

THE **Clone Newsletter**

DEDICATED TO FRUSTRATED DISK USERS



THE FLOPPY DISK CONSTRUCTION SET

A new product is waiting in the wings at Micro-W, and I am pleased to be able to describe it to you all for the first time here. Its name, as shown above, conjures up the appropriate imagery and feeling of this magical new utility package, for with its many tools, you will practically be able to 'take a disk apart' and then put it back together in any way you see fit.

With this program you will be able to REPAIR valuable disks that you thought were ruined forever with various read and write errors appearing time after time.

SECURE a confidential disk against unauthorized use (both reading AND writing) by using a four character password that you can choose yourself.

CATALOGUE all files on a disk by reporting names, types, program lengths, starting addresses, track/block usage, etc. to either the screen or a printer.

UNSCRATCH command to regain a file that was inadvertently 'scratched'. Also, UN-NEW to retrieve a similarly treated BASIC program.

The latest version of the EXAMINER (including manual control over bit density settings) to provide a powerful edge in deciphering the very latest protection schemes.

All this, plus a DISK DRIVE ALIGNMENT and SPEED CHECK utility and more! Surely one of the best values around at only \$19.95 & shipping and handling.

*** LAST MINUTE NOTES, COMMENTS, & SUGGESTIONS ***

Notch Taping

An important reminder - when backing up a diskette that either has its write-protect notch covered with tape or has no notch at all: Always remember to cover the copy disk's notch with tape BEFORE trying the disk out. Otherwise, when the program runs it may detect the open notch and then purposely destroy the copy disk by either reformatting it (a rather obvious operation), or by changing a single byte at some obscure location (an extremely subtle and sly move). A recent example of a disk that uses this protection is the popular GHOSTBUSTERS by Activision. Remember, you only have to run a copy disk once without the tape to ruin it, so get in the habit of always putting the tape on immediately after cloning to avoid frustrations.

Extra Syncs

When looking at a track with the EXAMINER, and finding garbage appearing after a specific sector is reached, there are two approaches to try in backing up the disk. First, try using the Non-Standard Sectors option of the TNU. Specify as the reference sector, the number of the sector that would follow the last 'clean' sector. If this fails, then try using the next higher sector number, and so on. If this approach fails, then try copying the track with the old CLONE MACHINE's Copy Entire Disk option (specifying starting and ending tracks equal to the track in question). It could simply be that an extra sync mark has been lodged between two good sectors, thus throwing a nibble copier (such as SUPERCLONE or TNU) off the proper sequence.

RAID OVER MOSCOW - Once Again!

The backup plans described for RAID OVER MOSCOW have apparently been driving some cloners up the wall. It seems that there may well be even more than the two versions of the disk that heretofore have been found to exist. Happily, a solution has been uncovered that seems to work equally well on any of the versions seen thus far. Use the plan as described in the September newsletter, however skip step four completely. Then do step five, and when done remove the original disk, insert the copy, and type the following:

```
OPEN15,8,15,"SO:RAID BOOT":PRINT#15,"VO":CLOSE15
```

and hit RETURN. Then continue with steps six on through eight. Finally, use the CLONE MACHINE's Track/Block Editor to copy track 18, block 0 from the original disk onto the copy. This should work!!!

THE EXAMINER - REVISITED

In the October/November issue of the CLONE NEWSLETTER, the EXAMINER - a utility program for displaying the data contained within the headers of a track - was published. This program has been well received and found to be very useful to many of our readers as an analysis tool (Note: For those of you who were not able to get your typed in version to work, we offer a copy of this program on disk for \$5.00. It also resides on THE FLOPPY DISK CONSTRUCTION SET described elsewhere in this issue).

In this article, a number of enhancements will be outlined that will make the EXAMINER an even more useful program for deciphering many of the state-of-the-art protection schemes.

First of all, two convenience features will be added to the EXAMINER. The first of these will be an easy exit from the program. When it is desired to stop using the EXAMINER, simply enter '0' for the requested track number. The following illustrates the lines that must be altered for this enhancement:

```
1040 PRINT"SQQQQQQQQQQ]]]]]]]]]ENTER TRACK (1-36):";
:GOSUB1240:IFTR=0 THENEND

1250 IFTR<0ORTR>36THEN1240

1325 PRINT"QQQQQQQQQ          < ENTER '0' TO END >"
```

Notice that in line 1040 the only change is the addition of a colon followed by "IFTR=0THENEND". In line 1250, a "1" has been changed to a "0".

