

Bear
Technologies
INC.



CARTRIDGE CRACKER™
WITH
ECA BACKUP™ AND SUPER SAVER™

CARTRIDGE CRACKER
(C) 1984 BEAR TECHNOLOGIES INC.
by
P.J. Myers and Dave Johnson

TABLE OF CONTENTS

<u>Section</u>	<u>Page no.</u>
A. Introduction	1
B. Set-up	2
C. Main Menu	3
1. Backup Cartridge Only	3
2. Backup Cartridge w/CC	3
3. Backup Cartridge w/CC and Debug	6
4. Backup MAX Cartridge	6
5. Cartridge Debug Report Only	7
6. ECA BACKUP	7
7. Format Disk	9
D. Special Functions	9
E. Advanced Programming	10
F. Screen and Printer Report	10
G. Printout Explanation	11
H. Supersaver-D64 and T64	13
I. Superbooter	14
J. 4 Minute Copy	14
K. Warranty Information.....	15

CARTRIDGE CRACKER WITH ECA BACKUP
(C) 1984 BEAR TECHNOLOGIES INC.

by
P.J. Myers and Dave Johnson

The Cartridge Cracker/ECA Backup software(CC software), will produce archival disk back-ups of most 4k, 8k, and 16k cartridges and Electronic Arts disks. The sole purpose of this package is to enable the user to make archival copies of original software. Cartridge Cracker and ECA BACKUP are for archival purposes only. It is illegal to copy, sell or distribute copyrighted computer software, except as permitted by the copyright laws of the United States.

The CC software, with the aid of the expander board, will make back-ups of most 4k, 8k, and 16k cartridges. The cartridge is copied to a disk which can be saved as an archival copy in case the cartridge fails.

ECA Backup will make backups of original Electronic Arts disks. ECA BACKUP does not require the expander board. Some Electronic Arts disks have many files in addition to the two 'EA' program files. Supersaver-D64 must be used to transfer all files, except the two 'EA' files, to the back-up disk.

Supersaver-D64 is designed to transfer files from a source disk to a destination disk or tape. It was designed to be used with ECA BACKUP, but it can also be used to transfer other program files.

Supersaver-T64 transfers files from a source tape to a destination disk or tape. This program will back-up tapes or transfer tapes to disk.

GETTING_STARTED

The CC package contains an expander board, a program disk, and a user's manual. The following equipment is required to operate the package:

1. C-64 or SX-64
2. 1541 or MSD single or dual
- *3. Compatible printer and interface (optional)

SET-UP

Cartridge Cracker:

Turn the computer off and insert the expander board into the game port of the computer. The socket on the expander board should be facing upward. The switches on the expander board should be set as follows: OPEN: sw1, sw2, sw4 and CLOSE: sw3. Turn the computer on and insert the program disk into drive 8. Type 'Load"*",8,1' and press 'Return'. The screen will display a copyright message and the program will load and run. The main menu will appear after 30 seconds indicating that Cartridge Cracker is ready. Remove the program disk from the drive and put it away.

ECA BACKUP:

The expander board is not required to operate ECA Backup. Insert the program disk into drive 8. Type 'Load"*",8,1' and press 'Return'. The screen will display a copyright message and the program will load and run. After 30 seconds the main menu will appear indicating that ECA Backup is ready. Remove the program disk from the drive and put it away. Selecting option 6 from the main menu will activate ECA BACKUP.

Supersaver-D64 and T64:

These programs are separate from the CC software. To load either Supersaver type 'Load"supersaver-D64 or T64",8,1 and press 'Return'. When the computer says 'Ready', type 'Run' and press 'Return'. Once Supersaver-T64 is loaded from the disk it can be saved to tape like any BASIC program.

MAIN_MENU

The main menu has eight options from which to choose. The options are:

1. Backup Cartridge Only
2. Backup Cartridge w/Cartridge Cracker
3. Backup Cartridge w/Cartridge Cracker and Debug
4. Backup Max Cartridge(left L.E.D. only)
5. Cartridge Debug Report only
6. ECA BACKUP
7. Format Disk
8. Exit

It's possible to return to the main menu from any other part of the program by pressing the 'Run/Stop' key.

