

## Inter-Office Memorandum

To LRG, Doug Fairbairn Date January 24, 1979

From Larry Tesler Location Palo Alto

Subject Notetaker Disk Capacity Organization PARC/SSL

# XEROX

Filed on: < Tesler > disk-capacity.memo

The capacity of the Notetaker floppy disk has been advertised as 340,000 bytes. That quantity assumed double-density, dual sided-disks, and a particular format. This memo summarizes some possibilities for formatting single-sided disks.

Standard IBM-style formats have an overhead in address marks and synch marks equivalent to 60 or more bytes per track plus 50 or more bytes per sector. The WD 1791 can handle non-standard formats, but below certain unknown minimum values for the synch mark overhead, reliability will be sacrificed.

Nominal disk capacity (according to Shugart literature):

Single density: 110K  
Double density: 220K

File Format (128 byte sectors, IBM style):

Single density: 35 tracks \* 16 sectors \* 128 bytes = 71,680  
[35\*(60+16\*(60+128))=107,380 including overhead]  
Double density: 35 tracks \* 32 sectors \* 128 bytes = 143,360  
[35\*(60+32\*(60+128))=212,660 including overhead]

Dump Format (1 sector per track) [haven't attempted yet]

Single density: 35 tracks \* 1 sector \* 3072 bytes = 107,520  
[35\*(60+60+3072)=111,720 including overhead]  
Double density: 35 tracks \* 1 sector \* 6144 bytes = 215,040  
[35\*(60+60+6144)=219,240 including overhead]

We may have to try reducing the overhead in order to fit that much on a track.

Dump format can handle 50% more data than file format. It still is not enough for a complete vmem dump of 256KB on one double density disk (or on two single density disks). It is almost enough if *save* omits the display bit map and *resume* does a *user restore*:

262,144[main mem]-38,400[bit map]=223,744[vmem]  
223,744[vmem]-215,040[disk capacity]=8,704[unsaveable vmem]

8K shouldn't be difficult to omit from the *save*. Among the things that can be put in the unsaveable part of memory are file buffers, which would have to be flushed before a *save*. I suspect there are other data structures that can be reconstructed after a *resume* as well.