

## DUF04.COM

DUF04 is written to assist in testing drives & directories under CP/M. When executed the following menu appears on the screen:

### CP/M Disk Utility Functions

Enter Drive To Run Tests On A: to P: B<CR> <-- you select a drive here

### Program Options

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1...Dump Directory on Screen
2...Display All Invalid Directory Entries
3...Rename All Invalid Directory Entries
4...Remove All Invalid Directory Entries
5...Test Entire Disk Surface
6...Remove Bad Blocks On Drive
7...Select Another Drive
8...Test System tracks
9...Unerase All Erased Files
10..Disk to Disk Copy
11..Dump Disk on Screen
Enter <Control C> to Quit
```

Enter Your Choice...

Options 1 to 6 and 8 will be followed by a printer output option so that a hard copy of the session may be generated if needed.

Option 1 displays the entire directory on the screen with information on the directory entry number, the extent number and the number of records written for that extent.

Option 2 will display only improper directory entries which include files with 'illegal' names that have embeded control characters or spaces, or files that have pointers larger than the disk storage capacity.

Option 3 allows you to create a seed name for all bad files so that the program will rename all such files and give you valid file names to work with. NOTE, files with bad pointers are not renamed as they have no real disk locations.

Option 4 erases all bad files detected by option 2 UNLESS they have good pointers AND have been renamed by Option 3.

Option 5 WRITES DATA ONTO THE ENTIRE disk drive starting with the directory. It then starts from the directory again and reads all the data written. Each CP/M sector is given a unique 3 byte code when written. If any code is missing on the read a list of the expected code and actual code will be printed. Also any damaged sectors will generate disk error messages. ALL INFORMATION PREVIOUSLY ON THE DISK IS DESTROYED FOREVER, SO COPY OFF ALL YOUR DATA IF NEEDED.

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(cont.)

Option 6 scans the entire disk from the directory and flags all bad sectors. It then creates a file in User Area 15 which points to all the bad disk sectors. In this way application programs will not encounter bad spots on the disk.

Option 7 allows you to select another drive for testing.

Option 8 will simply read the system tracks so that no loss of the operating system can result. If it finds an error you will have to reformat the disk, re-install the operating system & test again. If the tracks remain bad you cannot trust your operating system.

Option 9 will recover ALL files from the selected disk that were erased. This may lead to duplicate file names from previous updates and other disk activity. Use this only as a last resort when you have failed to backup and have erased a lot of the directory.

Option 10 simply lets you make a full disk copy from any drive to any drive. It checks to see if the drives have the same CP/M directory and disk mapping before allowing the copy.

Option 11 lets you select any track on the disk for viewing on the screen.

## A Practical Application of DUF04

If you have a disk with suspected problems you should use DUF04 as follows:

- 1) Run DUF04 and select the drive to test when DUF04 prompts for it.
- 2) Run Option 2 to determine if the directory has garbage entries.
- 3) If there are no invalid entries go on to 7
- 4) Run Option 2 again and turn the printer output on so you can get a hard copy of the invalid entries. If none of the invalid entries look 'useable' go to 6
- 5) Some of the entries look good so run Option 3 to give them usable names. Now go to 6
- 6) Run option 4 now to get rid of all remaining invalid entries. Now go to 7.
- 7) The directory is O.K. run Option 6 to see if the disk has any bad sectors. If there are no bad spots then go to 8. If bad sectors show up you may have to plan for a complete disk backup and reformatting in some cases. In most cases option 6 will hold all the bad sectors in a special file so that your application programs do not access these bad spots. Go to 8.
- 8) Run Option 8 to ensure the system tracks are O.K. If a system track shows up as bad you should backup the disk, reformat it and sysgen the system tracks again. Note that a bad system track means that the operating system you boot with cannot be trusted. If it is a system track on the second logical drive of a winchester you need not reformat and sysgen it.
- 9) You should use Option 5 only on a new disk or on a backed up disk as it destroys all data on any disk it tests. It is a very useful test in checking the operation of the disk drive, disk controller and disk interface software.