative" minds in adventure programming.

NEW!
*** DERELICT ***
Her masters have been dead for a thousand years but the ship is very much alive as she drifts through the solar system. Your job is to explore, ransack, rob — and stay alive! The last may be the hardest job of all. Plotted by Bob Anderson and Rodger Olsen, this may be the best adventure ever written for these machines. 12K on OSI, 16K on the TRS-80 Color.

** QUEST ** NEW **
A new concept in GRAPHIC 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.
FOR TRS-80 & COLOR-80 ONLY !!!!!!!!

$14.95 EACH — EXTENDED BASIC REQUIRED FOR COLOR COMPUTER

** TINY COMPILER ***

NEW FOR OSI AND TRS-80 COLOR COMPUTERS $24.95 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 or 6809 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. The keywords it recognizes are:
FOR...NEXT...IF...GOSUB...GOTO...<,>, =...PEEK...POKE...RETURN...
REM...STOP...END...USR(X)...PRINT
ARITHMETIC OPERATORS ARE +,-,*,/
LEGAL VARIABLES ARE A-Z, A SUBSCRIPTED VARIABLE
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.

NEW!
* WRITING ADVENTURES *
An all new data sheet on how to write ADVENTURES in BASIC. Learn to decode English, move objects and set frustrating traps. Includes complete text of DEATH SHIP adventures. $3.95

ARCADE GAMES FOR THE TRS-80 - TRS-80 COLOR & OSI

NEW!
** VENTURER **
A fast action all machine code Arcade game that feels like an adventure. Go berzerk as you sneak past the DREADED HALL MONSTERS to gather treasure in room after room, killing the NASTIES as you go. Great color, high res graphics, sound and Joystick game for the TRS-80 COLOR or OSI machines. (B/W and silent on OSI). Tape only $19.95
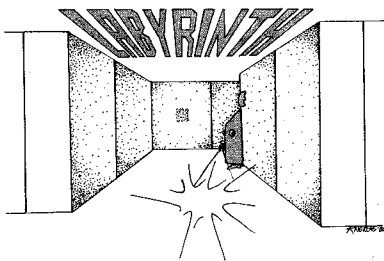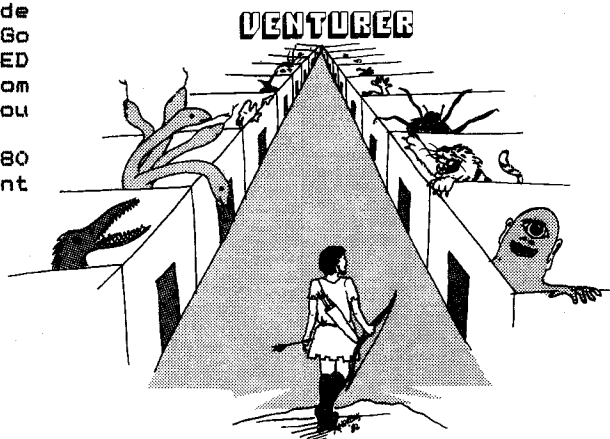
** LABYRINTH ** $13.95 on Cassette for Color 80 & OSI $15.95 disk

The action takes place in a realistic maze seen from ground level. This is a real time monster hunt as you track down and shoot the mobile monsters. Checking out and testings this one was the most fun I've had in years!!!

* SPACE SHUTTLE * COLOR 80 ONLY 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

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

** SPACE ZAPPER **   COLOR 80 ONLY
Protect your central starbase from
alien ships by zapping them first.
High res, high speed graphics,
right out of the arcades. $14.95 -
16K Extended or 32K disk Basic
COLOR 80 ONLY!

NEW!

