COMMODORE COMPUTER CLUB NEWS

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FREEWARE: DISK MAINTENANCE

By LARRY PHILLIPS

There has been a lot of talk recently about the concept of 'Freeware'. Basically, freeware is software that is offered on a 'try it first' basis. If you try it and like it, you then send the author whatever he's asking for the program. The money you send goes directly to the author without any intermediary profits being taken by distributors or stores. The author gets the amount he wants for his program, and you get the program at a lower price than you might expect. The program you get to try out may be of reduced function or be lacking documentaion in order to encourage you to send your money to get the full package. Generally, the concept is a good one and it only remains to be seen how well it works in practice. If you're wondering what this has to do with disk maintenance, read on.

Two young men from Seattle have written a program called 'Disk Maintenance' and have decided to offer it as freeware. The program available on the CCC library disk is a reduced function version, and you may get the full blown program and documentation by sending $20.00 US to the address contained in the program. This will also entitle you to any future updates that come out. Try the program, and if you like it, please support it, as this will encourage authors to offer good software at a reasonable price.

As for the program itself, it has a number of similarities to the old standby, Disk Doctor, with many added features. It is well written, and so far I have been unable to find any bugs in it. The program consists of two main subprograms, Disk Maintenance and ABLE, an acronym for Advanced Block Editor. Disk Maintenance is a directory manipulator. Let's look at it first.

A directory manipulator should allow you to at least rename, scratch and unscratch files. This program does all that and more. You may use it to:

Find start/end address of any program

View/edit BAM (block availability map)

Disassemble a machine language program (with or without showing undocumented opcodes)

Exchange the position of any two files

Jump to ABLE starting at the first sector of any file

Kill a file (wipes out dir entry completely)

List a BASIC program file

Make a menu of selected files on disk

Rename a disk

Append two Basic files

Compare two BASIC programs and show any different lines

Validate disk

List a sequential file to screen

All functions are accessed from the special directory screen, and can be selected merely by positioning the smooth scrolling arrow next to the entry, and pressing the appropriate key.

Going on to the Advanced Block Editor, we find that it will perform all the functions of Disk Doctor (or Doc/64), and has many enhanced features not previously seen in any other block editor. A block editor allows you to view/change the contents of any block on the disk. It is the manner of editing and viewing that separates the good from the bad. This one is so versatile that you will seldom think of something that can't be done with it. The display includes:

Track/sector in decimal

Position of cursor in dec and hex

Value of byte under cursor in dec and hex

ASCII (CBM ASCII) character

The sceen POKE value

Track/sector link in decimal

Address of cursor position (if in a program)

Binary value of byte under cursor

Word value of byte under cursor and following byte (LSB,MSB)

BASIC keyword of token under cursor

Disassembled contents of instruction under cursor

Mode of upper display (screen poke or PRINT value)

Operation is eased with the addition of HELP screens that include all commands, addresses of all KERNAL routines and a list of all opcodes (including those mysterious unimplemented ones). To change the contents

(Continued on page 6)

IN THIS ISSUE: 64 LIBRARY LISTINGS

ON THE BENCH:

THE LIEN YIG DISK DRIVE

By KEN MOREN

The first time I laid eyes on the Lien Yig drive, I thought, "Hmmm...an MSD clone." For those of you who haven't seen one, that's exactly what they look like: an MSD single drive. Being one of those hardware freaks, I was seized by an overwhelming desire to open it up and see if the internals showed as close a resemblance.

To my surprise the circuit board did not look at all like the MSD board but was an original design from a manufacturer of Apple clones. The main chips were the same as the 1541 (i.e. 6502 and two 6522's); the minor logic implementation was somewhat different.

The drive itself was a TEAC direct-drive mechanism. It had a heavy duty stepper motor and head positioning mechanism which, although somewhat noisy, looked as if it would give years of trouble-free service.

The interesting thing about this unit was that it had an Apple type analog board (the circuitry which controls the drive motor and head positioning) on it. You could connect it to an Apple II and it would work just fine. In fact, the main board was designed to work with an Apple drive. However, when you consider the main business of the manufacturer, this is not so strange. It's nice if you only have to stock one type of drive for all your products.

After thoroughly checking out the hardware, I then began to put it through its paces. Loading; saving; file handling....all seemed to be fine. Then I tried loading some commercial software. The first two, which were older stuff with relatively unsophisticated copy protection, loaded fine. Then I tried Flight Simulator II. No go. Some other newer ones yielded similar results. Hmmm.....

Then I tried copying. SCOPY and SBACK worked fine, as did all normal (slow) copy programs. However none of the fast copy programs at my disposal would work, nor would Fast Format.

So it would seem that this drive's DOS was not all that compatible with that of the 1541. No program which made calls to specific DOS routines would work.

Then I began to wonder how much compatibility there was in the hardware itself. Only one way to find that out: I pulled the ROMs from my 1541 and, with the help of adaptor sockets I made up then and there, installed them in the EPROM(2764) sockets of the Lien Yig drive.

(Continued on page 6)

SOFTWARE & BOOKS

Reviewed by MIKE QUIGLEY

QUICKWRITER III

Quickwriter III is a budget-priced, disk-based, machine-language word processor for the Commodore 64. Its main attraction is a wide variety of features, some of which are comparable to those on word processors costing many times more.

In addition to control over all four margins of the page, the user can change the screen and character colors, search for a string of up to 40 characters, print copy which is either justified (with parallel margins), flush left, right or centered, and go into a mode which produces continuous shift lock on letter keys only.

Commands such as Initialize (I0), Validate (V0) and New (N0) can be sent to the disk drive and the directory viewed without destroying the current text, REMS (which are not printed out) can be placed in the text, and files can be chained together during printing if their length exceeds the program's total memory capacity (about 53 blocks or 13,650 bytes).

If the printer allows it, the program allows redefined character codes to produce underlining, italics, different type styles and so forth. It also allows the use of different device and drive numbers and secondary addresses. Text can be previewed on the screen, though you can only see the right or left half of it. There is also what is called "semiautomatic hyphenation" which allows you to hyphenate at the end of lines as text is being printed out. This would be more useful if the user's participation wasn't required in such a direct manner.

Quickwriter III's most interesting feature is its ability to create form letters by using specially created files to "drop" information such as names, addresses, postal codes, etc. into specific locations in the letter's text.

Unfortunately, the kind of care lavished on all these goodies relating to formatting does not extend to the program's editing commands. One of the main functions of a word processor should be its ability to easily and efficiently manipulate text, and Quickwriter III disappoints in this regard. The reason for this is that despite several commands which give the impression of a full-screen editor such as going to the beginning and end of text, the program is basically a line editor, similar to Heswriter and Quick Brown Fox. This produces some peculiarities with cursor movement.

Let's say the cursor is in the middle of a line and I want to move directly above. Attempting to do this makes the cursor to go to the leftmost column which is reserved for moves of this nature (the text itself is only 37 columns wide). You can then proceed to the position you originally wanted to go to with the cursor right or F7 key -- the latter moves the cursor eight keys to the right at a time. If you make a lot of errors in your text, correcting them with this method becomes very tiresome.

The program's "insert mode" is not much better. If you want to put a lot of copy in the middle of previously typed text, pushing the INSERT key causes material to the right of the cursor to drop to the next line, creating a blank space for new copy. This method creates leftover spaces in the text which can be removed with the Rebuild command, but sometimes this command doesn't work, resulting in spaces which have to be taken out manually with the DELETE key.

One method of inserting a lot of copy into text without the above hassle would be to create a block at the end of text and use the program's block manipulation commands to put it in the right place. These commands -- Append, Bank, Copy, Delete, Insert and Transfer -- however, require further peculiar moves with the INSERT key similar to those mentioned above.

Another feature I found annoying was that the letters did not always appear on the screen as soon as my fingers typed them (they were instead printed with a jerky kind of rhythm) and keys held down would repeat if not released immediately.

In short, Quickwriter III seems best suited to economy-minded typists who want a lot of fancy printer features and don't make many mistakes or need to edit their copy.

The program's manual, though only 35 pages long, is concise and well-written and contains a "quick reference chart" with all the basic commands summarized. The section dealing with how to use the program with a wide variety of printers and interfaces -- an area of real concern for many computer novices -- is well handled. Samples of printer files for Gemini, Epson and Okidata are included. (It should be noted that some of the commands in the Gemini one are not correct. Several of them use lower-case instead of the correct upper-case characters.)

The disk is copy-protected with an error on an unused track. This causes the drive head to knock like when it NEWs a disk, a procedure I thoroughly dislike because of its effect on the drive's alignment. The disk is warrantied for 90 days and updates can be had for an additional charge when available. *(Educomp, 2139 Newcastle Avenue, Cardiff, CA 92007. $19.99)*

ASSEMBLY LANGUAGE FOR KIDS

Are you bewitched, bothered and bewildered by assembly language? Possessing knowledge about this subject is much like belonging to some kind of secret society where you need passwords to enter, and where you dabble in a lot of arcane mumbo-jumbo once admitted.

There are numerous books written designed to initiate novices into these mystical rites, but most of them have one thing in common: they are written for people who already know assembly language.

Fortunately, there are a few books recently available written for the average person. One of these is *Assembly Language for Kids: Commodore 64* by William B. Sanders.

Its title is deceptive, since the book is not really designed for kids, but rather for people who want to have "a good time learning assembly language." It's written in a chatty, easy-to-understand style as opposed to the advanced scientific jargon adopted by many other books on 6502 and 6510 programming.

Almost a third of the book's 337 pages is introductory material, discussing such subjects as the use of assemblers and the difference between hex and decimal numbers. It assumes that you have a working knowledge of BASIC, since many of its examples either relate to BASIC or analyze short BASIC routines and programs.

The number of examples in the book, from a short subroutine which clears the screen to the design of a "noisy space sprite", is one of its major strengths. In order to enter the examples, a simple Kids' Assembler is included in the book which you can either type in or obtain on disk with other utilities from Microcomscribe at an additional cost of $10. This assembler has a minimal editor, it uses non-standard opcodes and is somewhat slow since it's written in BASIC. The examples can also be entered with the Merlin 64 assembler, which author Sanders describes as "the best available for the 64" or the Macro Assembler Development System from Commodore. (A coupon in the book allows a discount on Merlin.) This may prove annoying to people with other assembler packages which do not accept the same conventions as these three.

For the most part, Sanders proceeds from Point A to Point B, telling the reader that everything will eventually fall into place, even if some matter is not fully understood at the moment. He occasionally drags in an opcode or procedure which is then not explored in sufficient detail, which might be a red herring to some readers.

It should be emphasized that this book doesn't deal with all the assembly language opcodes. It tries to teach the reader "how to learn to use the fundamental operations well and understand their use clearly [rather] than try and learn everything at once and not understand what you're doing." At its conclusion, Sanders gives some suggestions for further study such as books and magazines (including *Commander*, which, before it ceased publication, contained a regular column on assembly language by Canadian Eric Giguere).

About the only negative feature of this book is an annoying number of typographical errors, surprising because Microcomscribe's motto is "literate microcomputer documentation." Some of these are in the programs, which may cause confusion for novices. Hopefully these errors will be corrected in subsequent editions of this otherwise excellent book.

(Assembly Language for Kids: Commodore 64. William B. Sanders. Microcomscribe, 8982 Stinson Court, San Diego, CA 92129 U.S.A. $14.95 U.S.)

SPEEDWRITER

SpeedWriter is a compiler which takes a Commodore 64 BASIC program and converts it into a special kind of machine language so that it runs faster and more efficiently. It's claimed to be "easy enough for the novice," and there is a single sheet of instructions designed for those who are "not interested in the technical aspects" of the program's 40-page manual.

Using this simple method, I put SpeedWriter to the test with the 64 version of my own French Tutor, a BASIC program containing programmable characters. Although I had converted it successfully with another compiler, when I ran the SpeedWriter-compiled version, it failed immediately with an OUT OF DATA error in the non-existent line 4027.

I then compiled Taxman (Run, November 1984), which would not run at all. Neither would a large BASIC game which moved memory locations around to emulate a PET. I was luckier with another program containing sprites which moved much smoother and quicker.

Turning finally to the manual, I discovered SpeedWriter, like most compilers, has a lot of "ifs, ands or buts" -- exceptions to the rules -- which have to be observed if programs are to run successfully. These "directives" include telling the compiler which floating point variables and arrays are to be treated as integers, disabling the RUN/STOP key, and relocating the list of variables to a memory location higher than normal.

Among the claimed advantages of using SpeedWriter to compile programs is a reduction in program size. One large game I compiled, 98 disk blocks long, was reduced from 24443 bytes to 20243 bytes or 84 blocks, a drop of about 17%. As a result, disk access time is also supposed to decrease. However, any program created with SpeedWriter must have a special machine language routine placed on the same disk to run properly. This sub-program is 33 blocks long and takes over 22 additional seconds to load in!

SpeedWriter did not seem to significantly increase disk access time in terms of loading in files with the GET# statement. An uncompiled version of Mike

(Continued on Page 8)

THE HIDDEN SECRETS OF VIP

By LARRY PHILLIPS

VIP Terminal from Softlaw is an extremely well thought out program. The features it offers would take four or five articles to describe. One of the program's strongest points is the excellence of the documentation, both in the manual and on disk resident 'help' files, allowing you to re-read a section even while communicating. Imagine my surprise when I discovered that the seemingly complete documentation did not even mention a very exciting capability.

The book and the help screens did mention, in passing, a mode known as 'G4-graphics'. I say in passing, because all that was said about it was that some information services, such as Compuserve, can send the appropriate codes to put low resolution pictures on the screen. The way these pictures are formed will be familiar to anyone who has used the PET. They are made up of 'quarter-blocks', that is, the four quadrants of a character cell. On the 64, of course, these may also be coloured. During my investigations, I discovered that a local BBS, Delta 80, had a section called 'Pictures', and that the codes needed to put pictures on my screen were used on that system. The SYSOP, Charles Lindberg, answered my query about the actual codes, and I was off on a blitz of picture transfers. The only problem was that it was extremely difficult to make pictures with VIP, and difficult to test them properly with a BASIC program. From this point, I started looking for more hidden features. Help came from a friend who mentioned that he had the documentation for a program called VIDTEX, including many details on special features.

