

Additional Notes for Timesharing BASIC version 2.0

Timesharing BASIC 2.0 departs from the convention used with single user Disk BASIC in which a single format is used for all disks. In a manner similar to the Altair Minidisk, TS BASIC v2.0 uses a boot disk with a different format than a data disk. The boot disk cannot be used for file storage.

Boot Disk

The first 8 tracks (tracks 0-7) contain the disk boot image. The track and sector format of the boot tracks are the same as defined for tracks 0-5 in single user Disk BASIC. The TS BASIC v2.0 boot disk cannot be mounted or used for file storage.

Data Disk

Track 0, sector 0 contains a volume ID. See below. The remainder of tracks 0 through 5 are not used. Data file storage begins in track 6. Tracks 6-76 duplicate the format of disks used under single user Disk BASIC. This allows single user Disk BASIC disks to be mounted under TS BASIC 2.0. However, since the Volume ID sector is not present, single user BASIC disks can only be mounted as "Read Only."

Note that Timesharing BASIC 1.x is a hybrid of the disk layouts use for single user BASIC and TS BASIC 2.0. Like single user BASIC, only a single disk type is used, however, 8 tracks are allocated on all disks for the boot image instead of 6. In turn, the data section of the disk begins on track 8. Since both single user BASIC and TS BASIC 2.0 expect data starting with track 6, neither single user or TS BASIC v2.0 can mount a TS BASIC 1.x disk.

Volume ID

Track 0, sector 0 contains the volume ID for a data disk. Note: Even though this sector is on track 0, it follows the sector layout used for data tracks (tracks 6-76).

<u>Byte</u>	<u>Use</u>
0	Track number with sync bit (80h)
1	Sector number (zero)
2	File number – set to FFh for the volume ID sector
3	Count of data bytes in sector (128)
4	Checksum – sum of all bytes except for the track number, sector number, and the terminating FFh byte.
5-6	Link to the next sector in the file (zero for the Volume ID sector)
7-10	"VOL1" with MS bit set on the "1" (B1h vs 31h)
11-18	Volume name
19-40	Zeros
41-48	Read mount password, zeros if no password required
49-56	Modify mount password, zeros if no password required
57-134	Zeros
135	FFh marker
136	Zero

Single User BASIC Disks under Timesharing BASIC

Files on disks written under single user BASIC may appear to be password locked when accessed under Timesharing BASIC. The program shown in the file "TS BASIC Password Fix" can be run under single user BASIC to remove "junk" password bytes that may be in the directory. The disk will then work properly under both single user and Timesharing BASIC.

Booting Timesharing BASIC 2.0

The manual for Timesharing BASIC 2.0 does not go into much detail about the boot process as it is assumed that an Altair Turnkey computer is used instead of an older Altair with a full front panel. The boot process outlined in the version 1.0 manual can be followed as a reference for booting version 2.0 with a front panel machine. In short, after examining the boot ROM address (FF00h), return A15-A8 to zero, then depress RUN.

The strings used in the boot dialog have the MS bit (bit 7) set to terminate strings. Therefore, garbage characters may display if you're using a terminal emulator as a console. Settings to ignore bit 7 are available with most terminal emulators. Under Teraterm, for example, select "7 data bits" and "space parity" to ignore bit 7. Under HyperTerm, you can choose "Force incoming data to 7 bit" under the "ASCII Translation" setup option.

Once Timesharing BASIC 2.0 is booted and the configuration dialog questions are answered, remove the boot disk and insert the data disk(s) to be used. Then the required MOUNT operation(s) can be performed.

If you are using an Altair Clone, have the boot disk in drive zero and the first data disk in drive two as shown below.

```
=== 8 Inch Floppy Drive Content ===  
  
Drive 0: TS BASIC Boot Disk  
Drive 1: TS Files Disk 2  
Drive 2: TS Files Disk 1  
  
Drive to Update (x to exit):
```

After booting, swap data disk #1 from drive two into drive zero as follows:

- 1) Enter the Configuration Monitor (raise and hold the STOP/RUN switch in the STOP position, then raise the left AUX switch).
- 2) Choose the "Floppies" menu option to display the drive content.
- 3) Select drive two at the prompt.
- 4) Choose "Change Drive Number."
- 5) Select drive zero as the new drive number. You'll then see data disk #1 in drive zero and the boot disk moved to drive two.
- 6) Exit out of each menu and choose "Exit to Altair" to completely exit the Configuration Monitor.
- 7) Depress the RUN switch to resume CPU execution.