** AAARRGGGG! - ** ALL NEW FOR OSI OR TRS-80 COLOR **
    A high speed, high resolution chase around the screen for
disappearing targets.   At about level 5 you learn the meaning of the
name of the game. Requires Extended BASIC on TRS-80 COLOR. Takes 8K
on OSI. Plays with joysticks or keyboard controls. $12.95

* SPACE BATTLER ** - Two person Space Battle around the Black HOLE!
High res graphics and two person action make this program a real
winner - at an economical price because it's in BASIC. $12.95 TRS-80
COLOR machines only!

* BARRIERBALL ** - For 4K (or more) OSI and TRS-80 COLOR. This is a
classic two person computer game where you build barriers on the
screen in real time. One of the better renditions of this classic
game. $5.95

TIMETREK - REAL TIME REAL GRAPHICS TREK. No more scrolling displays or
forgetting where the Klingons are. TIMETREK presents you with a FULL
TIME display of a starship control panel. Sensors, scans, status and
damage levels are displayed simultaneously (except for the Galactic
Map and Battle Computer which just wouldn't fit). TIME TREK is in REAL
TIME! 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 - You 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 low Res
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. 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 -
AVAILABLE IN 4K

4

NEW!

TUBE FRENZY - This is an almost indescribable fast action
arcade game.   It has fast action, an all new concept in
play, simple rules, and 63 levels of difficulty. (Even the
author hasn't gotten past level 30.)   It is all in machine
code for fast action and does require joysticks. Another
great game by Dave Edson.
TRS-80 COLOR ONLY. 16K AND JOYSTICKS REQUIRED.
    $19.95
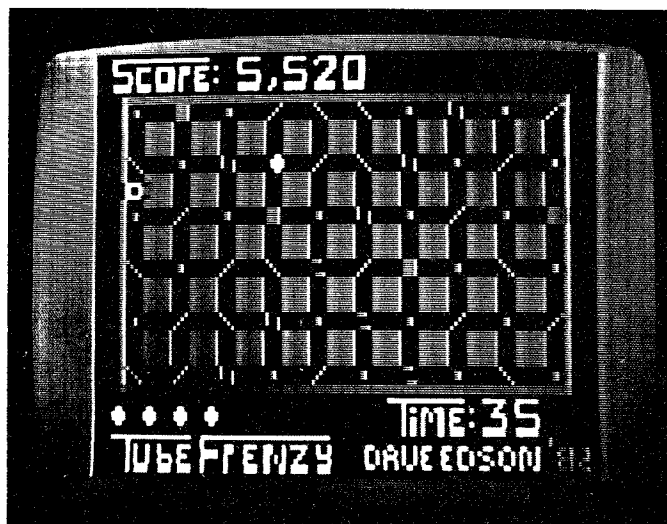
* KILLERBOT * Real time
action as you run, sneak, and
dodge your way through a
bloody field of death traps
and radar equipped killer
robots.   Get accross or die!
Joysticks or Keyboard 16K
COLOR 80 and OSI. Available
in 4K too! $9.95

## * A FEW LITTLE NOTES *

   (1) All ADVENTURES & ARCADE GAMES on pages 2,3 & 4 are available on
cassette or disk unless otherwise noted. For OSI, 8K needed for
cassette and 24K for Disk. For TRS-80 owners, 16K required for all
Adventures & Arcade games except a few which specify EXTENDED BASIC
or 32K COLOR ONLY.   PLEASE READ CAREFULLY. For TRS-80 COLOR DISK
OWNERS 32K needed.

(2) YOU TOO CAN BE AN AUTHOR!! Aardvark does publish programs from
outside programmers. We traditionally pay the highest royalties in
the industry and can often get a program onto the market place in a
few weeks. To submit a program, send a disk or tape with your name and
address on it and all the necessary documentation you feel we need to
test the program out.