The next eight sections of the manual explain the use of the CC software. Each main menu option has a series of sub-menus which contain complete instructions on the use of that option. Since many of the operating instructions are contained in the program, it is suggested that the CC software be loaded while reading this manual.

Options 1 - 5 assume the expander board is plugged in and the CC software is loaded. Refer to the set-up section for instructions on loading the program. Options 6 and 7 do not require the expander board, but it's assumed the CC software is loaded.

NOTE: The CC software was designed as a tool for making backups of most cartridges. It will correctly copy most 4k, 8k, and 16k commercially available cartridges. However, it is not fool-proof. There are a few cartridges which will not operate properly when copied with the CC software. These cartridges will require additional work to run properly. For this reason, the advanced programming section contains a detailed explanation of the report generated by CC. Although we do have a customer support line, we will not help you debug a cartridge over the phone or by mail.

1. Backup cartridge only.

Use this option if you wish to make an exact backup of a cartridge. This option makes exact copies of the cartridge ROMs. It does not remove any of the protection or memory initialization routines. If you choose this option, there is a good chance the program will not run when it is copied to a disk. This option should only be used if you need to make an exact copy of a cartridge. This option is primarily designed for EPROM programming.

2. Backup a Cartridge with Cartridge Cracker.

This option should always be used first when attempting to make a backup of a cartridge. Option 2 copies the cartridge and removes the BASIC and memory initialization routines from the copy of the cartridge. Most cartridge copies will run when copied with this option.

Let's make a backup of a cartridge using option 2. It is assumed the expander board is inserted into the game port, and the CC software is loaded into the computer. If you are not ready, refer to the set-up section for instructions.

Press the 'Run/Stop' key to make sure you are at the main menu screen. On the main menu, there is a flashing bar that says, "PLEASE ENTER SELECTION?". Press '2'. A '2' should appear in the upper right corner of the screen. The next flashing bar says, "SCREEN OR PRINTER?". Press 'S'. If you choose the printer by pressing 'P' the cartridge report will be sent to the printer. It's not necessary to read or understand the cartridge report to operate the CC software. The cartridge report is designed for advanced programmers. An explanation of the report appears in the Printer Report section of this manual. After pressing 'S' a new menu will appear.

CARTRIDGE CRACKER

1. Set switches on expander Bd. to:
 open: sw1, sw2, sw4
 close: sw3
2. Insert cartridge into expander Bd.
3. Reset switches on expander Bd. to:
 open: sw3
 close: sw4

Note: 'open' means 'off' and 'close' means 'on'

Read the instructions on the menu carefully. YOU MUST 'OPEN' AND 'CLOSE' THE SWITCHES IN THE EXACT ORDER SPECIFIED IN THE ABOVE MENU. If you make a mistake, press 'Run/Stop' and start over. Step 1 says to 'open' switches 1, 2, and 4 and to 'close' switch 3. This is how the switches should be positioned before you begin to use the CC software. If they are in any other position the CC software may not work properly. Step 2 says to insert the cartridge into the expander board. Hold the expander board and press the cartridge into the slot. The front of the cartridge should be facing you. On the SX-64, the cartridge will be facing the computer because the game port is on the top of the computer. When the cartridge is inserted, check the two L.E.D.'S on the expander board. If either both, or just the right one is lit, you can continue. If just the left one is lit, you have a MAX cartridge. To copy a MAX

cartridge press 'Run/Stop', and choose option 4 from the main menu. Now that you're sure you don't have a MAX cartridge, we can continue. Next, 'open' sw3 and 'close' sw4. When you are finished, press 'Return'. If you have failed to correctly follow steps 1 - 3, or if there isn't a cartridge in the expander board, you will get an error message. You can continue after an error by turning on or off the correct switches, or by inserting a cartridge into the expander board. After you have pressed 'Return', the screen will clear and a new menu will appear.

CARTRIDGE CRACKER

1. Reset switches on expander Bd. to:
open: sw4
close: sw3
2. Remove cartridge from expander Bd.
3. Insert formatted disk in drive 8

Pressing the 'Return' key copied the cartridge and it can now be removed from the expander board. Follow steps 1 and 2 to remove the cartridge. Step 3 tells you to insert a formatted disk into drive 8. Do not save a cartridge onto the CC program disk. You can destroy the CC disk by saving a cartridge on it. There is a \$10.00 charge for replacing customer damaged or erased program disks.

