Dictionary of **Printing** *and* **Publishing**

Dictionary of **Printing** *and* **Publishing**

Michael Barnard
John Peacock

Pira International

The facts set out in this publication are from sources which we believe to be reliable. However, we accept no legal liability of any kind for the publication contents, nor for the information contained therein, nor conclusions drawn by any party from it.

No part of this publication other than that excluded below may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without the prior permission of the copyright holder.

First edition © Chapman and Hall 1990
Second edition © Pira International 2000

© Pira International 2000

ISBN 1 85802 381 5

Published by
Pira International
Randalls Road
Leatherhead
Surrey
KT22 7RU

Tel: +44 (0)1372 802080
Fax: +44 (0)1372 802079
E-mail: publications@pira.co.uk
http://www.piranet.com

Typeset in the UK by Heronwood Press

Printed and bound in the UK by TJI Digital

Introduction

The first edition of this dictionary was published in Chapman and Hall's Blueprint list in 1990. Ten years is a long time in the vocabulary of industries which have been subjected to rapid technological progress and we had undoubtedly reached the sell-by date of *The Blueprint Dictionary of Printing and Publishing* when Pira acquired the Blueprint list towards the end of the millennium.

In this new edition we have tried, as before, to bear in mind two classes of user: the newcomer to the trade who needs help with traditional terms and the experienced printer or publisher who must attempt to keep up with new technical terminology, often originating in the computer industry.

Hence we have included words ranging from archaic mediaevalisms to technocratic jargon although, in an attempt to contain the book to a manageable size, we have in this edition deleted some of the more obscure and obsolete language.

The sources we have consulted are many and various and we have also borrowed from some of our own work – in particular *The Print and Production Manual*. For the new computer-related and multimedia terms which we must all accommodate in the 21st century we have relied heavily on David Penfold's excellent *Multimedia and Communications Glossary*, from which Pira has allowed us to extract many entries.

This is intended to be a functional, rather than an academic, work. We have not struggled to achieve any sort of uniformity in selecting parts of speech for headwords, offering the form in which we believe a word is most often used in practice. For this reason, we have not followed the dictionary convention of identifying parts of speech as this seemed to us unhelpful. Where there has been debate about the precise definition of a term, we have opted for common usage rather than precision as the criterion, although we have sometimes offered alternative uses.

Where we considered additional, tabular material would be helpful (for example, in explaining paper sizes, metric conversions etc) we have included this in an appendix at the back of the book to try to avoid the blocks of text which can sometimes inhibit reference by interrupting easy visual access to alphabetical sequence.

Despite much scanning by colleagues and comparison with other works, we are no doubt guilty of some obvious omissions, but short-run printing techniques will allow us to remedy our errors quite soon in the next edition . . . so please let us know.

MB and **JP**

1-bit, 8-bit and 24-bit colour The number of **bits** of information (**colour resolution**) that can be represented in the **pixels** (dots) on the screen. The higher the number of bits, the more colours or **grey scales** you can have. In turn, the higher the number of bits, the more memory is required to handle them, so the number of colours is limited by the size of the computer memory, rather than the monitor used. 8-bit and 24-bit are the most commonly used. 1-bit colour is **monochrome line**. See **bilevel coding**.

10Base2 A type of **Ethernet**, in which computers are connected by thin coaxial cable, commonly known as **thin Ethernet** or **thinnet**. (See also **cheapernet**.)

10Base5 The original **thick Ethernet** cabling standard, which uses thick yellow cable.

10Base-T A type of 10 Mbps **Ethernet**, in which computers are connected by **twisted pair** cable.

16-bit Describes hardware or software that manages data, program code and memory address information in words that are two bytes or 16 bits wide.

16-bit computer Developed in the mid-1970s, 16-bit computers are capable of handling data in multiples of 16 bits. See **8-bit computer, 32-bit computer**.

100Base-FX Part of the **100Base-T** standard, requiring **fibre-optic** connections.

100Base-T A 100 Mbps **Ethernet** standard, which is based on **CSMA/CD** technology, also called **Fast Ethernet**. Includes 100Base-TX, which requires two **twisted pairs** and 100Base-T4, which requires four pairs (but of lower-quality cable).

24-bit colour See under **1-bit colour**.

2B+D See **basic rate ISDN**.

2B1Q See **two-binary**, **one-quaternary**.

32-bit Describes hardware or software that manages data, program code and memory address information in words that are 4 bytes or 32 bits wide.

32-bit computer A machine capable of handling data in multiples of 32 bits. See **8-bit computer**, **16-bit computer**.

3DO A games system including animation, which will also play audio CDs, allow **Photo-CD** to be viewed and will eventually play video CDs using **MPEG**.

431A The type of plug that fits a standard type 600 **BT** telephone socket.

8-bit colour See under **1-bit colour**.

8-bit computer Describes computers that employ an 8-bit data word. See **16-bit computer**, **32-bit computer**.

A

A The A series is an international IS0 range of paper sizes reducing from 4A at 1682 × 2378mm through A0 at 841 × 1189mm to A10 at 26 × 37mm, with subsidiary **RA** and **SRA** sizes. Each size folds in half to preserve the same proportions of 1:$\sqrt{2}$ at each reduction. (See also **B**, **C**.) See Appendix.

AA Author's Alteration. See **author's corrections**.

AAL See **ATM adaptation layer**.

A&I **Abstracting** and **indexing**: the act of making summaries and indexes for books or journal articles.

ABA American Booksellers Association

abbreviated addressing A process which enables a programmer to use an **address** that has fewer characters than the full address, providing a faster means of processing data as the shorter address requires less decoding time.

ABI See **application binary interface**.

abort Controlled termination of a processing activity in a computer system.

abrasion resistance Measured resistance of a material surface (e.g. paper) to abrasion.

abridgement The concise version of esp. a book.

absolute humidity Quantity of water vapour in a unit volume of atmosphere. Contrast **relative humidity**.

absorbency The degree in which paper takes up contact moisture measured by a standard test. In optics, a transparent material's degree of suppression.

absorption Absorption or **penetration** is one of the four principal ways in which inks dry; it is associated most readily with coldset web-offset printing on newsprint. The other three methods are **oxidation**, **polymerisation**, and **evaporation**.

abstract Short summary of the contents of an academic paper or scientific article.

AC Author's Correction. See **author's corrections**.

accelerated ageing Testing of paper to determine strength loss or other physical changes caused through ageing.

accelerator Chemical, such as **borax**, used to speed up the development of photographic film.

accelerator card An add-on device which can be installed into a computer to speed up certain processes, e.g. graphics performance.

accents Marks added to letters in some languages to indicate a stress, e.g. é (acute e) in French.

acceptable use policy (AUP) The official policy applied by networks concerning the use to which the network may be put. **NSFNET**, for example, does not allow commercial use. Different networks have different AUPs.

acceptance testing The process by which a manufacturer tests a new system to demonstrate that it is in working order. (See also **beta testing**.)

access The ability to retrieve data from a computer storage medium or peripheral device.

access class In **SMDS**, the type (or **bandwidth**) of access. Different types of access line offer different access classes, ranging from 1.17 Mbps to 34 Mbps.

access control 1. The control system in computer networking imposed by **hardware** and **software** controls. 2. The controlled use of database information in such a way that restrictions may be imposed on the data items available and the operations that may be performed.

access control list (ACL) A list giving the services available on a **server**, showing which **hosts** are permitted to use which service.

access fee Fee charged by a museum or gallery for the facility of photographing items in its collection. Also called a **facility fee**.

accession number Serial number used in a library indexing system which shows when the new book was first acquired.

accessions New books added to a library.

access provider See **Internet service provider**.

access time The time taken to retrieve data from a computer storage medium or a peripheral.

accordion fold Parallel folds in paper, opening like an accordion bellows, each in an opposite direction from the preceding fold.

accordion insert Periodical insert with **accordion fold**.

accumulator A computer store location for arithmetical calculation.

Accunet A switched 56 kbps service provided by AT&T in the US. A forerunner of **ISDN**.

acetate Transparent sheet of film fixed over camera-ready artwork used for positioning **repro** or for marking instructions.

acetate proofs Acetate sheets, available in different colours, which can be developed and used as prepress proofs. Also called colour overleaf proofs. (See also **Cromalin**, **Matchprint**, **plastic proof**.)

acetone Fast-drying solvent used in printing.

achromatic colour An intermediate grey level in the monochromatic **grey scale** in computer graphics.

achromatic separations Colour separations produced by **CCR** (**complementary colour removal**). The black printer carries more detail than with conventional separations and the tertiary, or complementary, elements of any colour hue are removed. Also called **ICR** (**integrated colour removal**) or **GCR** (**grey component replacement**).

acid-free paper Generic term to describe paper which is free from acid-producing chemicals which reduce longevity. See **permanent paper** and **neutral sized paper**.

acid resist Acid-resisting coat on printing plate.

ACK See **acknowledge**.

ACK (acknowledgement) The **ASCII** character with code 6. An acknowledgement that a previous transmission has been correctly received. Also an acknowledgement number in a **TCP** header giving information about the receiver to the sender.

acknowledge In data communications, a character transmitted by a device as a response to a signal from another device to acknowledge that a connection has been achieved.

acknowledgements page Page of a book in which the author gives his list of sources and references.

ACL See **access control list**.

ACN See **Advisory Committee on Networking**.

acoustic coupler A device that permits data transmission through a telephone handset over the public switched telephone network by modulating audible (**analogue**) tones.

Acrobat A technology developed by Adobe Systems that allows documents created on one computer system to be read and printed on other systems. The technology uses **portable document format** (**pdf**) files, which are produced either directly as a print option in the source application or by running **PostScript** code through a program called Acrobat **Distiller**. All formatting information is embedded in the compressed file and graphics and font information can also be included. If the fonts in the document are not present on the system where the document is viewed, 'Multiple Mastering' technology is used to simulate those fonts. Acrobat can be used for proofing (particularly in conjunction with **ISDN**) and for **electronic publishing**, although the facsimile of the printed page is not always an ideal format for viewing on-screen. The latest version (Acrobat 3.0) was described as Amber during development and allows more capability in viewing documents over the **World Wide Web**.

acronym Abbreviation, usually in the form of a pronouncable word, made up of the initial letters of other words.

across the gutter Printed over the **gutter** margin of a book.

acrylic A polymer based on synthetic resin and used for surface coatings among other applications. Acrylic coatings are tough, flexible and waterproof.

ACs **Author's corrections**.

action cycle The complete set of actions, including origination, input, processing, output and storage, performed on data.

activation The process, in computer networks, by which a component is prepared to perfom its design task.

active document The part of an electronic document that is displayed in the current window and is therefore receptive to commands from the keyboard or mouse.

active file A file that has an expiry date later than the job date.

active matrix A design of **liquid crystal display**.

active vocabulary In speech recognition systems, the default built-in vocabulary to which additional words can be added by the user.

ActiveX A set of utilities developed by Microsoft as an answer to **Java**, so as to allow interactive content to be run over the **Internet**. ActiveX is an implementation of **OLE** and thus limited to applications running under Microsoft **Windows**.

activity loading A method of storing records in a file which allows the most used records to be located more readily.

AD 1. See **administrative domain**. 2. See **air-dry pulp**.

adapter In computing, an add-on board or other plug-in device which provides support for additional facilities: more memory, more communications capabilities, more network facilities etc.

adaptive answering The ability of a **fax modem** to decide whether an incoming call is a fax or data call.

adaptive digital pulse code modulation (ADPCM) A **compression** technique in which the difference between successive samples is encoded, rather than their values. This increases the amount of audio that can be stored on a CD about 16-fold. ADPCM is used on **CD-ROM XA** and **CD-I** disks.

ADAR Air-dried all rag paper.

ADB See **Apple Desktop Bus**.

ADC See **analogue-to-digital converter**.

ADCCP See **advanced data communication control procedure**.

A/D conversion See **analogue to digital conversion**.

add/drop multiplexer A device that can extract certain specified lower-bandwidth signals from a high-bandwidth signal and insert other lower-bandwidth signals.

addendum Late addition to book after printing, often as a pasted-in slip.

adder In computer architecture, the device that compiles an output from the sum of two or more input numbers.

additive Substance added to ink to control such performance characteristics as covering power, drying, permanence etc.

additive colour The production of colour by blending different colours of light. Colour (**RGB**) computer monitors and television sets use additive colour. Blending equal amounts of red, green and blue light gives white light and other combinations give other colours. This should be contrasted with the way in which we normally see, using white light, when the colour perceived is made up of the wavelengths reflected by an object, with those absorbed subtracted. **Subtractive colour** is used in printing (see **CMYK**). It should also be noted that devices using additive colours have a **colour gamut** which does not include all the colours that can be viewed in nature. (See also **1-bit, 8-bit and 24-bit colour**.)

additive primaries Red, green and blue, which when added together as light appear as white. Known also as the **light primaries**. Their complements or 'opposites' are known as the **light secondaries**: each one is made up of two colours out of the three, taken in turn. They are cyan (i.e. minus red), magenta (i.e. minus green), yellow (i.e. minus blue).

add-on board An expansion board (or card) that is inserted into one of the computer's expansion slots to provide additional features such as additional memory, communications, graphics etc.

add-on device See **peripheral**.

address The sequence of bits or characters that identifies the station to which a message or packet of data must be routed. See **electronic mail address**, **Internet address**, **MAC medium access control address**, **memory** address, **network address**, **SCSI** address.

addressability The number of addressable graphics points within a defined display or image area.

address checking A security procedure in which the **router** checks the **network** (**IP**) **address**.

address field The particular portion of a computer word containing either the address of the **operand** (item of information being operated

upon) or the information required to derive that address.

address format The arrangement of the parts of an address to identify a sector or track on a magnetic disk.

addressing 1. Assignment of addresses to the instructions in a program. 2. The communications method by which an originating unit selects a device to which to send a message.

address mask Used to identify which bits in an **IP address** correspond to the **network address** and which to the **subnet** portions of the address. This mask is also referred to as the **subnet mask** because the network portion of the address can be determined by the **class** encoded in an IP address.

Addressograph Proprietary name of a machine which uses individual plates to print names and addresses.

address resolution Conversion of an **Internet address** into the corresponding physical (**Ethernet**) address. See **address resolution protocol**.

