Microsoft CP/M BASIC

Addendum to Microsoft BASIC Manual for Users of CP/M Operating Systems

A CP/M version of BASIC (ver 4.5) is now available from Microsoft. This version of BASIC is supplied on a standard size 3740 single density diskette. The name of the file is MBASIC.COM. To run MBASIC, bring up CP/M and type the following:

```
A>MBASIC <carriage return>
```

The system will reply:

```
xxxx Bytes Free
BASIC Version 4.5
(CP/M Version)
Copyright 1977  (C) by Microsoft
Ok
```

You are now ready to use MBASIC. MBASIC is identical to Altair Disk BASIC version 4.1, with the following exceptions:

1. MBASIC requires 17K of memory.(A 28K or larger CP/M system is recommended).

2. The initialization dialog has been replaced by a set of options which are placed after the MBASIC command to CP/M. The format of the command line is:

   ```
   A>MBASIC [<filename>] [/F:<number of files>]
         [/M:<highest memory location>]
   ```

   Items enclosed in brackets are optional.

   If <filename> is present, MBASIC proceeds as if a RUN <filename> command were typed after initialization is complete. A default extension of .BAS is used if none is supplied and the filename is less than 9 characters long. This allows BASIC programs to be executed in batch mode using the SUBMIT facility of CP/M. Such programs should include a SYSTEM statement (see below) to return to CP/M when they have finished, allowing the next program in the batch stream to execute.

   If /F:<number of files> is present, it sets the number of disk data files that may be open at any one time during the execution of a BASIC program. Each file data block allocated in this fashion requires 166 bytes of memory. If the /F option is

omitted, the number of files defaults to 3.

The /M:<highest memory location> option sets the highest memory location that will be used by MBASIC. In some cases it is desirable to set the amount of memory well below the CP/M's FDOS to reserve space for assembly language subroutines. In all cases, <highest memory location> should be below the start of FDOS (whose address is contained in locations 6 and 7). If the /M option is omitted, all memory up to the start of FDOS is used.

NOTE

Both <number of files> and <highest memory location> are numbers that may be either decimal, octal (preceded by &O) or hexadecimal (preceded by &H).

Examples:

A>MBASIC PAYROLL.BAS	Use all memory and 3 files, load and execute PAYROLL.BAS.
A>MBASIC INVENT/F:6	Use all memory and 6 files, load and execute INVENT.BAS.
A>MBASIC /M:32768	Use first 32K of memory and 3 files.
A>MBASIC DATACK/F:2/M:&H9000	Use first 36K of memory, 2 files, and execute DATACK.BAS

3. The DSKF function is not supported by MBASIC. Use CP/M STAT.

4. The FILES statement in MBASIC takes the form FILES[<filename>]. If <filename> is omitted, all the files on the currently selected drive will be listed. <filename> is a string formula which may contain question marks (?) to match any character in the filename or extension. An asterisk (*) as the first character of the file name or extension will match any file or any extension.

   Examples:

```
FILES
FILES "*.BAS"
FILES "B:*.*
FILES "TEST?.BAS"
```

5. The LOF(x) function returns the number of records present in the last extent read or written (usually by a PUT or GET).

6. CSAVE and CLOAD are not implemented.

7. LLIST and LPRINT assume a 132 character wide printer and write their output to the CP/M LST: device.

8. All filenames may include A: or B: as the first two characters to specify a disk drive, otherwise the currently selected drive is used.

9. Filenames themselves follow the normal CP/M naming conventions.

10. A default extension of .BAS is used on LOAD, SAVE, MERGE and RUN <filename> commands if no "." appears in the filename and the filename is less than nine characters long.

11. The error messages "DISK NOT MOUNTED", "DISK ALREADY MOUNTED", "OUT OF RANDOM BLOCKS", and "FILE LINK ERROR" are not included in MBASIC.

12. The CONSOLE statement is not included.

13. To return to CP/M use the SYSTEM command or statement. SYSTEM closes all files and then performs a CP/M warm start. Control-C always returns to MBASIC, not to CP/M.

14. If you wish to change diskettes during MBASIC operation, use RESET. RESET closes all files and then forces CP/M to re-read all diskette directory information. Never remove diskettes while running MBASIC unless you have given a RESET command. The RESET statement takes the place of the MOUNT and UNLOAD statements in Altair BASIC.

15. MBASIC will operate properly on both Z-80 and 8080 systems.

16. MBASIC does not use any of the restart (RST) instruction vectors.

17. The FRCINT routine is located at 103 hex and the MAKINT routine at 105 hex (add 1000 hex for ADDS versions). These routines are used to convert the argument to an integer for assembly language subroutines.

18. If the LEFT$ or RIGHT$ string functions have zero as the number of characters argument, they will return the null (length zero) string.

19. The ERR() Disk error function is not supported as CP/M handles all disk error recovery.

20. Control-H (backspace) deletes the last character typed and is echoed to the terminal.

21. RESTORE <line number> may now be used to set the DATA pointer to a specific line.

22. All error messages and prompts are printed with lower case characters when appropriate.

23. Control-S may be used to cause program execution to pause. In the suspended execution state, control-C will cause a return to BASIC's command level, and any other character will cause the program to resume execution.

24. The EOF function may be used with random files. If a GET is done past end of file, EOF will = -1. This may be used to find the size of a file using a binary search or other algorithm.

25. LSET/RSET may be used on any string. The previous restriction to FIELDed strings has been eliminated.

26. The string function INPUT$(<number of characters> [,[#]<file number>]) may be used to read <number of characters> from either the console or a disk file. If the console is used for input, no characters will be echoed and all control characters are passed through except Control-C, which is used to interrupt execution of the INPUT$ function.

27. VARPTR(#<file number>) returns the address of the disk data buffer for file <file number>.