As luck would have it, all the information is essentially the same for the two programs. The special controls are all based on an ESCape sequence. Unlike the CTRL key, an ESC is a character in itself. It is CHR$(27), and is generated in VIP by pressing the 'stop' key, or by sending a CTRL [(square left bracket). An ESCape sequence is a series of characters starting with a CHR$(27). In VIP, the important ESC sequences control colour and the cursor position. The sequence for setting colour is:

ESC k x

In this case, ESC is CHR$(27), k is always the character 'k', but 'x' is the character that sets a background and character colour, and will be different for each combination of colours you want to send.

The colours are determined as follows:

```
bit   7 6 5 4 3 2 1 0
      c c c c b b b b
```

The bits marked 'c' are the ones that determine the character colour, the ones marked 'b', the background colour. The colours for both fields are:

0 - Green
1 - Yellow
2 - Blue
3 - Red
4 - White
5 - Cyan
6 - Purple
7 - Orange
8 - Black

For ease of reference, the colours and the keys needed to send them are laid out in the chart in Figure 1.

The next sequences have to do with cursor positioning. The cursor may be manipulated by either CTRL keys as long as you don't want to get too fancy. For example, a clear screen may be sent with a CTRL l (unshifted L). In ASCII, this is a form feed, otherwise known in videoland as 'wipe the tube'. You may also send it with an ESC sequence, but it will take one extra character, ie. ESC j, two characters instead of one.

For fancier movements, we have a series of sequences that will put the cursor anywhere on the screen without having to move it through all the intermediate positions. The visual effect of this must be seen to be appreciated. At 300, 600, or even 1200 baud, the movement of the cursor from point to point one space at a time is noticeably slow. With absolute positioning, it is startling, to say the least. The cursor seems to come alive, jumping immediately to wherever you've sent it. The shifted Y is the prime ingredient in positioning the cursor. The sequence is:

ESC Y v h

Again, ESC is CHR$(27), the Y is always used, v is a character used for vertical position, and h is a character used to position horizontally. The positions are determined by the 7 low order bits:

```
bit   7 6 5 4 3 2 1 0
      x p p p p p p p
```

Where x signifies an unused bit, and bits marked 'p' give a position according to the binary value between 0 and 127. To determine the cursor position, you just use the decimal value of the ASCII code for the character and subtract 32, position 0 being a 'space'. Of course, the maximum you would ever use is 106, as VIP Terminal will not allow any more characters on the screen. For that matter, if you use 106 columns, your eyes are a lot better than mine, but not for long. If a vertical position greater than 24, or a horizontal position greater than 39, 63, 80 or 105 is sent (depending on the number of characters you are using), the cursor will not wrap around to another line or cause the screen to scroll. It will merely go as far as it can, and stick to the bottom or right hand side.

Here's a real life example of cursor positioning:

ESC Y ↑ A

This will set the cursor to line 10, column 33. If you look at a standard ASCII chart, you will see why. I have provided a chart in Figure 2. Use it to avoid having to work out the values each time.

Most bulletin board systems will not allow you to send special characters in a message or your E-mail, but there are some that do. It's a lot of fun sending a message to someone using colour changes and cursor positioning, and many VIP users have developed some very fancy signatures that may be stored in the programmable keys and sent with one keystroke. There are more sequences, but I'll leave them for now. If you have a 1650 modem, or an equivalent that has a 'half duplex' switch, try this. Set VIP to full duplex, the modem switch to half duplex, and go to 'terminal' mode. Then send some ESC sequences for colour changes and cursor position. Try other combinations. If you don't have a modem that allows this, try phoning a friend who also uses VIP, and send the codes to each other. You'll soon get the idea, and can dazzle everyone with your creations.

FIGURE 1

Screen Colour ↓ / Character Colour →	Grn	Yel	Blu	Red	Whi	Cya	Pur	Orn
Grn	↑!	↑p	spc	0	!	P	♦	p
Yel	↑a	↑q	!	1	A	Q	a	q
Blu	↑b	↑r	"	2	B	R	b	r
Red	↑c	↑s	#	3	C	S	c	s
Whi	↑d	↑t	$	4	D	T	d	t
Cya	↑e	↑u	%	5	E	U	e	u
Pur	↑f	↑v	&	6	F	V	f	v
Orn	↑g	↑w	'	7	G	W	g	w
Blk	↑h	↑x	(	8	H	X	h	x

Note: \ = Pound Sign ↑ = control char.
♦ = Shift @ ("at")

FIGURE 2

ONES ↓ / TENS →	0	1	2	3	4	5	6	7
0	spc	♯	4	>	H	R	\	f
1	!	+	5	?	I	S	]	g
2	"	,	6	@	J	T	↑	h
3	#	-	7	A	K	U	←	i
4	$	.	8	B	L	V	♦	j
5	%	/	9	C	M	W	a	k
6	&	0	:	D	N	X	b	l
7	'	1	;	E	O	Y	c	m
8	(	2	<	F	P	Z	d	n
9	)	3	=	G	Q	[	e	o

