**DISK CAPACITY**

Because of the enormous number of possible combinations of disk

controllers, number of sides, number of tracks, and electronic

recording densities, it is impractical to list all the different disk

capacities. They range from 400 sectors (H17, single-side, 40-track)

to 4004 sectors (H47, double-side, double density).

**GROUPS**

HDOS internally combines nearby sectors of data together into what are

called "groups." Because of the intrinsic structure of HDOS, it is

**possible to keep track of no more than 255 "groups"** of data sectors per

disk. A 400-sector disk will be organized into 200 groups, with 2

sectors per group. A 2560-sector disk (H37, double-sided, doubledensity

80 track, 16 sectors per track) will be organized into 213

groups of 12 sectors each. A 4004-sector H47 disk (double-sided,

double-density) will be organized into 250 groups of 16 sectors each.

**DISK FILE STORAGE**

Because of this internal grouping of sectors, the minimum amount of

space HDOS will use when recording a file is a single group. Using the

examples shown of standard H17, H37, and H47 disk sizes, 10 files of

one sector each will use the following amount of actual disk space: H17

- 20 sectors; H37 - 120 sectors; H47 - 160 sectors. However, to store

10 files of 16 sectors each would require: H17 - 160 sectors; H37 - 240

sectors; H47 - 160 sectors.

**GROUPS OR CLUSTERS**

HDOS allocates sectors to files in groups called "clusters" or

"groups." The name "clusters" was coined by programmers who discovered

the inner workings of HDOS by disassembling the machine code. The

'official' name as used in the original HDOS source code is "group."

Each group or cluster is composed of two contiguous sectors in the case

of the H17 5-1/4 inch disks, and up to sixteen contiguous sectors in

the case of H47 8-inch disks, when using double-sided, double-density

recording. inch disks. Clusters on a single-sided, single-density

8-inch disk are composed of 4 sectors. Clusters on a double-sided,

double-density 8- inch disk are composed of 16 sectors.

**THE DIRECTORY**

In order to keep track of all the files in the system, HDOS uses a

listing known as the "directory." The directory contains the name,

location, size, and creation date of every file in the system. In

order to access a given file, HDOS first looks up its name in the

directory. It then uses information listed along with the filename to

locate the sectors which comprise the file. The directory is also an

HDOS file called "Direct.Sys." HDOS cannot use this file to look up

the location of a file, because it cannot read "Direct.Sys" until it

can look at the data in "Direct.Sys" that tells where "Direct.Sys" is

located! HDOS solves this paradox by recording the location of

"Direct.Sys" on physical track zero of every disk.