After you have placed a formatted disk into drive 8, press 'Return'. The screen will clear and ask you to enter the name of the cartridge. You can enter up to 16 letters or numbers. Enter the name, and press 'Return'. Next, it will ask you for 2 letters to identify the object code of the program. For example, if we copied a cartridge called 'Bear Tech' we would enter 'Bear Tech' for the program name, and 'BT' for the name of the object code. Press the 'Return' key after entering the two letters for the name of the object code. CC will then ask you if you would like to 'ZERO' the CIA TIMERS. In most circumstances this is not necessary. IT IS ALWAYS NECESSARY TO 'ZERO' THE TIMERS WHEN COPYING A PARKER BROTHERS OR EPYX CARTRIDGE. If you wish to 'ZERO' the timers press 'Y' and then 'Return', otherwise press 'Return' to leave them unaltered. You will see a cartridge report on the screen and the cartridge will be saved to disk. When this is finished, the main menu will appear and you are ready to copy another cartridge. You can choose option 8 if you wish to exit the program.

If we had actually copied a cartridge called 'Bear Tech', the disk directory would look like this:

1	Bear Tech	PRG
65	BT.OBJ	PRG

NOTE: XX.OBJ can vary from 17 to 65 blocks in length.

In our example, the first program called 'Bear Tech' is the auto-start boot program for the larger 'BT.OBJ' program. The second program, 'BT.OBJ' is a copy of the code from the cartridge. To load the copied program into the computer, type: Load"program name",8,1. You must load the program with a '8,1' or it will not work. For example: Load"Bear Tech",8,1 would load our example. When loading a copied program, the screen will clear and the XX.OBJ program will load and run. A large program will take about 70 seconds to load.

If the program fails to run, make sure you have loaded the program as described above. If it still fails to run, or it locks-up the computer, try to copy the cartridge using option 3 from the main menu. If the program has failed to run properly, you must remove both the boot program and the XX.OBJ program from your disk BEFORE you make an attempt to copy it with option 3. If you don't remove the programs, the disk drive will give you an error because those programs already exist on that disk. Remember, the 1541 disk drive requires that each program on the disk must have a unique name. Use the scratch to remove the programs from your disk. For example:

```
OPEN15,8,15,"SO:Bear Tech":CLOSE15
```

```
OPEN15,8,15,"SO:BT.OBJ":CLOSE15
```

NOTE: You cannot 'scratch' files while running the CC software.

You are now ready to try option 3 if option 2 has failed.

3. Backup w/Cartridge Cracker and Debug.

This option is exactly the same as option 2, except it removes many of the protection schemes used by the software companies. This option should only be used if option 2 fails. Choose option 3 from the main menu and follow the steps outlined in option 2.

4. Backup MAX Cartridge (left L.E.D. only).

A MAX cartridge is a cartridge that was designed to be used with the Commodore MAX Machine. It is possible to identify a MAX cartridge with the L.E.D.'s on the expander board. When a cartridge is inserted into the expander board, either one or both of the L.E.D.'s will be lit. IF ONLY THE LEFT L.E.D. IS LIT THE CARTRIDGE IS A MAX CARTRIDGE AND SHOULD BE COPIED USING OPTION 4. A MAX cartridge cannot be copied correctly unless you use option

4. If you are using option 2 or option 3 and find out you have a MAX cartridge, press the 'Run/Stop' key and start over using option 4.

To copy a MAX cartridge, choose option 4 and follow the instructions for option 2. Although you must 'open' and 'close' different combinations of switches, the general procedure is the same as copying a regular cartridge.

5. Cartridge Debug Report Only.

This option is primarily designed for advanced programmers. It will generate a screen or printer report using debug. It is designed to generate a report of all Kernal, BASIC, and protection routines found by Cartridge Cracker and Debug. This option generates a report only. It DOES NOT save a copy of the cartridge to the disk.

The report generated by option 5 is identical to the one generated by option 3. Option 5 should be used when a cartridge fails to run even when it has been copied using option 3. By looking at the report, it is possible to tell the addresses that Debug and Cartridge Cracker would have changed. If you have a working knowledge of machine language, it is possible to restore or remove any particular address from the copy produced with option 3.

