NASPEN DISC

1. Introduction   8000H Version.

NASPEN DISC is an extension to Naspen VS:1 for the Nascom disc
system with NAS-DOS. It gives disc equivalents for the tape read,
write and join commands, and a number of enhancements to the Naspen
commands. A powerful feature of the extended Naspen is that graphic
characters with bit 7 set can now be handled; this permits a
special-purpose graphics ROM or programmable character generator to
be used for up to 128 or 64 additional characters respectively,
e.g. Greek letters and mathematical symbols.

2. Disc Commands

The 'R' (read), 'W' (write) and 'J' (join) commands now operate on
named disc files, and the 'V' (verify) command has been deleted.
The name of the last file read by the 'R' command is displayed on
the top line of the screen. A new ']' directory command has been
added which displays a directory of the Naspen text files on the
currently 'logged' drive, and permits logging onto a second drive.
Files written to the disc may be executed from the directory
display, or from NAS-DOS, which will load the file and return to
NASPEN DISC with the file name displayed.

After entering an 'R', 'W' or 'J' command you will be prompted for
a file name in NAS-DOS format (i.e. up to 8 characters, but
avoiding the colon (:) and control characters). Errors can be
corrected by back-spacing. After entering the file name, press
<ENTER> to accept the command or <ESC> (SHIFT/ENTER) to abort it.
Caution: NASPEN DISC does not check that the file name refers to a
text file in Naspen format; if in doubt, use the ']' directory
command (see below).

With the 'W' (write) command, if the file already exists the prompt
'Over-write?' will be displayed. Reply with 'Y' to continue; any
other key will abort the command.

When using the 'J' (join) command, ensure that there is enough free
space to accommodate the new text. If there is insufficient space,
text will be lost and the free space counter will show 0000. Unlike
the tape version, the disc 'J' command does not duplicate the text
if it is aborted with <ESC>. However if duplication is required,
save the file and 'J' it onto itself.

3. New Commands

T Top kill

This command is similar to the 'K' (kill) command, except that the
text is deleted from the current cursor position to the start of
the text file. Since the effects of 'T' are irrevocable, you must
confirm the command with 'Y', as with the 'K' command.

The 'K' and 'T' commands, together with the disc 'J' and 'W'
commands, enable portions of text to be moved from one file to
another.

Q Continuous print

This command is similar to the 'P' print command, except that printing is continuous from the cursor position to the end of the text, and does not stop at the 'bell' page terminators. The 'bell' code (07H) is sent out with the text, and may be used by a printer handler to start a new page.

] Directory

This will display all the Naspen text files on the currently 'logged' drive. To be more precise, it displays all files with an execute address of 8006H, which is the warm start address of NASPEN DISC. If there are more than 12 files, they will be displayed blocks of 12. To stop the display press <ESC> (SHIFT/ENTER) once. A blinking cursor will be displayed. If you press <ESC> when you have the blinking cursor, you will return to the file you were last editing. To load a file, use the cursor up and down arrows to get to the file required. Type] <ENTER> and the file will be loaded.

To log on to drive 2, type '2' after displaying the directory of drive 0. A directory of the Naspen text files on the disc in drive 2 will be displayed, and subsequent disc operations will be on drive 2.

To return to drive 0, use the ']' command to display the drive 2 directory, then type '0'; the drive 0 directory will be displayed as before.

Files saved under the NAS-DOS]P command will have the wrong execute address for NASPEN DISC, and will not be displayed by the ']' command. These files can be loaded with the 'R' command if the file name is known. Otherwise, return to NAS-DOS, load the file with]L, then re-enter NASPEN DISC by typing E8006 <ENTER>. Re-save the file with the NASPEN DISC 'W' command to change the execute address.

LF Capitals lock

In insert mode ('I' or 'A'), pressing the <LF> (SHIFT/CH) key will change the keyboard action from lower-case to upper-case letters; pressing <LF> again will restore normal action. The keyboard action is automatically restored on exit from insert mode.

4. Modifications

f, F Find

The text string handling for the 'f' and 'F' find commands has been improved so that it is impossible to run off the end of the line or to backspace over the prompt. <ESC> will abort the command.

m, M Move

Naspen uses curly brackets as markers for the block of text to be
moved, and thus prevents their use as characters in the text. The
markers have been changed to CTRL/SHIFT/Y and CTRL/SHIFT/Z; the
symbols for these control codes have no obvious meaning, but were
chosen because other available control codes are convenient for
text formatting with a printer handling routine. For example,
CTRL/SHIFT/A and CTRL/SHIFT/C give suitable symbols for under-
lining, and CTRL/SHIFT/K for subscripting.