The second feature will be a fast restart. If you should exit the program for any reason, and then wish to rerun it (while it still resides in memory), the CHECKING DATA STATEMENTS subroutine does not need to be run again. The following line when added to the program, will achieve this end:

```
1008 IFPEEK(49511)<>234THENGOSUB1340
```

The next change revolves around the display of the two ID characters. In some instances, one or both of these characters may be either unprintable or a reserved special character command for the C64. In these cases, the screen will become messed up with garbage characters. To avoid this from happening, the following changes will cause the ascii numbers of the ID to be printed whenever the actual characters are outside of the normal alpha-numeric range.

```
1182 A=ASC(A$+CHR$(0))
1185 IFI>1THEN1200
1190 IF(A<48ORA>90)ORD=1THEND=1:PRINTTAB(T(I)-2);:A;:NEXT
1195 PRINTTAB(T(I));A$;:NEXT
1200 D=0:PRINTTAB(T(I));ASC(A$+CHR$(0));:NEXT
```

Before you go any further, test these changes that you have made. Make sure that you can exit the program by entering a zero for the track number. Then see that when re-running the program, the CHECKING DATA STATEMENTS subroutine isn't executed. Finally, examine a disk that you know previously had messed up the screen of the examiner. Make sure that now the ID characters are being represented by their ascii numbers.

THE EXAMINER REVISITED (cont.)

The final two enhancements will actually improve the performance of the EXAMINER in the most substantial way. The first is an improved sync locating algorithm. In the original EXAMINER, a sync error would be reported in place of header information whenever a sector was found missing. This is somewhat undesirable, as a track may very well be missing either one or a number of sectors while still containing valid data on the remaining sectors. Therefore, with the changes described below, the EXAMINER will now only report a sync error when a track is completely empty of any sync marks (or if the wrong track density is used to read it). The changes required to implement the improved sync locating algorithm are included with the changes listed for the final enhancement.

Track densities and density bits were previously discussed briefly in the September newsletter in an article describing the new TNU. To recapitulate, every Commodore diskette is divided up into four distinct regions. Each of these regions is read from and written to at slightly different frequencies, yielding tracks with different bit densities. As a protection scheme, a track could purposely be written at a wrong frequency (for the region that it's in), and then, under program control, be read at this same 'wrong' frequency. The assumption would be that any copier used to backup the disk would copy the track using the normal frequency for its region, thus failing to accurately copy the data. However, one of the advanced features of the TNU is its ability to copy a track while providing user control over bit density. The only hard part, however, was determining just what the proper density should be. With the changes described below, this job will now be much easier. Now when a track appears erratic (illegal track or sector numbers, scads of checksum errors, etc.), you can try a different track density, and in this way determine the correct value to use with the TNU.

```
1041 PRINT:PRINT"Q]]]USE DEFAULT TRACK DENSITY (Y/N)? Y[left]";
1042 POKE204,0
1043 GETR$:IFR$=""THEN1043
1044 IFR$<>"Y"ANDR$<>"N"ANDR$<>CHR$(13)THEN1043
1045 POKE204,1:IFR$<>"N"THENPOKE49399,255:POKE49401,0:GOTO1050
1046 PRINTR$;:PRINT:PRINT"Q]]]]]]ENTER TRACK DENSITY (0-3): ";
1047 OPEN1,0:INPUT#1,DN$:CLOSE1:DN=ASC(DN$)-48:IFDN<0ORDN>3THEN1047
1048 POKE49399,159:POKE49401,32*DN
1420 DATA239, 76,137, 91,223,112,108,207
1430 DATA 61,239,192, 22,249,169,157,213
1440 DATA 45,210,109, 27, 6, 4,103,245
1450 DATA175, 27,132,105,235,188,166,154
1530 DATA248, 32, 64, 5, 76, 74, 5,120
1560 DATA 44, 0, 28, 48,251,173, 1, 28
1670 DATA 14, 32,240, 5, 96, 0,120, 32
1780 DATA141, 12, 28,173, 0, 28, 41,255
1790 DATA 9, 0,141, 0, 28, 96, 0,136
```

Be particularly careful when typing in the numbers in lines 1420 through 1450, as these numbers are used as checksums in determining the correctness of all the other data statements. If an error is made in typing in any of the other data statements, the offending line number will be reported as an aid in locating the wrong number.

