Output Devices

XEROX 4050 laser printer

High quality A4 (11.70 x 8.28 inches) printout. 300 dots per inch. Full variety of fonts.

Landscape and Portrait orientation (Landscape = A4 with long sides horizontal, Portrait = A4 with long sides vertical).

Printing speed of up to 70 pages per minute and up to 9,240 lines per minute.

Automatically collated output.

The following is a simplified description of the printing process.

An A4 sized area of the photo-receptor belt is given an electro static charge. The laser then etches the format of the required printout by removing the charged area and leaving just the character shapes charged. The belt, which is moving, then attracts a mixture of plastic coated steel shot with tribo- electric charge, mixed with black, finely ground plastic. Using varying rates of charge, this "toner" is then transferred to the paper in the shape of the required characters.

Only the characters are covered by this toner which, at this point, could easily be rubbed off. These pages then pass between two heated rollers where the toner is "fused" to them by melting the ground plastic.

It is controlled by its own software (XER4050A) to which files are sent by the system. XER4050A then processes the files and passes them to the XEROX 4050 itself for printing.

IBM 4250 electro-erosion printer

High quality text and graphic printouts on continuous, metal-coated, special paper. Produces high-quality originals for reproduction. Unidirectional printing (left to right), which exposes 32 lines of dots in one sweep. Capable of printing any dot combination which can represent characters or graphics of any shape.

Prints at 600 dots per inch.

Printing of dots is performed by electronically vaporizing a thin metal coating on the special paper, thus exposing a black contrast layer beneath the metal coating.

It is controlled by its own software (IBM4250A). Like the 4050, files are processed by this software and then passed on to the IBM4250 itself for printing.

VERSATEC 9242 electrostatic colour plotter

Produces a large colour spectrum with bright, translucent toners. Can plot an E-size (34x44 inches) colour drawing in minutes. Can plot an E-size black and white monochrome drawing in less than 90 seconds. Draws plots of any length on 42 inch wide paper.

Produces resolution of 200 dots per square inch.

Used for plots, graphs, microchips, notices, in fact anything!

It is controlled by a Versatec model 830 Raster Processing Machine (RPM). This is a

microcomputer system which controls the processing and transmission of graphic data between the virtual machine (VER9242a) and the printer itself.

Graphic data is converted to raster data and arranged in an order that is acceptable to the printer/plotter.

Plotting principles: Programmed voltage is applied to an array of densely spaced (200 per linear inch), writing nibs embedded in a stationary writing head. Upon digital command, the nibs selectively create minute electrostatic dots on the paper passing over the head. The paper is then exposed to liquid toner, producing a permanent image. The plotter uses a multiple pass technique.

In the first pass, the paper is marked to "end-of-plot" to assure proper registration. Paper is then automatically rewound at eight inches per second to plot starting position. Four passes, each writing one colour from one of four toning stations, overlay the four colours. Automatic precision tracking maintains registration. The four toner colours are YELLOW, MAGENTA, CYAN, and a special process BLACK.

NCR 5330 microfiche system

An "online" computer output microfiche system which converts an online data stream into titled and indexed microfiche. A microfiche is a small piece of film 105mm by 148mm (approximately 4 x 6 inches), which contains reduced images of a computer's print output. The Fiche Printer (which actually produces the fiche) is controlled by the System Processor which is a microcomputer. Associated with the System Processor is a fixed disk, (housed within it), which is used to store the software programs necessary to produce fiche.

At RAL CCD, we do not leave the device running on a permanent basis even though it is classed as an online device. This is because the chemicals, which have to be kept in a constant state of readiness, deteriorate much too quickly, making it far too expensive for the occasional fiche which may be produced throughout the day. To counter this, it is left to the operator's discretion to run it and clear the queues as and when they build up.

IBM 3203 line printer

An "impact" printer, so called because the characters are printed as a result of a hammer hitting a character face. Between the hammer and the character face is an inked ribbon and the paper. The ink causes the character to be printed upon the paper.

The main elements of the printer are a print hammer unit, an interchangeable train cartridge containing 240 characters, and a tapeless carriage under program control.

It prints at six or eight lines per inch.

The print train is capable of printing in upper and lower case.

Paper used is continuous stationary of approximately 2000 pages per box.

The printer is used for large printouts, special forms (labels and stores), batch job output and the more insignificant outputs such as dump output and file updates. Output which cannot be routed to its intended destination for one reason or another, is also routed to this printer by default.