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)
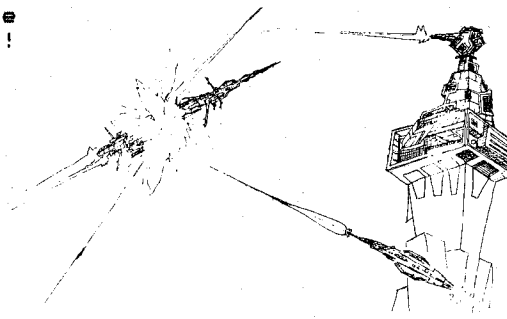
MONSTER MAZE $12.95 (C1P ONLY 8K)

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)
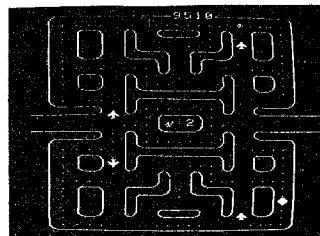
COLLIDE $9.95   (C1P ONLY 8K)

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 thiefs. Fast action and fun for
one or two players. (Cassette only)

NOTE** SEE PAGE 3 FOR ANOTHER NEW DAVE EDSON GAME (VENTURER).

OSI ONLY

ASTEROIDS & CATERPILLAR
FOR THE C1/2/4/8P

ASTEROIDS FOR THE C1/2/4/8P!! IN MACHINE CODE !!!! $12.95
At last an Asteroids game good enough to be pubsished by Aardvark!!
(4k C1P, 8K C4P). A real bargain in a great arcade game!
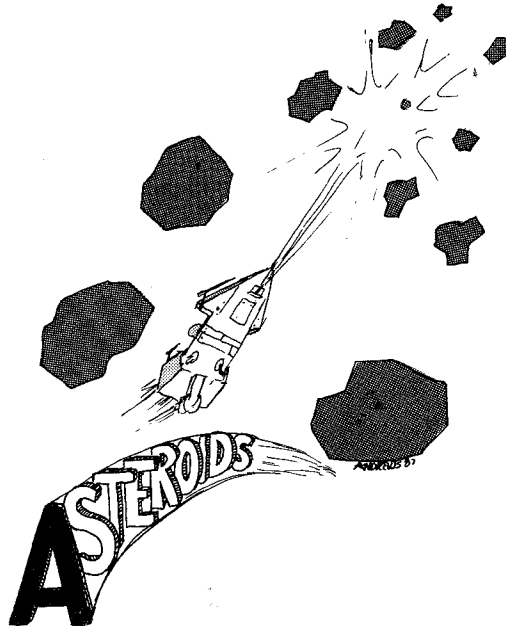
CATERPILLER !! ALL MACHINE CODE FOR C1/2/4/8P $14.95

   Written with the Tiny Compiler, this
is a full featured, fast arcade game.
Caterpillers chase you through a field
of mushrooms breaking apart as you shoot
them.   It might be easy if it weren't
for the hungry spiders chasing you
across the bottom of the screen. One of
the fastest neatest games available for
the OSI.
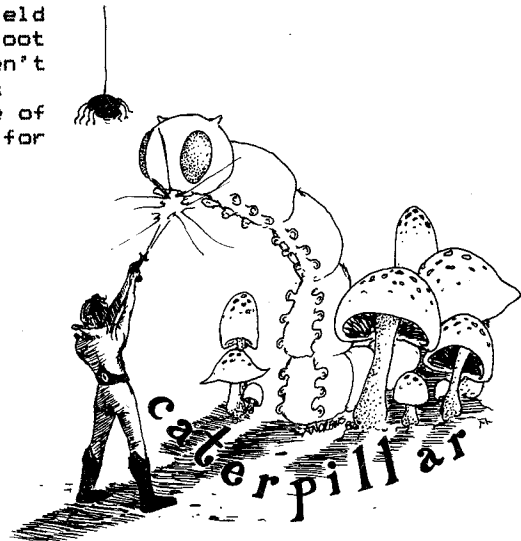
NIGHT DRIVER $14.95

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)