Address Resolution Protocol (ARP) The **TCP/IP** protocol used to find an **Ethernet address** from an **Internet address**. An ARP **packet** containing the Internet address of a host is transmitted and the Ethernet address will be returned by that host or by another host. Each host **caches** address translations to reduce delay. ARP allows Internet addresses to be independent of Ethernet addresses but only if all hosts support it. Hosts that do not support ARP use **constant mapping**.

address screening The procedure in **SMDS Switched Multimegabit Data Service** by which a user can control the destinations and/or the sources of information.

address track A track on a magnetic disk containing the addresses of files and records stored on other tracks of the same disk.

adhesive binding Binding style for books and magazines involving the application of a hot-melt adhesive to the roughened or ground back to hold the pages and cover together. Also called **cut-back binding**, **perfect binding**, **thermoplastic binding**, **threadless binding**.

adjacent channel The communications channel in closest proximity, physically or electrically, to the one in use.

adjust An editing feature in wordprocessing by which the processing software automatically adjusts the right-hand margin for the insertion or deletion of copy during playback and by which **word wrap** is automatically performed.

ADMD See **administration management domain**.

Administration management domain (ADMD) A public **X.400** Message Handling System telecommunications provider. Examples are **MCI Mail** and ATT Mail in the US and British Telecom Gold400 Mail in the UK. Together, the ADMDs in all countries provide the X.400 backbone.

administrative domain (AD) The **hosts**, **routers** and **network**(s) managed by a single administration.

Adobe Leading graphic arts software developer with many industry-standard applications.

Adobe Illustrator A drawing **program** with vector imaging and editing **software**.

Adobe PhotoShop See **PhotoShop**.

Adobe Systems, Inc. Software development house responsible for some of the early software which led to the creation of **desktop publishing**. In particular, the developers of the **PostScript page description language** which has become the *de facto* standard. Other programs include: **Illustrator**, a popular graphics package; **Adobe Type Manager**, which offers high-resolution font images on screen; **Photoshop**, for retouching; and **Acrobat**, a technology that allows documents created on one computer system to be read and printed on other systems.

Adobe Type Manager (ATM) A program that uses **Type 1 PostScript** fonts to display type on the screen to provide the best on-screen rendition that the resolution of the display screen allows. ATM will also allow output of Type 1 fonts to a non-PostScript printer. See **fonts, outline fonts**.

Adonis A document delivery service based on the supply of scanned images of the full text and graphics of a large number of biomedical journals. The service was initiated by a consortium of European scientific publishers.

adopt Include a textbook on the official list of books to be used in State schools.

adoption Approval for a book to be used in State schools.

ADPCM See **adaptive digital pulse code modulation**.

ADSL See **asymmetric digital subscriber line.**

advance A prepublication payment by a publisher to an author from which **royalties** based on sales will subsequently be deducted.

advanced data communication control procedure (ADCCP) An ANSI-standardised bit-oriented synchronous data link control protocol equivalent to **HDLC** (**high-level data link control**).

advanced peer-to-peer networking (APPN) An IBM procedure that routes data in a network between two or more **APPC** systems.

advanced program-to-program communications (APPC) An implementation of the IBM **SNA/SDLC** protocol which allows communication between interconnected systems so that the processing of programs is shared between the systems.

Advanced Research Projects Agency (ARPA) An agency of the US **DoD** responsible for the development of new technology for use by the military (for some time called **DARPA**). It funded development of **ARPANET** (which was the basis of the **Internet**) and **TCP/IP**.

Advanced Research Projects Agency Network (ARPANET) The predecessor of the **Internet**, funded by **ARPA.** It became operational in 1968 and was used for early networking research, as well as providing a central **backbone** during the development of the Internet. The ARPANET consisted of individual computers interconnected by **leased lines** using **packet switching** to communicate. Protocols used included **ftp** and **telnet**.

advance feed Sprocket holes in paper tape which align with code hole positions to indicate start of tape.

advance sheets Folded and collated sheets for the publisher's approval before **binding**.

advertorial Magazine article written by an advertiser with the aim of boosting a product or products.

Advisory Committee on Networking (ACN) A committee of the Information Systems Committee of the UK Universities Funding Council.

aerograph See **airbrush**.

A format paperback Massmarket paperback of trimmed size 178 × 111mm.

AFS See **Andrew file system**.

against the grain Folding or cutting at right angles to the grain of the paper. Contrast **with the grain**.

agate Obsolete term for 5½ pt type. Also called **ruby**. Standard measurement of advertising columns: 14 agate lines = 1 column inch.

agent A program that acts as an intermediary in **client-server** computing, preparing information and handling information exchange on behalf of **client** or **server**. (See also **intelligent agent**, which implies that the agent is involved in some decision-making process.)

AGV Abbreviation for **automatic guided vehicle**, a driverless or robot cart which travels round a factory floor carrying materials, finished products etc. Used extensively in modern newspaper printing plants and in automated warehouses.

AI See **artificial intelligence**.

AIFF See **audio interchange file format**.

air bar Bar on a web-offset press which conveys the web of paper. Tiny holes in the bar 'float' the web on a minute cushion of air, preventing **set-off**. A modern development from the **grater roller** which transfers the web by physical contact (and sometimes leaves smudges and set off).

airbrush Small compressed-air gun for fine manual ink spraying on artwork, photographs etc.

air consignment note See **air waybill**.

air-dried paper Paper dried by passing the web through warm air with only minimum support rather than on steam-heated cylinders. Used for high-quality production.

air-dry pulp Pulp with a standard moisture content of 10%.

air gap The narrow air gap between a magnetic read-write head and the disk surface.

air knife coater Device which applies a jet of compressed air to the coating on a web of paper to achieve a smooth level film while fluid.

air knife cooling Cooling using jets of compressed air.

airmail Lightweight paper, usually below 40gsm, used for stationery when postage cost is critical. Often coloured pale blue.

air shear burst Break in paper reel caused by trapped air.

air waybill Air-transport term for the document made out on behalf of the sender as evidence of the contract of carriage by air freight. Also called an **air consignment note**.

ALA American Library Association

Albert A name given by **British Telecom** to a machine intended to combine telephone, wordprocessing, **teletext** and **telex**. It has long since been abandoned.

Albion press An old cast-iron hand press still in use for producing **lithographs** and other fine art printing work.

albumen plate Lithographic printing plate coated with albumen dichromate.

alcohol damping The use of alcohol as the damping solution in a litho press.

alcohols Solvents used in some inks.

Aldus Software house which led the **DTP** revolution with the development of **PageMaker**, the first comprehensive page make-up package with **PostScript** output.

ALGOL Algorithmic Language. A computer **high-level language** used mainly for scientific and mathematical applications.

algorithm An arithmetical computer routine in the form of programmed instructions which performs a recurring task.

algorithmic language A language designed for expressing algorithms such as **ALGOL**.

alias A method of allocating an easily remembered name to an **email address** (if perhaps the actual address is hard to remember, e.g. **CompuServe** email addresses); alternatively, if the mail software allows, a group of addresses, so that you can send a message to a group of people while apparently only using one address.

aliasing A possible undesirable result of displaying or printing an **analogue** or continuous image in a **digital** format, so that the image is split into cells. This can create a jagged or pixellated image and is particularly noticeable on low-resolution devices and in fine detail. (See also **anti-aliasing**, **moiré**.) Aliasing also occurs in the conversion of digital sound to analogue sound using a **sound card**. If the **sampling** rate, i.e. the frequency of extraction from the digital sample, is too low, the sound is distorted. To avoid aliasing, a sound card with a sampling rate of around 40kHz is required.

align To line up type, horizontally or vertically, using a typographical criterion, e.g. **base alignment**.

aligning numerals See **lining figures**.

alignment The lining-up of printed characters, with appropriate spacing.

alignment pin Any pin or key that will ensure correct connection of components.

alkali resistance Quality in paper which resists staining or discolouration by alkaline materials.

alley Space between columns of type on a page (US).

allotter Computer device which directs files to specific peripherals.

alloy Composition of several metals.

all rag paper Paper made from rag pulp.

ALOHA A system of **contention resolution** devised at the University of Hawaii ('aloha' is a Hawaiian greeting). **Packets** are **broadcast** and the sending system listens to see if they collide and, if so, re-transmits after a random time. **Slotted ALOHA** forces packets to start at the beginning of a time slot. Basic ALOHA is particularly appropriate for networks with long propagation times, e.g. those including satellites.

alphabet A set of all the characters, digits and symbols used in a language or work. A set of the characters used in a code language such as **ASPIC**.

alphabetic character set One which contains letters, but not digits, but may contain control and special characters.

alphabetic shift The key or control for selecting an alphabetic character set on an **alphanumeric** keyboard.

alphabetisation The sorting of words or phrases into alphabetical order. The alphabetisation of individual words is normally straightforward enough, but alphabetising compound words and phrases requires rather more care. There are two broad schemes: **word-by-word**, where compound words and phrases are counted only as far as the first word break (compound words are normally treated as two words unless the hyphenated prefix cannot stand on its own); or **letter-by-letter,** where compound words and phrases are counted all the way through to the first comma if there is one or if not to the end, ignoring all hyphens and word-breaks on the way. The first is the more traditional (and in some ways the more intuitive) and is commonly used for general indexes; the second is the more explicit and eliminates any subjective judgements, and is often used for glossaries or technical indexes.

alphabet length Length of a lower-case type font.

alpha channels A feature used in the storage of 24-bit images on the **Macintosh**, which uses 32-bit **QuickDraw**. The remaining eight bits are used by the alpha channels to hold information on other aspects of the image, such as masks and layering effects, for use by **bitmap editors** such as **Adobe PhotoShop**, in much the same way as in drawing programs. The effect is that different parts of the image can be handled independently.

alphanumeric Relating to the full alphabetic and numeric character set of a machine.

alphanumeric data Data displayed using both aphabetical and Arabic numerical symbols.

alphanumeric sort A computer sort of items into alphabetical order.

alphasort To sort data into alphabetical sequence.

alpha testing The testing of a software package at a first preliminary stage prior to a **beta testing**.

alt A **Usenet** newsgroup category, which stands for 'alternative' and includes many unconventional or controversial, topics.

AltaVista A search engine for the **World Wide Web** and for **Usenet** newsgroups. AltaVista was mounted by **DEC** to demonstrate the power of the alpha chip, on which it runs.

alum Aluminium sulphate. One of the main components in papermaking **size**.

AM See **amplitude modulation**.

Amber The development name for Adobe **Acrobat** version 3.0, especially designed for

transmitting and accessing Acrobat **pdf** files via the **World Wide Web**. With this version it is possible to view a document page by page as it is downloaded, whereas previously, with earlier versions of Acrobat, it was necessary to download the whole document before any of it could be viewed.

amberlith Proprietary name for an orange acetate sheet with a peelable coating, used to make light-proof masks when assembling films.

ambient conditions Those conditions pertaining to the surrounding medium (temperature, noise etc.).

ambient noise level A random and uncontrollable noise level in a circuit or at a location. See **noise**.

American National Standards Institute (ANSI) Creates standards for a wide variety of industries, including computer programming languages.

American Standard Code for Information Interchange (ASCII) An agreed method of representing alphanumeric characters by 7-bit binary numbers. ASCII represents the characters that can be keyed on a standard PC keyboard, plus some characters which provide certain functions, such as Bell, which produces a bell or bleep. 7-bit ASCII consists of 128 characters, and is sometimes called 'basic ASCII', **plain ASCII** or **flat ASCII**. Although there has been no formal agreement, 8-bit characters are often described as 'extended' or **high-level ASCII** and include many of the commonly used accented characters and some other characters. Extended ASCII consists of 256 characters. Note that the values for individual high-level characters differ from the **ANSI** character set, which is used by **Microsoft Windows**. (See also **EBCDIC**.)

America Online (AOL) A US online service provider based in Vienna, Virginia, US. AOL offers **electronic mail**, interactive newspapers and magazines, conferencing, software libraries, computing support, online classes and services such as hotel and plane reservations and shopping. (See also **Prodigy**, **CompuServe**.)

ampersand Symbol (&) for the word 'and'.

amplitude modulation (AM) A form of transmission in which the amplitude level of a carrier **frequency** is changed to determine the encoded information. (See also **frequency modulation**.)

amplitude modulation (AM) screening Traditional screening method where the variation in signal (defining different shades of grey) generates dots of different sizes positioned over a regularly spaced cell structure (screen ruling). Contrast **FM screening**, also called **stochastic screening**, where the dots generated are all the same or very similar minuscule size (**microdots**) but are spread over an area to lesser or greater degrees to give the shades of grey required.

AM screening See **amplitude modulation screening**.

analogue Information that can vary in a continuous fashion (e.g. loudness of sound), containing no discontinuous elements. (Contrast **digital**.) The conventional telephone system uses analogue signals and thus **modems** are required to convert digital signals for transmission over telephone lines. Newer methods, such as **ISDN**, **frame relay** and **asynchronous transfer mode** are digital.

analogue computer A computer which represents numerical data by analogous physical variables such as speed, length or voltage rather than by digital representation. Contrast **digital computer**.

analogue loopback A self-test for **modems** to check the frequencies they are using.

analogue proof Proof produced by mechanical means from physical materials, (e.g. a **Cromalin** proof produced from film) as distinct from a **digital proof** produced from a computer file (e.g. an **Iris proof** generated from a colour file).

analogue-to-digital conversion Conversion of information from **analogue** form (such as the loudness of a sound) to **digital** (so that it can be represented in a computer). (See also **sampling**, **digital modulation**.)

analogue-to-digital converter (ADC) A device which produces digital output from an analogue input. Compare **digital-to-analogue conversion**.

analyse scanner or **analyse unit** The input half of a colour scanner which scans the original and takes the scanning signals into memory. As distinct from the **output scanner**, which is the half that records the scanned signals onto film creating the separations.

analyst A person who defines problems and suggests procedures for their solution.

anamorphic scaling Scaling in which one dimension of a subject is reduced/enlarged to a different proportion from the other dimension: e.g. a **half-tone** reduced 30% across the width and retained at original size in the depth.

ancestral file A file back-up system (son to father to grandfather file), where the son is the current working file.

anchor A marker for the beginning or the end of a hypertext link. Also used within wordprocessing and **DTP** processes to indicate where

graphic or other imported information is linked to the main document text flow.

anchor point In **DTP** systems, a fixed point which remains anchored to its original position while the cursor moves other elements into different positions.

AND A logical operation in which e.g. A AND B has a true result only if both of the variables A and B are true.

AND gate Computer function interpreting the concept **AND** in program code.