SOLUTIONS

WORDPRO 3+/64

The protection in this program checks for error 21 on track one. Later, the protection scheme checks an error free block of the program against the original error less 2 (i.e. \$32-2=\$30 which is the ascii value for '0').

To defeat the protection make the following changes on the original disk on track 17 (\$11), sector 5 (\$05): Change byte \$18 from \$14 to \$1A, and change byte \$88 from \$30 to \$32. Now file copy the program to a new disk.

SPELLRIGHT PLUS/64

This program checks for error 22 on track 35. To defeat the error checking, change the program SPA107213PP on track 17 (\$11), sector 8 (\$08), byte \$FC from \$20 to \$00. The program no longer looks for an error and can be file copied.

LUNAR OUTPOST

This program checks for error 23 on track 1, sector 1. To list the directory with a disk editor change bytes on track 18 (\$12), sector 0 (\$00) as follows: bytes \$90-\$99 to \$A0.

To defeat the error protection, file copy all files to an error free disk. Then make the following changes: In program LUNAR, on track 17 (\$11), sector 5 (\$05) change byte \$B8 to \$32, byte \$B9 to \$33, byte \$BA to \$33, and byte \$BB to \$33. In program EPYX, (a nine block program) change bytes in the second block at track 17 (\$11), sector 12 (\$0C) as follows: byte \$69 from \$A9 to \$4C, byte \$6A from \$05 to \$D5, and byte \$6B from \$A2 to \$09. In program LO (a 178 block program) change bytes in block 114 at track 12 (\$0C), sector 9 (\$09) as follows: byte \$1C from \$4C to \$AD, byte \$1D from \$00 to \$11, and byte \$1E from \$C0 to \$D0. After loading there is a pause before the program activates. Use port #2 for the joystick.

DROL

This program checks for error 23 on track 2, and error 27 on track 34. It also checks for non-error locations. All this is saved and later checked by the main program.

To defeat the error checking, make the following changes in the program DROL on track 17 (\$11), sector 10 (\$0A): change byte \$5C from \$31 to \$30, byte \$5D from \$36 to \$28, and byte \$5E from \$38 to \$30. In program D2? make the following changes on track 19 (\$13), sector 8 (\$08): change byte \$52 thru \$58 from \$00 to the following values: \$32, \$30, \$32, \$30, \$33, \$30, \$37, \$30. The program can be file copied and run without error checking.

John Fricke
West Lafayette, In.

SOLUTIONS (cont.)

1. The following three programs are all unprotected in the same manner:

- a) LEARNING WITH LEEPER (Sierra On-Line)
- b) WIZARD AND PRINCESS (Sierra On-Line)
- c) MISSION ASTEROID (Sierra On-Line)

Change the byte at position 28 on track 18, sector 2 from decimal 50 (hex 32) to decimal 48 (hex 30). Do a backup to another disk. Do not recreate the error and you'll find it no longer checks for the error.

2. The next solution is for BANK STREET WRITER from Broderbund Software.

Change bytes 113 and 114 on track 15, sector 17 from decimal 210 (hex D2) and decimal 26 (hex 1A) to decimal 97 (hex 61) and decimal 85 (hex 55) respectively. Next, change bytes 87 and 88 on track 20, sector 3 from decimal 210 (hex D2) and decimal 26 (hex 1A) to decimal 69 (hex 45) and decimal 102 (hex 66) respectively. The program is now unprotected, and you only have to copy the files.

3. The final submission for this occasion is for DESIGNER PENCIL from Activision.

Load in a monitor that locates outside of the range \$4000-\$4E50. Load in the file called 1984. At location \$4A37 make the following change:

CMP #\$32 becomes CMP #\$30

Larry Boyd
Charlottetown, P.E.I.

