An Introduction to the LDOS Operating System
or
What You Really Need To Know Quick
To Init a Model I/III Hard Drive

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     The first thing to do when dealing with the Model I/III Hard
Drives is to forget everything you ever knew about initing the Model
II/16 Hard Drives. Although the hardware is similar, the Disk
Operating Systems definitely are not. What might be abnormal on one
system is perfectly normal on the other. This guide will acquaint you
with the basics of the operation of these machines or, more
specifically; what you need to know in order to keep the software from
blowing up in your face.

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               When performing a BACKUP to a blank diskette;
                  You must FORMAT that diskette first

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     LDOS is not TRSDOS. Although they appear to operate in a similar
fashion, these two operating systems are very different. The BACKUP
utility does not contain a FORMAT routine; so when backing up to an
unformatted diskette, you must format that diskette first. Another
note to bear in mind is that the format actually written to the
diskette is different from TRSDOS. What this means to you is simply
this;

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               NEVER BACKUP FROM LDOS TO A TRSDOS FORMATTED DISKETTE
                     (if you do, you're asking for it!)

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     The LDOS FORMAT Utility allows many user options to be set. These
include the number of tracks to format, single or double density,
single or double sided, and the Boot Track stepping rate. At this time
you really don't have to concern yourself with all this. Following is
the command to format a diskette in drive 1 using the system defaults:

FORMAT :1 (Q=N) <ENTER>

The (Q=N) parameter instructs the FORMAT Utility not to prompt
for any parameters. After the diskette is formatted, you are ready to
BACKUP to it.
The LDOS BACKUP Utility is quite a bit more complex than its
TRSDOS counterpart you are probably familiar with. The idea is the
same; to take the contents of a source diskette and copy it to a
destination diskette. The manner in which this is accomplished will
vary depending upon the source and destination diskettes.

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There are two main forms that the LDOS BACKUP may take.
These are 'MIRROR IMAGE' and BACKUP RECONSTRUCT.

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The faster of the two, and the most familiar, will be the Mirror
Image Backup. In this mode the source diskette will be read track by
track and written to the destination track by track. The backup will
be an exact duplicate of the original. This can occur when backing up
between two diskettes of the same track count, or when the destination
track count exceeds the source. If; however, LDOS determines that the
information may not (for whatever reason) be written to the
destination in the same physical space as on the source, a BACKUP
RECONSTRUCT will be invoked.
BACKUP RECONSTRUCT is a 'by file' copy. That is to say that
instead of reading and writing several tracks like the Mirror Image,
the Reconstruct will read then write one file at a time. The file
names will be displayed on the screen as they are copied. Even though
this form of backup is slower, it does have the advantage of 'packing'
or condensing the files on the diskette.

BACKUP :1 :2

The above command will allow a BACKUP from drive 1 to drive 2.
Any combination of drives may be used, and I suggest reading the
BACKUP section in the LDOS Hard Disk Operating System Manual for more
information.
LDOS keeps information in the directory to show when the file was
last updated and if a particular file had been copied or backed up
since its last modification. When a source diskette is backed up from,
this directory information is modified. For this reason, if during a
BACKUP the message "Can't clear Mod Flags; Source Diskette is Write
Protected" appears; don't panic. All this means is that the source
diskette is indeed write protected and that the backup utility cannot
update the source's directory.

Now that you know how to FORMAT and BACKUP with LDOS;

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MAKE SEVERAL BACKUPS OF YOUR HARD DISK FLOPPY DISKETTES

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When Initing the Hard Drives:
1) Forget about TRSDOS 4.0 Init
2) Have something else to do for a while

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    Initing the Model I/III Hard Drives is really very simple, but
first let's take inventory. If you're initing a Model III hard drive
then you should have two diskettes. One is the HARD DISK OPERATING
SYSTEM INITIALIZATION diskette and the other is the HARD DISK
OPERATING SYSTEM diskette. For the Model I hard drive system you
should have three diskettes (three because they're single density)
labeled HARD DRIVE OPERATING SYSTEM INITIALIZATION, HARD DRIVE
OPERATING SYSTEM, and HARD DRIVE OPERATING SYSTEM XTRA. Naturally
since you have read, digested, and taken to heart the first part of
this paper, you are now working with BACKUPS of EVERYTHING!