THE WHOLE 64 LIBRARY

Disks (double-sided) cost $5.00 to buy or require a $10.00 deposit while you borrow them. 64 librarian is Glenn Hazlewood -- see him at any of the club's Vancouver meetings.

```
"CCC LIBRARY DISK" A1 2A
  1  "C-64 WEDGE"          PRG     23 "HANGMAN"            PRG
 24  "BLACKJACK"           PRG     28 "SOLITAIRE"          PRG
 14  "TARGET PONG"         PRG     27 "BOGMAIN"            PRG
 23  "ANDROID NIM 64"      PRG     28 "YAHTZEE"            PRG
 38  "ATARI 11.C2"         PRG     42 "PERSONALITY TEST"   PRG
 25  "ENTERTAINER"         PRG     43 "ARTILLERY.C2"       PRG
 37  "LABYRINTH"           PRG      2 "AQUA 2"             PRG
 13  "KEYBOARD"            PRG      7 "TIME GUESSER"       PRG
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 7A  "CASTLE ADVENTURE"    PRG      4 "DOS 5.1"           PRG
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 57 BLOCKS FREE.

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  4  "DOS 5.1"             PRG     11 "RES MORT"           PRG
  4  "HIRES VIEW 2"        PRG     09 "MUSIC MAKER"        PRG
  2  "HIRES VIEW 2.MAC"    PRG     20 "GRUNGY TOWERS"      PRG
 32  "1-DOLLAR"            PRG     98 "SUPERTREX 64+"      PRG
 32  "2-MAP"               PRG      9 "SUPERDOS267000"     PRG
 32  "3-DBL BESSEL"        PRG      3 "SPRITE BOOT"        PRG
 32  "4-KAREN"             PRG     43 " SPRITE EDITOR"     PRG
 33  "5-DIP"               PRG      2 " SCROLL.DATA"       PRG
 20  "FRENCH 64"           PRG      3 "SAMPLE SPRITES"     PRG
  9  " STANDARD.SET"       PRG     33 "SPRITE INSTR."      PRG
 28  "SINGLE BACKUP"       PRG      4 "CHAR BOOT"          PRG
  5  "MOUSE"               PRG     32 " CHAR EDITOR"       PRG
  9  "SPRMON.SYS51201"     PRG      1 " ROTATE.DATA"       PRG
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  2  "ABK"                 PRG     13 "ANIMAL"             PRG
 11  "BIG MATH 1.1"        PRG     27 "READER"             PRG
  9  "CASH REGISTER"       PRG     13 "MATH.QUIZ"          PRG
  5  "CRYPTOGRAM"          PRG     10 "ANIMAL.DATA"        SEQ
  8  "DONUTS"              PRG     11 "HOT.&O.EASY"        PRG
 24  "ELIZA"               PRG     13 "SPELLING.TEST"      PRG
 10  "EUROPE"              PRG     14 "G'S & I'S"          PRG
  6  "FRACTIONS"           PRG     23 "DISPLAY"            PRG
 17  "FRENCH VERBS"        PRG      4 "HISTOGRAM"          PRG
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 13  "HAIKU 5"             PRG     10 "EUROPEAN CAPITOL"  PRG
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  7  "MATH DICE"           PRG     10 "FRENCH"             PRG
 13  "MATH TUTOR"          PRG      6 "GLOBAL"             PRG
  7  "MISSING NUMBER"      PRG     23 "ICE CREAM PAR"      PRG
  9  "NO"                  PRG     26 "MATH IQ"            PRG
 15  "PET8"                PRG     27 "HANGMAN 2"          PRG
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 14  "P&L PLOTTING DEM"    PRG     12 "XMON64H(29900)"     PRG
 10  "SPRITE DEMO"         PRG     12 "XMON64T(38003)"     PRG
  9  "3-D DEMO"            PRG     10 "SHOOT"              PRG
  2  "M/L DRAW DEMO"       PRG      5 "SEQUENTIAL FILE"    PRG
 65  "STAR TREK IV-A"      PRG     13 "RANDOM FILE"        PRG
 38  "SPRITE MAKER"        PRG     19 "DISASSEMBLER DIS"   PRG
 38  "ATARI"               PRG     16 "DISK CHECKER"       PRG
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 12  "TRACK & SECTOR"      PRG      6 "SECTOR PRINT"       PRG
  8  "MENU"                PRG      7 "DSK VIEW/CHANGER"   PRG
  2  "   DIRECTORY   "     SEQ
195BLOCKS FREE.

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 67  "PONZO TUTOR-2.64"    PRG      4 "SAVE FILE(S) SEQ"   PRG
 74  "PONZO TUTOR-3.64"    PRG     28 "SINGLE BACKUP"      PRG
 64  "PONZO TUTOR-4.64"    PRG     33 "SPRITE INSTR."      PRG
 67  "PONZO TUTOR-5.64"    PRG     10 "64 MEM CHART.SR"    PRG
 61  "PONZO TUTOR-6.64"    PRG      3 "INDEX HARDCOPY"     PRG
 60  "PONZO TUTOR-7.64"    PRG      3 "INDEX HARDCOPY 2"   PRG
 12  "LISTER.V64"          PRG      8 "INDEX HARDCOPY 3"   PRG
  4  "1525 CHAR.EDIT"      PRG     19 "WORLD CLOCK"        PRG
  7  "TIME VEN INST"       PRG     11 "SUPER CHASE"        PRG
  7  "TIM VEN SET UP"      PRG     25 "STARTREK"           PRG
 19  "TIME ADVENTURE"      PRG
  5 BLOCKS FREE.

"CCC LIBRARY DISK" C2 2A
  3  " LIBRARY NOTES "     PRG      4 "ADVF 3"             SEQ
  7  "SCRLL.LDR.TAPE"      PRG      5 "ADVF 4"             SEQ
 46  "SPRT.EDIT.TAPE"      PRG      5 "ADVF 5"             SEQ
 25  "BIMON"               PRG      8 "ADVITM"             SEQ
 26  "SOUNDER"             PRG      5 "ADVKEYS"            SEQ
 11  "DOS IN BASIC"        PRG     18 "ADVMAP"             SEQ
 88  "SUPERTREX 64+"       PRG     15 "ADVSHOR"            SEQ
 48  "ADVENTURE-64"        PRG      2 "HIRES VIEW"         PRG
  9  "ADVF 0"              SEQ     32 "1-DOLLAR"          PRG
  5  "ADVF 1"              SEQ     32 "2-MAP"             PRG
  4  "ADVF 2"              SEQ     32 "3-DBL BESSEL"      PRG
  3  "ADVF 20"             SEQ     32 "4-KAREN"           PRG
  7  "ADVF 21"             SEQ     33 "5-DIP"             PRG
  9  "ADVF 22"             SEQ     22 "DISK UTILITIES"    PRG
  8  "ADVF 23"             SEQ      2 "COMM64"            PRG
  6  "ADVF 24"             SEQ     56 "BACKGAMMON"        PRG
  7  "ADVF 25"             SEQ      4 "PARTITION LOADER"  PRG
 11  "ADVF 26"             SEQ      5 "PARTITION /4"      PRG
  6  "ADVF 27"             SEQ     13 "SPEED TYPE 64"     PRG
  5  "ADVF 28"             SEQ     12 "1 SIN+"            PRG
  1  "ADVF 29"             SEQ
  0 BLOCKS FREE.

"CCC LIBRARY DISK" D1 2A
 33  "ROM 1"               PRG      7 "64 SEARCHER"        PRG
 33  "ROM 2"               PRG      4 "ULTRASORT TEST"     PRG
  1  "KERNAL BOOT2"        PRG     23 "ULTRASORT"          PRG
  1  "TRANS.A000-A"        PRG      1 "C-64 WEDGE"         PRG
  1  "KERNAL BOOT1"        PRG      4 "DOS 5.1"            PRG
  5  "DISK MENU"           PRG      2 "DOS INSTR."         PRG
 15  "DISK BACKUP 1541"    PRG     45 "MONTANA"            PRG
 20  "BIORHYTHMS"          PRG     94 "KANON"              PRG
 28  "MUNCHMAID"           PRG     20 "STAR PILOT"         PRG
 21  "OIL TYCOON"          PRG     14 "SKI-64"             PRG
 42  "WUMPUS HUNT"         PRG     23 "DARK STAR"          PRG
 21  "JAPANESE AFD"        PRG     27 "MARTIAN INVADERS"   PRG
  4  "UNNEW"               PRG     56 "FOOTBALL64"         PRG
 12  "FILECOPIER INSTR"    PRG     13 "1 SIN+"             PRG
 14  "FILECOPIER"          PRG      3 "STRING THING 64"    PRG
  4  "ALARM CLOCK"         PRG      5 "ENTERPRISE C64"     PRG
  5  "AUTO PROOFREADER"    PRG     24 "CONSTRICTOR.4"      PRG
 14  "DISASSEMBLER 64"     PRG      8 "EXPANDER.4"         PRG
  3  "RAMTEST/MACHINE"     PRG      3 "SLOW LISTER"        PRG
  5  "FOUR-SPEED BRAKE"    PRG
  6 BLOCKS FREE.

"CCC LIBRARY DISK" D2 2A
 13  "C-64 FILE CASE"      PRG     27 "TOKER64"            PRG
  9  "LOCKDISK64"          PRG     22 "APD"                PRG
  6  "CROSS-REF64"         PRG      6 "CROSS-REF"          PRG
 10  "COPY-ALL.64"         PRG     10 "BUPERMON64.V2"      PRG
109 "BACH FUGUE.C"         PRG     12 "LISTER.V64"         PRG
 14  "SPRITE MANIP.64"     PRG     10 "COPY-ALL"           PRG
 24  "MUSIC MASTER"        PRG     30 "TELCOM232.4.17.4"   PRG
 23  "YESTERDAY.C"         PRG     30 "TELCOM8010.4.0.4"   PRG
 17  "HIRES GRAPHICS"      PRG     11 "TELCOM.INST.4"      PRG
  1  "PET EM"              PRG      4 "MERGER"             PRG
  6  "SCREEN PLOTTER"      PRG      8 "RS323.INSTR.4"      PRG
 98  "MONOPOLE.C"          PRG      4 "FACTORS.VIC64"      PRG
 14  "SUBMARINES.C"        PRG     10 "BLACKJACK!"         PRG
 27  "MASTER"              SEQ      6 "BIRTHDAY.64"        PRG
 14  "COWBOY SHOOTOUT"     PRG     12 "TWIN BAGELS"        PRG
 11  "RES MORT"            PRG     14 "BATTLESHIPS"        PRG
  1  "PET EMU BOOT"        PRG      9 "LINCOLNSHIRE"       PRG
 17  "EMULATOR"            PRG      2 "COPY FILE 64"       PRG
  4  "555 TIMER DESIGN"    PRG
 11 BLOCKS FREE.

"CCC LIBRARY DISK" E1 2A
  5  "CONT.LDR.ML"         PRG     32 "EYES"               PRG
  9  "HI RES LOADER"       PRG     32 "FRIENDS"            PRG
  1  "SCREEN"              PRG     32 "SINCOS2"            PRG
  7  "CONT.LDR.PAL"        PRG     32 "SATELLITE"          PRG
 32  "SQUEEZE"             PRG     32 "DONALD.DUCK"        PRG
 32  "TEST"                PRG     32 "VM.THINGS"          PRG
 32  "HOPALONG"            PRG     32 "SESAME.ST"          PRG
 32  "GUY"                 PRG     32 "NUDE.REV"           PRG
 32  "FIG1"                PRG     32 "VIS.ROSETTE"        PRG
 32  "FIG2"                PRG     32 "VIS.61A"            PRG
 32  "FIG3"                PRG     32 "XMAS.CARD.1"        PRG
 32  "HOUND2"              PRG     32 "4HILLS"             PRG
  2 BLOCKS FREE.

"CCC LIBRARY DISK" E2 2A
  1  "LIST-ME C61.L"       PRG     32 "DES.1"              PRG
  5  "CONT.LDR.ML"         PRG     32 "7-SHILL"            PRG
  8  "HI RES LOADER"       PRG     32 "MUSIC"              PRG
  1  "SCREEN"              PRG     32 "MAP"                PRG
  6  "CONT.LDR.PAL"        PRG     32 "DIANE"              PRG
 32  "SPIRAL.1"            PRG     32 "WILLY"              PRG
 32  "SUE"                 PRG     32 "RACCOON"            PRG
 32  "KAREN"               PRG     32 "SINCOS1"            PRG
 32  "SNOOPY"              PRG     32 "MATCH"              PRG
 32  "ALBERT"              PRG     32 "WINSTON"            PRG
 32  "DOLLAR"              PRG     32 "MICROMETER"         PRG
 32  "DIP"                 PRG     32 "NUDE"               PRG
 32  "SNAIL"               PRG
  3 BLOCKS FREE.

"CCC LIBRARY DISK" F1 2A
 47  "BITS AND BYTES"      PRG     52 "DISKVIEW-64"        PRG
  5  "BYTSPRITES"          PRG     13 "MINIWORDPRO.64"     PRG
  1  "DOS.BOOT.64"         PRG     26 "LIST"               PRG
  4  "+DOS 5.1.64"         PRG     18 "ARTILERY"           PRG
  2  "+DOS.INST.64"        PRG     26 "BACKGAMMON"         PRG
 37  "PILOT INST.64"       PRG     13 "BUGS 64"            PRG
 15  "PILOT TRANSL.64"     PRG     22 "CAVES & CAVERNS"    PRG
  4  "DISK ADDR CHANGE"    PRG     12 "CHECKERS"           PRG
 11  "COPY/ALL"            PRG     24 "CONSENTRATION 64"   PRG
 15  "HOW TO USE"          PRG     12 "HAMMARABI"          PRG
  5  "HOW PART TWO"        PRG      8 "HUKAAK"             PRG
  1  "C-64 WEDGE"          PRG     21 "OTHELLO"            PRG
  4  "DOS 5.1"             PRG     16 "PI HUNT 64"         PRG
  9  "PRINTER TEST"        PRG     16 "PI HUNT 64.2"       PRG
  6  "VIEW BAM"            PRG     24 "YAHTZEE"            PRG
  4  "CHECK DISK"          PRG     33 "MUGWAMPS"           PRG
 14  "DISPLAY T&S"         PRG     50 "DISK CMDS"          PRG
  9  "PERFORMANCE TEST"    PRG     69 "NUCLEAR DEMO"       PRG
  5  "SEQUENTIAL FILE"     PRG      7 "GASSER"             PRG
 15  "RANDOM FILE"         PRG
  1 BLOCKS FREE.

CCC LIBRARY DISK" F2 2A
  5  "BOOT.UK2.64"         PRG     58 "QUIET AFTERNOON"    PRG
 23  "+SPRITES.64"         PRG     42 "G-BACK CHALLENGE"   PRG
  3  "+MUSIC.64"           PRG      8 "GUESS GRAPH"        PRG
  7  "+LAND.64"            PRG      8 "SAFE CRACK"         PRG
 71  "+DEMO.64"            PRG      6 "TORPEDO"            PRG
 15  "1000 MILES/INST"     PRG     52 "3DMAZE"             PRG
 25  "1000 MILES"          PRG      9 "FIFTEEN.64"         PRG
 13  "1 SIN+"              PRG     14 "OUTPOST 64"         PRG
 79  "STAR TREK-C64"       PRG     23 "IT"                 PRG
 23  "DRAW POKER"          PRG     53 "SNOOPY MATH"        PRG
 25  "CARD SNAP"           PRG     44 "LOME(64)RANGER"     PRG
 23  "CLUE"                PRG      2 "ALPHABET TYPE"      PRG
 17  "SPACE NIM"           PRG      2 "TEMPERATURE CONV"   PRG
 14  "DUCKSHOOT"           PRG
  2 BLOCKS FREE.

"CCC LIBRARY      " G1 2A
 18  "DISK MANAGER"        PRG      4 "CHRISTMAS"          PRG
  1  "SPACE DUEL BOOT"     PRG    149 "CHRISTMASMUSIC"     PRG
  5  "SPACE DUEL49152"     PRG     17 "CHRISTMASCODE"      PRG
  4  "AUTO PROOF"          PRG      5 "CHRISTMASBOOT"      PRG