The following procedure should be followed to backup PUZZLE PANIC by Epyx. The TNU is required.

- 1. Copy with FOUR MINUTE BACKUP.
- 2. Use SUPERCLONE to copy track 35.
- 3. Using TNU:

Select option #1 - Non-Standard Sectors
Select Track: 10
Alter Density Bits: NO
Reference Sector: 0
Range 21

Chuck McGaffin
Ballston Lake, N.Y.

SOLUTIONS (cont.)

SPY VS SPY

This program, recently on the market from First Star Software, was impossible to copy! I used the SUPERCLONE program and it didn't work. Luckily though, it was weak in program structure, and I managed to crack it! Better yet, it was my first time! It's very simple. The directory can't be listed so just copy the files with file copy. Here's the cracking plan:

- 1) Copy the files S1, S2, S3, S4, S5, and S6.
- 2) Type in the following loader:

```
100 IFA=OTHENA=1:LOAD"S1",8,1
200 IFB=OTHENB=1:LOAD"S2",8,1
300 IFC=OTHENC=1:LOAD"S3",8,1
400 IFD=OTHEND=1:LOAD"S4",8,1
500 IFE=OTHENE=1:LOAD"S5",8,1
600 IFF=OTHENF=1:LOAD"S6",8,1
700 IFG=OTHENG=1:SYS26112
```

- 3) Run it and it won't check for errors.

The SYStem starts the main program, and the program protection is in program S0. In the manual, it says to LOAD"S*",8,1. This is the loader, and it loads in S0.

Helena Lowe
Davis, Ca.

Ed. Note: Here is an alternative approach to handling this program.

SPY VS SPY

The SPY VS SPY disk contains 17 tracks of error 21 and 4 tracks of error 29. SUPERCLONE should handle this but it seems to get lost among all the errors and hangs up.

One easy solution to this is to start with a blank, never-formatted disk. This will usually (but not always) be the case of a new disk out of the box. The procedure would then be to simply copy the remaining required tracks with SUPERCLONE.

Another, and perhaps more useful approach, is to make such a disk yourself. This is quite easily done with FASTCLONE and is quite fast since no valid data has to be handled. This "bulk erasing" procedure is as follows:

- a) Select the FASTCLONE option of SUPERCLONE.
- b) When asked for the source disk, insert any disk but leave the drive door open and start the copy process.

SOLUTIONS (cont.)

- c) When asked for the destination disk, insert the disk you want to copy to, but this time close the door as usual.
- d) Repeat the procedure until the copy is complete, leaving the drive door open any time the source disk is inserted and closed when the destination disk is inserted.
- e) This procedure will yield a completely blank disk of all error 21's.

The copy procedure for SPY VS SPY is then:

1. Get a blank destination disk that is all error 21's, or make one as described above.
2. Using SUPERCLONE in the normal fashion:
 - a) Copy tracks 1 thru 4 (these will be error 29).
 - b) Copy tracks 11 thru 23 (valid data).
 - c) Copy track 30 (valid data).

WHISTLER'S BROTHER

This program is easy to handle except for track 8. Track 8, block 7 contains valid data and must be copied over. Some of the preceding and following blocks however are error 21. The ERROR DETECTOR does not report this track properly and neither SUPERCLONE nor TNU will copy it correctly. The following approach will succeed.

1. Copy the entire disk with FMB (the error 23's on track 2 are required).
2. Recopy track 34 with SUPERCLONE (error 27's).
3. Reformat track 8 with TNU.
4. Recopy track 8 starting with block 7 with THE CLONE MACHINE or block 7 only with T/B EDITOR.
5. Use UNGUARD to create error 21 on 6 or 7 blocks starting with track 8, block 8 (I used a time constant of 25).
6. Use UNGUARD again to create error 21 on 5 or 6 blocks starting at track 8, block 0 (TC=15 was right for my drive).
7. Track 8 should be checked (UNGUARD) to see that track 8, block 7 has survived. If not, you will have to reformat track 8 (TNU) and try again with a different value for TC. The number of blocks of error 21 on track 8 can vary, so if your results are not exactly the same as described try to load the copy anyway. If it runs, you're done.