Andrew file system (AFS) The distributed file system developed in the Andrew Project, a distributed system project at Carnegie Mellon University, subsequently adopted by the **OSF** (**Open Software Foundation**) as part of the **DCE** (**Distributed Computing Environment**) architecture.

angle cutting In web sheeting, when the the web is cut at an angle rather than horizontally to the machine direction.

aniline ink Volatile ink which dries very quickly. Used in **flexography**, a relief printing process using flexible, deformable plates.

aniline printing Obsolete name for **flexography**.

anilo roller Roller used in **flexography** which applies **aniline ink**.

animal-sized paper Paper treated by passing it through a bath of animal size (gelatine).

animation Displaying a series of images with slight differences between them, at a speed that is fast enough to create the illusion of smooth movement. (See also **cel animation**, **Gouraud shading**, **morphing**, **Phong shading**, **tweening**.)

anisochronous data channel A communications channel in which data, but not timing information, is transmitted. Also called an **asynchronous data channel**.

annotation In **hypertext**, a new **node** linked to an existing node. If the software allows it, this provides both authors and readers with the opportunity to add additional information, which can be **text**, **graphics**, **audio** or **video**.

annotation symbol A symbol used by a programmer to append messages or notes to a flowchart.

anodised plate Printing plate used for **offset litho** and specially coated to prevent **oxidation**.

anonymous ftp The facility to transfer documents, files, programs and other archived data over the **Internet** by **ftp** to a standard guest account with **login** name anonymous or ftp and the user's electronic mail address as password. Access is then provided to a special directory hierarchy containing the publicly accessible files, typically in a subdirectory called 'pub'. It is not possible to access other directories on the system.

ANSI See **American National Standards Institute**.

ANSI character set The character set adopted by **ANSI** as the standard for computers; also the character set used by **Microsoft Windows**. Unlike the **ASCII** character set, ANSI uses all 8 bits, so that the character set comprises 256 characters. The printable characters of the ASCII character set have the same code in both the ANSI and ASCII character sets. ANSI characters that are not displayed on the keyboard are accessed using the alt key on a PC keyboard and the option key on a Macintosh keyboard. In Windows, the characters can also be accessed using the Character Map utility.

ansi.sys A configuration file needed in MS-DOS to be able to display **block graphics** and other effects.

answer Response of publisher's computer system to a query about availability of a book. Usually indicated in code form, e.g. **NYP (Not Yet Published)**.

answer-only modem A **modem** (usually a very cheap one) which can receive messages but not send them.

anthology A published collection of poems or stories by one author or several, usually selected by an editor.

anti-aliasing Ways of improving the display of **analogue** or continuous images in digital formats by reducing the pixellated appearance or reducing the creation of artefacts when the **colour resolution** is low. Can use either **dithering** or **grey levels**. (See also **aliasing**, **jaggies**, **hinting**.)

anti-halation backing Coating on the back of photographic film which prevents **halation**.

antimony A metallic element forming part of the alloy used in metal type.

anti-oxidant Ingredient in an ink which extends the **open time** of an ink on press.

antique A printing paper with a rough finish but good printing surface valued in book printing for its high-volume characteristics. Also called **antique wove**.

anti-rust paper Paper with additives which protect metal surfaces against rusting.

anti set-off spray Fine spray sometimes applied on printing machines at the final stage to prevent **set-off**.

anti-tarnish paper Paper with additives which protect bright metals against tarnishing.

AOL See **America Online**.

APDU See **application protocol data unit**.

aperture Lens opening on a camera, expressed as an **F number**.

API See **application program interface**.

APL A powerful algorithmic language employing an extensive set of data structures and operators.

apochromatic Lenses which focus blue, green and red in the same plane.

Apogee Digital workflow and production system produced by Agfa using the **pdf** format for standardising and controlling pages.

apparent density Weight of paper per unit of volume.

apparent specific gravity See **apparent density**.

APPC See **advanced program-to-program communications**.

appearing size The physical size of a type, as opposed to its nominal point size. Two typefaces of the same point size can have very different appearing sizes.

appendix Addition to a book or document following the main text.

Apple Popular make of computer widely used in the graphic arts industries.

Apple Computer, Inc. Manufacturer of the **Macintosh** range of personal computers as well as the earlier Apple I, Apple II and Lisa. Founded in 1983 by Steve Jobs and Steve Wozniak.

Apple Desktop Bus A system for connecting input devices to the **Macintosh**.

Apple File Exchange A utility that allows a **Macintosh** to write disks in IBM-PC format.

AppleLink An **electronic mail** and information service reserved for Apple employees, developers, universities, user groups, dealers etc., which provides product announcements and updates (for third-party products as well as for Apple products) and technical information.

AppleShare File server software from Apple for handling networked or connected **Macintosh** computers.

applet See **Java applet**.

AppleTalk A proprietary **local area network** protocol developed by Apple Computer, Inc. for communication between Apple products, principally the **Macintosh**, and other computers. AppleTalk is built into the Macintosh and is independent of the **network layer** on which it is run. **EtherTalk** is an implementation of AppleTalk on an **Ethernet LAN**. (See also **LocalTalk**.)

application Software such as a wordprocessor or spreadsheet that is used to perform a specific type of work.

application binary interface (ABI) The interface via which an **application program** accesses the **operating system**. Binary-compatible applications should run on any system with the appropriate ABI. (See also **API**.)

application icon In **Windows**, a graphic that represents a running application: it appears after the application has been started but then minimised.

application layer The top layer of the **ISO seven-layer model**, which handles aspects such as network transparency and resource allocation. The application layer is concerned with the user's view of the network, areas such as electronic mail, directory services and file transfer. The **presentation layer** (the next layer) provides the application layer with a local representation of data that is independent of the format used on the network.

application-level gateway A **filter** or series of filters specially written to permit or prevent the transmission of specific **applications** through a security **gateway** or **firewall**. Provides a high level of security as it also allows all traffic to be monitored.

application program interface (API) The interface that an application program uses to request operating system and other services. An API can also provide an interface between a high-level language and lower-level utilities and services. For **Windows**, the API also helps applications manage windows, menus, icons and other **GUI** elements. For a **local area network** and on the **Internet**, an API provides applications with routines for requesting services from lower levels of the network or from communication protocol stacks. (See also **ABI**.)

application protocol data unit (APDU) A **packet** of data exchanged between two application programs across a **network**. This is at the **application layer** of the **OSI seven-layer model** and may actually be transmitted as several packets at a lower layer including extra information for **routing** etc.

application service element (ASE) Software in the **presentation layer** of the **OSI seven-layer model**, which provides an interface to handle **APDUs**. Because **applications** and **networks** vary, ASEs are split into common services and specific services.

applications package A suite of computer programs used to solve problems specific to a particular application, e.g. business, financial, scientific.

applications program A program written to accomplish a specific task (such as wordprocessing), as opposed to administrative or utility programs.

applications software Programs which are applied to solve specific problems, such as business systems.

APPN See **advanced peer-to-peer networking**.

APR Asahi Photosensitive Resin. Proprietary Japanese product for the manufacture of **photopolymer plates**.

aquatint Type of print using 'mottled' areas designed to resemble water-colour painting.

aquatone Form of **collotype** printing using a fine-screen gelatine-coated plate and **offset** printing.

AR Aspect ratio.

arabic figures The numerals 1, 2, 3, 4 etc. as distinct from the Roman I, II, III, IV. Evolved from Arabic symbols. Arabic figures can be typeset as **lining** or **non-lining figures**.

Arachnophilia A **Windows freeware HTML** editor, available from **ZDNet**, that can also be used to create Web pages from **RTF** documents.

archetype Document or book written about the typical themes and motifs of a particular time and subject.

Archie A system to automatically gather, index and serve information on the **Internet**. The initial implementation provided an indexed directory of filenames from all **anonymous ftp** archives. Later versions provide other collections of information. (See also **archive site**, **Gopher**, **Prospero**, **wide area information servers**.)

architecture The design or arrangement of components in a microprocessor.

archival paper A paper with long-lasting qualities, usually with good colour retention. (See also **permanent paper**.)

archive To store data economically offline for future use in a computer system.

archive site An **Internet host** where files are stored for public access via **anonymous ftp**, **Gopher**, **World Wide Web** or other file-handling tools. There may be several archive sites for, say, a **Usenet newsgroup**, where one may be recognised as the main one and the others act as **mirrors**. Archive sites are also known as ftp sites and **ftp archives**. (See also **Archie**.)

arc lamp Lamp that produces light by a current which arcs across two electrodes, usually of carbon (thus, carbon arcs). Used as a light source in photography or plate-making.

ARCnet See **Attached Resource Computer Network**.

area composition See **page make-up.**

area make-up Bringing together text and graphics into a page or area layout.

area storage A buffer of storage reserved for live data en route between a **peripheral** and its storage destination in a computer.

arithmetic unit Computer unit which performs calculations.

ARP See **Address Resolution Protocol**.

ARPA See **Advanced Research Projects Agency**.

ARPANET See **Advanced Research Projects Agency Network**.

ARQ See **automatic repeat request**.

array A series of items arranged in a meaningful pattern. In many programming applications, the term is taken to refer simply to an area set aside to store program data.

arrow Printing sign → used to indicate direction.

arrowhead Printed sign ▶ which usually refers to a **cross-reference**.

art See **artwork**.

artboard Woodfree board coated to a high finish for fine printing of half-tones.

art canvas Loose wove, strong cotton with a tissue lining. Used in bookbinding.

artificial intelligence (**AI**) The development of processors that can perform functions normally identified with human intelligence such as reasoning, learning and self-improvement in such a way that a device can improve its own operation.

artificial parchment A paper which simulates parchment.

art paper Paper coated with china clay and polished to a high finish.

art platen Platen printing machine used for proofing or printing half-tones.

artwork 1. Original illustrative copy or typesetting ready for reproduction at pre-film stage. 2. Illustrations, designs or photographs used in printing.

Artype Proprietary name for a make of **transfer type**.

AS See **autonomous system**.

ascender The part of a letter extending above the **x-height**, as e.g. in b, d, h, k and l. (See also **descender**.)

ASCII See **American Standard Code for Information Interchange**.

ASCII coding See **American Standard Code for Information Interchange**.

ASDL See **asynchronous digital subscriber loop**.

ASE See **application service element**.

A series See **A**.

ash or **ash content** Residue of paper after incineration, gauged by standard test. Represents the amount of **loadings** and **fillers** (mineral content) that there are in the paper.

ASN See **autonomous system number**.

ASN.1 Abstract Syntax Notation One. The **OSI** language for describing abstract syntax, used in the **presentation layer** of the **OSI seven-layer model** to describe the sort of information being exchanged.

aspect ratio The ratio of width to height. Common uses are to describe a **pixel**, a display screen or a **graphic**. Although square pixels (1:1) are considered preferable, most displays use aspect ratios of about 5:4. The aspect ratio of graphics will not always appear to be the same on paper as it does on screen (partly because the pixel aspect ratio is not 1:1). When graphics are transferred from one software package to another, care needs to be taken to preserve aspect ratios.

ASPIC Acronym for Authors' Symbolic Prepress Interfacing Codes: an early generic coding system.

ASR Answer Send and Receive. Machine which can send to and receive from a computer by paper tape.

assembler A computer program which converts a **low-level language** into **machine code**. Compare **compiler**, which converts a **high-level language** into machine code.

assembler box Part of a **Linotype** composing machine in which the line is assembled.

assembly Bringing together pieces of film to make up rows of pages and produce final imposed **foils** for platemaking. Also called **planning**.

assembly language A low-level computer language which needs an **assembler** to translate it into machine code.

assigned numbers The **RFC** in which the currently assigned values used in network protocol implementations are documented. This RFC is updated periodically and current information can be obtained from the **IANA** (**Interernet Assigned Numbers Authority**). The IANA assigns numbers to new protocols, ports, links etc.

asterisk Star-shaped symbol (*) often used as a footnote reference mark.

asymmetrical modulation A scheme in which the use of a communications line is maximised by giving a larger share of the **bandwidth** to the **modem** which is transmitting the most information.

asymmetric digital subscriber line (or **loop**) **(ADSL)** A digital telecommunications protocol that allows transmission of VHS quality video over standard telephone lines. This means that VCR-quality video could be delivered to homes without the need for rewiring. (See **video on demand**.) Uses the principles of **asymmetrical modulation** with upstream bit rates measured in kbps and downstream bit rates of up to 9 Mbps. Will also effectively provide a greater **bandwidth** for access to the **Internet** to those using **dial-up** connections over modems. Note that this provides an alternative to **ISDN**. In the US, provides part of the **National Information Infrastructure** (**NII**).

asynchronous Not **synchronous** (or synchronised). Most often refers to data communications in which the sending and receiving devices do not have to be synchronised and thus the data is sent in groups or blocks, rather than as a steady stream, between two devices. The data must include **start** and **stop bits** to indicate the beginning and end of each group or block. Asynchronous can also refer to events that occur at different times rather than concurrently, e.g. **email** communication is asynchronous. Similarly, a telephone conversation is asynchronous, in that signals are recognised, equivalent to start and stop bits, which indicate when to transfer control of the conversation.

asynchronous assignment In **asynchronous transfer mode**, the manner in which individual cells are allocated to different users in response to the varying demands of the traffic.

asynchronous computer A digital computer in which automatic progress from one operation to the next is controlled by signals indicating that the previous operation has been completed.

asynchronous data channel See **anisochronous data channel**.

asynchronous multiplexer A device which provides an interface for up to 16 communications devices (terminals, printers, keyboards). Programmable functions include **parity** checking.

asynchronous transfer mode (ATM) A high-**bandwidth** method of transporting information in short, fixed-length **cells**, designed to integrate the transport of all services on a single **network**. Defined by the **ITU-T** for public broadband-ISDN. Also known as 'fast packet' and generally associated with a fast **packet switching** technology called **cell relaying**, in which information is handled in fixed cell lengths of 53 **octets**.

AT&T American Telephone and Telegraph, Inc. One of the largest US telecommunications providers. The **Unix** operating system and the **C** and C++ programming languages were developed at AT&T Bell Laboratories. Until 1983, AT&T had a monopoly on the supply of telephone services in the US.

AT command set A set of commands developed by Hayes Microcomputer Products for software control of **modems**. This set was emulated in **Hayes-compatible** modems and is now regarded as standard for modems used with PCs.

ATM See **asynchronous transfer mode**, **automatic teller machine**, **Adobe Type Manager**.

ATM adaptation layer (AAL) The interface between services and the **ATM** (**asynchronous transfer mode**) switching protocol. AAL 1 provides a constant **bit rate** at source and destination, thus emulating a private **circuit** or **leased line**. AAL 2 emulates a variable bit rate service (e.g. voice). AAL 3 emulates a **connection-oriented** service. AAL 4 emulates a **connectionless** service (e.g. **SMDS**). AAL 5 is a null adaptation layer.

