

## TDU - TAPE TO DISK TRANSFER FACILITY

A number of customers have expressed a wish that a facility such as CMDFILE, which is supplied on LDOS, should be included in the small-LDOS package. This utility enables the user to transfer machine language tape programs to an LDOS disk. Logical Systems are not able to provide CMDFILE with small-LDOS for copyright reasons, but they have given us permission to write such a utility and include it. Hence, on your disk you will find a program called TDU/CMD. These are the instructions for that program.

TDU is a straightforward utility which will transfer programs from tape to disk and disk to tape. It does not provide facilities for offsetting, hence the user should make certain that the machine language program to be transferred will not clash with DOS, for although in such a case he can put his program on to disk, immediately he tried to use it, it would crash. There are many techniques for avoiding this, the most common is the one that we have mentioned, whereby the source program is offset by a number of bytes so that it resides at an address above DOS. On execution it is moved down to its original position. Although this may sound a little ambiguous at first sight, it should be realised that by the time the move down takes place, the need for the disk operating system is over. As will be seen, however, if the program being loaded requires the use of the disk operating system, then this method will not work. A number of offset programs are available, probably the best is System Savers.

TDU commands are of two formats. The first is a single keyword, normally abbreviated to its first letter, the second is the keyword followed by the equals sign and a program name. There are two stages to the program, Input and Output, hence when one first accesses the program you will be told that there is no program resident and then informed that you are at the input stage and given an abbreviated list of the commands. After the program has been inputted, then the O command for Output is selected and the output executed.

The commands are as follows:

### INPUT COMMANDS

TAPE                      This will load the next program from cassette. In other words it is not necessary to specify a program name. It is important to be aware that Tandy Model III users must have the HITAPE function active regardless of whether the tape accessing is to be at high or low speed.

The Model III, of course, is principally intended to be used at high speed, hence using TDU at 500 baud requires special attention. First of all, as always, activate HITAPE. Then call Basic and from the keyboard enter POKE 16913,0. This will set the low speed. To get back to Dos to use TDU do not re-set, enter the command CMD"S". You will now be back in DOS; call TDU and proceed as normal. Experienced users will no doubt be aware of other ways in which address 16913 can be set to 0 and, of course, they may use such methods. The only purpose of going into Basic is to have an easy way of carrying out the procedure.

TAPE=nnnnnn	This command is used when the name of the program is known. The name must, of course, be six characters or less. Those that are less will be assumed to be padded with blanks. If by mistake a name of more than six characters is entered then only the first six will be significant.
DISC=filespec	This will load the disk file named "filespec". DOS is used for this accessing, so any problems in loading will be reported by DOS in the normal way.
NAME	This is a very useful function. It saves one loading in a whole program if one only wishes to ascertain the name of it. On execution the program's name will be displayed and the read aborted.
CLEAR	Remove any resident program. The TDU title will be redisplayed.
OUTPUT	Go to the OUTPUT commands.
EXIT	Return to DOS

#### OUTPUT COMMANDS

TAPE=nnnnnn	This will save the resident program to tape with the name nnnnnn
DISC=filespec	Save the program as a disk with the filespec given in the command.
VERIFY	This command enables the user to verify a tape. It will read in a program from the cassette and check it against the contents of the resident program.
INPUT	Return to the INPUT commands.
EXIT	Return to DOS.

Holding down the Clear key during tape access will abort that access.

Program loading addresses are given by TDU. They are displayed after a load and in place of the "no program resident" message. In other words, if there is a resident program you are given the addresses, if there is not you are notified of that fact. Several error messages can be displayed but they are all self explanatory. As we have mentioned, during disk input output DOS has control, so if any problems are experienced it will be a DOS error message that is generated.

Any number of programs may be joined together up to memory capacity. Obviously later loaded programs will overwrite earlier programs if load addresses coincide. Hence, the joining of programs should be carried out with some care.

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