Marc Moulton
Ridgecrest, Ca.

SOLUTIONS (cont.)

MICRO-COOKBOOK (Commodore)

To any Cloners who are also into gourmet cooking, I am happy to report how to backup MICRO-COOKBOOK by Commodore. The solution is very simple, the copy plan is:

- a) Copy the COOKBOOK disk with FMB.
- b) Use UNGUARD to correct track 1, block 0, error 23.
- c) Then correct track 35, block 0, error 23.
- d) Copy the RECIPE disk with FMB.

Pat Pagnanella
Park Ridge, N.J.

DI-SECTOR (Starpoint Software)

I would like to offer a method which I have discovered to produce USER copies of DI-SECTOR without modifying the MASTER disk.

Let's use the following abbreviations for this process:

- M - This will be the Di-Sector MASTER disk with WRITE-PROTECTION!
 - U - This will be the Di-Sector USER disk.
 - C - This will be a copy of the Di-Sector MASTER disk.
- 1) Using the FOUR MINUTE BACKUP, produce "C" from "M"; don't worry about all the errors, they don't really matter.
 - 2) Load "M" as directed by the Di-Sector manual.
 - 3) When the first information screen appears and instructs that the "RETURN" key be hit, substitute "C" for "M" and hit the "RETURN".
 - 4) Next, when instructed to do so, insert "U" into the drive.
 - 5) When instructed to load disk "M", instead use "C" --- let the drive try reading this for about 8 - 10 seconds (it checks that the write-protect tab is not present) then switch "M" for the "C".
 - 6) Follow the normal creation instructions switching "U" and "M" until the process is complete.

Joseph J. Strauch, CCP, CDP
Factoryville, Pa.

SOLUTIONS (cont.)

SARGON II

Use THE CLONE MACHINE to copy the file XYZZY from the SARGON II disk. To load and run SARGON, write the following two BASIC lines and save them as "SARGON":

```
10 IF A=0 THEN A=1:LOAD"XYZZY",8,1
20 IF A=1 THEN SYS(12288)
```

LOAD and RUN "SARGON" and the chess game will start without all that error clattering.

John Montgomery
Fairport, New York

LETTERS TO THE EDITOR

Dear Sir:

I recently discovered something that I feel may be of interest to your readers. While I was making a backup of the Broderbund program OPERATION WHIRLWIND, I noticed a strange piece of code in the loader program.

Line 180 reads: OPEN1,8,15,"M-E rG":CLOSE1. After some examination, I found that this code was the actual error checking routine. A small piece of machine code was left in the disk drive buffer and activated by line 180 of the loader program. For those who are familiar with the internal DOS operations, this routine uses the job que to perform a read of tracks 2 and 34 and place the IP error codes into the stack of the disk drive.

In any case, replacing line 180 with the following line will remove the requirements for the errors, thus making a backup very easy:

```
OPEN1,8,15:PRINT#1,"M-W"CHR$(80)CHR$(1)CHR$(2)CHR$(5)CHR$(9):CLOSE1
```

This in effect will place the proper error codes into the disk drive stack just as if the errors were actually on the disk and the error checking routine had been executed.

Roger K. Snyder
Vero Beach, F.L.

Dear Sirs:

In your outline to break RAID OVER BUNGLING BAY, after you change the two bytes on track 12, sector 7, you say to file copy the rest of the files onto a new disk. There is a problem with that idea. The filename "DPRG" is an invalid file name. Any attempt to file copy it will result in "FILE NAME NOT FOUND". If you load in your track/block editor and examine that file name, you will notice that following the filename is a quotation mark (hex \$22). That makes it an invalid name for file copying. How I got around that was to change the hex \$22 to a \$20 - a space. Now I can file copy all the files over to a new disk in any order I choose - preferably with the boot first.

LETTERS TO THE EDITOR (cont.)

When I am done, I reload my track/block editor and change the file name back to its correct name. Note - the quotation mark must be there for the program to run. Once the files have been transferred and renamed, you can copy the entire disk with any whole disk copier.