ATS (Animal Tub Sized) Paper sized after manufacture with animal gelatine.

Attached Resource Computer Network (ARCnet) Originally a proprietary **network** developed by DataPoint; now no longer proprietary. Uses a star topology and a **token-passing** protocol. Slower than **Ethernet** at 2.5 Mbps but allows different kinds of transmission media (**twisted pair**, **coaxial cable** and **fibre-optic cable**) to be mixed in the same network. A revised specification called ARCnet Plus supports **bit rates** of up to 20 Mbps (see **bits per second**).

attachment A file sent with an **email** message. May be compressed or encoded using **BinHex** or **uuencoding**. In most cases uses **MIME** (**Multipurpose Internet Mail Extensions**) to enable the attachment.

attribute Property or characteristic. Within a **DTD** (**document type definition**), attributes may be defined for **SGML** (**Standard Generalised Markup Language**) (and **HTML** (**Hypertext Markup Language**)) tags or elements, as well as possible values for an attribute. Within a **document instance**, a tag may include a particular value for an attribute. Within typography, attribute is used to mean type style, such as italic or bold, while in **paint** and **draw programs**, attribute refers to line weights, colours and styles, as well as to the colours and styles of fills. (See also **element**, **entity**.)

audio Sound on computers (and on audio **compact discs** and **digital audio tape**). This is handled by storing a sequence of discrete samples. The continuous (**analogue**) sound waveform of the original is sampled tens of thousands of times a second. Each sample represents the intensity of the sound pressure wave for each frequency at that instant. The quality of the digital encoding is also affected by the number of **bits** used. The encoding may be linear, logarithmic or **mu-law**. Audio is replayed through a **sound card** which converts the digital file back into an analogue waveform. Sound is one component of **multimedia**. (See also **audio IFF**, **audio interchange file formats** and **aliasing**.)

audio bridge A way of connecting a small number of telephone lines in order to provide an audio conference. Audio bridges over **ISDN** are more effective than those over the **PSTN** because there are fewer problems with varying audio levels and background noise conditions.

audioconferencing A multi-party telephone conversation. (See also **computer conferencing** and **videoconferencing**.)

audiographic teleconferencing Use of an **electronic whiteboard** or shared screens as part of **teleconferencing**.

audio IFF See **audio interchange file format**.

audio interchange file format (AIFF, audio IFF) A sound format developed by Apple Computer for storing high-quality sampled **audio** and musical instrument information. It is now also used by Silicon Graphics and some professional audio packages.

audiotex A system in which it is possible to access a database of audio messages using a **touch-tone** telephone. Is widely used as part of **voice mail** systems.

audio-visual (**AV**) Information provided on media that use both sight and sound, such as sound tapes and slides.

audio-visual interleaved (avi) A **video format** used within **Windows**. Files using this format can be replayed using the Windows **Media Player**.

audit trail In workflow management, the facility to keep track of all successive versions of documents with information on when changes were made and by whom.

AUP See **acceptable use policy**.

authentication Verification of the identity of a person or process. In a communication system, authentication verifies that messages really come from their stated source. (See also **digital signature**, **encryption**.)

author's corrections Corrections made by the author on proofs and changing the original copy, as distinct from **printer's error** or **literals** made by the typesetter. Author's corrections are by convention marked in blue; printer's errors or literals are marked in red.

author-date A bibliographical reference system comprising the author's name and date of publication, e.g. Brown, 1984.

author-date system See **Harvard system**.

authoring Creating a **hypertext** or **hypermedia** document. There are a number of authoring languages, such as Apple's **HyperCard**, as well as an ever-increasing number of **Web** authoring tools for creating **HTML** documents for the **World Wide Web**.

Authorware Interactive Studio Software from Macromedia for developing interactive multimedia applications. Takes a more structured approach than the same company's **Macromedia Director**. (See also **Shockwave**.)

auto-answer A feature supported on many **modems** and all **fax** machines which allows incoming calls to be answered automatically, even if the user is not present.

auto-dial A feature of advanced **modems**, usually used for **call-back**, so that the modem can call automatically without human intervention.

autoflow In **DTP** systems, a facility which allows text to flow automatically into a preset layout or **template**.

autograph Written words in the author's handwriting.

autographic transfer Method of reproducing hand-written material from a special hard-sized transfer paper by **lithography**.

autokerning See **automatic kerning**.

autoleading In **DTP**, automatic leading set at 120% of the **body type** size.

auto-lithography Drawing of original artwork on a lithographic printing plate.

automatic bootstrap loader Allows system start-up from a variety of **peripheral** devices without the need to enter commands from a **keyboard**.

automatic dialling unit A device (typically a **modem**) that is capable of automatically generating signals which correspond to the dialled digits of a call.

automatic error correction Referring to the detection and correction (usually involving retransmission) of transmission errors. The degree of correction will be dependent on the error checking codes employed and equipment configuration.

automatic feeder Device on a printing or folding machine which draws paper into the machine.

automatic guided vehicle See **AGV**.

automatic heading The positioning of a heading on consecutive pages by means of a generic instruction at the start of a project, common on modern page make-up systems.

automatic imposition equipment See **projection platemaking equipment**.

automatic kerning or **autokerning** The ability of some typesetting systems automatically to adjust the letter fit of certain character combinations in text so that spacing is kept visually even.

automatic pile delivery System on modern printing machines which jogs printed sheets into an orderly pile and gradually lowers the accumulating stack.

automatic programming Any technique employed to simplify program writing such as the use of an **assembler** to translate a programmer's symbolic code into **machine language**.

automatic repeat request (ARQ) An error control protocol used in **modems**, in which the receiver asks the transmitter to resend corrupted data.

automatic teller machine (ATM) Cash dispenser which uses credit or debit cards, authenticated by the use of a **PIN** number.

automatic transfer press A web-fed press which allows **make-ready** to proceed on one set of plates while a job is still running on a second set. There is then no press stop when the new job starts.

autonomous system (AS) A collection of **routers** under a single administration using a common **Interior Gateway Protocol** for routing **packets**.

autonomous system number (ASN) Used for **routing** on **Internet**. See **autonomous system**.

autopaster See **flying paster**.

autoplate Machine for producing curved printing **plates**.

autopositive film Photographic material which produces a positive image from a positive original without an intermediate.

auto-redial A feature supported on many **modems** which allows redialling until a connection is made. The redial time can usually be set to a value to suit the user. This is a particularly useful feature for **dial-up** connection to **bulletin boards** and **Internet points of presence**.

autoreversal film Type of film used for making contact film duplication without requiring an intermediate stage of negative or positive, i.e. will give a negative from a negative or positive from a positive. Also known as **direct-duplicating film**.

autosplice See **flying paster**.

autotracing The conversion of a **bitmap** to a **vector** or **outline** image. Most autotracing programs are able to trace images in **TIFF** or **pcx** format and output as **Encapsulated PostScript**. Autotracing is useful for converting images which have been scanned to images which can be manipulated using a **draw program**.

auxiliary storage See **backing store**.

AV Audio-visual.

avatar A computer-generated figure, intended to

represent a human on a computer screen. In the early days of **videoconferencing**, it was suggested that such an approach might be used to reduce **bandwidth** requirements.

avi See **audio-visual interleaved**.

a/w See **artwork**.

azerty Keyboard arrangement used in France as alternative to the standard **qwerty** keyboard arrangement of characters. Accommodates **accents**.

azure laid Blue-tinted **laid paper**, usually used for stationery.

azure wove As **azure laid** but without characteristic **laid lines**.

B

B The B series is an international **ISO** range of sizes designed for large items (wallcharts, posters) and falling between the **A series** sizes. (See also **A**, **C**.) See Appendix.

BA Booksellers Association.

BABT approval Approval by the British Approval Board for Telecommunications, indicated by a green circle. Any equipment, most commonly **modems**, requires this approval before it can be legally connected to the UK telephone system. A red triangle means that approval has not (yet) been obtained.

back 1. The **binding** edge of a book. The back margin is the space between the type and bound edge. 2. In binding, to form a shoulder on each side of the spine. See **backing**, **rounding and backing**.

backbone The primary connectivity mechanism of a hierarchical distributed system. All **stub** and **transit networks** which have connectivity to an intermediate system on the backbone are assured of connectivity to each other.

backbone site A key **Internet** site, which processes a large amount of third-party traffic, especially if it is the home site of any of the regional co-ordinators for the **Usenet** maps. (See also **rib site**, **leaf site**.)

back-edge curl Distortion of the back edge of a sheet of paper usually caused by heavy solids too close to the back edge. Also, **tail-end hook**.

backer card Display card fixed to back of **dump bin** or stand.

background Computer processing mode which can occur concurrently with the main use of the machine, e.g. **hyphenation** and **justification** of a text file while other material is being input.

background processing Low-priority tasks, in a multitasking environment, that are performed when higher-priority programs are inactive. In wordprocessing, performance of a task such as printing while the operator completes other tasks.

background program One which does not depend on interaction with the user.

backing In **binding**, the operations which form a shoulder on each side of the **spine**. Also known as **jointing**. In paper the carrier sheet for a peel-off stock.

backing store Mass storage medium on a computer, e.g. floppy disk, magnetic tape etc.

backing-up See **back-up**.

back lining Strip of paper or fabric glued to the **spine** of a book to give reinforcement strength. (See also **first and second linings**.)

back link A **link** back to the point from which the last link was made.

backlist Publisher's list of those books published before the current date and still in print.

back margin The margin of a book nearest the **spine**.

back number Copy of a previous issue of a periodical.

back-of-book Pages in a periodical following the editorial; often classified advertising.

backoff Where a **host** that has experienced a **collision** on a **network** waits for a (random) amount of time before attempting to retransmit.

backplane The wiring and connecting units that allow a computer to be connected to its **peripherals**.

backplaning (or **back planing**) Method of reducing the thickness of newly cast stereos (see **stereotype**) by trimming the reverse side on a planing machine.

backs Combined **back margins** of a book.

backslant Backward sloping typeface, i.e. opposite to italic.

backslash The slash character (\). It is used to separate subdirectories in **DOS** commands. Note, however, that **Unix** uses the forward slash command for this purpose and, as most **Internet hosts** run on Unix machines, it is necessary for DOS users to remember this when using such programs as **ftp**.

backspace The movement of the cursor of a **VDU** or a printing head in a backwards direction along a line.

back-step collation See **black-step collation**.

backstrip A strip of paper or linen which is glued

down the **spine** of a book after the pages have been sewn and rounded, prior to the case being added.

back swell A build-up of thread or glue at the **spines** of books during **binding** causing the spines to swell undesirably.

backup MS DOS command for saving selected groups of files held on from disk, usually the hard disk, to a back-up disk. (See also **Restore**.)

back-up The act of duplicating data for security purposes.

back-up ad Advertisement published in conjunction with an insert or editorial announcement.

Backus-Naur form (BNF) A grammar of grammars (or metasyntax) for specifying the syntax of programming languages, command sets etc. **SGML** and **HTML Document Type Definitions** can be regarded as BNF grammars.

backward read A technique which allows a magnetic tape to be read while the tape is running backwards.

backwater Liquid containing dissolved ingredients in papermaking process, which is passed through the wire when stock is deposited. Also known as **whitewater**.

BackWeb A **push technology** that enables **Web** site owners to create their own controlled **Internet** channels to deliver targeted and personalised content directly to end users. This is rather like **PointCast**, except that PointCast sends only public information. BackWeb's patented Polite Agent unobtrusively monitors an Internet user's online activity and, when **bandwidth** is available, BackWeb incrementally **downloads** user-requested information using **UDP** (**User Datagram Protocol**). Because the downloads take place when data-transfer levels are otherwise low, they do not affect a user's other activities and real-time delays appear shorter. Users are able to schedule deadlines by which time files should be available. (See also **Castanet** and **Netscape Netcaster**.)

bad break Undesirable end-of-line hyphenation of a word.

bagasse Fibre sometimes used in papermaking obtained from sugar cane.

baggy paper Loosely wound **web**.

BAK A filename extension used by several operating systems to identify backup copies of files.

band A group of tracks on a magnetic disk. A communications frequency range between two defined limits.

Banda A type of duplicator, which draws the **image** onto a sheet of special paper which is then attached to a drum. The drum rotates and prints onto paper passing under it.

banding An effect seen on low-resolution printers when **graduated fills** are printed, in that the transition is shown in distinct, contrasting bands rather than in one continuous flow. The higher the resolution of the printer, the less banding will be visible. It is also possible to observe banding on-screen, depending on the screen resolution, but this does not mean that the bands will necessarily print.

band strapping Enclosing a stack of printed material with a strong, thin plastic band to secure it. The machine is a 'band strapper'.

bandwidth Technically, the difference, in **hertz** (**Hz**), between the highest and lowest frequencies of a transmission channel or the range of frequencies required to transmit a signal. However, as typically used, the rate at which data can be sent through a given communications circuit: e.g. voice over the telephone network requires a bandwidth of 3kHz while uncompressed video requires a bandwidth of 6MHz. See **broadband**, **voice band**, **wideband**.

bandwidth top-up The opening up of an **ISDN** channel when a private **circuit** becomes congested. The channel is closed again when the traffic subsides.

bang path A way of describing a **UUCP electronic mail address** naming a sequence of **hosts** through which a message must pass to get to the addressee. So called because each **hop** is signified by a bang sign (or exclamation mark '!'). Now that **Internet** addressing is available, this notation is rarely used, although the terminology is used to described the sequence of hosts through which a message may pass before it is delivered to the intended recipient.

bank Grade of lightweight writing and printing paper used for correspondence, multi-part sets etc. Weights over 60gsm are known as **bonds**.

banner 1. Large headline on advertisement or newspaper story. 2. Poster or cloth strip containing an advertising message.

barcode A horizontal strip of vertical bars of varying widths, groups of which represent characters. There are various different standards but each symbol typically contains a leading quiet zone, start character, data character(s) including an optional check character, stop character and a trailing equate zone. In addition to conventional barcodes, there are also radial and two-dimensional coding systems, which are used for specialised applications such as automatic warehousing. Barcode readers usually use visible red light with a wavelength between 632.8 and 680 nanometers.

barcode reader See **optical wand**.

baryta Heavy grade of coated paper sometimes used for reproduction proofs.