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
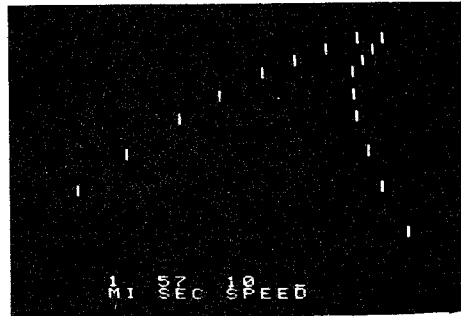to   catch them in a net and bounce   them into a   waiting   ambulance.
S&R's usual good graphics with fast action and gory SPLAATTTS when you
misss. Yuchhh — but good.

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.

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.

BACKGAMMON (8K) $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.

ALIEN II (WITH MACHINE CODE MOVES) Tape $10.95 5-1/4" disk $12.95

   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")

GALAXIA $9.95 - cassette $12.95 - 5-1/4" disk   8" disk $14.95

   The finest, fastest, neatest arcade game ever written for the OSI!
Features rows 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)
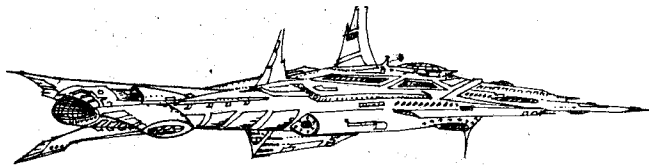
ALIEN IV C1P ONLY $12.95 (cassette only)

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.

** 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 forstall any questions on the topic - THE SOURCE IS NOT AVAILABLE IN MACHINE READABLE FORM.

*** 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.

FANTASIC COPY 5-1/4" Disk C1 or C2/4 $19.95

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!

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 8th 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.

*** BUSINESS PROGRAMS ***

BOOKEEPING 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

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   5-1/4" DISK ONLY

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

***** 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 ********

    This is 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 two years,
(Vol. 1 & Vol. 2) PLEASE SPECIFY if you are ordering, Vol. 1, Vol. 2,
or Vol. 3.

VOL. 1   APRIL 1980 - FEBRUARY 1981 $9.00 (6 ISSUES)
VOL. 2   APRIL 1981 - FEBRUARY 1982 $9.00 (6 ISSUES)
VOL. 3   APRIL 1982 - FEBRUARY 1983 $14.00 (6 ISSUES)

OVERSEAS $14.00 VOL. 1 & 2, $19.00 VOLUME 3

***** 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 renumbers 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.

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)

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.

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

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.

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.

VIDEO MOD II - THE GOURMET DELIGHT - PLANS $7.95

True 32 X 32 Mod for C1P Model 1. Requires replacement of the original cyrstal 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.

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.

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.

SAVING DATA ON TAPE $4.00

Instruction for several methods of generating tape based files.

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.

OSI ONLY

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 SYNPOSIS $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.

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 our disk system.

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

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

   This program sits on page 2 - using less than 20 btyes of your free
RAM - to provide instant screen clear and full screen editing for the
C1P.   It allows editing of any BASIC line anywhere on the screen as
well as real back-space.

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

SUPPORT ROMS FOR BASIC IN ROM MACHINES!!!
C1S $39.95

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.

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 sectored. Brand may vary.

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

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 51/4 or 8" disk drives. Add $150 for populated
disk controller section and specify 51/4 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.

MITTENDORF ENGINEERING

HIGH RESOLUTION GRAPHICS KIT   (HRG)

This kit provides control of 65,636 points on your video display (256x256 points) The kit, which includes a 6" X 6" printed circuit board, all required parts, detailed assembly instructions and software, is applicable to all OSI personal computers and business computers using the 540 board. The HRG video signal is added to your video signal so both existing and HRG video are available at the same time. The kit includes 8K of RAM which is automatically available as ordinary user RAM when not using HRG. Software includes PLOT and DRAW routines in BASIC; or, you may program in assembly language by the usual means. Basic commands are added such as PLOT, DRAWTO etc. are:

```
FULL KIT                 $185.00
FULL KIT WITHOUT RAM     $130.00
BOARD AND DOCUMENTATION  $40.00
```