That problem was easy to solve. But your explanation to NICKS'S SWIFT COPY was difficult. I transferred the directory to track 18 and adjusted all pointers. I got the directory to list, deleted the file called DOS and then loaded my monitor. You say that the boot program will locate itself at \$032C to \$03CD - I find it at \$0304 to \$03CC (end byte +1). You then say to save it at \$034c to \$03CD. I changed the two required locations to what you said, saved the program to the address you mentioned, SYS 844 the boot on and got the main menu screen. Except it had one problem - all the upper-case letters were graphics. Tapping the Commodore/Shift keys reverted everything back to normal. I pressed "1" for the nibble program to load, and the screen changed to tell me to be sure that the correct disk was in the drive. I responded with "Y", and then READY and my blue screen appeared.

I tried different load addresses for the boot program, but to no avail. Can you please check your information on that outline to see if it is correct. If you can notify me of any changes that you make, I would greatly appreciate it.

John P. Blanc
So. Ozone Park, N.Y.

Ed. Note: I have compared the published instructions for backing up NICK'S SWIFT COPY with the original letter from Mr. Boyd and can find no discrepancies. I also failed in my attempt to backup this disk and can only suggest that perhaps Mr. Boyd offer some further clarifications.

Dear Editor,

Firstly, congratulations for this "magical product" - a very useful tool. Now for some extraordinary uses of the CLONE MACHINE.

- (1) I loaded "CLONE", the three block program and SYS 51536 - guess what happened! This program became a Tape-to-Disk copier. Of course, for some reason or other one has to use the run/stop key also! I have backed up a few protected tapes to disk using this technique.
- (2) An easier way to backup EASY SCRIPT is to use the FMB program and then use UNGUARD to set error 22 at track 1, block 0, and track 35, block 1. It only takes 6 3/4 minutes.
- (3) A copy plan to backup the program PILOT:
 - a. Use FMB to copy whole disk.
 - b. Use SUPERCLONE to recopy tracks 1 and 35 only.

And thus you have a working copy of PILOT. Time taken: 7 1/4 minutes.

F. Shaik
Durban So. Africa

A MESSAGE FROM THE PRESIDENT

We thank all of you for subscribing to the CLONE NEWSLETTER. We're sorry that the newsletter was a little late at times but sometimes at the last possible moment, priorities became shuffled. Our hints from all of you readers and owners of the CLONE MACHINE will still be gathered and compiled into a new volume sometime this summer. We hope to have every one of the solutions that you have supplied us, printed sometime this summer in this one volume. It will be offered to you at a minimal cost and you will receive a postcard indicating when it is available. We feel that any new enhancements of the CLONE MACHINE should work with the new Commodore 128 and we will be closely watching the progress and sales of this unit. By the way, our FONT FACTORY was selling briskly at the MADISON SQ GARDEN computer show. We gave some review copies out to a number of editors, so watch your magazines for reviews. Newsletter subscribers its your last chance to own one for \$20.00

We are getting quite involved with MIDI here at Micro-W Distributing Inc. That stands for MUSICAL INSTRUMENT DIGITAL INTERFACE and its similar to the RS232 port found on printers (only MIDI is found on musical keyboards). We have become dealers for CASIO, KORG, SIEL, WERSI, and other keyboard synthesizers that support MIDI. We have also become involved with QRS (they make player piano rolls) and we are putting a significant number (about 10,000) of piano rolls on floppy disk to be played by your Commodore Computer and a new MIDI interface that we have developed. The music DOESN'T use the SID chip, rather it requires a MIDI Keyboard that has 8 polyphonic voices. LIST PRICE for a six song sample disk and interface is \$49.95 but CLONE SUBSCRIBERS can purchase it for \$40.00 plus S&H. Remember, to use this package requires a MIDI equipped music keyboard. If you have any additional questions, please feel free to call and we will try to help (its a new subject for all of us here too). Musical entertainment and education are the areas that we are concentrating in. If you want to hear what we can do with a COMMODORE, music synthesizers, and piano rolls, send us \$5.00 and we'll get you out an audio cassette tape. We have other software, hardware, and ??? projects underway at the present time and we're always looking for talent to help in our projects (for money). Thanks again for being patient, loyal, and the most fantastic people in the world.....our customers and best of all.....our friends.



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