BAS A filename extension common to several **operating systems** denoting **BASIC** source program files.

base alignment Aligning characters of different sizes on the same line. See **baseline**, **align**.

baseband A transmission method through which digital signals are sent without **modulation**. In general, only one communication channel is available at any given time. Most **local area networks** are baseband networks, e.g. **Ethernet**.

baseboard artwork or **baseline artwork** Artwork presented on a stiff base with a tissue overlay indicating colour splits.

base-level synthesizer The minimum capability required by the Microsoft **MPC** specification for a music synthesizer within Microsoft **Windows**. It must be capable of playing at least six simultaneous notes on three melodic instruments, together with three simultaneous notes on percussion instruments. (See also **MIDI**.)

baseline The line on which characters are based, i.e. the line along the bottom of characters, such as a, b and c, which do not have descenders (as in j, p, q and y). Line spacing is measured between baselines. **Leading** is extra spacing added, based on the strips of lead (the metal) which compositors used to add between blocks of type.

base paper Paper to which a coating is to be added. Also called **body paper** or **body stock**.

BASIC Beginners All-purpose Symbolic Instruction Code. A widely used **high-level** computer programming language.

basic bandwidth unit (BBU) The smallest unit of bandwidth which can be allocated.

basic rate interface (BRI) See **basic rate ISDN**.

basic rate ISDN (BRI) This is a UK version of **ISDN** which consists of two 64 **kbps** channels (B – bearer – channels) for speech or data, plus a 16 kbps channel (**D** – delta – channel) used for signalling and control purposes. The aggregate data rate is thus $2 \times 64 + 16 = 144$ kbps. Basic rate ISDN is often referred to as 2B + D. BRI is the kind of ISDN interface most likely to be found in a residential service.

basic size American paper term for the specified sheet size used to define **basis weight**. Different papers have different basic sizes: the basic size applied to book papers is $25 \times 38''$.

basil Grade of leather produced from sheepskin and used in the production of account book bindings.

basis weight or **substance** 1. The weight of a material, usually paper, defined in grams per square metre. 2. (US) Weight in pounds per ream of paper cut to **basic size**. Typical US weights for book papers are 50lb (equivalent to 74gsm), 55lb (equivalent to 81gsm), 60lb (equivalent to 89gsm). See Appendix.

Baskerville Typeface designed by John Baskerville in the 18th century and still widely used.

bastard progressives Set of progressive proofs showing every possible colour combination of the four **process colours**.

bastard size Non-standard size of any material or format.

bastard title See **half title**.

BAT An **operating system** filename extension that denotes a batch file.

batch Method of computer processing where input data is collected into batches before processing, as distinct from **real time** or **interactive** operation. A batch **pagination program** is one where the machine operator sets up the specification parameters by using a menu, and then allows the program to make up the text into pages with no further intervention. Contrast an **interactive page make-up program**, which requires continuous dialogue with the operator.

Bath Information and Data Services (BIDS) A data provision service at the University of Bath, providing bibliographic and electronic **document delivery** services to the UK higher education sector.

batter Broken or damaged type, blocks or plates.

battered Damaged printing surface.

battery-backed RAM A form of non-volatile storage in which power is permanently supplied to memory modules even when power to the computer is removed.

baud The information-carrying capacity of a communication channel in terms of the number of changes of state or level per second, i.e. the frequency of electrical oscillation. This is the same as the **bit rate** only for two-level modulation with no **frame** or **stop bits**. Many people confuse bit rate and baud, probably because most lower-speed modems have the bit rate and baud rate (also called 'symbol rate') identical. It is therefore less ambiguous to use the term **bits per second** (**bps**) when describing modem rates of transmission. The term baud was originally a unit of telegraph signalling speed, set at one Morse code dot per second and named after Emil Baudot (1845-1903), the French engineer who constructed the first successful **teleprinter**.

baud barf The apparently random characters which appear on a monitor when a **modem** connection is used with some protocol setting (espe-

cially line speed) incorrect, when voice communication occurs on the same line, or when there is really bad line noise. Baud barf is not completely random, and experienced **hackers** (in both the good and bad senses) can extract information from it about the sending modem.

Baudot code Five-bit code developed by the French engineer Emil Baudot in the 1870s (see **baud**); still used for **telex**.

baud rate See **baud**.

baudy language A graphical language for conveying feelings, also described as **emoticons** and **smileys**. Obviously a pun on **baud** (and of course 'body language') e.g. :) = smile, ;) = wink, : (frown. The possibilities are limited only by imagination and the **ASCII** character set.

bboard See **bulletin board system**.

BBS See **bulletin board system**.

BBU See **basic bandwidth unit**.

BCC See **block check character**.

B-channel The main type of component channel of **ISDN** services, used for carrying data or voice. B stands for 'bearer'. See **basic rate ISDN**.

BDG Binding.

BDG/ND Binding/no date.

beard Distance from the bottom of the **x-height** of a piece of type to the bottom edge of the body.

bearers 1. Type-high metal strips, surrounding the type for protection when moulding **stereotypes**. 2. Flat surfaces at the end of printing press cylinders.

beater (beating engine) Large vat used midway through the papermaking process to refine liquid pulp. Replaced in modern papermaking by the **cone refiner**.

beater-sized pulp Papermaking furnish to which the size is added during beating rather than at a later stage in the process. See **internal-sizing**, **engine-sizing**, **sizing**.

beating Part of the papermaking process where fibres are mechanically treated in a **cone-refiner** (beater) to modify their characteristics to those required by the desired paper quality in manufacture. Also, **refining**.

Because It's Time NETwork (BITNET) A wide-area academic computer network in the US based originally on IBM mainframe systems connected via leased 9600 bps lines. Operates as a single network with **EARN** in Europe and other networks in different parts of the world.

bed The flat metal part of a printing machine which holds the type form during printing.

beeper See **pager**.

Bekk smoothness Measurement of smoothness of paper surface using the Bekk instrument.

bell A control character originally employed to ring a bell on **teletype** equipment. Now more commonly used to permit more codes than is possible from the **TTS** six-level coding structure.

Bell 103 The variant of **V.21** created by **AT&T** when it had a telephone system monopoly in the US.

bell code Code permitting more commands than is possible on the **TTS** six-level coding structure.

belt press Printing press using two continuous belts for printing books in-line from a paper web to a delivered book, ready for **binding** at the end of the press. See **Cameron belt press**.

benchmark test A routine designed to evaluate the performance of a device under typical conditions.

Ben Day Mechanical process of **tint** laying superseded by photographic screen tints. Named after its developer, Ben Day.

BER See **bit error rate**.

Berkeley Internet Name Domain (BIND) An implementation of a **Domain Name Server** developed and distributed by the University of California at Berkeley. Many Internet **hosts** now run BIND.

Berkeley Network (B-NET) Unix Ethernet software developed at the University of California at Berkeley, which is regarded as the *de facto* standard and distributed by Unisoft.

Berne Convention International **copyright** agreement signed in Berne in 1886.

Berners-Lee, Tim The leading developer of the **World Wide Web** at **CERN** in the early 1990s.

bespoke software Software written for a specific application for a single customer. Also, **custom software**.

best effort A classification for low-priority network traffic, used with reference to the **Internet**. Different kinds of traffic have different **bandwidth** requirements and therefore different priorities: e.g. certain types of real-time communication, such as **videoconferencing**, need a certain minimum guaranteed **bandwidth** and **latency** and thus need a high priority. **Electronic mail**, on the other hand, has no real-time need and is classified as a best-effort service.

beta ray gauge Device which uses radio isotopes to measure the weight of paper.

beta testing The stage at which software is tested under real conditions, prior to general release. See **acceptance testing** and **alpha testing**.

bevel 1. Sloping surface of a piece of type between the **face** and the **shoulder**. 2. Outer edges of letterpress printing plate which are below type height and by which the plate is secured. Also known as a **flange** .

Beyond Press Software package which allows **QuarkXPress** files to be repurposed in **HTML** for the Web.

Bézier curve Geometric curve whose shape can be defined through a series of intermediate points called control handles.

bf Bold face. See **bold**.

B format paperback Massmarket paperback of trimmed size 198 × 126.

bible paper Very thin, strong, opaque printing paper used where low bulk, or weight, is needed. Originally made for bibles and prayer books, also used for dictionaries and air mailed publications.

Bibliographic Retrieval Service (BRS) An **online** information service providing indexed access to scholarly, scientific and technical publications. Two leading suppliers are BRS Information Technologies and DIALOG Information Services.

bibliography List of books and articles relating to a written work, usually given at the end of the work. Each item in the list may include details of author, title, publisher etc.

biblio page Reverse of title page; the page which gives bibliogrphical details about the book. See **copyright page**.

bibliophile A collector or lover of books.

bi-directional printing Movement both from left to right and right to left in a line printing machine (e.g. daisywheel printer) thus increasing output.

BIDS See **Bath Information and Data Services**.

biff To notify someone that they have incoming mail. Named after a **Unix** utility, which was in turn named after a golden Labrador at the University of California at Berkeley which barked when the post arrived.

bilevel bitmap, bilevel coding A black-and-white **bitmap**, in which each **pixel** is either on or off. Thus the two levels of a bilevel bitmap are black or white. Bilevel coding is used in fax where each pixel in a scan is represented as either black or white with no representation of a degree of greyness. **Grey levels** can be simulated on output by a mixture of black and white pixels in appropriate proportions.

bill Poster.

bill of exchange A common payment instrument for exporters, defined as 'an unconditional order in writing, addressed by one person to another, signed by the person giving it, requiring the person to whom it is addressed to pay on demand or at a fixed and determinable future time, a sum certain in money to the order of a specified person, or to bearer'.

bill of lading A statement of goods being carried by sea, used as a document of title by the consignor, and as a receipt by the shipping line.

bimetal plate Lithographic plate where the printing image area base is usually brass or copper, and the non-printing area is usually aluminium, stainless steel or chromium. Used for long runs.

binary See **binary system**.

binary-coded decimal A numeric representation system in which each decimal digit is represented by four binary digits.

binary counter A computer component comprising a series of bistable devices, or flip flops, each storing one bit of a byte.

binary file Any file that is not ordinary text, i.e. one which contains more than just standard (7-bit) **ASCII** characters. This includes spreadsheet files, databases, executable programs and most wordprocessing files.

binary synchronous communications (BSC, bisync(h) or **bisynchronous communications)** A protocol developed by IBM for **half-duplex** links and widely used in networks on mainframes. Bisynch communications need the clocks on the computers sending and receiving the information to be synchronised before transmission begins. (See also **asynchronous transmission**.)

binary system (base two) A method of working with numbers based on only two digits, 1 and 0. Used in all **digital** computing systems because 1 and 0 can represent on and off, or connected and disconnected. All data input into computer systems and transferred over communications links is therefore converted from the everyday decimal system to binary. **Octal** and **hexadecimal** systems (based on 8 and 16) are also widely used in computing.

binary transfer A **File Transfer Protocol** which allows **binary files** to be transferred between computers.

BIND See **Berkeley Internet Name Domain**.

binder 1. Device for holding loose-leaf sheets. 2. Person who does bindery work.

bindery Place where **binding** is carried out.

binding 1. The process of fastening printed sheets together and securing them in a cover. 2. The bound part of a publication, i.e. cover, stitching etc.

binding board or **binder's board** Board used in the covers of a case-bound book. Usually good quality and single-ply. See **case board**, **grey board**, **millboard**, **unlined chipboard**.

BinHex A **Macintosh** format for representing a **binary file** using only printable (i.e. **ASCII**)

characters. Because BinHex files are simply text, they can be sent through most **electronic mail** systems and stored on most computers, although it is necessary to obtain appropriate software for non-**Macintosh** computers in order to read and use these files. The suffix hqx usually indicates a BinHex format file. (See also **BinHex 4.0**, **uuencode**.)

BinHex 4.0 A 7-bit-wide representation of a **Macintosh** file with **CRC** error checking. BinHex 4.0 files are designed for communication of Mac files over long paths. Some Macintosh mailing systems will put **attachments** into BinHex 4.0 automatically, which can cause problems if the receiving machine is not also a Macintosh.

BIOS Basic Input Output System: that part of an operating system that controls the interface with computer hardware.

bipolar signal An electrical line signalling method used in **digital** communication, where the signal alternates between positive and negative polarities.

B-ISDN See **broadband ISDN**.

bisync, bisynch See **binary synchronous communications**.

bisynchronous communications See **binary synchronous communications**.

big-endian The ordering of the components of a hierarchical name in which the **domain name** is specified first.

bit An acronym for binary digit, the smallest item of information which a computer can hold, being either 1 or 0, essentially representing a switch being open or closed. More meaningful information is handled by using combinations of bits, called **bytes**. In **serial communications**, bits are transferred one at a time.

bit bang Serial data transmission by rapidly changing, in software, a single output bit at appropriate times. Bit bang was used on certain early computers. The technique is now being used again on some **RISC** architectures because it takes very little processor time.

bite Stage in the process of etching a metal block or plate with acid. Each application of the acid increases the depth of the etch and is called a bite.

bit error rate (BER) The number of bits received with errors relative to the total number of bits received, given either as 1 in 10^6 or as 10^{-6}, indicating that 1 in 1 000 000 (a typical error rate) have errors.

bitmap A two-dimensional array, in which pixels are either on or off, i.e. black or white, or 1 or 0. Can easily be stored in a computer. Often used to describe the image itself. Unlike **vector graphics**, bitmaps cannot be resized without loss of quality. If a bitmap represents a coloured image, there will be more than one bit for each **pixel**, i.e. each colour will have its own bits. (See also **raster**, **1-bit, 8-bit and 24-bit colour**.)

bitmap display A screen on which each **pixel** displayed corresponds directly to one or more bits in the computer's video memory. Such a display has fast updating compared with a terminal connected via a **serial line** where the speed of the line limits the speed at which the display can be updated. Almost all modern personal computers and **workstations** have bitmap displays, which means that **graphical user interfaces** can be used, together with interactive graphics and choice of on-screen **fonts**.

bitmap editors See **paint program.**

bitmap font (raster font) A **font** in which each character is stored as an array of **pixels** (or a **bitmap**). Such fonts are not easily scalable, in contrast to **vector** or **outline fonts** (like those used in **PostScript** and **TrueType**). In practice, bitmap fonts need to be stored in all the sizes required, which not only limits their functionality but also takes up space on the storage medium, particularly at large sizes. Of course, all fonts are bitmapped when displayed onscreen or printed. The difference between outline and bitmap fonts is that the bitmaps for outline fonts are created **on the fly**.

bitmap graphic A graphic image made up of arrays of dots. Sometimes called a **paint-type graphic**. Bitmap graphics are typically line images, consisting either of solids or flat tinted areas. Line and tint drawings and type can be displayed as bitmap graphics. Compare with **vector graphics**.

bitmap image See **bitmap** and **bilevel bitmap**.