6. ECA BACKUP.

There are two options from which to choose depending on the type of Electronic Arts(ECA) disk you have. ECA disks fall into two categories: 'old' and 'new'. The following is a list of the ECA programs and the categories to which they belong:

<u>OLD</u>	<u>NEW</u>
Archon*	Seven Cities of Gold*
Mule*	D-Bug*
Music Con Set*	Word Flyer*
Pinball Con Set*	Standing Stones*
Axis Assassin*	
Murder/Zinderneuf*	
One on One*	
Worms*	
Hard Hat Mack*	
Financial Cookbook*	
Last Gladiator*	

* Trademark of Electronic Arts Inc.

If you have a 'new' ECA disk you must first make a

'clone' of that disk using the 4 Minute Copy program. Once you have made a 'clone', you can make a copy of that disk by choosing 'N' from the ECA BACKUP menu. The 'new' option will work with a 1541 or MSD. The 'new' option will only work if you have a 'clone' of the original disk. The 'clone' disk should be made using the 4 Minute Copy. The 'clone' will have an error on track 35. Ignore this error. It will not interfere with the operation of ECA BACKUP or the ECA disk.

To use the 'new' option, choose option 6 from the main menu, then press 'N' at the ECA BACKUP menu. Insert the 'clone' ECA disk and press 'Return'. ECA BACKUP will alter the code on the 'clone' ECA disk and return to the main menu when it is finished. You can load the 'broken' ECA disk by typing 'Load"*",8,1'. The copy will load like an original, but it will not check for the protection that appeared on the original disk.

To use ECA BACKUP for the 'old' ECA disks, choose option 6 from the main menu, and press 'O' at the ECA BACKUP menu. This option will copy original 'old' Electronic Arts disks. It requires a 1541 disk drive. A Commodore compatible drive won't work.

Insert your original Electronic Arts disk and press 'Return'. ECA BACKUP will then ask you to insert the destination disk and press 'Return'. The screen will clear and ask you to enter the name of the program. Enter any name up to 16 characters and press 'Return'. Next, it will ask you to enter a two letter name to identify the object code of the program. For example, if you were copying a game called 'Bear Tech' you would enter 'Bear Tech' for the name, and 'BT' for the two letter (XX.OBJ) object code name. After you have entered the two letter name, press 'Return'. ECA BACKUP will auto-format the destination disk and save the first 'EA' file. When it is done, it will tell you to insert the original disk again, and press 'Return'. This second pass copies the second 'EA' file. The original disk will appear to start running, but it is actually just ECA BACKUP loading the program into memory. The second pass can take up to 4 minutes to complete. Finally, it will tell you to insert your destination disk again and press 'Return'. This will save the second file to your destination disk.

IMPORTANT: When ECA BACKUP 'old' is finished it will reset the computer. You must also reset the disk drive by turning it off and then on again. If you wish to copy another original disk, you must reload the CC software and choose option 6 again.

ECA BACKUP 'old' copies the two 'EA' files that appear on every Electronic Arts disk. If you load the disk directory of the original Electronic Arts disk, you will see that the first two files are named 'EA'. On some disks there are many other files besides the two 'EA' files. You must use Supersaver-D64 to copy these files from the original to your copy. Use Supersaver-D64 to copy everything except the two 'EA' files. DO NOT COPY THE TWO 'EA' FILES WITH SUPERSAVER-D64, ECA BACKUP DOES THAT FOR

YOU. Remember, not all Electronic Arts disks have additional files on the disk. If a disk has no additional files, ECA BACKUP will do a complete backup of the disk. If the original has additional files, you must use Supersaver-D64 to transfer these files to the copy after you have copied the two 'EA' files using ECA BACKUP.

ECA BACKUP renames the two 'EA' files with the name you entered. For example, if we were copying a disk called 'Bear Tech' we would have entered 'Bear Tech' for the name and 'BT' for the object code name. Our copy would then look like this:

```
1   Bear Tech   PRG
202 BT.OBJ      PRG
```

To load your copy, type: 'Load"program name",8,1' and press 'Return'. For example, 'Load"Bear Tech",8,1'. The program will automatically load and run.

NOTE: ECA BACKUP wipes out itself and the CC software after copying the second 'EA' file. If you wish to use it again you must reload the CC software into the computer. It is also necessary to reset the disk drive by turning it off and then on again.