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Power up the Hard Drives, then the Computer
Insert the INITIALIZATION Diskette into Drive 0
Press RESET

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    On pressing RESET, the system should boot and the LDOS logo
should appear on the display. Enter the date in a MM/DD/YY format and
press <ENTER>. LDOS Ready should now be displayed. The command to
actually init the hard drive/s may take several forms depending upon
your specific system. The first example will assume a Model III system
with one hard drive and two floppies. We will also assume that the
hard drives have NOT been previously formatted.

DO INITHD3 (NEW,PW=PASSWORD,HARD1,FLOPPY2)

This command will set up a chain of events that will take an average of 15 minutes per hard drive to complete. INITHD3 is a DO File that will init the hard drive. NEW signifies a new and unformatted drive. PW= the password. HARD1 instructs the system that there is only one hard drive to format and FLOPPY2 allows the system to configure for two floppies.

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When Initing a Previously Inited Hard Drive
a New Parameter Must Be Added To The Command String
ABS

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If the drive that you are INITING has been inited before, then the INIT command will be slightly different. Let's assume (dangerous!) a Model I system with two hard drives and three floppies. The command string would be:

DO INITHD1 (NEW,ABS,PW=PASSWORD,HARD2,FLOPPY3)

Notice that the parameter ABS has been added to signify that we want to re-init. Also notice that the name of the Do File is different from the Model III version. It is now INITHD1 instead of INITHD3. Notice also that we are now initing two hard drives and the system will contain 3 floppies.

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THE HARD DRIVES WILL BE FORMATTED 4 TIMES
or
Don't Get Shaken. This IS Normal.

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Some definitions are in order now. A PHYSICAL DRIVE is the actual logic and mechanics associated with a drive mechanism. It exists in the real world and it is something tangible that we may actually touch. A LOGICAL DRIVE is how the computer, or operating system, views the physical drives. Under the LDOS INITHD Utility there will always be four logical drives regardless of how many physical drives are attached.

One physical hard drive will contain 2 platters resulting in a total of 4 surfaces and 4 read/write heads. Under the LDOS HDINIT Utility, if the computer has one physical drive, it will assign one logical drive to each surface. Head 0 will be assigned to logical drive 1 (a logical drive 0 is not allowed). Head 1 will be assigned as logical drive 2 and so on.

When using 2 physical drives, LDOS will split each physical drive into 2 logical drives. Two physical drives multiplied by two logical drives each results in four logical drives total. Therefore LDOS will FORMAT four times.

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When using the LDOS DO file INITHD1 or INITHD3
The Utility will always FORMAT 4 times.

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INITHD is, as previously stated, a DO file set up by LDOS to allow convenient formatting and initialization of the Radio Shack hard drives. This is; however, not the only way that our drives may be initialized. The customer may optimize his format by setting up his logical drives in a manner most convenient to his needs. The methods to allow this type of customized initialization are covered in the Appendices of the MODEL III HARD DISK SYSTEM START UP MANUAL.

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The Operator Has the Ability to Customize
The Format and Initialization to Suit
His Specific Needs.

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Upon completion of the Initialization and Format, the system will re-boot itself. At this time type:

DO INITHD3 (MASTER)
or
DO INITHD1 (MASTER)

The system is now operating off of the hard drive and will prompt you to insert specific diskettes into the first floppy drive. These diskettes will then be copied onto the hard drive. Remember:

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When operating with the hard drives:
Drives 0 through 3 are Hard
Drives 4 through 7 are Floppy

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The Initialization is now complete. The INITIALIZATION Diskette that you began with is now your STARTUP Diskette. Resident on this diskette is a file named CONFIG/SYS.CCC. This file contains specific information on the system that was just inited. During the boot process, information contained within this file will be loaded into the system to configure it for the number of floppies and hard drives noted during the init process. Make at least one backup of this diskette.

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The STARTUP Diskette Must Be Used Each Time
The System Is Reset

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Since the CONFIG/SYS file contains information specific to the system on which it was created, the STARTUP diskette may not be used to boot up other hard drive systems. Although, if your luck is running well and it's not raining, this disk may work on some machines that were configured in a similar manner. More probable is that it won't.

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The STARTUP Diskette Is Created to be Used On
One Specific System Only.
It May, Or May Not Function Properly On
Another System.

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