BITNET See **Because It's Time NETwork**.

bit-oriented protocols Protocols that deal with information transfer at the bit level.

bit pipe A path using **circuit switching** which provides unrestricted transfer of information. The user is responsible for protocols above the physical layer.

bit rate The rate at which digital information can be sent over a communications system, measured in **bps** or **kbps** or **Mbps**.

bits per inch The number of bits recorded per inch of magnetic tape or disk track. See **bpi**.

bits per second (bps) A measure of **bandwidth** or data transmission speed. Often quoted in kbps (1000 bps) or Mbps (1million bps). The **ITU-T** has set a number of standards for data

transmission over analogue networks (**V series**).

bit stream A sequence of bits, usually regarded as potentially endless and occurring at regular intervals. Note also that BitStream is a company supplying fonts and related software.

bit stuffing A method of ensuring **data transparency** in **bit-oriented protocols**.

BIX A US online service owned by **Delphi** but operated independently. Offers **email** and conferencing, as well as its own **Windows** access to the **Internet**.

black and white Single colour black-only originals or reproductions as distinguished from multi-colour. Sometimes called **mono** or **monochrome**.

black box Colloquial term for an electronic device which converts one type of input into another form of output.

blackening Paper defect associated with calendered paper where areas darken. Can be caused by paper being too damp when **calendering**.

black letter Also called **gothic**. A type style based upon a style of handwriting popular in the 15th century.

black printer The black plate in four-colour reproduction used to give correct neutral tones and detail.

black-step collation Also called **back-step collation**. Method of ensuring sections of a publication are gathered in the correct sequence. The outer fold of each section is printed with a rectangle or short thick rule. The position of the rule on each section is such that when the spine of the complete publication is viewed, the rules form a stepped pattern. (See also **collate**.)

blad Sample pages of a book produced in the form of a booklet and used for promotional purposes.

blade-coated cartridge See **coated cartridge**, **blade coating**.

blade coater Machine for **blade coating**.

blade coating Paper coating method where a surplus of coating is applied to the **web** and then levelled and controlled by a flexible steel blade.

blade cut Paper defect where a **blade scratch** cuts deeply into the **web**.

blade scratch Paper defect where there is a hair-like indentation in a coated surface running in the grain direction. Caused by a particle lodged behind the blade during coating.

blade streak Paper defect which is similar to a **blade scratch** but larger and caused by a larger particle.

blanket A rubber-surfaced sheet clamped around the cylinder of an offset litho printing press which transfers the printing image from plate to paper.

blanket contamination Occurs where undesirable material becomes attached to the litho blanket and interferes with print quality.

blanket cylinder The cylinder around which the **blanket** is clamped.

blanket-to-blanket Printing configuration where two **blanket cylinders** act as opposing **impression cylinders** printing both sides of the sheet or **web** simultaneously.

bleaching Part of papermaking process where chemical treatment is used to purify, whiten, brighten and improve permanence of the pulp. Treatments include exposure to chlorine, chlorine dioxide, hydrogen peroxide and alkalis.

bleach-out Underdeveloped **bromide** print used as a basis for a line drawing. The bromide print is bleached away after the drawing is finished.

bleed Printed matter running off the cut edge of a page. The bleed allowance beyond the trimmed size (see **trim**) is usually 3mm to ensure a clean cut-off.

blind 1. Blocking or stamping of covers or jackets without metallic foil or ink resulting only in an indentation for embossing. 2. Used to describe a **litho** plate where the image has lost its ink receptivity.

blind blocking Blocking or stamping of covers or jackets without metallic foil in order to smooth down, indent, or emboss the surface. Also called **blind stamping**.

blind keyboard Typesetting keyboard with no visual display (e.g. screen or **marching display**).

blind stamping See **blind blocking**.

blind stitch The stitch which joins the books together in the sewing process. It is this stitch which is cut to separate one book from the next. (See also **kettle-stitch**.)

blister Paper defect usually occurring during **heatset** drying of coated papers where clearly defined bubbles form on both sides of the **web**.

blister cut Paper defect resulting in a **web** cut often diagonally to machine direction.

blister pack Packaging method using a sheet of plastic holding bubbles of air which form a cushion of protection.

block Etched copper or zinc plate used in **binding** for impressing or stamping a design on a cover. In letterpress printing, a plate typically containing a line or **half-tone** illustration which is mounted and printed with the type.

block check character (BCC) A character which

is added to blocks in character-oriented protocols to indicate that they contain codes.

block graphics Use of the graphics characters defined in the IBM extended **ASCII** character set to create graphics on a PC screen running under MS-DOS (rather than **Windows**). Each graphics character takes up the space usually used by an alphanumeric character and therefore detailed effects are not possible. In order to use block graphics, the file **ansi.sys** must be included in the config.sys file.

blocking 1. **Binding** operation to impress a design or lettering into a book cover, often filling the impression with metal or pigment **foil**. 2. Fault where stack of printed sheets stick together as the ink dries.

blocking fee See **holding fee**.

block-pull Proof of a printing **block**.

blottings Grade of highly absorbent papers.

blow-up To enlarge photographically; or a print so made.

Blue Book One of the four standard references on **PostScript** (*PostScript Language Tutorial and Cookbook*, Adobe Systems, Addison-Wesley, 1985). The other three official guides are known as the *Green Book*, the *Red Book* and the **White Book**.

blue key In film assembly, a form of key in which the image is produced photographically in **drop-out blue**, and is non-printing.

bluelines See **blueprints**.

blue pencil 1. Pencil used for marking corrections. 2. To censor by deleting offensive material.

blueprints Contact dyeline proofs made on paper from film. Used for general checking purposes especially positioning. Also called **blues**, **bluelines**, **diazo** prints, **dyelines** and **ozalid** prints.

blue ribbon campaign A campaign run against censorship on the **Internet**, prompted principally by the US Communications Decency Act of 1996. Support is shown on **Web** pages by a looped blue ribbon (similar in style to the red ribbon worn by those supporting AIDS research).

blues See **blueprints**.

blue wool scale Scale of light fastness for inks. 8 is the highest for printing inks. 6 is the minimum level required for exposure to daylight. Yellow and magenta inks tend to be less light fast than black and cyan.

blurb Brief description of a book, usually for the jacket.

bmp Microsoft **Windows bitmap graphics** format. BMP files may use **run-length encoding**.

B/ND **Binding**/no date.

B-NET See **Berkeley Network**.

BNF See **Backus-Naur form**.

board General term for paper above 220gsm (although sometimes applied to substances down to 200gsm). The term includes numerous grades ranging from those of one finish throughout, to those made from combining several plys of the same or different **furnishes**. Boards may be uncoated or coated one or both sides. (See also **case board**, **paperboard**.)

board hollow In case-making, a **spine hollow** made of the same board as the front and back boards. Used particularly in children's books.

Bodoni Typeface designed by Giambasttista Bodoni, characterised by thick stems and contrasting thin **serifs**.

body 1. Metal composing term for the solid metal of a piece of type carrying the printing surface. 2. Phototypesetting term for the size of the body of type e.g. 12pt = a 12pt body. 3. Inkmaking term describing the viscosity of the ink.

body copy or **body matter** Text pages as distinct from **prelims**, **endmatter**, index etc.

body paper See **base paper**.

body size Same as typesetting term **body**.

body stock See **base paper**.

body text The main text of a book.

body type The type used for text, rather than for headings, usually between 8 and 12 point.

boilerplating Sections of wordprocessed text or of computer graphics held in memory for frequent retrieval and use.

bold Heavier version of a typeface, as distinct from light or medium. Sometimes abbreviated to **bf** (bold face).

bolle-a Letter 'a' with a small circle over it (e.g. å) used in a number of Scandinavian languages.

bolt Folded edge of a printed section (other than the binding fold) which is removed in final trimming.

bond Range of heavier substance printing and writing papers often used for letterheads, invoices etc. Similar papers of lighter substance (under about 60gsm) are known as **banks**.

bonded ink One suited to **hard-sized** papers, drying by **oxidation** rather than **penetration**.

bonding strength Measurement of a paper's resistance to **picking** and **delamination** when printing.

Bongo A visual interface builder for **Java**, developed by Marimba Inc., a company formed by four of the original developers of Java. Marimba has also developed **Castanet**, and Bongo is principally a tool for creating Castanet channels.

book-block Book at the binding stage after sewing or **perfect binding** but before **forwarding** operations have been carried out.

book club Club whose members are offered books at discounted prices.

book jacket Protective wrap-around to a book, usually made of paper.

bookmark A mark to indicate a position in a document (used e.g. in **Acrobat** files). Also used to describe a **WWW** reference to a document, which may be on the same server or a different one. It is possible with most WWW **browsers** to save a file of bookmarks and thus allow quick location of frequently referenced documents.

book paper Paper with characteristics good for book printing but also used more generally.

bookplate Printed (and often specially designed) label glued onto the **flyleaf** of a book to show who owns it. See *ex libris*.

book proof Page proofs paperback-bound in the form of the finished book.

bookwork Production of books.

Boolean search A search formalism using operators such as AND and OR. Used in most searching programs on the **Internet**.

boot or **boot-up** To load the operating system or programs automatically into a computer.

bootstrap An initial set of instructions executed by a computer usually to load the **operating system**.

borax Chemical substance used to accelerate the development of photographic film.

borders Decorative designs usually edging the page or type.

BOT Beginning of tape. Mark showing start point of computer tape.

bounce The return to the sender of an **electronic mail** message that is undeliverable, together with an error notification (a **bounce message**) usually explaining why the message has not been delivered.

bounce mail See **bounce message**.

bounce message (bounce mail) A message returned to the sender of **email** explaining why it has not been possible to deliver the message to the intended recipient or to the next link in a **bang path**. Reasons may include a non-existent or misspelled user name or a relay site that is **down**, i.e. not accessible.

bound books Term sometimes used for books where the coverboards are attached to the book before applying cover material or affixing **endpapers**. Much stronger than cased books and expensive to produce.

bounding box In **DTP**, a rectangular space on the page which is defined by dragging the mouse diagonally. Type can be placed or typed into it.

bourgeois Obsolete term for 9pt type.

bowl Typographical descriptive term for enclosed part of a letter as in a p or o. Also known as a **counter**.

boxboard Card used in carton-making.

boxed heading A ranged-left heading, as distinct from a **cross head** which is centred.

boxhead ruling Space at head of a ruled column where headings are to be inserted.

bpi Bits per inch. The density at which data is encoded on a magnetic medium is expressed in bits per inch. 1600 bpi is typical for standard magnetic tape.

BPIF British Printing Industries Federation.

BPOP Bulk packed on pallets. Refers to consignments of sheets.

bps See **bits per second**.

brace Form of bracket { }, mainly used in tables.

bracketed serif An additional curved line or flourish joined to the main part of a letter, contrast **wedge serif**.

brackets Pairs of marks ( ), [ ], used in text. Also called **parentheses**.

BRAD Acronym for British Rate and Data. Publication listing all UK publications and their advertising specifications and requirements.

Braille System of printing for blind people using characters made up of configurations of raised dots which are read by finger touch.

branching coupler In **optical fibres**, a device for splitting the signal from one fibre into two or more fibres.

brass A die made from metal and used for **blocking**, e.g. spine brass which is used for blocking the spine of a case prior to casing in. A true brass is made by engraving the metal, brass, mechanically. The normally used brass is produced photomechanically on copper or zinc. See **chemac**.

Bravo Imaging model developed by **Adobe**.

brayer Small hand roller for applying ink when proofing.

breadboard A circuit board on which experimental circuits are assembled and tested.

break To send an **RS-232** break (two character widths of **line high**) over a **serial line**. (In general computing the term is also used in other ways.)

breaker (breaking machine) Vat used in the first stages of papermaking to break down the crude pulp and dissolve it in water. Replaced in modern papermaking by the **hydrapulper**.

break for colour American term meaning to colour separate into printing colours.

breaking length Measurement of the limiting length of a uniformly wide strip of paper where the strip held by one end breaks due to its own weight.

breaking strength Paper measurement to determine comparative strengths.

break-line Term for the short last line of a paragraph. (See also **club-line**, **widow**.)

break-out box A test device, which is inserted into a **serial communications** connection to test the signals on each wire.

break-up Pull apart a letterpress **forme** and distribute the type.

breath-of-life packet An **Ethernet packet** that contains bootstrap code (i.e. code which will allow a computer to reboot or restart), sent out periodically from a computer on the network to infuse the **breath of life** into any computer on the network that has crashed. Computers which rely on such packets must have sufficient hardware or firmware code to wait for (or to request) such a packet during the reboot process.

breve Symbol placed above a vowel to show it is pronounced short.

brevier Obsolete type size, approximately 8pt.

BRI See **basic rate ISDN**.

bridge A device which transfers traffic either between homogeneous or between network segments using **datalink layer** information. These segments would have a common **network layer** address.

brightness Measure of how much light is perceived by the eye. The more correct term is **luminance**, but brightness is important in some methods of representing colour in computer graphics.

Brightype Obsolete machine which converted letterpress type and engravings to photographic images for use in **offset lithography** or **gravure printing**.

brilliant Obsolete term for 4pt type.

bristol Good quality paperboard with smooth finish.

British Printing Industries Federation (BPIF) Organisation representing the interests of British printing companies.

British Standards Institution (BSI) British national co-ordinating body for technical standards in industry.

