MICROGRAPHICS

Micrographics involves microminiature recording on film and permits records storage in 2 or 3 percent of the space needed for storage of original documents. Equipment needed consists of the following:

- a *camera* to film (record) documents
- a *processor* for processing and duplicating exposed film (or the exposed film can be sent to a specialist for processing)
- a *microfilm/microfiche* reader to magnify the microfilm back to readable size (microfilm can be enlarged to its original size without loss of detail)
- a *printer* to produce hard copies (printouts) of the microfilmed documents of the same size as the original documents.

NOTE The reader and printer are frequently one combined unit rather than two separate units.

Types of microfilm

Microfilm comes in three sizes for various applications:

- 16-mm rolls or flat film
- 35-mm rolls or flat film
- 105-mm solely for microfiche
- microfiche jackets (16- and 35-mm film)
- aperture cards (35-mm frame by frame)

16-mm film is used for letter-, legal-, and cheque-sized documents, newspapers, or any business-type documentation up to 28-cm × 43-cm (11" × 17") sized paper.

35-mm film is used primarily for architectural drawings, maps, and specifications (i.e., documentation larger than 28 cm × 43 cm), or records that would be hard to read if they were too small.

105-mm film is used for microfiche and computer output microfilm (COM).

Microforms

A microform is the medium that holds the microimages in place for storage or for reading the individual record images or microrecords. The choice of microform will depend on the nature and the amount of the material to be stored and might be any of the following.

Reels (or cartridges)

- Reels are rolls of uncut film that are used when all of the microfilmed documents are related to each other (e.g., when libraries store old newspapers).
- Reels and cartridges offer the advantage of low cost and high density (i.e., they can hold up to 6000 images) but they are difficult to search and update.

Film jackets

- These are transparent cards with sleeves into which strips of film are inserted.
- These covers are used for storing strips (up to 75 per jacket) of microfilm.
- The jackets are particularly suited to *active* systems when frequent consultation and update are involved.

Aperture cards

- These are computer input cards that house a microfilm frame.
- This storage medium combines the microfilm with electronic data processing because the input card can be coded with related data.

Microfiche

- This is the term for 100-mm × 150-mm (4" × 6") flat sheets that contain rows of microfilm frames.
- Each microfiche can hold from 30 to 420 microimages.
- This method is suited to situations in which, for example, film versions of entire reports are to be kept.
- Microfiche is easier to update than other film storage devices.

Ultrafiche

- This microform contains microrecords with a very high reduction ratio (more than 90 times) and therefore permits storage capacity of 4000 or more images.
- Because of the density of images, there is usually an index of that particular fiche in the lower right-hand corner.

Microfilm storage systems

Equipment designed specifically for housing the various types of microfilm storage devices (binders, cabinets, small tubs) is available from office equipment suppliers. An indexing system for locating microfilmed material could be a card index, a punched card index, or any record identification method used in numeric, alphabetic, or alpha-numeric systems.

Micrographics and the computer

Micrographics can play an important role in information processing. Data generated by a computer can be converted directly into microimages (computer output microfilm: COM) and also retrieved by a computer (computer-assisted retrieval: CAR).

NOTE Computer output to laser disk (COLD) is becoming popular in mainframe data centres as a replacement for COM.

Computer output microfilm (COM)

In a COM system, computer output is transferred directly onto microfilm instead of onto paper. An operator can access a specific document within seconds for viewing on a monitor and for hard-copy printing if needed.

The system is advantageous because it is space-saving and permits very rapid retrieval. The high cost of COM makes it best suited to large, sophisticated records management situations. For smaller companies, the Yellow Pages list service companies that specialize in COM.

Computer-assisted retrieval (CAR)

In CAR, the capability of the computer is linked to the searching of microform files. Microrecords are located within seconds and the microform can be read on a separate viewer or, in an integrated (networked) office, on the screen of the terminal from which the request was initiated. The microrecord is marked with a machine-readable code that assists automatic retrieval.

Computer input microfilm (CIM)

CIM is the reverse of COM—microfilm is used as input to the computer. The microfilm is scanned and converted into machine-readable format on magnetic tape. This tape can then be used by the computer to read and manipulate information processed and stored earlier on the microfilm.