Note that there is an 'm' command not mentioned in the Naspen
manual. Both commands search for the first marked block of text and
then copy it; 'm' begins the search at the current cursor position,
whereas 'M' begins the search at the start of the text (compare the
'f' and 'F' commands).

N Return to monitor

The 'N' command now makes a 'cold start' return to NASDOS, i.e. a
jump to D00OH. As with the original Naspen 'N' command, a cold
start is required in order to reset the stack pointer.

Cursor up and down

The cursor up and down arrow keys will scroll the text when the
cursor reaches the top or bottom of the screen window, both in
command mode and in insert ('I' or 'A') mode. It is possible for
the cursor right and left arrow keys, and the 'm' or 'M' command,
to take the cursor off the screen. Pressing 'H' or <CH> will home
the cursor in command mode as usual, and in insert mode the up and
down arrow keys may be used to return the cursor to the screen.

5. Using NASPEN DISC

NASPEN DISC (file NPD1.5 on the disc supplied) occupies 8000H —
87FFH, and uses 8720H — 87FFH for the stack and workspace. The text
file limit is set at 7FFFH, which gives a capacity of 28638
characters. This is about the largest usable file, and many of the
commands are quite slow when the file is nearly full. In a 32K
system, the area from 8800H — 8FFFH is available for printer
handlers etc.

Naspen VS:1 must be resident from B800H — BFFFH, either in EPROM
for a 32K system or copied into RAM for a 48K system.

To use NASPEN DISC, simply load and execute the file NPD1.4 using
the NAS-DOS JE command: the cold start entry point is 8000H. Text
may then be entered in the normal way, and the file saved onto disc
with the ·NASPEN DISC 'W' command. If a return to the operating
system is made with the 'N' command or by Reset, NASPEN DISC may be
warm started by executing from 8006H; this will preserve the
current text, as with a Naspen warm start. Alternatively, once
NASPEN DISC has been initialized (cold started), any text file with
an execute address of 8006H may be executed from NAS-DOS with the
JE command; this will load the file and return to NASPEN DISC.

A text file prepared by NASPEN DISC is identical to a normal Naspen file except that (a) the default text file limit is 7FFFH instead of 3F01H, (b) characters with codes higher than 7FH may be included. It follows that a tape or disc file prepared under Naspen may be loaded after initializing NASPEN DISC, and then saved as a NASPEN DISC file. The procedure for a disc file has already been described (see the 'J' command). With a tape file, execute NASPEN DISC and then return to NAS-DOS. Load the tape file with the monitor R command, and return to NASPEN DISC by executing from 8006H. Note that the text file limit at address 1012H should be changed to 7FFFH before saving the file. Conversely, a NASPEN DISC file may be saved onto tape as follows. Initialize NASPEN DISC and load the file; return to NAS-DOS, warm start Naspen by executing from B806H, and then use the 'W' command.

6. Machine code notes

The workspace area from 100FH to 101FH has the same usage as with Naspen, and is initialised from a table at 8060H; the default values may thus be altered by changing the corresponding table entries.

There is a 3-byte input reflection at 875DH, which is initialized to a return instruction from a table at 8073H. This may be used to trap input from the keyboard and change character codes, e.g. to use a programmable character generator which can only define the first 64 characters of the 'graphics' set. To use the reflection, change the instruction to jump to an input trap routine, and terminate the routine with a return instruction.

NASPEN DISC turns off the Bits & P.C.s PCG (Programmable Character Generator) when it is cold or warm started, and with a simple hardware modification the same code may be used to select an alternative graphics ROM containing a second character set. The code is as follows (values in hex):

```
802D   21 00 0C   LD HL,0C00
8030   7E         LD A,(HL)
8031   CB D7      SET 2,A
8033   CB AF      RES 5,A
8035   77         LD (HL),A
8036   DF 5E      SCAL ZFFLP
```

To turn the PCG on, change the SET and RES instructions to RES and SET respectively: CB 97, CB EF.

To change the markers for the beginning and end of a 'move' block, change the character codes in the following locations (hex):
begin - 8450 85B2
end   - 8455 8460 8465 85BC 85C4

If you have a copy of NASPEN DISC located other than at 8000H, then change any references to memory locations within it accordingly.