 12  "ML%"                 PRG      2 "DEMO.BOOT"          PRG
  4  "UNNEW"               PRG     17 "DEMO.C000"          PRG
  8  "MERRY CHRISTMAS"     PRG      4 "SNAIL.C64.BOOT"     PRG
 12  "WORD HUNT 10/10"     PRG     63 "SNAIL.C64.INST"     PRG
 13  "WORD HUNT 20/30"     PRG     93 "SNAIL.C64"          PRG
 12  "WORD HUNT 10/15"     PRG      3 "GEMINI SCR.DUMP"    PRG
  2  "PRINT LOTTO 649"     PRG     11 "HAM CODE"           PRG
  2  "SLOT.BOOT"           PRG      2 "CATALOG INST."      PRG
  6  "SLOT.A"              PRG     44 "CATALOG"            PRG
 45  "SLOT"                PRG     86 " BREAKOUT"          PRG
  3  "KEYPRINT.INST"       PRG     28 "SINGLE BACKUP"      PRG
  1  "KEYPRNT.#C000"       PRG      8 "INDEX HARDCOPY 4"   PRG
  7  "KEYPRNT.PAL"         PRG
  3 BLOCKS FREE.

"CCC LIBRARY      " G2 2A
 40  "MC.MASTER CAT"       PRG    103 "MU.C64 MUSIC"       PRG
  9  "MC.MAKE MASTER"      PRG     20 "MU.MACHINE OBJ"     PRG
  5  "COMMANDS"            PRG     18 "TEXTMASTER 64"      PRG
 30  "COM.TEST DEMO"       PRG     40 "TM-INSTRUCT 1"      PRG
 22  "COM.BORT DEMO"       PRG     40 "TM-INSTRUCT 2"      PRG
  4  "COM.HOW FAST"        PRG      9 "TM-INSTRUCT 3"      PRG
 58  "HR.GRAPHICS PAL"     PRG     10 "AN.INSTRUCTIONS"    PRG
 24  "HR.GRAPHICS INST"    PRG     33 "AN.ELLIPSE"         PRG
  9  "HR.GRAPHICS OBJ"     PRG     10 "AN.WIBBLE"          PRG
  6  "HR.GRAPHICS DEMO"    PRG     56 "AN.ANIMATION PAL"   PRG
  3  "HR.PICTURE LOAD"     PRG      4 "AN.ANIMATION OBJ"   PRG
 33  "HR.PICTURE 1"        PRG     10 "AN.ANIMATION DEM"   PRG
  2  "HR.HIRES TO 1525"    PRG     10 "64 TEST"            SEQ
 27  "MU.PLAYER PAL"       PRG
 19 BLOCKS FREE.

"CCC LIBRARY DISK" H1 2A
  8  "MINEFIELD 2.P"       PRG      2 "REF.PAGE 126.1"     PRG
 19  "STAR LANES.P"        PRG      2 "REF.PAGE 127.1"     PRG
 17  "WORD-SEARCH.P"       PRG      2 "REF.PAGE 130.1"     PRG
 20  "TV SATELLITES.P"     PRG      2 "REF.PAGE 139.1"     PRG
  4  "SEQ DIR.C"           PRG      1 "REF.PAGE 142.1"     PRG
  4  "THE BIRDS.C"         PRG      1 "REF.PAGE 142.2"     PRG
 14  "DEMON STAR2.C"       PRG      7 "REF.PAGE 146.1"     PRG
 39  "CYLON IAP.C"         PRG     12 "REF.PAGE 147.1"     PRG
 72  "DEATH STAR.C"        PRG      8 "REF.PAGE 148.1"     PRG
 91  "DR. LIVINGSTON.C"    PRG      1 "REF.PAGE 153.1"     PRG
 69  "PIRATE ADV.C"        PRG      1 "REF.PAGE 159.1"     PRG
  8  "TINY.AID.C"          PRG      1 "REF.PAGE 160.1"     PRG
  3  "KALEIDOSCOPE.C"      PRG      1 "REF.PAGE 161.1"     PRG
 18  "MINEFIELD.C"         PRG      2 "REF.PAGE 163.1"     PRG
 18  "SNOOP.C"             PRG      2 "REF.PAGE 165.1"     PRG
 16  "VIPER.C"             PRG      2 "REF.PAGE 167.1"     PRG
  1  "FEED.BOOT.C"         PRG      4 "REF.PAGE 181.1"     PRG
 26  "+THE.EARTH.C"        PRG      2 "REF.PAGE 185.1"     PRG
  1  "+FEED.ML.C"          PRG      7 "REF.PAGE 187.1"     PRG
 16  "DIR. READER.C"       PRG      2 "REF.PAGE 193.1"     PRG
 63  "SUPER64.SRC"         PRG      2 "REF.PAGE 197.1"     PRG
  4  "CONTEXT INDEXER"     PRG      2 "REF.PAGE 200.1"     PRG
  4  "LIST-ME (C)63.L"     PRG      2 "REF.PAGE 203.1"     PRG
  3  "REF.PAGE 20.1"       PRG      1 "REF.PAGE 205.1"     PRG
  2  "REF.PAGE 45.1"       PRG      1 "REF.PAGE 206.1"     PRG
  1  "REF.PAGE 85.1"       PRG      1 "REF.PAGE 209.1"     PRG
  2  "REF.PAGE 110.1"      PRG      1 "REF.PAGE 288.1"     PRG
  1  "REF.PAGE 111.1"      PRG      2 "REF.PAGE 344.1"     PRG
  5  "REF.PAGE 114.1"      PRG      4 "REF.PAGE 347.1"     PRG
  2  "REF.PAGE 117.1"      PRG      4 "REF.PAGE 356.1"     PRG
  6  "REF.PAGE 118.1"      PRG      3 "REF.PAGE 357.1"     PRG
  1  "REF.PAGE 119.1"      PRG      4 "REF.PAGE 371.1"     PRG
  1  "REF.PAGE 123.1"      PRG      1 "USER.PAGE 43.1"     PRG
  1  "REF.PAGE 123.2"      PRG      1 "USER.PAGE 44.1"     PRG
  4 BLOCKS FREE.

"CCC LIBRARY DISK" H2 2A
  2  "USER.PAGE 46.1"      PRG      7 "DIR-LIST.64.C"      PRG
  1  "USER.PAGE 47.1"      PRG     14 "DEMON STAR.C"       PRG
  1  "USER.PAGE 49.1"      PRG     23 "HANKMEN"            PRG
  2  "USER.PAGE 51.1"      PRG     28 "DOSBANK.C"          PRG
  2  "USER.PAGE 58.1"      PRG     30 "LINK.INSTR.C"       PRG
  1  "USER.PAGE 65.1"      PRG     19 "RELOCATOR 5.2.C"    PRG
  2  "USER.PAGE 71.1"      PRG     12 "PAINT.C"            PRG
  2  "USER.PAGE 76.1"      PRG     17 "WATERMELON-J.C"     PRG
  1  "USER.PAGE 78.1"      PRG      7 "HEADS OR TAILS.C"   PRG
  1  "USER.PAGE 80.1"      PRG     34 "MOON BUGGY.C"       PRG
  2  "USER.PAGE 81.1"      PRG     14 "TERMINALAL.64.C"    PRG
  1  "USER.PAGE 85.1"      PRG      7 "+TERM.64.C"         PRG
  1  "USER.PAGE 86.1"      PRG     41 "TOLL BRIDGES.P"     PRG
  1  "USER.PAGE 87.1"      PRG     24 "MUSICMASTER"        PRG
  2  "USER.PAGE 88.1"      PRG     95 "THE KANON.C"        PRG
  1  "USER.PAGE 90.1"      PRG     19 "BACH DUET.C"        PRG
  1  "USER.PAGE 90.2"      PRG     36 "LIGHT CYCLES 64!"   PRG
  1  "USER.PAGE 99.1"      PRG     35 "NIGHTMARE PARK.C"   PRG
  1  "USER.PAGE 110.1"     PRG     34 "WHEEL FORTUNE.C"    PRG
  1  "USER.PAGE 111.1"     PRG     14 "SUBMARINES.C"       PRG
  2  "USER.PAGE 145.1"     PRG     16 "64 TIMEPIECE"       PRG
  4  "USER.PAGE 146.1"     PRG      8 "SILLY 64"           PRG
  6  "USER.PAGE 147.1"     PRG      4 "OLD ENG.BOOT"       PRG
 16  "BACKUP 1541"         PRG      9 "OLD ENGLISH(27)"    PRG
  9  "GOBLIN"              PRG      7 "DISK NAME CHANGE"   PRG
  9  "GOBLIN2"             PRG     24 "CONCENTRATION"      PRG
 13  "DOS-AID.64.C"        PRG
  1 BLOCKS FREE.

"CCC LIBRARY DISK" I1 2A
 12  "POTHOLES"            PRG      7 "S/SCRIPT COMMAND"   PRG
 13  "DOTS"                PRG     10 "1 TOUCH COMMANDS"   PRG
 10  "REC-BEEP"            PRG     23 "GRAPHIC TUT-2.64"   PRG
 16  "64 TIMEPIECE"        PRG     71 "GRAPHIC TUT-3.64"   PRG
  5  "COLOR BARS"          PRG     76 "SPRITES TUT-1.64"   PRG
 14  "MLX ENTRY MON-3"     PRG     31 "SPRITES TUT-2.64"   PRG
  6  "SPIKE.INST."         PRG     25 "LABEL.ASSEMBLER"    PRG
 18  "SPIKE"               PRG     18 "DRAGONMASTER"       PRG
 13  "SUPERBASIC"          PRG      5 "INV DISK DIR"       PRG
  3  "MOIRE PATTERN"       PRG      6 "DATAWRITER"         PRG
  2  "STAR DEMO"           PRG      9 "DISK HEADER"        PRG
  3  "FALLING SHAMROCK"    PRG     13 "OLD.MON.WED"        PRG
  8  "MERRY XMAS"          PRG     15 "R.REVENGE"          PRG
  2  "64 RENUMBER"         PRG      3 "ULTRAFONT INST"     PRG
  9  "TEST DRIVE 9"        PRG     12 "ULTRAFONT49152"     PRG
  9  "TEST DRIVE 8"        PRG     27 "HAUNTED MANSION"    PRG
  7  "SPRITE BASIC"        PRG      6 "PSM FUNCTION KEY"   PRG
  5  "BUTTERFLY SPRITE"    PRG      2 "ASTRO PANIC INST"   PRG
  5  "TIE FIGHTER"         PRG      2 "ASTRO PANIC BOOT"   PRG
 26  "CANYONS OF ZELAI"    PRG      7 "ASTRO 49152"        PRG
  1  "ONE LINE"            PRG      1 "OSIRIS BOOT"        PRG
  8  "SEA BATTLE"          PRG      8 "OSIRIS 49152"       PRG
  5  "INDEX HARDCOPY 5"    PRG     20 "RETRIEVALS"         PRG
  2  "1541 FORMATTER"      PRG     10 "FRACTION SHOOT"     PRG
 19  "SPEEDSCRIPT"         PRG     11 "MATH DRAG"          PRG
  2  "SPEEDSCRIPT.INST"    PRG
 19 BLOCKS FREE.

"CCC LIBRARY DISK" I2 2A
 16  "VOYAGER VI"          PRG     32 "180 RADIUS"         PRG
 32  "40 RADIUS"           PRG     32 "ET.PLOT"            PRG
 32  "60 RADIUS"           PRG     32 "GLOBE"              PRG
 32  "80 RADIUS"           PRG     11 "DMON/64"            PRG
 32  "10 DEGREES"          PRG     13 "DOC/64"             PRG
 32  "20 DEGREES"          PRG      8 "SBACK.64"           PRG
 32  "30 DEGREES"          PRG     11 "SCOPY.64"          PRG
 32  "45 DEGREES"          PRG      3 "LOADAT"            PRG
 32  "60 DEGREES"          PRG      5 "MICROMON INST"     PRG
 32  "70 DEGREES"          PRG     17 "MICROMON 49152"    PRG
 32  "80 DEGREES"          PRG      9 "FUNCTION KEYS"     PRG
 32  "90 DEGREES"          PRG     29 "DUAL 1541 BACKUP"  PRG
 32  "120 RADIUS"          PRG      9 "DUAL 1541 INSTR."  PRG
 32  "150 RADIUS"          PRG      4 "CHANGE DISK"       PRG
 17 BLOCKS FREE.

"CCC LIBRARY      " J1 2A
  7  "CARDCO LOCK"         PRG      2 "GREEN EYE PLOT"     PRG
  8  "INTERFACE TEST"      PRG      9 "TINY MENU"          PRG
  4  "DEMONS INST"         PRG      2 "FLOWERS"            PRG
  8  "DEMONS OF OSIRIS"    PRG      1 "COMAL STUFF-----"   SEQ
 19  "CANYON CRUISER"      PRG      4 "STR().PROG.C"       SEQ
  9  "PRACTICAL JOKE"      PRG      2 "VAL.F.287.C.I"      SEQ
 18  "HARDHAT CLIMBER"     PRG      1 "REVERSE.PROG.C"     SEQ
  7  "GRAPH PLOTTER"       PRG      3 "FACSUM.FUNC.R.C"    SEQ
  4  "ASTRO-PANIC INST"    PRG      3 "TINYMAX.FUNC.C"     SEQ
  7  "ASTRO-PANIC"         PRG      3 "HEXDEC.PROG.C"      SEQ
  2  "MUNCHMAZE.INST"      PRG     13 "PLOTTER.PROC"       SEQ
  7  "MUNCHMAZE"           PRG      2 "SUNFLAKE"           SEQ
  8  "RED BARON.INST"      PRG      9 "SUNFLAKE.PLOT"      PRG
 15  "RED BARON"           PRG      7 "SUNFLAKE.IMPROVE"   SEQ
 22  "ULTRAFONT.INST"      PRG     11 "PRINT DIRECTORY"    PRG
 12  "ULTRAFONT"           PRG     18 "FORMATTER"          PRG
 18  "TRENCHFIRE"          PRG      9 "PALINDROMES"        PRG
 17  "1541 8-UP"           PRG      5 "6/49 SIM"           PRG
 24  "POKER"               PRG     10 "FORMATTER.PLOT"     PRG
  7  "64-KEY"              PRG      4 "HI"                 PRG
 48  "CHARACTER EDITOR"    PRG      1 "PRINTER STUF-----"  SEQ
 21  "TEST    .CHR"        SEQ     43 "MONTH CALENDAR"     PRG
 18  "SILENT NIGHT"        PRG     14 "YEAR CALENDAR"      PRG
  2  "BOOTWEG"             PRG      8 "APPT. CALENDAR"     PRG
  6  " WES"                PRG      8 "A LABEL MAKER"      PRG
 10  "BARRIER BATTLE"      PRG      9 "2XCHAR.4"           PRG
  8  "ROAD RUNNER"         PRG     14 "DISK DRIVE EXP"     PRG
 10  "REACT"               PRG      5 "COLOR CHANGE"       PRG
  7  "HI-RES.INST"         PRG      5 "RAM VIEW 64 H/C"    PRG
 13  "HI-RES SKETCHPAD"    PRG     22 "DOCTOR.INS"         PRG
  1  "PLOTTER STUFF--"     SEQ
 37 BLOCKS FREE.

"CCC LIBRARY      " J2 2A
 11  "LIST-ME FIRST  "     PRG     14 "TEMP CONVERT.C"     PRG
 25  "WORD PROCESSOR.C"    PRG     28 "REG'D SUPPLY.C"     PRG
 16  "EASY EDIT.C"         PRG     12 "BIO-COMPAT.C"       PRG
 14  "TYPEWRITER.C"        PRG     12 "BIO-PLOTER.C"       PRG
  9  "TYPER.C"             PRG     17 "BIO-PRINTER.C"      PRG
  6  "TEXT EDITOR.C"       PRG     25 "CAR COST MILE.C"    PRG
 13  "MINIWORDPRO.C"       PRG     18 "RECIPE SIZER.C"     PRG
  8  "FOOD PRICES.C"       PRG     27 "ADDRESS BOOK.C"     PRG
 23  "HEATING COST.C"      PRG     27 "RECORDINGS.C"       PRG
  7  "MONEY EXCHANGE.C"    PRG     27 "LIBRARY CARDS.C"    PRG
 22  "PROPERTY EVAL.C"     PRG     14 "CHECKBOOK.C"        PRG
 18  "WEIGHT WATCHER.C"    PRG     28 "MAG INDEX.C"        PRG
 25  "MEMORANDA.C"         PRG      9 "BIORHYTHM.C"        PRG
 21  "LIFE EXPECT.C"       PRG
190BLOCKS FREE.

"CCC LIBRARY      " K1 2A
 12  "LIST-ME FIRST  "     PRG      7 "MORT SCHED.C"       PRG
 27  "INTEREST.C"          PRG      6 "MORT CALC.C"        PRG
 21  "BOOKEEPING.C"        PRG     12 "MORTGAGE.I"         PRG
 58  "LUMP SUM.C"          PRG     23 "MEMORANDA.C"        PRG
 23  "BOND YIELD.C"        PRG     13 "INVOICER.C"         PRG
  4  "FICA TAX.C"          PRG      7 "DATES.C"            PRG
  9  "STOCK OPTION.C"      PRG      5 "MILEAGE.C"          PRG
 11  "STOCK LIST.C"        PRG      6 "MARKS.C"            PRG
 15  "LOAN.C"              PRG     10 "GROWTH RATE.C"      PRG
 25  "IREG CASH FLOW.C"    PRG      4 "DAY OF WEEK.C"      PRG
 12  "INVESTMENT.C"        PRG      6 "CALENDER.C"         PRG
 11  "INVENTORY.C"         PRG      3 "TYPING TEST.C"      PRG
  4  "GROWTH CALC.C"       PRG     12 "BUSFRCABROI.C"      PRG
 14  "DECISION MAKER.C"    PRG     24 "APARTMENT.C"        PRG
 10  "FINANCIAL CALC.C"    PRG     19 "COPS BASE TAPE.C"   PRG
 12  "PORTFOLIO.C"         PRG     20 "COPS BASE DISK.C"   PRG
  7  "MORTGAGE.C"          PRG
230BLOCKS FREE.

"CCC LIBRARY      " K2 2A
 13  "MPRM SCREENS"        SEQ     19 "CATLOG.IMG"         PRG
 87  "MPRM.DOC"            PRG      6 "CMBOOT.IMG"         PRG