7. Format Disk

This option will format a disk when given a name and an id. Choose option 7 from the main menu and type in a name, a comma, and an id. If you press 'Return' without entering a name the disk name will default to 'CART. CRACKER,CC'. When you press 'Return' you will be asked if you wish to format a disk. If you wish to continue, press 'Return'. If you do not want to format a disk, press 'N', and then press 'Return'. Finally, it will tell you to insert the disk to be formatted and press 'Return'. CC will format the disk and return to the main menu when it is finished.

8. Exit.

Choose option 8 if you wish to exit the CC software. Once you choose this option there is no way of restarting Cartridge Cracker or ECA BACKUP. You must reload the CC software and start over.

Special Functions

Run/Stop: pressing this key returns you to the main menu.

NOTE: also see the Advanced Programming section.

Advanced Programming

Cartridge Cracker has two 'hidden' functions which are available to the experienced programmer. The two functions are 'S' and 'L'. These functions can be executed from the main menu instead of the normal 1 - 7. 'S' stands for short or 8k, and 'L' stands for long or 16k.

If you have saved an 8k or 16k cartridge with CC or a machine language monitor, CC can run a report on the program when it is loaded back into RAM. This makes it possible to debug cartridges when the cartridge is no longer functioning or available. You must load the cartridge back into RAM before loading the CC software. Also, you must choose 'S' OR 'L' before choosing any other option from the menu. Choosing another option will erase the cartridge you just loaded into RAM. Using 'S' or 'L' only generates a report similar to the one produced by option 5 of the main menu. It DOES NOT alter any code or save a copy to the disk. It is assumed that you know whether the cartridge is 8k or 16k. Also, the report shows you the code that would be removed by CC, it does not remove it for you. This requires the use of a machine language monitor. The report should serve as a guide to those who understand how to interpret and replace "defective" code in a cartridge. Please do not contact Bear Technologies for instructions on the use of these functions. These functions are included for advanced programmers only. It is not necessary to understand these functions to operate options 1 - 7 on the main menu of Cartridge Cracker.

Screen and Printer Report

Options 1 - 5 on the main menu ask if you would like the report to go to the screen or to the printer. Press 'S' or 'P' to choose. Most of the time you will want to choose the screen. It's not necessary to generate a printed report of every cartridge. Usually a hardcopy is only necessary if a cartridge fails to run when copied with option 3 of the main menu.

If you request a hardcopy, it will look something like this:

Cartridge Cracker

Program: program name
Object: Object code name

Addr	Code	Assembly	T	Valid	Status

8030	20 50	FD JSR FD50	K	True	Corr
80C5	3E 81	AD ROL AD81	S	True	Nocorr

```

81D3 91 54      STA(54),Y Z   True   Nocorr
851B 8C 8C 8C  STY 8C8C   P   True   Nocorr
8AC5 8C 3D 8E  STY 8E3D   V   True   Nocorr
BE3A 85 01      STA 01      B   True   Corr

```

The above example shows the five types of code that Cartridge Cracker may or may not correct. The example was generated using option 2 from the main menu. Option 2 only corrects the BASIC and Kernal routines. Note that only types 'K' and 'B' are corrected. If this had been copied with option 3, type 'V' would also have been corrected.

Printout Explanation

Addr: Hexidecimal address at which CC believes there could be some kind of Kernal, BASIC, or protection code.

Code: Hexidecimal memory dump of the bytes residing at a particular address

Assembly: This is the mnemonic equivalent of the hexadecimal code

I: This indicates the type of routine found by CC. The types were assigned by the authors and serve to indicate the area in the computer's memory being accessed.

Valid: This indicates whether or not CC determined the code would prevent the cartridge from running when it was copied. Even if there is a 'True' in this column the code may not be removed.

Status: This indicates whether CC removed the code from a particular address. 'Corr' means the code was removed, and 'Nocorr' means the code was unchanged.