British Telecom The largest telecommunications provider in the UK, formerly part of Royal Mail. Now known as **BT**.

broadband This can be defined in a number of ways. It is generally used to describe networks faster than those in common use, so exactly what it means depends on the date. In 1995, the boundary between broadband and **narrowband** was often considered to be at 2 Mbps. However, higher speeds are becoming common, even for **wide area networks**.

broadband ISDN (B-ISDN) A broadband network in which **ATM** (**asynchronous transfer mode**) and **SONET** (**Synchronous Optical NETwork**) transport are used to provide four service classes delineated according to connection orientation, the need for an end-to-end timing relation, and whether the service **bit rate** is constant or varying. This proposed successor to **ISDN** will operate at broadband speeds, even to the home (but not over the existing phone cabling). Should be distinguished from primary rate ISDN which works at 2 **Mbps**, but is actually made of 64 **kbps** ISDN circuits and is not a fully integrated service. The two main proposed broadband ISDN rates are 150 Mbps and 600 Mbps.

broadband network A **network** that can support a wide range of frequencies, typically from audio up to video, and employing frequency division **multiplexing** on a **coaxial cable**.

broadband transmission In data transmission, the ability to transmit along a communications channel (e.g. a cable) which can be split into several narrower bands simultaneously so that several different kinds of transmission – voice, video, data – can be transmitted at the same time.

broadcast A transmission either addressed to two or more stations at the same time or a transmission to multiple, unspecified recipients. (The terms **narrowcast** and **personalcast** have been coined to describe more focused transmission.) On **Ethernet**, a broadcast packet is a special type of **multicast** packet which all **nodes** on the network are always willing to receive.

broadcast quality video Flicker-free video (more than about 30 frames per second) at a resolution of about 800×640 pixels.

broadcast storm A **broadcast** on a **network** that causes multiple **hosts** to respond by broadcasting themselves, causing the storm to grow exponentially.

broad fold Method of folding sheets of printed paper to form a book which has the paper grain running from top to bottom of a page.

broadsheet Newspaper size approximating to A2 when folded.

broadside Traditional 'standard' sheet size from which the subdivisions of **quarto**, **sexto**, **octavo** etc. derive.

brochure Promotional booklet about a company or product, often produced to a high quality to create an image of success.

broke Defective paper discarded during manufacture and usually re-pulped. Usually marked **xxx**. (See also **retree**.)

broken ream Part of a ream of paper left after use.

bromide Photographic light-sensitive paper used in photographic reproduction or phototypesetting, producing a positive image.

bronzing Process for obtaining a metallic printed effect. Metallic or bronze powder is applied to printed sizing ink while the ink is still wet giving a metallic lustre.

brouter A device which bridges some **packets** (i.e. forwards them based on **datalink layer** information) and routes other packets (i.e. forwards them based on **network layer** information). The **bridge/route** decision is based on configuration information.

brownline See **brownprint**.

brown mechanical pulp Mechanical paper pulp produced from boiled or steamed wood.

brownprint Also known as a **Van Dyke** or **brownline**. Term (mainly used in America) for a photographic print from a negative used to check positioning before making printing plates. Similar to **blueprint**.

browse To look through data in a **database** or online system.

browser A program that requests, interprets and displays **hypertext,** or **HTML**, documents available over the **World Wide Web** (although it is often also able to use other **Internet** tools). Also provides tools for **navigating** and for following **links**. Another name for a World Wide Web **client program**. Commonly used browsers include **Netscape Navigator** and **Internet Explorer**.

BRS See **Bibliographic Retrieval Service.**

brush coating Method of coating a web of paper where the coating mix is distributed by a set of stationary and oscillating brushes.

BS Number given to a British Standard published by the BSI (**British Standards Institution**).

BS5750 The British Standard setting out the requirements for certification for **quality assurance** and **quality control** within a company. The standard does not prescribe how to achieve fitness for purpose but rather identifies the disciplines and specifies the procedures and criteria needed to ensure a product or service meets customer requirements. Complies with International Standard ISO 9000.

BSC See **binary synchronous communications.**

B Series See **B**.

BT The current name for **British Telecom.**

bubble card See **blister pack**.

bubble cassette Removable and portable **bubble memory** available in cassettes of 64kb and 256kb capacity.

bubblejet printer Printer using a technology developed by Canon in which small bubbles of ink are heated and propelled from the printhead onto the paper.

bubble memory Form of backing storage which uses magnetically charged crystal chips to hold data. Not widely used.

bubble sort In which successive data items are exchanged if necessary, starting with the first pair on a list.

BUBL See **Bulletin Board for Libraries**.

buckle folder Machine for sheet folding where the sheet is bent or buckled by a metal plate. Also called a **plate folder**. The main alternative folding method is knife folding on a **knife folder**.

buckram A heavy and strong binder's cloth made from woven textile stiffened with **size**.

buffer A temporary storage area for data.

bug Computer term for a defect interfering with a computer operation.

built-up letter Graphic term for a letter which is first drawn and filled in after.

bulk Paper term used to describe the degree of thickness of paper. Measured by **caliper**, **volume** or **ppi** (**pages per inch**) (US).

bulk basis Obsolete paper term describing the thickness (32nds of an inch) of 320 pages in 60lb quad crown (68gsm).

bulk between boards The total thickness of a **book-block** without counting the thickness of the front and back boards.

bulking dummy A blank book to show the type of paper being proposed and the bulk that this paper will achieve.

bulking index American paper measurement of bulk in inches of thickness per pound of basis weight.

bulking number American paper measurement of the number of sheets that bulk to 1 inch in thickness under standard pressure. Multiply bulking number by 2 to give pages per inch (**ppi**).

bulk wrapping/bulk packing Wrapping several copies of a periodical, as distinct from individual wrapping.

bulky mechanical Grades of paper made predominantly from **mechanical pulp** to a specific and high bulk, e.g. as often used for cheap paperback books.

bulldog First edition of a daily paper.

bullet Phototypesetting term for a large dot used for ornamentation.

bulletin News sheet.

bulletin board See **bulletin board system.**

Bulletin Board for Libraries (BUBL) A **Gopher**-based information service of interest to the library and information community (and others) running at the University of Bath. It was originally a bulletin board service, hence the title.

bulletin board system (BBS, bboard) An electronic message centre, typically on the **Internet**, accessed by **electronic mail** and by **dial-up** over a **modem**. Bulletin boards (named after real notice boards) are usually devoted to specific topics. They are in many ways similar to **newsgroups** on **Usenet** (which is essentially a distributed BBS). There are publicly available areas and areas accessible only by password, or other form of checking system, so that private bulletin boards can be set up for group discussions.

bulls eye See **hickey**.

bump exposure Photographic term describing method of increasing highlight contrast when producing a **half-tone** by removing the screen briefly to remove any dots in the highlight area.

bumping blocks Use of delicate hammering from the back of a letterpress block to raise the height of various parts.

bundling Compressing the folded sections at the beginning of the **binding** process in a special bundling press which squashes the sections flat and expels the air from them prior to further processing.

burin A pointed engraver's steel tool used for cutting.

burn Platemaking term for an exposure.

burn-out mask An opaque mask used in platemaking to protect the image areas of a printing plate while the non-image areas are exposed for long enough to burn out all remaining unwanted traces of sellotape, edge marks etc. Used on **positive-working plates**.

burr A rough edge of metal left after burnishing or cutting.

burst Rupture of a paper web due to one of a variety of causes, e.g. the reel being too tightly wound or air trapped into the reel when winding.

burst binding A form of unsewn adhesive **binding** where the sections are 'burst' or punched along the **spines**, typically on a web printing press, thus giving extra adhesion between sheets as well as sections when the sections are bound. Also known as **punch binding**. (See also **notch binding**.)

burster Machine that separates continuous stationery into single sheets.

burst factor A measure of the **bursting strength** of a paper.

burst index A measurement of paper **bursting strength** relative to grammage under standard test conditions.

burstiness The ratio of peak to average **bandwidth** required by a telecommunications service.

bursting strength The strength of a paper to resist a uniformly distributed pressure under test conditions.

bursty traffic Where a **local area network** device takes over the whole **bandwidth** for a very short period, which means a sudden burst of activity.

bus A communication path (usually a series of wires) along which information is passed from one part of a computer to another. The devices are connected in **parallel**. A PC may have a number of buses so that internal communication takes place at a speed similar to that of the processors themselves. Recent developments have been **local bus**, **PCI** and **VESA local bus**, all intended to prevent communications bottlenecks within systems.

Bush, Vannevar Author of the original paper (1945) which suggested a **hypertext**-type system, called memex.

business press Periodicals directed to the business and professional sectors.

butted lines Linecast **slugs** placed side by side producing a single line of type.

butterfly wings See **wing effect**.

button An image or **glyph** on a screen, designed to be **clicked** on, as a method of user input. This may be to start a program, change the display or, in **hypertext** viewers, to indicate a **hyperlink**, from which a link or jump can be made to a different part of the same document or to another document. Hyperlinks are also often indicated by using a different colour, font or screen attribute, such as underlining.

B/W Black and white.

byline Writer's or journalist's name on an article or newspaper story.

byte A combination of eight **bits**, generally used to represent a character. There are 256 permutations of the eight 1s and 0s and therefore 256 characters can be represented in principle. However, in the official **ASCII** character set, only the first seven bits are used, so that 128 characters are defined and of these some are used for control purposes. Bytes, **kilobytes** (1kb = 1024 bytes) and **megabytes** (1Mb = 1024kbs =

1 048 576 bytes) are also used to describe the size of both computer random access memory and disk storage memory. Transmission speeds, however, are given in **bits per second**. In networking, the term **octet** is usually used in preference to byte, because some systems use the term byte for units that are not eight bits long.

C

C 1. A high-level programming language developed for the Unix operating system on Digital Equipment Corporation PDP 11/70 minicomputers. 2. The **C series** is an international **ISO** range of sizes for envelopes, designed to accommodate stationery in the A series sizes. (See also **A**, **B**.) See Appendix.

C1S Paper coated on one side.

C2S Paper coated on both sides.

cable Although in the past cable has meant any kind of electrical wiring, the term is now almost always used, at least in the communications industry, to mean **fibre-optic** cable.

cableless LAN A **local area network** using radio, microwave or infra-red links in place of cables.

cable television (CATV) Supply of television signals via cable (originally copper **coaxial cable**, but now **fibre-optic cable**), rather than by broadcast signal.

cache To store documents or images, usually locally, after they have been accessed over the **Internet** in order that future access can be achieved more quickly. If a document or image is not available in the cache, the **browser** has to return to the Internet to retrieve it. Cache is also used as a noun describing the place where the files have been **cached**. In computing generally, cache has the meaning of storing temporarily, usually to allow other information or programs to be loaded into memory.

CAD Computer-Aided Design. The use of a computer graphics in design.

CAD/CAE Computer-Aided Design/Engineering.

CAD/CAM Computer-Aided Design/Computer-Aided Manufacture.

caesura A pause, esp. in a line of poetry.

CAJUN CD-ROM Acrobat Journals Using Networks.

CAL See **computer-assisted learning**.

calcium carbonate Chalk pigment used as a filler in some papers and as a white coating mix.

calcium hypochlorite Used for bleaching paper.

calender A set of rollers on a paper machine which give a smooth finish to the **web** as it passes through by applying pressure. Calendered paper has a smooth, medium gloss finish. See also **supercalender**.

calf Leather of high quality used in bookbinding.

calf cloth An imitation leather **binding** material.

california case A kind of type case which accommodates both **upper-** and **lower-case** letters.

caliper The thickness of a sheet of paper or board, measured with a micrometer and usually expressed in thousandths-of-a-millimetre (microns).

caliper shear burst Web break during winding caused by variations in roller **nip**.

call-back A user authentication scheme used by some computers running **dial-up** services. The user dials in to the computer and gives his **login** ID and password. The computer then breaks the connection and uses an **auto-dial modem** to call back to the user's registered telephone number. If an unauthorised person discovers a user's password, the call-back will go, not to him or her, but to the owner of that login, who will then know that his account is under attack.

caller ID (CID) A feature of some **modems**.

calligrapher Specialist in the art of handwriting.

calligraphy Art of handwriting or script drawing.

calling line identifier The telephone number of the device originating a call.

callout Text used to point out and identify parts of an illustration.

CALS See **Continuous Acquisition and Lifecycle Support**.

camber Convex surface of a roll of paper.

Cambridge Ring A **LAN**, **local area network**, which, unlike the **Ethernet** configuration, is circular. A series of repeaters strengthens the signals as they are sent round the ring, and simultaneously check for and report on errors.

cameo Relief **die stamping** process.

camera-ready artwork or **camera-ready copy (CRC)** or **camera-ready paste-up (CRPU)** Pages produced by typesetting or by **paste-up**, which are subsequently photographed to produce printing plates. This method is gradually being replaced by sending a **PostScript** file which is output directly on a high-resolution **imagesetter** or even on a **digital printing press**.

Cameron belt press A web book press which, linked to a binding line, can print, gather and bind a substantial book in one pass. Used primarily for paperbacks.

Campus-wide information system (CWIS)

Information and services made available at university sites via **kiosks** running interactive computing systems, possibly via campus networks. Services routinely include directory information, calendars, **bulletin boards** and **databases**.

cancel 1. To remove a leaf in a book and replace it with another. 2. Reprinted sheets for replacing cancelled leaves.

c&lc Capitals and **lower case**.

c&sc Capitals and small capitals, i.e. words which begin with capitals and have the other characters in small caps the height of the lower-case body size.

canon Obsolete term for 48pt type.

canonical name (CNAME) A **host's** official name as opposed to an **alias**. This is the first hostname listed for its **Internet** address in the hostname database or the **NIS** map. A host with multiple network interfaces can have more than one Internet address and each address will have its own canonical name (plus any aliases).

canvas Bookbinding cloth of good strength. Also known as **art canvas**.

canvas note A type of embossed stationery which simulates **canvas**.

CAP See **Columbia AppleTalk Package**.

capacitor A device that introduces a capacitance to an electric circuit.

cap height The height of the capital letters in a particular **typeface** or **font**. (See also **x-height.**)

capillary rise The distance liquid travels vertically up a strip of paper, measured by standard test.

caps/capitals Capitals. Upper-case letters, e.g. A, B, C etc. See also **lower case**.

caption Text accompanying and describing an illustration.

capture To transfer the text accessed from a remote **host** and appearing on screen or in a window into a disk file. Unlike **downloading** a specific, complete file that already exists, the capture feature will save everything that appears on the screen, wherever it comes from, including any text typed at the keyboard. **Screen capture** refers to taking a quick picture of the computer screen. **Acrobat** Capture is a program produced by **Adobe Systems** which allows text to be scanned and then transferred via **OCR** directly to form a **pdf** file readable with an **Acrobat** viewer.

carbon black Intensely black pigment used in ink manufacture.

carbonless paper Paper that creates copies without a layer of **carbon tissue**. See **NCR**.

carbon paper Lightweight paper coated on one side with transferable colouring agent for producing copies by impression onto an underlying sheet.

carbon process Gravure colour correction processes which uses three-colour **carbon tissues**.

carbon tissue 1. Thin paper coated with carbon powder. 2. Sheet of **light-sensitive** material used in **photogravure**.

carbro Continuous tone colour print.

carbro process Photographic technique for correcting colour before the positive stage.

card See **board**.

cardboard Any stiff sheet of card, usually comprising several layers of paper pasted together.

card chase Small **chase** used for small stationery composition.

carding Thin spacing of lines of type.

card punch Keyboard machine which perforates cards for data storage or input. A **card reader** reads the data.

card reader A device that produces signals from holes sensed in a **punched card**.

caret Proofreader's mark indicating an insertion.