 74  "MPRMEXAMPLE"         PRG      7 "GRFUTL.IMG"         SEQ
 15  "MPRMSEQ"             PRG      1 "HD.IMG"             PRG
 74  "MPRMUTIL"            PRG     11 "PRTERR.IMG"         PRG
 20  "MPRM"                SEQ      7 "SNDUTL.IMG"         SEQ
 15  "DOC/64.LP"           PRG      3 "SEQ LISTER"         PRG
 24  "BINGO"               PRG      3 "ACCEPT.INF"         SEQ
  8  "SPRITE GEN"          PRG      7 "ACCEPT.IMG"         PRG
  9  "SUPER DIRECTORY"     PRG      3 "FORMAT.INF"         SEQ
 11  "DISK EDITOR"         PRG     17 "FORMAT.IMG"         PRG
  9  "DISK ORGANIZER"      PRG     12 "BUSFRCABROI"        PRG
 33  "DISK MASTER"         PRG     35 "CLUE TWO"           PRG
  1  "COMAL---STUFF---"    SEQ
150BLOCKS FREE.
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CCC BBS: 271-1082

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"CCC LIBRARY DISK" L1 2A
 1  "MENU"            PRG     6  "&4MENU"          PRG
43  "PROPS"           PRG     7  "VICMENU"         PRG
15  "MIND BOGGLE/64"  PRG    21  "VICSPEEDSCRIPT"  PRG
13  "MIND BOGGLE/VIC" PRG     3  "VICONTENTS"     SEQ
 9  "MEMO WRITER/64"  PRG     3  "64 CONTENTS"    SEQ
 9  "MEMO WRITER/VIC" PRG    19  "BB"              PRG
 5  "BEGIN CORNER/64" PRG    14  "SPEED1"          PRG
 5  "BEGIN CORNER/VIC" PRG    9  "SPEED2"          PRG
 6  "ML.BEG/64"       PRG    17  "SPEED3"          PRG
 6  "ML.BEG/VIC"      PRG    20  "SPEED4"          PRG
 8  "SOUND STORY"     PRG    10  "SPEED5"          PRG
 5  "STEP LISTER/64"  PRG     1  "64INSTR"        PRG
 4  "STEP LISTER/VIC" PRG     1  "INSTR"          PRG
 4  "VIC PRINT SOUND" PRG     1  "VICINSTR"       PRG
 2  "CASS 64"         PRG     8  "CONVERT64"      PRG
 3  "CASS BEEPER/VIC" PRG     8  "CONVERTVIC"     PRG
31  "SOUND SCULPTOR 1" PRG    4  "COMPUTESCREEN"  PRG
19  "J"               PRG     4  "COMPUTECOLOR"   PRG
33  "&4SPEEDSCRIPT"   PRG     1  "COMPUTE!"       PRG
 8  "SKI PHYSICS 1"   PRG    10  "GAIZETTE"       PRG
 8  "SKI PHYSICS 2"   PRG    10  "&4BOOKS"        PRG
16  "SKI PHYSICS/64"  PRG     7  "VICBOOKS"       PRG
14  "JOYSTICK CONTROL" PRG    4  "COMPUTE!/VIC"   PRG
14  "FAST ADD/64"     PRG     6  "GAIZETTE/VIC"   PRG
11  "FAST ADD/VIC"    PRG     1  "----------"     SEQ
26  "SUPERSPRITE"     PRG    11  "FABT COPY-64"    PRG
122BLOCKS FREE.

"CCC LIBRARY DISK" L2 2A
 1  "MENU"            PRG    10  "SHAPE MATCH"     PRG
 5  "COMPUTE!/VIC"    PRG     9  "WORD SCRAMBLE/64" PRG
 7  "GAIZETTE/VIC"    PRG     8  "WORD SCRAMBLE/VI" PRG
 3  "VICONTENTS"      SEQ    10  "BEGIN CORNER/VIC" PRG
 3  "COMPUTE!"        PRG     5  "BEGIN CORNER/64" PRG
 8  "VICBOOKS"        PRG     8  "1 TOUCH KEYWORDS" PRG
10  "&4BOOKS"         PRG    10  "RANDOM NUMBERS"  PRG
17  "3-D TAC TOE/64"  PRG     2  "TAPE DATA FILES1" PRG
17  "3-D TAC TOE/VIC" PRG     2  "TAPE DATA FILES2" PRG
 7  "CASTLE DUNGEONVI" PRG    2  "TAPE DATA FILES3" PRG
13  "D"               PRG     4  "FILE COPIER"     PRG
26  "CASTLE DUNGEON64" PRG    8  "SCROLL &4"       PRG
 9  "FRANTIC FISH/VI" PRG     3  "&4 CONTENTS"     SEQ
10  "FRANTIC2"        PRG     6  "MN"              PRG
40  "FRANTIC FISH/64" PRG    85  "CODE PRO-64 BMA" PRG
13  "REVENGE CYON/VIC" PRG    4  "COMPUTECOLOR"    PRG
13  "REVENGE CYON/64" PRG     4  "COMPUTESCREEN"   PRG
22  "THERAPY/64"      PRG     7  "VM"              PRG
22  "THERAPY/VIC"     PRG    10  "GAZETTE"         PRG
14  "SPELL CRITTER/64" PRG   11  "FAST COPY-64"    PRG
 9  "SPELL CRITTER.VI" PRG
160BLOCKS FREE.

"CCC LIBRARY DISK" M1 2A
 1  "MENU"            PRG    12  "BONK BARRELS/VIC" PRG
 5  "COMPUTE!/VIC"    PRG    20  "SPACE PATROL/64" PRG
 7  "GAZETTE/VIC"     PRG    10  "SPACE PATROL/VI" PRG
 2  "COMPUTE!"        PRG    10  "BP"              PRG
 8  "VICBOOKS"        PRG    15  "ROBOT MATH/64"   PRG
10  "&4BOOKS"         PRG    13  "ROBOT MATH/VIC"  PRG
 7  "VM"              PRG    25  "BC"              PRG
 6  "MN"              PRG    11  "BEGIN CORNER/VIC" PRG
 4  "COMPUTECOLOR"    PRG     3  "COLOR CHART/VIC" PRG
 4  "COMPUTESCREEN"   PRG     3  "COLOR CHART/64"  PRG
18  "GAZETTE"         PRG    12  "BEEKEEPER/64"    PRG
 4  "ULTRAFONT LOADER" PRG   11  "BEEKEEPER/VIC"   PRG
13  "ULTRAFONT.OBJ"   PRG     2  "VICONTENTS"     SEQ
 4  "REVISED ML/64"   PRG     2  "64 CONTENTS"    SEQ
85  "CODE PRO-64 BMA" PRG     1  "BEGIN CORNER/64" PRG
15  "BONK BARRELS/64" PRG
303BLOCKS FREE.

"CCC LIBRARY DISK" M2 2A
32  "DISK MASTER"     PRG     4  "DIR.L2"          SEQ
32  "64 DISK MASTER"  PRG     7  "DIR.S1"          SEQ
 2  "DIR.C1"          SEQ     3  "DIR.S2"          SEQ
 2  "DIR.A2"          SEQ     3  "DIR.M1"          SEQ
 2  "DIR.A1"          SEQ     1  "----------"      SEQ
 4  "DIR.B1"          SEQ     5  "DISK DIR XREF"   SEQ
 2  "DIR.B2"          SEQ    19  "FUNCKEYS"        PRG
 4  "DIR.C2"          SEQ    31  "AUDIO CATALOGGER" PRG
 4  "DIR.D1"          SEQ     8  "AUDATA"          PRG
 3  "DIR.D2"          SEQ     3  "PRINT LOTTO &49" PRG
 2  "DIR.E1"          SEQ    19  "64 WORD HUNT"    PRG
 2  "DIR.E2"          SEQ     5  "LP RECORD TIMER" PRG
 4  "DIR.F1"          SEQ     2  "64 FANFARE"      PRG
 3  "DIR.F2"          SEQ     4  "MULT TO 79 NOS"  PRG
 3  "DIR.G1"          SEQ     8  "ALPHA-DIRECTORY" PRG
 6  "DIR.G2"          SEQ     8  "TINY-ALPH-DIRECT" PRG
 6  "DIR.H1"          SEQ    12  "UNSCRATCHER"     PRG
 5  "DIR.H2"          SEQ    12  "COLOR PENTONIMOS" PRG
 5  "DIR.I1"          SEQ    12  "64 DISK EDITOR"  PRG
 3  "DIR.I2"          SEQ     5  "TIGER SPRITE"    PRG
 5  "DIR.J1"          SEQ    16  "BUDGET PLANNER"  PRG
 3  "DIR.J2"          SEQ     4  "METEOR BOOT"     PRG
 3  "DIR.K1"          SEQ    32  "METEOR TITLE"    PRG
 3  "DIR.K2"          SEQ     2  "DATA"            PRG
 5  "DIR.L1"          SEQ     6  "ML METEOR"       PRG
291BLOCKS FREE.

"CCC LIBRARY DISK" N1 2A
 1  "MENU"            PRG    31  "BB"              PRG
 5  "COMPUTE!/VIC"    PRG    30  "CAMPAIGN MANAGER" PRG
 7  "GAZETTE/VIC"     PRG     2  "CURSOR SET/VIC"  PRG
 2  "COMPUTE!"        PRG     2  "CURSOR SET/64"   PRG
 3  "&4 CONTENTS"     SEQ    24  "64 BOOKS"        PRG
 3  "VICONTENTS"      SEQ     1  "BALLOON BLITZ!/VI" PRG
 7  "VM"              PRG     4  "STRING SEARCH 2" PRG
 6  "MN"              PRG     5  "STRING SEARCH 1" PRG
 4  "COMPUTECOLOR"    PRG     1  "SPRITE MAGIC LOA" PRG
 4  "COMPUTESCREEN"   PRG     2  "----------"      REL
18  "GAZETTE"         PRG     6  "GEMINI CHARS"    PRG
 3  "ERROR TRAP/64"   PRG     9  "COMPUTER.SET 5"  PRG
 3  "ERROR TRAP/VIC"  PRG     9  "GOTHIC.SET(19)"  PRG
 9  "VIC BOOKS"       PRG     9  "ROMAN/SCRIPT(19)" PRG
 2  "BEGIN CORNER 1"  PRG    12  "ART DECO SET(31)" PRG
 2  "BEGIN CORNER 2"  PRG     9  "OLD ENGLISH(31)" PRG
 2  "BEGIN CORNER 3"  PRG     9  "SNORD SET"       PRG
 2  "BEGIN CORNER 4"  PRG     9  "SCRIPTSET"       PRG
 5  "BEGIN CORNER 5"  PRG     9  "BYDEWIND SET"    PRG
 7  "BNO-CAT/VIC"     PRG     1  "----------"      SEQ
 9  "BC"              PRG     4  "CHAR EDITOR"     PRG
28  "BNO-CAT/64"      PRG    32  " CHAR EDITOR"    PRG
31  "SPRITE MAGIC"    PRG     1  " ROTATE. DATA"   PRG
 5  "DISK PURGE"      PRG     9  " STANDARD.SET"   PRG
22  "BALLOON BLIT2/64" PRG
2A6BLOCKS FREE.

"CCC LIBRARY DISK" N2 2A
48  "DISKFILER"       PRG     5  "STAND ALONE SCRA" PRG
35  "DISKFILER.DOC1"  SEQ    17  "QUILT GRAPHICS"  PRG
10  "DISKFILER.DOC2"  SEQ    43  "BILLIE JEAN ON!" PRG
39  "BEAT IT 30120"   PRG    34  "BOOT.PROTOCOL.10" PRG
61  "STARTREK BURROUG" PRG   25  "LOAD.PROTOCOL.10" PRG
18  "BWEDGE4"         PRG    17  "TERM.OTT.C64.ML3" PRG
 2  "BWEDGE4.INFO"    SEQ   137  "TERM.PROTOCOL.10" PRG
22  "ADDRESS FILER"   PRG     8  "INFO.PROTOCOL.10" SEQ
11  "SCROLLING SIGN"  PRG     7  "NBUILD"          PRG
11  "SEND MORSE"      PRG     1  "N E T"           SEQ
24  "BEMER"           PRG
67 BLOCKS FREE.

"CCC LIBRARY DISK" O1 2A
33  "SPEEDSCRIPT.V.5" PRG     4  "R2 1"            PRG
7a  "B/S INST.V.5"    PRG     4  "R2 2"            PRG
93  "B/S ARTICLE"     PRG    33  "R2 3"            PRG
 8  "FILE CONVERTER"  PRG    33  "R2 4"            PRG
 3  "CUSTOMIZER BOOT" PRG     4  "R3 1"            PRG
12  "THE CUSTOMIZER"  PRG     4  "R3 2"            PRG
 3  "ROM EMULATOR.C"  PRG    33  "R3 3"            PRG
 4  "8X 1"            PRG    33  "R3 4"            PRG
 4  "8X 2"            PRG     6  "ART SHOW.C"      PRG
33  "8X 3"            PRG     1  "LOGO.D"          PRG
33  "8X 4"            PRG     9  "DISSOLVE.D"      PRG
 4  "R1 1"            PRG    40  "JIMMY.D"         PRG
 4  "R1 2"            PRG    40  "SIGNATURE.D"     PRG
33  "R1 3"            PRG    14  "FUNNYBASIC"      PRG
33  "R1 4"            PRG    10  "FASTCOPIER"      PRG
12 BLOCKS FREE.

"CCC LIBRARY DISK" O2 2A
 1  "MENU"            PRG     5  "BEGIN CORNER 1/V" PRG
 5  "COMPUTE!/VIC"    PRG     4  "BEGIN CORNER 2/V" PRG
 7  "GAZETTE/VIC"     PRG     1  "ROCKNEY SOFTWARE" PRG
 2  "COMPUTE!"        PRG     5  "SCREEN HEAD/VIC" PRG
24  "64 BOOKS"        PRG     6  "SCREEN HEAD/64"  PRG
 9  "VIC BOOKS"       PRG     3  "ANIMATING VIC"   PRG
 7  "VM"              PRG     9  "LEARN COUNT/64"  PRG
 6  "MN"              PRG     9  "LEARN COUNT/VIC" PRG
 4  "COMPUTECOLOR"    PRG     4  "DISK TRICKS 1"   PRG
 4  "COMPUTESCREEN"   PRG     4  "DISK TRICKS 2"   PRG
18  "GAZETTE"         PRG     5  "DISK TRICKS 3"   PRG
 3  "&4 CONTENTS"     SEQ     6  "DISK TRICKS 4"   PRG
 3  "VICONTENTS"      SEQ    15  "SCREEN-80"       PRG
 4  "SPEED CUST BOOT" PRG     9  "CUSTOM-80"       PRG
 8  "AD"              PRG     1  "CUST CHAR LOADER" PRG
 1  "CUSTOM-80 LOADER" PRG   10  "CUST.SS"         PRG
36  "MYSTERY MANOR/64" PRG   23  "TREASURE HUNT/64" PRG
14  "MYSTERY MANOR/VI" PRG   23  "TREASURE HUNT/VI" PRG
 5  "BEGIN CORNER 1/6" PRG    1  "----------"      PRG
 6  "BEGIN CORNER 2/6" PRG   16  "FAST GENINI DUMP" PRG
338BLOCKS FREE.

"CCC LIBRARY DISK" P1 2A
 2  "MENU"            PRG    21  "CABBY/VIC"       PRG
 5  "COMPUTE!/VIC"    PRG    35  "TURTLE GRAPHIC 1" PRG
 7  "GAZETTE/VIC"     PRG    10  "TURTLE GRAPHIC 2" PRG
 2  "COMPUTE!"        PRG     3  "TURTLE GRAPHICS" PRG
 9  "VICBOOKS"        PRG    10  "TOMB/64"         PRG
24  "&4BOOKS"         PRG    10  "TOMB/VIC"        PRG
 8  "MN"              PRG     3  "VICREATIONS 2"   PRG
 8  "VM"              PRG    45  "FIRST AID"       PRG
 4  "COMPUTECOLOR"    PRG    10  "HIRES DUMP/64"   PRG
 4  "COMPUTESCREEN"   PRG     4  "VICREATIONS 3"   PRG
10  "GAZETTE"         PRG     1  "----------"      PRG
 2  "VICREATIONS 1"   PRG    10  "HIRES EDITOR"    PRG
 2  "VICONTENTS"      SEQ     1  "HIRES BASIC LOAD" PRG
 2  "&4 CONTENTS"     SEQ    10  "HIRES ML"        PRG
 4  "ROCKNEY SOFTWARE" PRG    6  "HIRES BASIC"     PRG
 8  "AD"              PRG    20  "LISTER"          PRG
40  "TREK"            PRG     2  "LISTER TESTER"   PRG
15  "VOCAB BUILDER"   PRG     9  "PICPRINT"        PRG
12  "TEACH ENGLISH"   PRG     1  "TRUE ID"         PRG
23  "QUIZ MASTER"     PRG    24  "HORSE RACE"      PRG
13  "QUIZ MASTER 2"   PRG     1  "CANYON RAIDER"   PRG
23  "MUSIC TUTOR"     PRG    11  "CR"              PRG
 7  "HIRESDUMP/VIC"   PRG    25  "MISSILE MATH"    PRG
37  "CABBY/64"        PRG    32  "LIGHTSAVER"      PRG
85 BLOCKS FREE.

"CCC LIBRARY DISK" P2 2A
 3  "LOAD ME FIRST"   PRG    42  "ML6A"           PRG
 1  "MACHINE LANGUAGE" SEQ    58  "ML6B"           PRG
 1  "BOOK (C)1983 BY " SEQ    54  "ML7A"           PRG
 1  "HAROLD BROCHMANN" SEQ    28  "ML7B"           PRG
20  "ML0"             PRG    42  "ML8A"           PRG
54  "ML1A"            PRG    16  "ML10A"          PRG
32  "ML1B"            PRG    28  "ML9A"           PRG
33  "ML2"             PRG    27  "ML9B"           PRG
48  "ML3A"            PRG     9  "UFO"            PRG
20  "ML3B"            PRG     6  "ML10B"          PRG
35  "ML4"             PRG     9  "ML10C"          PRG
50  "ML5"             PRG
87 BLOCKS FREE.

"CCC LIBRARY DISK" Q1 2A
 1  "CHECKER"         USR    19  "4040 COMMANDS.C"  PRG
13  "LIST-ME (C)TS.L" PRG    14  "THE GREAT FRED.C" PRG
28  "AUTOTERM/1650.C" PRG    20  "LIST-ME VIC 2.L"  PRG
 7  "TERM.64.D"       PRG    89  "DEFINITION.C"    PRG
10  "WET PAINT.C"     PRG    18  "TEXTMASTER.C"    PRG
21  "VIPER.C"         PRG    48  "TM-INSTRUCT 1.D" PRG