The printout can serve as a guide when attempting to correct a program which fails to run even after being copied with option 3 of the main menu. You must have a machine language monitor to remove or restore the code appearing on the printout. The code is only removed when a 'Corr' appears in the 'Status' column. For example:

```

A053 8D 67 89  STA 8963   V   True   Corr

```

In the above example, CC determined the code at address A053 through A055 would prevent the cartridge from operating properly when copied. The code at those addresses would be replaced with 'EA' or NOP. If the cartridge failed to run after the removal of this code it would be possible to restore the code with a ML monitor. To restore the code, you must first load the XX.OBJ file into the computer's memory. For example: 'Load"BT.OBJ",8,1'. This will load the program into memory, but it will not run. Next, type 'NEW'

and press 'Return'. Finally, load and run your ML monitor. You must make sure that your monitor DOES NOT LOAD AT ADDRESS 8000. If it does, it will wipe out the XX.OBJ program. In the example, you would assemble address A053 with STA 8963 which would restore the original code. Then, you must save the altered program back to the disk. If you are attempting to restore the code in a 16k (65 block) program, you must "flip-out" BASIC before you resave the code. This is done by changing address 0001. Normally, there is a 37 at this address. You must replace this with a 36. This will replace the BASIC ROM with RAM. Many ML monitors have a 'M' command which can be used to exchange the BASIC ROM with RAM. For example, 'M 0001' would display address 0001 which can then be changed to a 36.

Not all ML monitors are the same. Refer to your instruction manual for specific instructions on the use of your monitor.

NOTE: The printout should serve as a guide only. It may not contain all of the protection schemes used by some software manufacturers. PLEASE DO NOT CALL OR WRITE BEAR TECHNOLOGIES INC. CONCERNING SOFTWARE YOU ARE UNABLE TO COPY.

SUPERSAVER-D64

Supersaver-D64 is designed to transfer PRG files from a source disk to a destination disk or tape. It will display and transfer PRG files only. It will not transfer SEQ or REL files. Supersaver-D64 was primarily designed to transfer the additional PRG files that appear on some Electronic Arts disks. Refer to ECA BACKUP for more instructions concerning Electronic Arts file transfer.

Type: 'Load"supersaver-d64",8:' and press 'Return'. When the computer says, 'Ready', type 'Run' and press 'Return'. Supersaver-D64 will ask you to enter the name of the program or to press 'Return' (CR). If you know the name of the program you wish to transfer, type it in and press 'Return'. Enter the name exactly and do not include quote marks. If you aren't sure of the exact spelling press 'Return'. Supersaver-D64 will read and display the name of each PRG file on the source disk. When the name of the file appears on the screen, press 'Space Bar'. Supersaver-D64 will load the program into memory and display the starting and ending address of the program. When the program is loaded, it will ask if you would like the program saved to disk or tape. Press 'D' or 'T'. Then it will tell you to insert a destination disk or tape and to press any key to save the program. The program is transferred with the same name that it had on the source disk. You cannot change the name of the program with Supersaver-D64. When the transfer is complete, Supersaver-D64 will restart and ask you for another name or to press 'Return'.

NOTE: When saving programs to tape you must advance the tape approximately 5 counter positions between each program on the destination tape.

SUPERSAVER-T64

Supersaver-T64 is essentially the same as Supersaver-D64, except it uses tape as a source instead of disk. Once Supersaver-T64 is loaded into the computer, it can be saved to a tape and used by anyone that does not have a disk drive. Type: 'Save"supersaver-T64" and press 'Return' to save a copy to tape. Supersaver-T64 can also be used to transfer files from tape to disk. When using Supersaver-T64 to transfer from tape to tape, it is suggested that you use a completely erased tape as a destination tape. Also, you should advance the tape approximately 5 counter positions between each program on the destination tape.

Superbooter

Superbooter is designed for experienced programmers only! It will create an auto-start boot for any machine language program or copy of a cartridge. It was designed to be used with options 1 and 5 of Cartridge Cracker, but it will also make 'SYS' boots for any type of machine language program.

