



The Four Generations of Computers

Elliott 803: Second Generation Computers

The 1960s saw the introduction of second generation computers using transistors rather than valves.

One of these second generation machines was the Elliott 803.

Tony Nixon:

Who might have bought a computer like this?

Kevin Murrell:

Well this particular machine, the Elliott 803 was very popular in universities.

Tony:

And this is the input end?

Kevin:

Well that's right. Programs for the computer were prepared offline away from the machine on a tape very similar to Colossus and this punch tape has both the program and the data all on one tape.

Tony:

And could we see it running?

Kevin:

Yeah. I've loaded the program into the reader. We need to go back to the operator's console, set the instruction up ready to read the tape and now 'operate' will start the tape loading.

FX: Machine noise

Kevin:

Now that tape and the data have been loaded into the processor's central memory.

Tony:

Right. OK. So where is the central processor?

Kevin:

Right, well the central processor is all of these cabinets, all five of the cabinets. Now if I open this one, this is actually the memory cabinet, and this machine's got four K of core memory.

Tony:

How much power does this machine consume, Kevin?

Kevin:

Well this machine operates at 25 volts DC, and if we look at the power supply, it's taking about, 50 amps at the moment.

Tony:

OK, so 50 times 25, about one and a quarter kilowatts.

Kevin:

That's right. That's about half an electric fire.

Tony:

And what about the output? We've seen the input.

Kevin:

Well the output's also produced on paper tape, and a machine like this would actually punch the tape for the student (noise of machine) and that paper tape would be returned back to the student to go back to their offline desk to print their results out.

Tony:

So we've gone full circle. The student starts offline writing the paper tape and then the paper tape's returned to the student. The student puts the paper tape into the offline reader and gets back a printout.

Kevin:

... the results, that's right.