 3  "LIST FREEZER.C"  PRG    40  "TM-INSTRUCT 2.D" PRG
12  "RASTER INTERPT.C" PRG    9  "TM-INSTRUCT 3.D" PRG
13  "BIN DISK COPY.C" PRG    40  "USING &4 WEDGE.C" PRG
 9  "JSTICK DOODLE.C" PRG     1  "C-64 WEDGE.C"    PRG
 3  "MILEAGE.I"       PRG     4  "DOS 5.1"         PRG
53  "LIFESCORE.I"     PRG     2  "FLAG BOOT.C"     PRG
17  "RANDOM LOTTO.C"  PRG    41  "WORLD FLAGS.D"   PRG
10  "MUNCHMATH.C"     PRG     2  "BOOT 25TH.C"     PRG
34  "WORD WORKER.C"   PRG    41  "25TH.D"          PRG
 9  "64 FAST POKES.C" PRG     1  "SYS 40784.D"     PRG
22 BLOCKS FREE.

"CCC LIBRARY DISK" Q2 2A
 2  "MENU"            PRG     9  "B"              PRG
 5  "COMPUTE!/VIC"    PRG     9  "C"              PRG
 7  "GAZETTE/VIC"     PRG    27  "C/G TERM"       PRG
 2  "COMPUTE!"        PRG    27  "C/G TERM/VIC"   PRG
 9  "VIC BOOKS"       PRG    11  "DISK AUTOLOAD"  PRG
24  "&4 BOOKS"        PRG    18  "JUMP/64"        PRG
 8  "VM"              PRG    13  "JUMP/VIC"       PRG
 8  "MN"              PRG    15  "BUDGETEER/64"   PRG
 4  "COMPUTECOLOR"    PRG     7  "BUDGETEER/VI"   PRG
 4  "COMPUTESCREEN"   PRG    12  "B2"             PRG
18  "GAZETTE"         PRG     9  "FUNCTION KEY/64" PRG
17  "ML BEG"          PRG    29  "SUPERTANK"      PRG
 7  "HESGAMES"        PRG    11  "KAYLON/VIC"     PRG
35  "LJ.MD"           PRG    13  "KAYLON/64"      PRG
16  "BS"              PRG    10  "FUNCTION KEY"   PRG
15  "BC"              PRG     1  "C/G TERM/64"    PRG
 9  "LJPATH.C"        PRG     2  "POWER BASIC"    PRG
 4  "LJ.XYZ"          PRG     1  "ML BEG/VIC"     PRG
 2  "JUMPDEMO"        PRG     2  "ML BEG/64"      PRG
15  "JUMPER.C"        PRG     1  "----------"      USR
 2  "&4 CONTENTS"     SEQ     6  "DISK MENU"      PRG
 2  "VICONTENTS"      SEQ    19  "DISKMANAGER"    PRG
14  "MLX/64"          PRG    21  "ARITH. PROBS"   PRG
12  "MLX/VIC"         PRG     9  "TINY AID"       PRG
16  "BAGDAD/64"       PRG    33  "AMORTIIA'N REV'D" PRG
 8  "BAGDAD/VIC"      PRG
85 BLOCKS FREE.

"CCC LIBRARY DISK" R1 2A
 2  "MENU"            PRG     3  "AUTOLINE/64"    PRG
 5  "COMPUTE!/VIC"    PRG    14  "MLX 64 V2.02"    PRG
 7  "GAZETTE/VIC"     PRG     1  "C/G BOARD 1"     PRG
 2  "COMPUTE!"        PRG    63  "C/G BOARD 2"     PRG
 9  "VIC BOOKS"       PRG     1  "C/G BOARD 3"     PRG
24  "&4 BOOKS"        PRG     1  "C/G BOARD 4"     PRG
 8  "VM"              PRG     9  "LETTER ATTACK"   PRG
 8  "MN"              PRG    10  "LETTER ATTACK/64" PRG
 4  "COMPUTECOLOR"    PRG     2  "VICONTENTS"     SEQ
 4  "COMPUTESCREEN"   PRG     3  "64 CONTENTS"    SEQ
10  "GAZETTE"         PRG     5  "ML.BEG/64"      PRG
11  "3-D LABYRINTH"   PRG     2  "ML.BEG"         PRG
 4  "COS COMBAT"      PRG     1  "COS COMBAT/64"   PRG
10  "CD"              PRG     1  "CC"              PRG
16  "WORD GUESS"      PRG     5  "ML.BEG/VIC"     PRG
 6  "TIME CLOCK"      PRG     1  "LABYRINTH"      PRG
 6  "CABS INDEX"      PRG    11  "3D"              PRG
27  "DISK BACKUP"     PRG     1  "NAME"           PRG
 4  "AUTOLINE/VIC"    PRG     2  "ML BEG"         PRG
 4  "PRODUFREADER"    PRG    54  "TABLES"         PRG
16  "COS COMBAT64"    PRG     2  "MSGFILE1"       REL
 5  "TIME CLOCK/64"   PRG   172  "USTAT"          REL
 8  "MAGIC VOICE"     PRG    41  "QUICKCOPY V2.0" PRG
17  "WORD GAMES/64"   PRG
40 BLOCKS FREE.

"CCC LIBRARY DISK" R2 2A
66  "&4EXCH"          PRG    60  "BLITZTERM.C1"   PRG
27  "&4EXCH.DOC"      SEQ    35  "BLITZTERM.DOC"  SEQ
13  "TERM.C1"         PRG    13  "BT64.C1"        PRG
50  "BAYOUTERM2"      PRG    16  "TERM80"         PRG
36  "KCARET"          PRG    40  "TERM80.DOC"     SEQ
29  "KCREAT"          PRG    17  "NEWTERM"        PRG
72  "KERNAL BBS"      PRG     7  "TERM.C"         PRG
16  "KERNAL.DOC"      SEQ    47  "VERSA-TERM"     PRG
37  "AUTO PUNTER TERM" PRG     7  "AVT.ML1"       PRG
10  "BT64.C"          PRG     7  "AVT.ML2"       PRG
 6  "BLITZTERM.BOOT"  PRG    19  "BKC"           PRG
34 BLOCKS FREE.

"C64 COMAL 0.14  " S1 2A
 5  "BOOTCOMAL"       PRG    16  "RECURSIONS"      PRG
151"COMAL80.CAN"     PRG    18  "FORMATTER"       PRG
 1  "):-------------<" SEQ     1  "FILE'TO'PRINT"   PRG
 1  ")<-------------(" SEQ     1  "FILE'TO'SCREEN"  PRG
 1  ")ERROR MESSAGES(" SEQ     7  "DISK COMMANDS"   PRG
 1  ")>   FILE    <(" SEQ    11  "C64 COMAL INFO"  PRG
 1  ")<-------------(" SEQ     3  "REMOVE COMMENTS" PRG
 5  "COMALERRORS"     SEQ     5  "SEE'ROLL/DEMO"   PRG
 1  ")<---------- --<" SEQ     5  "SEE'PAGE/DEMO"   PRG
 1  ")FILE GENERATOR(" SEQ     3  "CURSOR/DEMO"     PRG
 1  ")<---------- --<" SEQ     2  "VALUE/DEMO"      PRG
10  "GENERROR.E.L"    SEQ     2  "SHIFT/DEMO"      PRG
 1  ")<---------- --<" SEQ     2  "JIFFY/DEMO"      PRG
 1  ")AUTO BOOT PROG(" SEQ    10  "QUICKSORT/DEMO"  PRG
 1  ")<---------- --<" SEQ     4  "JOYSTICK/DEMO"   PRG
 6  "HI"              SEQ     3  "PADDLE/DEMO"     PRG
 1  ")<---------- --<" SEQ     7  "DISK'GET/DEMO"   PRG
 1  ")SEQ DATA FILES(" SEQ     4  "LOGICAL OPS/DEMO" PRG
 1  ")<---------- --<" SEQ     1  ")<-------------(" SEQ
21  "INFORMATION3NOV" SEQ     1  ")  SPRITE DATA  <" SEQ
42  "INSTRUCTIONS0.14" SEQ    1  ")    FILES     <" SEQ
 1  ")<---------- --<" SEQ     1  ")<-------------(" SEQ
 1  ")COMAL PROGRAMS(" SEQ     4  "MOD2"            SEQ
 1  ")<---------- --<" SEQ     1  "SANTA"           SEQ
 6  "SEE'INFORMATION" PRG     1  ")<---------- --<" SEQ
 6  "SEE'INSTRUCTIONS" PRG    1  ")END OF COMAL  <" SEQ
 4  "LOGO'BOOK'SAMPLE" PRG    1  ")DEMO PROGRAMS <" SEQ
 4  "SNOWFLAKE"       PRG     1  ")              <" SEQ
 6  "SPRITE/TURTLE"   PRG     1  ")THE FOLLOWING <" SEQ
34  "LOGO EMULATOR"   PRG     1  ")TWO PROGRAMS  <" SEQ
10  "LANDER"          PRG     1  ")ARE WRITTEN IN(" SEQ
21  "MUSIC"           PRG     1  ")   BASIC     <" SEQ
11  "SANTA'GAME"      PRG     1  ")              <" SEQ
 3  "BOUNCE"          PRG     1  ")DO NOT LOAD   <" SEQ
21  "SPRITE'DESIGNER" PRG     1  ")THEM INTO     <" SEQ
 7  "READ'DIRECTORY"  PRG     1  ")COMAL         <" SEQ
 8  "PRINT'DIRECTORY" PRG     1  ")<---------- --<" SEQ
15  "EXPRESSION"      PRG    17  "1541BACKUP(FREE)" PRG
 8  "UTILITIES"       PRG    16  "SINGLE FILE COPY" PRG
67 BLOCKS FREE.

"CCC LIBRARY DISK" S2 2A
41  "BBS"             PRG     2  "DOWNLOAD MENU"   SEQ
41  "BBSR3.IMG"       PRG     2  "FEED INTRO"      SEQ
41  "BBSMOD"          PRG     1  "FEED NUM"        SEQ
35  "CELINE BBS"      PRG     2  "MAIN MENU"       SEQ
 7  "TERM.64"         PRG     1  "POST INTRO"      SEQ
35  "CELINE"          PRG     1  "READ INTRO"      SEQ
 1  "CALL NUM"        SEQ     1  "TESTFILE"        SEQ
 1  "CATEGORIES"      SEQ     2  "THIS 1"          SEQ
26  "CIS BROWSE"      SEQ     2  "THIS 2"          SEQ
 3  "CIS CAT"         SEQ     2  "THIS 3"          SEQ
 1  "CLUB 1"          SEQ     1  "WELCOME"         SEQ
 1  "CLUB 2"          SEQ     1  "BOARDS 1"        SEQ
 1  "CLUB 3"          SEQ     1  "BOARDS 2"        SEQ
 1  "CLUB INTRO"      SEQ     1  "BOARDS.FD"       SEQ
 1  "CLUB LIST"       SEQ     1  "----------"      SEQ
 1  "DELETE INTRO"    SEQ    17  "NEWTERM"         PRG
 2  "DOWNLOAD INTRO"  SEQ     7  "TERM.C"          PRG
381BLOCKS FREE.

"CCC LIBRARY DISK" T1 2A
 1  "BOOT.NEWUTH"     PRG     6  "TOUCH TONES"     PRG
103"DOC.NEWUTH"      SEQ     1  "CLICK-BY8928"    PRG
49  "WEDGE"           PRG    15  "80 COLUMN+"      PRG
 7  "VICTERM/NEWPUNTE" PRG    3  "BOOTBWDGE"       PRG
 7  "TERM/VIC.C1"     PRG    27  "BWDGE9"          PRG
38  "NEWPUNTER W/GRFX" PRG   69  "RAVICS TERMINAL" PRG
 8  "PUNTER.ML"       PRG     2  "BIN TO DEC"      PRG
59  "PTER."           PRG     4  "BIN TO GCR"      PRG
40  "ASM15"           PRG     1  "DEC TO BIN"      PRG
14  "CBTERM"          PRG     1  "DEC TO HEX"      PRG
19  "CBTERM.DOC"      SEQ     6  "GCR TO HEX"      PRG
74  "IMODUF 6.7"      PRG     2  "HEX TO DEC"      PRG
60  "CROSS REFERENCE" PRG     5  "HEX TO GCR"      PRG
36  "DISKALL"         PRG
8  BLOCKS FREE.

"CCC LIBRARY DISK" T2 2A
 2  "MENU"            PRG     4  "PROOFREADER"     PRG
 5  "COMPUTE!/VIC"    PRG    14  "MLX/64"          PRG
 7  "GAZETTE/VIC"     PRG    12  "MLX/VIC"         PRG
 2  "COMPUTE!"        PRG     2  "VICONTENTS"     SEQ
 9  "VIC BOOKS"       PRG    33  "&4 CONTENTS"    SEQ
24  "&4 BOOKS"        PRG     1  "CHOMPER/VIC"     PRG
 8  "VM"              PRG     1  "CHOMPER/64"      PRG
 8  "MN"              PRG     1  "C/G BOARD 1"     PRG
 4  "COMPUTECOLOR"    PRG     1  "C/G BOARD 2"     PRG
 4  "COMPUTESCREEN"   PRG    81  "C/G BOARD 3"     PRG
18  "GAZETTE"         PRG     1  "C/G BOARD 5"     PRG
 2  "POWER BASIC/V"   PRG     8  "C-64 WEDGE 5.1E" PRG
 9  "TRAP'EM/VIC"     PRG     5  "DOS 5.1E"        PRG
 8  "VT"              PRG    16  "COMPACTOR II"    PRG
11  "CV"              PRG    11  "UNCOMPACTOR II"  PRG
 6  "KABLAM/VIC"      PRG     2  "SAMPLE PROGRAM"  PRG
11  "MAG INDEX"       PRG     2  "UNCOMPACTED PGM" PRG
 1  "VIC MAG DRAW"    PRG     1  "COMPACTED PGM"   PRG
10  "MD"              PRG     1  "UNCOMPACTED @2"  PRG
39  "MATH DUNGEON"    PRG    67  "BACGAMMON V2"    PRG
 7  "DISK MERGE"      PRG     6  "3-D CLOCK"       PRG
 1  "C/G BOARD 3"     PRG    46  "BRUNHILDE"       PRG
16  "TRAP'EM/64"      PRG    22  "BURN RUBBER"     PRG
 7  "CHOMPER"         PRG     6  "NESSIE.INST"     PRG
26  "KABLAM/64"       PRG     2  "NESSIE.ML"       PRG
 2  "POWER BASIC/64"  PRG     2  "TUNNELS"         PRG
 2  "BAKER'S DOZEN 1" PRG    25  "MISSILE MATH"    PRG
 3  "BAKER'S DOZEN 2" PRG     5  "DRAGON"          PRG
 2  "BAKER'S DOZEN 3" PRG    13  "SNOOPER PBM C-64" PRG
 5  "BAKER'S DOZEN 4" PRG     7  "ANTIQUE CAR"     PRG
27 BLOCKS FREE.

"CCC LIBRARY DISK" U1 2A
 2  "MENU"            PRG     4  "PROOFREADER"     PRG
 5  "COMPUTE!/VIC"    PRG    12  "VIC MLX"         PRG
 7  "GAZETTE/VIC"     PRG    14  "PROOFER/64"      PRG
 2  "COMPUTE!"        PRG    44  "CRYPT/64"        PRG
 9  "VIC BOOKS"       PRG    12  "NAMETHATNOTE/64" PRG
24  "&4 BOOKS"        PRG    11  "COLOR-SWAP/64"   PRG
 9  "VM"              PRG    10  "LINE CROSS REF/6" PRG
 8  "MN"              PRG     2  "VICONTENTS"     SEQ
 4  "COMPUTECOLOR"    PRG     4  "BAKER'S DOZEN 2" PRG
 4  "COMPUTESCREEN"   PRG     3  "BAKER'S DOZEN 3" PRG
18  "GAZETTE"         PRG     3  "BAKER'S DOZEN 4" PRG
 5  "BAKER'S DOZEN 1" PRG     5  "BAKER'S DOZEN 5" PRG
13  "CYPHER/VIC"      PRG    24  "PEEK A BYTE DEMO" PRG
 1  "CRYPT/VIC"       PRG     7  "WEDGA A01"      PRG
16  "A"               PRG     1  "M1"              PRG
12  "B"               PRG     3  "&4 CONTENTS"    SEQ
 9  "ADDRESS"         PRG     1  "----------"      USR
14  "NAMETHATNOTE/VIC" PRG   35  "CLASSICS"       PRG
 6  "VIC QUIZ GEN"    PRG    26  "MOONLIGHT SNATA" PRG
 2  "VIC INVERTER"    PRG    76  "PRELUDE & FUGUE" PRG
 7  "COLOR/VIC"       PRG    19  "CHORALE"         PRG
11  "LINE REF/V"      PRG    62  "CLAIRE DE LUNE"  PRG
14  "MLX 64 V2.02"    PRG    38  "EL-GHADDAI"      PRG
25 BLOCKS FREE.

"CCC LIBRARY DISK" U2 2A
 2  "MENU"            PRG    14  "MLX 64 V2.02"    PRG
 3  "&4 CONTENTS"     SEQ     9  "MN"              PRG
11  "ALPHA ANX/64"    PRG    32  "NEW 64 BOOKS"    PRG
11  "ALPHA ANX/VIC"   PRG    14  "NEW VIC BOOKS"   PRG
 7  "AVAIL"           PRG     4  "POWER BASIC"     PRG
 1  "BAKER'S DOZEN 1" PRG     4  "POWER BASIC/64"  PRG
 3  "BAKER'S DOZEN 2" PRG     4  "PROOFREADER"     PRG
 3  "BAKER'S DOZEN 3" PRG    11  "V2"              PRG
 8  "BAKER'S DOZEN 4" PRG    12  "VICMLX V2.02"    PRG
 2  "COMPUTE!"        PRG     2  "VICONTENTS"     SEQ
 5  "COMPUTE!/VIC"    PRG     9  "VM"              PRG
 4  "COMPUTECOLOR"    PRG     1  "----------"      USR
 4  "COMPUTESCREEN"   PRG    22  "TAX RETURN 1984" PRG
15  "DL"              PRG    41  "BOHEMIAN"        PRG
12  "DG"              PRG    28  "RHAPSODY"        PRG
 1  "DIGGER64"        PRG    18  "B RHAPSODY"      PRG
 2  "DIGGERVIC"       PRG    44  "MPYTHON 30120"   PRG
 6  "DIR SORT"        PRG    10  "FONTASIA"        PRG
19  "GAZETTE"         PRG     5  "METABASIC INST"  PRG
 7  "GAZETTE/VIC"     PRG    54  "METAINST PCLIP"  PRG
10  "HEAT SEEKER/V"   PRG    16  "BASIC 34864"     PRG
18  "HEAT SEEKER64"   PRG     2  "PICLDR"          PRG
 2  "MLFB1/QUIZ"      PRG    32  "ELLEN"           PRG
 1  "MLFB2/TABLE"     PRG
119BLOCKS FREE.
```