Type: 'Load"superbooter",8,1' and press 'Return'. When the computer says 'Ready', type 'Run'. An explanation of Superbooter will be displayed on the screen. READ IT CAREFULLY. Superbooter creates two types of auto-start boots. One is designed for cartridges and the other is a 'SYS' type for any other machine language program. After reading the intro screen, press 'Return'. Superbooter will ask the name of the boot you would like to build. Enter any name up to 16 characters. Next, Superbooter will ask for the 2 letters of the name of your XX.OBJ file. The XX.OBJ file is the machine language program for which you are building a boot. If your file came from the CC software it will already be named XX.OBJ. If not, you will have to rename your file in the XX.OBJ format. Superbooter will then ask the number of files to be loaded. A single boot can load up to 4 files. The files must be named XX.OBJA through XX.OBJD. Next, it will ask if you would like to "flip-out" BASIC. For example, if you are making a boot for a 16k or 24k cartridge, you must first remove BASIC from memory. Finally, Superbooter asks if you want a cartridge or 'SYS' boot. A cartridge boot jumps to the C-64's reset vector, and a 'SYS' boot will jump to any decimal address you specify. Select the type of boot you would like, and Superbooter will build an auto-start boot with the information you supplied. GOOD LUCK!

4_Minute_Copy

The 4 Minute Copy program is a high speed, public domain copy program. To use it, type 'Load"4*",8,1', and press 'Return'. Type 'Run' when the computer says 'Ready'. The copy program will blank the screen while running. It will also make the disk drive light flash continuously. It is usually necessary to disconnect your printer or printer interface while running this program. The program will ask you to insert source disk. Insert the disk and press any key. It takes three passes to copy an entire disk. 4 Minute Copy will write error type 23 on the destination disk if the source disk contained any type of error on a particular track. For example, if the source disk had an error type 21 on track 01, track 01 on the destination disk would have an error type 23. Any good copy program can change 23's to any other type of error. 4 MINUTE COPY IS INCLUDED WITH THIS PACKAGE TO COPY 'NEW' ECA DISKS ONLY. IT IS NOT INTENDED TO BE USED AS BACK-UP PROGRAM FOR COPY-PROTECTED DISKS.

LIMITED WARRANTY

HARDWARE: Bear Technologies, Inc. (BT) warrants for a period of 90 days from the date of purchase, that it's hardware products shall be free from defects in workmanship and materials under normal use and service. Opening any enclosure or modification of any enclosure, component, printed circuit board, or connecting cable voids the warranty.

SOFTWARE: Bear Technologies, Inc. (BT) warrants for a period of 90 days from the date of purchase, that the magnetic diskette on which a program is recorded shall be free from defects in workmanship and materials under normal use and service. If failure of a diskette has resulted from accident, abuse, or misapplication of the diskette, BT shall have no responsibility to replace the diskette under the terms of this limited warranty. Software programs and their instructional materials are sold "AS IS", WITHOUT WARRANTY AS TO THEIR PERFORMANCE, MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE. The entire risk as to the results and performance of a software program is assumed by the purchaser.

If a defect occurs, during the warranty period, BT will repair (or at it's option, replace) at no charge, a product that proves to be defective, provided that the product is returned with proof of purchase, shipping prepaid, to BT. This warranty shall not apply if, in the opinion of BT the product has been damaged, misused, or modified. Except as noted, THERE ARE NO WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO , ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, and in no event, shall BT be liable for loss of profits or benefit, indirect or otherwise, consequential or other similar damages arising out of any breach of this warranty.

SERVICE INFORMATION

Should your Cartridge Cracker (CC) package malfunction, please call (616) 245-5061 and ask for COMPUTER PRODUCTS CUSTOMER SERVICES. You will be able to discuss your problem with one of our technicians. If the problem cannot be resolved over the phone, you will be given a RETURN AUTHORIZATION NUMBER, and asked to return your CC package for service.

The warranty period for your CC package is ninety (90) days from the date of purchase. It is assumed that any CC package returned without proof of purchase is out of warranty. Please make sure your CC package is protectively packaged since shipping damage is not covered by warranty. We advise you to insure your CC package.

Your CC package should be sent, along with your proof of purchase, shipping prepaid to:

BEAR TECHNOLOGIES INC.
REPAIR CENTER
3417 Roger B. Chaffee Blvd.
Suite 306
Grand Rapids, MI USA 49508

MAKE SURE YOUR RETURN AUTHORIZATION NUMBER IS CLEARLY
VISIBLE ON THE OUTSIDE OF THE CARTON OR SHIPMENT WILL BE
REFUSED.

Bear Technologies Inc. reserves the right to make
updates on any part of this package without prior notice.
Updates to the disk software will be made on an EXCHANGE
BASIS ONLY for \$5.00, plus \$3.00 for shipping & handling.

Cartridge Cracker is a trademark of Bear Technologies, Inc.

