9 Recording programs on cassette

As you have seen, the Introductory Cassette has a number of programs stored on it. You can record programs you have typed into the Electron onto cassette for future use. This is very useful for transferring other people's programs from their cassette onto yours; for example, you might want to copy one particular program on the Introductory Cassette onto another cassette. Before you make any cassette copies of any programs, be sure that you are free to do so. The company or person who wrote the program may own the copyright to that program. In which case, written permission must first be applied for.

The main thing to remember when you record programs is where the program that you've recorded can be found on the cassette, otherwise you will spend a lot of time searching. We strongly advise you to keep a piece of paper with each cassette, and to write down the name of each program and the tape counter position where it begins and ends. Bear in mind that when you record a program, it will record over the top of anything already on the tape; this is useful for erasing old programs you no longer need, but fatal if you record over the top of one you want to keep!

Most short programs will only move the cassette tape counter 30 or 40 positions, but try to spread the programs over the length of the cassette. For example, record the first program at 000, the second at 100, the next at 200 and so on. This will make them easy to find, and will reduce the chances of overlapping recordings. The quickest way to find out if there's a program at a particular point on the cassette is to play it back and listen to the cassette machine if you can. If there is a high pitched whistling noise, it means that a program is just about to start or just finishing. If you hear a screeching noise, you are listening to a program.

One final point – when recording a program at the beginning of a cassette, wind the tape by hand until the clear plastic tape 'leader' is no longer visible.

Saving (recording) a program on cassette

Once you have typed a program into the Electron, then do the following to save it:

Insert the cassette into the cassette recorder.

Set the tape counter to 000 when the tape is fully rewound.

Type

`SAVE "MYPROG"` RETURN

The message

`RECORD then RETURN`

appears on the screen.

Fast forward the cassette to the place where you want to record the program – this will be 100, 200 or 300 etc on the tape counter. Note that if you have cassette motor control, you cannot wind the tape unless you have executed a **SAVE**, **LOAD** or ***CAT** command (see below for ***CAT**).

Start recording on the cassette machine, then press RETURN on the Electron.

If you want to give up at any time, press ESCAPE.

While the program is being saved on the cassette, the name of the program, which is MYPROG appears on the screen along with some numbers. This means everything is going OK. When the computer is finished, the > will reappear, and the tape will stop automatically. If you don't have cassette motor control, then the tape will carry on and you will have to press the STOP button on the cassette recorder after the > reappears.

Checking a recording

To check that the program is really on the cassette use the ***CAT** command described later in this chapter. If the recording went wrong for any reason, then just re-record it.

In the example above, the program was called MYPROG, but you can make up any name you like – as long as it contains ten letters or less.

Loading a program from cassette

To load a program on cassette into the Electron's memory, type

```
LOAD "MYPROG"  RETURN
```

The message

```
Searching
```

will appear. Rewind the cassette to just before the beginning of the program, using the tape counter to help you get there.

Check that the volume and tone controls are set correctly. If you are unsure about this, turn to chapter 3.

Press the PLAY button on the cassette recorder.

If the computer finds a program other than the one you asked for, it will display its name on the screen but won't load it. As soon as the computer finds the beginning of your program called MYPROG, the message

```
Loading
```

will appear, and this tells you that the computer is now loading that program.

When the program is loaded, the computer will print the > prompt on the screen, and will automatically stop the tape if you have motor control. If you haven't then press the STOP button.

Now the program is in the computer's memory, type

```
RUN  RETURN
```

and the computer executes the program. If you have read the chapter on the Introductory Cassette, you probably remember that we were using a different command to load the tape. This is the **CHAIN** command, and what it does is tell the computer to first **LOAD** the program and then **RUN** it immediately afterwards. So if you type

```
CHAIN "MYPROG"  RETURN
```

this will save you having to type **RUN** after the program has loaded.

LOADING AND SAVING SHOULD NORMALLY BE DONE IN MODE 4, 5 OR 6.

Cataloguing the tape

To find out what programs are on the tape, type

*CAT `RETURN`

then play the tape (from the beginning if you want). Better still, keep a record of what is on the tape because cataloguing the tape takes a long time. However, cataloguing the tape also lets the computer verify the information recorded. If there are any errors in the data on the tape, an error message will appear on the screen, and the cataloguing continues.

What the numbers mean

A typical catalogue might look like this

```
MYPROG      00    0084
GAME1       08    088E
GAME2       0A    0ABA
fred        25    2545
```

The program name (or 'filename') is followed by two 'hexadecimal' numbers which give the 'block' number. As described in chapter 4, each program is recorded as a series of 'blocks'. See chapter 6 for an explanation of hexadecimal numbers.

The last number on the line gives the 'length' of the file.

Escape

If you want to stop in the middle of a **LOAD**, **CHAIN** or **SAVE**, press `ESCAPE`. You will probably get a

```
Bad Program
```

error appear on the screen. To get rid of this, type

NEW `RETURN`

For more information about using cassettes for storing programs, please turn to chapter 26.