A LEGAL OPINION...

By ROBERT A. KREISS
(from Northwest Computing, Seattle)

What do King Kong and Donkey Kong have in common? Do you think that the people who brought you King Kong also brought you Donkey Kong? These were the questions which Universal City Studios raised in court when they claimed that Nintendo Co., Ltd. violated trademark law by choosing the name Donkey Kong for their video game.

Trademark law states that a person or company cannot adopt and use a symbol or name for their product when it would be likely to cause the public to be confused, mistaken or deceived with an existing trademark. Back in 1933, RKO made a movie about a big gorilla. Richard Cooper, the son of the creator of the King Kong story, sold the rights to the name, character and story to Universal City Studios.

As you probably know, King Kong ended up climbing the Empire State Building and defiantly fighting off the world while clutching a beautiful woman in his giant hand.

Donkey Kong has a somewhat similar name, also involves a large gorilla who holds a woman captive, and the gorilla sends obstacles crashing at those who try to rescue the woman.

One of the legal questions raised in the lawsuit was whether the public was likely to be confused as to the source of the Donkey Kong game, i.e. whether they would be likely to believe that Donkey Kong was created or sponsored by those who brought them King Kong.

The court's answer was predictable. There was no likelihood of confusion. In fact, the court stated that no reasonable jury could have found confusing similarity between the names, story or characters involved, and consequently the lawsuit did not have to be tried to a jury.

The judge in the case described the Donkey Kong gorilla as "farcical, childlike and nonsexual," who uses "silly obstacles of pies, cement tubs, birthday cakes and umbrellas" in contrast with King Kong, "a ferocious gorilla in quest of a beautiful woman who goes on rampages, chases people, crushes them underfoot, or throws them to the ground, and fights with dinosaurs, giant snakes, airplanes and helicopters."

Undaunted, Universal City Studios appealed this case to the 2nd Circuit Court of Appeals, where it again lost. It remains to be seen whether they will try again at the Supreme Court level. I guess the moral is that where the stakes are large enough (Donkey Kong has presumably reaped considerable profits for its owner) lawsuits often follow.

The lawsuit also involved another interesting legal point about trademarks. Trademarks are based on the use of a symbol or name with a product. And trademark rights can be very valuable legal rights. But a person who sells a product under a particular mark cannot separate the two (the product and the mark) and sell the rights to use the mark while withholding the business of making and selling the particular product involved.

A hypothetical example will make that clearer. Suppose that Commodore were to decide to stop making home computers, but it felt that the Commodore name might be valuable to someone else. So Commodore, in this example, assigns its rights to use the Commodore name to Atari. Atari develops a new product, totally unlike its existing products and also unlike Commodore's computers.

The courts would say that the sale of the Commodore name from Commodore to Atari was invalid, because the name was detached from the Commodore line of products. In a nutshell, you can't separate the rights to a trademark name from the use of that name with the product with which it is associated.

In the King Kong case, Richard Cooper, the son of the originator of the King Kong story had rights associated with King Kong, including the rights to the book and publishing rights. Cooper apparently sold the rights to the character and story to Universal City Studios. As a matter of copyright law, this may have been perfectly proper. But Cooper also assigned Universal the rights to the name, a right governed by trademark, not copyright law.

The district court stated that the name could not be transferred as a separate asset. It had to be sold in connection with a sale of a business and goodwill, and Cooper had not done that. Put another way, Cooper had retained the rights to the book and the publishing rights, so there was no business that went with the sale to Universal.

(Mr. Kreiss is an attorney with a Seattle law firm.)

FREEWARE *(from page 1)*

of a block, just choose your preferred form of input. You may choose to change by TEXT (two formats), DECIMAL, BINARY, HEXADECIMAL, BASIC keyword, OPCODE/OPERAND, ADDRESS (hex or dec), WORD (hex or dec). I wouldn't be surprised if I've missed one or two. You can COPY a single byte to a range of bytes, SLIDE a range of bytes to another location in the block or PUT a range into or WRITE from memory, INPUT from keyboard to memory (for later WRITE or LOOK). There is an Encode/Decode function for disguising your data or programs, a LOOK for finding the occurence of any pattern of data, and a VIEW command for re-viewing the block with no changes for those 'whoops' times. You can disassemble any block, with or without undocumented opcodes, and finally, the most fun feature of all, the SPRITE mode.

When you are in SPRITE mode, you will see a 63 byte highlight in the block you are editing. In the bottom part of the screen will be four sprites in both high resolution and multicolour, as well as expanded and unexpanded. This will allow you to move the highlighted area to look for sprites within a file using the most sophisticated pattern matching computer, the human brain.

In the immortal words of the kitchen gadget salesman, "Now how much would you pay? But wait! If you act now, we will also include...". Yes, there is more. Many of these functions have the ability to use the printer instead of the screen, and at any time you may dump your screen to a printer. The dump is done in Hi-Res, so that all characters will show up exactly as they do on your screen, shifted, reversed and all.There is a small utility that allows you to set up a definition for your own favourite printer. "Now how much..." Ah yes, one more bonus is included. It is a Compacter/Uncompacter written entirely in machine language for speed. There is a well written instruction book that further explains all the commands, and offers examples and usage suggestions.