STEREO MUSIC/SOUND EFFECTS SYNTHESIZER KIT

Featuring two channels (stereo), 3 voices per channel, 8 octaves per voice, fixed or variable amplitude, envelope control and amplifiers for direct connection to 8 ohm speakers. With this kit, you can simulate the sounds of various musical instruments and produce a large variety of sound effects such as gunshots, explosions, crashes, racing cars, lasers, percussion instruments etc. The kit uses two AY-3-8910 programmable sound generators (PSG) interfaced to the OSI bus by means of a MC6820 (PIA). The two 8 bit PIA bus outputs are routed to two 16 pin sockets for use in controlling external items. Includes a real time clock. Documentation consists of a 145 page manual which includes detailed assembly instructions and software. No 600 board modifications are required. The kit can be used with other OSI systems but users must interface the data bus by means of two 8T26 IC's.

```
1.  Parts and Manual for Monaural System     $113.00
2.  For Stereo ADD to Item 1                    34.00
3.  On board Clock for PSG, ADD                 10.00
4.  Real Time Clock, ADD                        10.00
            FULL SOUND & I/O KIT              $167.00
5.  I/O Kit (without sound)                     75.00
6.  Real Time Clock, ADD                        10.00
            FULL I/O KIT                        85.00
7.  Board and Manual                            40.00
```

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*** 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.

*** 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

    There is an additional $8.00 Shipping charge for all monitors.

** 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 warranteed 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.

The charge does not apply, of course, to those programs described in
the catalog as being on disk!

Programs described as being for BASIC in ROM systems cannot be
transferred to disk.

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 ot
find the almost universal notification that nothing is waranteed or
guaranteed. We guarantee everything that we publish to function as
advertised - no exceptions or disclaimers.

FROM THE AARDVARK TEAM

** 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. TO
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 5:00 P.M. MONDAY THRU FRIDAY ONLY! THANK YOU.

AARDVARK
TECHNICAL SERVICES
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Walled Lake, MI 48088

MAY 1982

(313) 669-3110

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PLEASE CIRCLE TYPE OF SYSTEM!

CHALLENGER C1P   CHALLENGER C2P   CHALLENGER C4P   CHALLENGER C8P

SUPERBOARD _____ TRS-80 _____ COLOR-80 _____ _____

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.
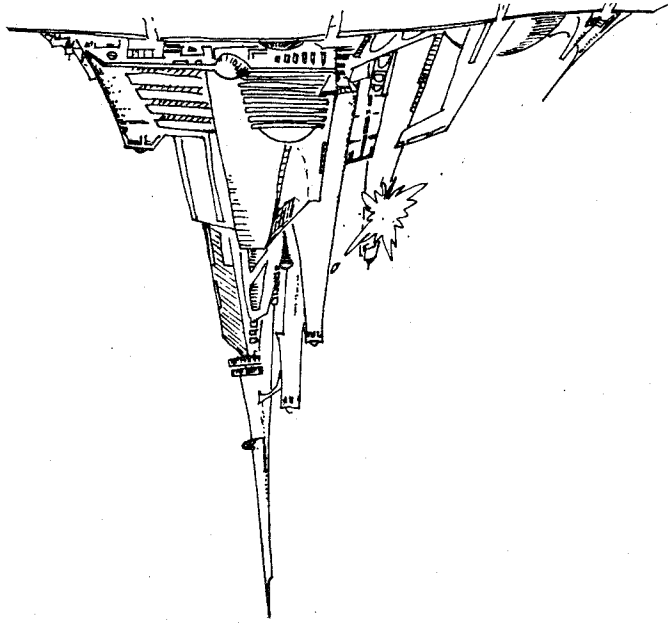
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