Whether you just want to learn more about the disk formats or have other applications for a good utility program, I feel it is well worth the cost.

(Disk Maintenance by Chris Newman and Greg Valazza, Reflexive Software, 6507 39th Ave. N.E., Seattle, WA 98115. RATING: Excellent!)

LIEN YIG *(continued from page 1)*

Presto Chango, one perfect 1541 clone! Everything then worked.

So, it would seem that the hardware at least was compatible 100%. The software, however is something else again.

As it comes, out of the box, the unit has limited usefulness. It would be O.K. as a simple mass storage device or as a second drive. It would of course, be far better than no drive at all.

It is very well constructed and runs very cool (after 24 hrs. continuous use was only barely warm to the touch). Thus it would be an excellent choice for someone running a small B.B.S.

Priced at $299 and with its software problems, it is not all that competitive with the new 1541 priced at $339; however, it is better built and has a better drive mechanism than even the new 1541's TEC drive. It has an all metal case (steel) which should provide good magnetic and electrostatic shielding. If only it was priced at $279 and had its EPROMs reprogrammed.....

Available at Broadway Computer Centre, 683 E. Broadway, Vancouver.

THE FINANCIAL FACTS

AUDITOR'S REPORT

We have examined the balance sheet of Commodore Computer Club as at November 30, 1984 and the statement of income and expenses for the year then ended. Our examination was made in accordance with generally accepted auditing standards, and accordingly included such tests and other procedures as we considered necessary in the circumstances.

In our opinion, these financial statements present fairly the financial position of Commodore Computer Club as at November 30, 1984 and the results of its operations and the changes in its financial position for the year then ended in accordance with generally accepted accounting principles applied on a basis consistent with that of the preceding year.

Marsh & Marsh
Chartered Accountants

Vancouver, Canada
January 4, 1985

COMMODORE COMPUTER CLUB

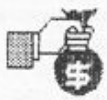
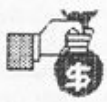
STATEMENT OF INCOME AND EXPENSES FOR THE YEAR ENDED NOVEMBER 30, 1984
(With comparative figures for 1983)

	1984 11 mos.	1983 12 mos.
Income		
Dues	$ 6,139	$ 11,435
Course fees	300	2,760
Vancouver Pet Users Club (Note 2)	-	1,875
Sundries	973	477
	7,412	16,547
Expenses		
Rent	2,859	2,943
Speaker	33	1,000
Printing & materials	234	1,024
Newsletter	2,106	1,924
Utilities	310	296
Legal	159	280
Depreciation	740	278
Course expenses	300	1,560
Office & sundries	763	1,199
	7,504	10,512
Net income (loss) for the year, to Members' Equity	$ (92)	$ 6,035

BALANCE SHEET, NOVEMBER 30, 1984
(With comparative figures for 1983)

	1984	1983
ASSETS		
Current Assets:		
Cash in bank	$ 2,307	$ 4,143
	2,307	4,143
Fixed Assets:		
Equipment	4,654	2,170
Less: Accumulated depreciation	1,018	278
	3,636	1,892
	$ 5,943	$ 6,035
LIABILITIES		
Current Liabilities	$ Nil	$ Nil
Total Liabilities	Nil	Nil
Members' Equity		
Balance, opening	6,035	$ Nil
Net income (loss) for the year	(92)	6,035
Total Members' Equity	5,943	6,035
	$ 5,943	$ 6,035

This is the balance sheet referred to in the Auditors' Report of Marsh & Marsh, Chartered Accountants, dated January 2, 1985.

STATEMENT OF CHANGES IN FINANCIAL POSITION FOR THE YEAR ENDED NOVEMBER 30, 1984
(With comparative figures for 1983)

	1984	1983
Funds Provided:		
Operations		
Income for the year	$ -	$ 6,035
Non-cash item - Depreciation	740	278
Total Funds Provided	740	6,313
Funds Applied:		
Operations	92	-
Loss for the year	2,484	2,170
Total Funds Applied	2,576	2,170
Increase (Decrease) in Working Capital	(1,836)	4,143
Working Capital, opening	4,143	-
Working Capital, closing	$ 2,307	$ 4,143
Represented by:		
Current Assets	$ 2,307	$ 4,143
Current Liabilities	-	-
	$ 2,307	$ 4,143


NOTES TO FINANCIAL STATEMENTS
NOVEMBER 30, 1984

Note 1: The Club was incorporated on April 22, 1983. Fixed assets are depreciated on the declining balance method. One half normal rates are applied to new additions: Software 33%; Hardwaare 20%

Note 2: Assets of the Vancouver Pet Users Club as at December 31, 1982 were transferred to Commodore Computer Club. The assets transferred were:

Equipment	$ 159
Cash	1,716
	1,875

Note 3: The Club changed its year end to November 30th in 1984. The current year reflects an eleven month accounting period.

Published by The Commodore Computer Club, P.O. Box 91164, West Vancouver, B.C. V7V 3N6. Editor: Mike Quigley (321-8465).

Club meetings are normally held: *Workshop:* first Tuesday of the month, 7:00 p.m., Thompson Secondary School cafeteria, 1755 E. 55th Ave. (near Victoria Drive); *Lecture:* third Wednesday of the month, 7:00 p.m., Emily Carr College of Art and Design, 1399 Johnston, Granville Island. These dates and locations are subject to change. For up-to-date information on any changes, please call the club's 24-hour answer phone:

PET-3311 (738-3311)

Club Executive: President -- Jim Bauerle; Vice-President -- Philip Seligman; Secretary -- Al Townsend; Treasurer -- Hu Reijne; Directors -- Guenter Hake, Glen Hazlewood, Helen Hing, Doug Johnson, Ellenor Jonsson, Murray Kopit, Gary Lee-Nova, Ken Moren, Dave Norman, Larry Phillips, Kevin Pickell, Mike Quigley, Nick Shevchenko, Sig Steiner, Marvin Steinway.

COMMODORE DISK DRIVES

By JOEL ELLIS REA

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(continued from last issue)

About two years later Commodore invented the Commodore 64! (Ever heard of one of those?) I won't go into all of its nice features, but it still had the serial bus and it still had BASIC V2.

Well, the 1540 was supposed to work with the 64, but it couldn't SAVE or LOAD programs due to timing problems. (Sound familiar?) This time, Commodore upgraded the disk drive instead of the BASIC in the computer, and so was born the 1541. The 1541 is almost identical to the 1540 except for the DOS in ROM.

Anyway, with BASIC V2, it is not easy to send commands to the disk. You have to OPEN the command channel. It's not easy to view the disk directory. You have to LOAD that as a program and LIST it. (Good-bye whatever program you were working on, unless you saved it). If the drive gets an error, it flashes its little red light as a sign. If you want to know what KIND of error, you can't just PRINT DS$ (Disk Status) like you can with BASIC V4.

These problems existed in the old PETs with BASIC V2 as well, so an enterprising progra er by the name of Bob Fairbairn wrote the DOS Manager, or DOS Wedge as it has come to be known. (Also referred to as the DOS Support Program.) Commodore put this goodie on the TEST/DEMO disk they included with every drive.

So with the 1540/1541, two new versions of The Wedge were written -- one for the VIC-20 and one for the C-64. This program is included on your TEST/ DEMO disk, and can really make life easier!

The manual included with the 1541 is actually a hurried revision of one of the earlier drive's manual. (For proof, just read the description of Error #74 "DRIVE NOT READY" on page 46 thereof! Not to mention the "redlight/green-light" mixup on page B!)

As a reference manual for technical-types, the 1541 manual isn't half bad. As a tutorial manual for the first-time computer user, it's a joke!

A COMPLEAT GUIDE TO MACHINE LANGUAGE PROGRAMMING ON THE PET

By HAROLD BROCHMANN

THE IRQ VECTOR (9-1)

Despite the blinding speed with which the microprocessor executes ML programs, it nevertheless has time to do a lot of other things at the same time...such as scanning the keyboard and decoding the results, updating the clocks and timer, etc.

These "time out for housekeeping" events take place 60 TIMES PER SECOND and are called INTERRUPT routines. They occur automatically whether the PET is executing ML or BASIC.

If the PET has time to do so many things during its interrupts, maybe it wouldn't notice if we added one more item to its list of things to do!

Locations $90 and $91 contain an address which is used by the PET during its interrupts. SYS 4, followed by .M,0090,0091 will reveal this address. Compare it with the IRQ component of the microprocessor status display. Same number. This address is called the IRQ VECTOR.

We will now write a simple ML program that simply writes your name at the top of the screen whenever the SHIFT key is pressed. The program will be "transparent" to BASIC. In other words, you can write and execute BASIC programs with no interference. Only when the SHIFT key is pressed does the ML sequence come into play.

Because this program is so short, and to keep things simple, we will place it in the second casette buffer. Briefly, here is what our program is going to do:

1. Change the address of the IRQ vector to point at our program.

2. Check to see if the shift key has been pressed; if it has not, let execution continue normally.

3. If the shift key has been pressed then write your name on the screen and then continue normally.

It would be disastrous if an interrupt occured while we were in the process of chaining the interrupt vector! For this reason, our first instruction is to disable or skip the interrupt sequence until we are finished. For this we use the SET INTERRUPT (SEI) instruction. The inverse instruction is CLEAR INTERRUPT (CLI).

```
003A 78       SEI       ;set interupt disable.
033B A5 90    LDA $90   ;move IRQ vector
033D 8D 66 03 STA $0366 ;...to new location
0340 A5 91    LDA $91
0342 8D 67 03 STA $0367
0345 A9 4F    LDA #$4F  ;new vector
0347 85 90    STA $90
0349 A9 03    LDA #$03
034B 85 91    STA $91
034D 58       CLI       ;ok to interrupt again.
034E 60       RTS
034F A5 98    LDA $98   ;shift key
0351 F0 12    BEQ $0365 ;...not pressed
0353 A9 02    LDA #$02
0355 8D 00 80 STA $8000 ;write BILL
0358 A9 09    LDA #$09  ;...on the screen
035A 8D 01 80 STA $8001
035D A9 0C    LDA #$08
035F 8D 02 80 STA $8002
0362 8D 03 80 STA $8003
0365 4C 00 00 JMP $0000 ;continue
```

Note that it doesn't matter what you place in bytes $0366 and $0367 because the program loads these bytes for you.

Now SYS 826. Press the shift key. There you are. Notice that you cannot get rid of this word by using the shifted CLEAR/HOME key. The word can be cleared by printing CHR$(147), or by printing a clear screen from program.

Those whose names are not Bill, as well as for those who would like longer messages displayed, are left to modify the program accordingly. Naturally it isn't necessary to make the appearance of the name or message dependent on pressing the shift key. Other cues can be used.

As you can appreciate, adding your own custom designed procedures to the PETs regular repertoire can be a lot of fun - and maybe even useful!

Many programs make use of the IRQ vector. This includes many of the utility programs such as Toolkit and Micromon! You can nearly always tell if a PET has such a utility program running in it because the IRQ vector will be altered.

SYS 4

The IRQ in a BASIC 3 PET is normally set to $E692. In BASIC 4 PETs this is $E455. If your microprocessor status display shows the IRQ vector to be something other than these numbers, then there is a utility program in operation. The SAVE command, by the way, will break the chain.

Try activating MICROMON, observe the IRQ address, exit, and then executing SAVE, followed by pressing the STOP key. Now SYS 4 and look at the IRQ address again.

We said that an examination of the IRQ vector will NEARLY always tell us whether or not the PET has a utility program operating in it. There is another way to do it. This is known as using a WEDGE, a technique discussed in the next section.

REVIEWS

(Continued from page two)

Konshak's Datafile (*Run*, November 1984) took 59.7 seconds to load in a large file consisting of 207 records; the compiled version took 55 seconds.

SpeedWriter's manual is extremely good, though there are references in it to the original English edition of the same program. One serious goof is a list of "ifs, ands or buts" on page 3 and 4 containing many technical terms not discussed for several more pages. This list is for "Speedwriter version 2.0" whereas the menu screen of the program reads version "1.1".

On the whole, SpeedWriter ran very smoothly. It found syntax and other errors in the program to be compiled and listed these either on screen or printer. There is even a method by which several programs can be compiled in succession. One feature I didn't like was what happened if the program to be compiled was not found on disk. The screen prompt -- "press space to continue" -- resulted in the computer being reset, which meant another 2-1/4 minutes to load SpeedWriter back in. (The documentation on how to handle this problem is poor.)

On the whole, I was not very impressed with SpeedWriter's compiling abilities. If a sample of BASIC programs had been included to compile and demonstrate some dramatic differences in speed, my opinion might have been quite different.

(Codewriter Corporation, 7847 North Caldwell Avenue, Niles, Illinois 60648. $55.00)

OLLIE'S FOLLIES

This is a well-designed program which combines elements of "jumping" games like Donkey Kong with the nasty robots of Impossible Mission. Your object is to get through various obstacles in 24 rooms. Impeding your progress, aside from robots, are hazards like drainpipes, lightning bolts, lasers, moving steps, elevators, balance beams, and fans. In order to escape to the next screen you have to open the exit door with a key, the path to which is fraught with more perils.

When I first started playing the game, I was intimidated by the prospect of 24 screens with no apparent bonuses, so I turned it over to my testing staff. They soon discovered that progressing to the end of level four resulted in a clue to starting the game at the fifth level, and logical deduction led to another clue which made it possible to start at level nine.

The game has plenty of imaginative touches, as well as a few peculiar ones. In order to defeat the robots, you have to jump up and touch the "energizer" which is like a giant fright wig. Its effect lasts for a few seconds while you are wearing it.

The ultimate object of the game is a mystery to me. However, for the arcade game junkie, its numerous challenges will provide hours of amusement ... and frustration.

(American Eagle Software, P.O. Box 46080, Lincolnwood, IL 60646 U.S.A. $34.95)