CARL A **document delivery** service set up by the Colorado Alliance of Research Laboratories.

carnet International customs document that allows goods to cross several European frontiers by road but only incur duty payments at their final destination.

carriage paid Refers to a deal where goods are delivered with the freight element paid by the sender. (See also **cif**.)

carriage return Keyboard command key which terminates a line of setting and may enter text from a computer screen into memory.

carrier frequency Frequency speed of a carrier signal.

carrier sense multiple access/collision detect (CSMA/CD) A method of access control used to resolve contention between stations wishing to transmit on **Ethernet**. If two **nodes** transmit at once, the data is corrupted. The nodes detect this and continue to transmit for a certain length of time to ensure that all nodes detect the collision. The transmitting nodes then wait for random times before attempting to transmit again. This reduces the amount of **bandwidth** wasted on collisions compared with simple **ALOHA** broadcasting. (See also **collision**.)

carrier sheet Sheet of paper inside film wrapping which carries the address label.

carrier signal (carrier tone, carrier wave) A continuous signal of a single frequency which can be modulated (varied) by a second, data-carrying signal. In radio communication, there are two common kinds of modulation: **amplitude modulation** and **frequency modulation**. In **modem** communications, **phase modulation** is

also used, often in combination with amplitude and frequency modulation.

carrier tone Another term for **carrier signal**.

carrier wave Another term for **carrier signal**.

car stock Stock of books held by a rep so bookshops can be supplied quickly.

carton Cardboard box for packing.

cartouche Decorative box framing a piece of text.

cartridge Printing or drawing paper with good dimensional stability, high opacity and good bulk. Often used in bookwork.

cartridge disk Computer storage disk enclosed in a plastic case.

cascade The arrangement of **windows** in a **graphical user interface** so that they overlap in a regular fashion, usually with the underneath window in the top left-hand corner of the screen and each overlapping window offset down and to the right.

Cascading Style Sheets (CSS) A method by which layout and typographic information can be encoded into **HTML** documents, so that the document provider, rather than the user, has control over the design. Requires a **browser** that is CSS-compatible, but CSS is supported by the latest versions of both **Internet Explorer** and **Netscape Navigator**.

case Refers to whether letters are capitalised (upper-case letters) or not (lower-case letters). The term comes from the days when typesetters used metal type and stored the letters in wooden typecases: the capitals were usually kept in the top, or upper, case; the small letters were kept in the bottom, or lower, case.

case board Board used for case-making, typically **Dutch grey board** or unlined **chipboard**. Typical caliper/gsm ranges are from 1725 microns/1120gsm at the lower end up to 3000 microns/1750gsm.

case-bound Referring to a book with a hard case. Also described as 'cased'. (See also **limp-bound**.)

CASE Data Interchange Format (CDIF) An emerging standard for interchange of data between CASE (computer-aided software engineering) tools.

casein glue Near-acid-free glue used in bookbinding and in making coated papers.

case-making machine Machine that cuts cardboard for making the cover of a book.

case material The material, or imitation cloth, which covers the **case boards** to form the case of a hardback book.

Caslon Typeface designed by the first major English typefounder, William Caslon.

cassette 1. Light-proof container for photographic film or roll paper. 2. Small reel-to-reel tape holder for audio or data recording. In storage terms, a C10 (ten-minute) tape will hold around 60**K** (20 A4s of text); or in other words, 6K per minute of running time (around 2 A4s of text).

cassie Damaged paper at the top and bottom of a **ream**.

Castanet A client-server framework developed by Marimba for the broadcast distribution of software.

cast coated Paper given a high gloss by pressure from a polished, heated cylinder before the coating dries.

casting 1. The process of forcing molten metal into a mould to create a character or **slug** of type. 2. Producing **stereotypes** in newspaper printing. A casting box is used for this purpose.

casting box Box used for casting metal printing plates (stereos).

casting off Calculating the number of pages a given amount of copy will make when set in a given **typeface** and size to a given area.

cast up Calculate the amount of setting needed for a book, including spacing and headings, for an estimate of **typesetting** costs.

catalogue Book or booklet which presents details of goods or services, often including prices and ordering routines.

Cataloguing in Publication data A system operated by the British Library offering classified entries which publishers can print on the imprint pages of their books to facilitate library cataloguing, bibliographical compilation etc. The equivalent in the US is the **Library of Congress** (**Lib Con**) **number**.

catch line A temporary heading on a manuscript or proof for identification.

catch-stitch See **kettle-stitch**.

catch-up Scumming on a **litho** printing plate.

catchword(s) Word or words highlighted in some manner, such as first and last words on dictionary pages repeated in the headline.

cathode The negative terminal of an electronic component. The 'anode' is the positive terminal.

cathode ray tube Video screen activated by **electron gun**.

CATNIP See **common architecture technology for next-generation Internet protocol**.

CATV See **cable television**.

CBDS See **connectionless broadband data service**.

cc Copies.

CCD See **charge-coupled device**.

CCI See **computer-controlled inking**.

CCIR See **Consultative Committee on International Radio**.

CCIRN See **Co-ordinating Committee for Intercontinental Research Networks**.

CCITT Comité Consultatif International Téléphonique et Télégraphique. International committee that drafts and approves communications protocols and standards.

cc:mail Commercial **electronic mail** software for Microsoft **Windows** from Lotus Corporation.

CCR Complementary colour removal. See **achromatic separations**.

CCS See **Common Communication Services**.

CCTA The UK Government Centre for Information Systems. Originally Central Computer and Telecommunications Agency (the letters were retained as customers were familiar with them), CCTA is part of the Office of Public Service and Science, which works to improve government services to the public. It is responsible for stimulating and promoting the effective use of information systems in support of the efficient delivery of business objectives and improved quality of services by the public sector.

CCTV Closed circuit television.

CD See **compact disc**, **compact disc interactive** (**CD-I**), **compact disc-recordable** (**CD-R**), **compact disc read only memory** (**CD-ROM**) and **compact disc eXtended Architecture** (**CD-ROM XA**).

CDA See **Compound Document Architecture**. Also, Communications Decency Act.

CDDI See **copper distributed data interface.**

CD-I (compact disc interactive) A consumer product CD disk which will store sound, text and graphics, and full-motion video.

CD-I, CD-i See **compact disc interactive.**

CDIF See **CASE Data Interchange Format.**

CDM See **Content Data Model.**

CDMA See **code division multiple access.**

CDPD See **Cellular Digital Packet Data.**

CD-R See **compact disc-recordable.**

CD-ROM See **compact disc read-only memory.**

CD-ROM XA See **compact disc eXtended Architecture.**

CDTV Acronym for Commodore Direct Total Vision: a CD multimedia product launched by Commodore.

CEEFAX Trade name for the **videotex** or **teletext** system used by the British Broadcasting Corporation (BBC).

cel (or cell) A single background image within an **animation.** See **cel** (or **cell**) **animation**.

cel (or cell) animation An **animation** technique in which the background is kept constant and transparent sheets containing images, which are perceived to move, placed in front. This is easier than drawing a new background for every frame and has been incorporated into some computer animation programs.

cell A fixed length of data for transmission, as used in **asynchronous transfer mode.** Also used in other ways, e.g. to describe parts of tables or spreadsheets.

Cellnet One of the principle providers of mobile communications networks in the UK.

cellophane Thin transparent film.

cell relaying See **fast packet switching**.

Cellular Digital Packet Data (CDPD) A wireless standard providing two-way, 19.2 kbps **packet** data transmission over existing **cellular telephone** channels.

cellular radio A low-power radio transmission system with a cellular network of base stations which may be used by stationary or mobile users for voice or data communication linking into the **public switched telephone network**.

cellular telephone A telephone which uses **cellular radio**.

celluloid proof Proof on transparent sheet, one per colour printed, used for checking register. (See also **plastic proof**.)

cellulose Complex fibrous substance forming the walls of plant cells, and the prime raw material in pulp. Cellulose **acetate** is used in making film.

CELTIC French digital compression equipment for **telephony**, which uses **voice activation** to assign an active channel only when one of the parties is speaking. (See also **digital speech interpolation**.)

central processing unit See **CPU**.

centre To position type centrally in a given measure.

centre-feed Paper tape sprocket holes that line up with the middle of code holes. (See also **advance feed**.)

centre notes Notes placed between columns of a page.

centre spread The two facing pages at the centre of a **signature**.

centrifugal cleaner Device which removes unwanted material from paper fibres by centrifugal force.

Centronics interface An alternative name for a **parallel** interface. (Centronics was an important printer manufacturer in the early days of microcomputing.)

Century American typeface designed by Theodore Lowe de Vinne in 1895. A form called 'Century Schoolbook' is more commonly used now.

CEPS See **colour electronic prepress system**.

CEPT European Conference of Posts and Telecommunications, the European grouping of **PTTs** which undertakes in Europe functions similar to that of **ITU-T**.

cerfs (kerfs) Grooves cut into the backs of sections into which the thread cuts.

CERN (Centre for European Nuclear Research) Now The European Laboratory for Particle Physics in Geneva, Switzerland, where the **World Wide Web** was first developed in order to allow physicists to take advantage of **hypertext** technologies to share information.

certificate authority A body that attests to or confirms the identity of a person or an organisation and issues digital certificates. Used in secure communications.

certificate of origin A certificate stating details of where a commodity has been manufactured.

C format paperback Paperback of trimmed size 234×156mm.

CGA Colour graphics adapter: early IBM PC standard to drive a colour monitor. (See also **EGA**, **VGA**, **SVGA**.)

CGI See **Common Gateway Interface**.

CGI-script Language in which **scripts** can be written using the **Common Gateway Interface** to allow users to interact with external data and applications, thus creating dynamic **HTML** documents.

CGM See **Computer Graphics Metafile**.

chad The waste punched out of paper tape or cards.

chain lines The wider watermark lines which run at right angles to the narrow **laid lines** on **laid papers**.

chalking Powdering of ink which has not adhered properly to paper.

chalk overlay Letterpress overlay for indicating adjustment to printing pressure.

challenge-handshake authentication protocol (CHAP) An authentication scheme used by **PPP** servers to check the identity of the originator of a connection. Once a link is established, a 'challenge' message is sent from the server to the originator, which responds with a value calculated using a **one-way hash function**. The server also calculates the value and if the values match, the authentication is acknowledged; if not, then the connection is usually terminated. CHAP is one of the more secure authentication procedures.

chancery Style of italic such as Bembo.

channel A path for the transmission of information, which may be physical or logical. The concept is particularly important in some **push technologies**, such as **Castanet**. Also the basic unit of discussion on **IRC**. Once one joins a channel, everything typed is read by others on that channel. Channels in IRC can be either named with numbers or with strings that begin with a # sign and can have topic descriptions.

channel op Also **chanop** or **chop**. Someone who has privileges on a particular **IRC channel**.

channel service unit (CSU) A type of interface used to connect a terminal or computer to a **digital** medium in the same way that a **modem** is used to connect to an **analogue** medium. If a CSU is used, the user must supply all of the transmit logic, receive logic and timing recovery in order to use the CSU, whereas a **digital** (or **data**) **service unit** (**DSU**) performs these functions.

channel service unit/data service unit (CSU/DSU) A device that performs both the **CSU** and **DSU** functions.

channel status table A table indicating the current status of all physical and logical channels at the user interface to a network.

chanop See **channel op**.

CHAP See **challenge-handshake authentication protocol**.

chapbook Small pamphlet containing, e.g., tracts or ballads hawked by street traders (chapmen) in the 17th to 19th centuries.

chapel Smallest unit of a print union's departmental or company grouping. Father of chapel (**FOC**) or **Mother of chapel** is the elected chairperson.

chapter drop White space between the head of the chapter title and the head of the type area of a book.

chapter head Chapter title and/or number.

character A representation of a single unit of meaningful data, e.g. a letter or a number, usually using **ASCII** or **ANSI** coding.

character-based interface The traditional user interface, where all screen images are made up of text characters. Commands are input as standard text strings, followed by a carriage return. Alternatively, **menus** can be used. Compare with **GUI**. Also described as **command interface** and **command line interface**, although these imply that menus cannot be used.

character code Numeric representation of a character. See, e.g., **ASCII**.

character compensation Global reduction or expansion in character fit by adjustment to the normal set width values resident in a typesetting system's computer. Also called **track kerning** or **tracking**.

character count Total number of characters and spaces in a piece of copy.

character entity A way of describing a character using only **ASCII** characters which is used in **SGML** and **HTML** (see **entity**). The character is usually delimited by & and ; so that, e.g., the Greek letter alpha (a) might be represented as '& alpha;'. The **delimiters** can however be changed in the **SGML declaration**.

character fit Space between letters which can be reduced or expanded.

character formatting The application of a format or style (including such factors as typeface, typestyle, indents, space before and after) to a single character, or group of characters in a **desktop publishing** system or **wordprocessor**. Compare with **paragraph formatting**.

character generation Projection of type images on a **cathode ray tube**.

character graphics See **block graphics**.

character printer A printer which prints individual characters as distinct from complete lines. Often capable of reproducing specific typefaces.

character recognition Reading **characters** by machine, often for digital storage. Also, **optical character recognition**, **OCR**.

character set The full range of **characters** on a keyboard in **memory** or available for **output** from a machine.

characters per second (cps) A measure of data transmission rate. (See also **baud**.)

character subset Any group of **characters** taken from a character set which have a common feature. See **character set**.

charge-coupled device (CCD) An array of light-sensitive transistors, arranged across a **scanner** head, one for each **pixel** or unit of resolution. They convert the reflected light signal into **bitmap** information. Sensors may be only bilevel (**1-bit**) or they may measure **grey levels** (**8-bit**).

charting Transforming numbers into graphical representations (pie charts, bar charts etc.).

chase Rectangular steel frame in which type and blocks are locked up for letterpress printing.

chassis The metal base or structure onto which the electronic components of a computer are assembled.

Chat A **Windows** for Workgroups (Windows 3.11) interactive **talk program** operating over a **local area network**. Also generally used (without the initial capital) to describe real-time interaction of the **Internet**. See **Internet Relay Chat**.

CHC paper Paper impregnated with cyclohexylamine carbonate, used to de-acidify old books.

cheapernet Also known as **thinnet**, **thin Ethernet**. Colloquial term for thin-wire **Ethernet** that uses **coaxial cable** instead of the full-specification **yellow cable**.

check bit or **check digit** A binary digit (or digits) employed as a check for the presence of errors in a related set of digits.

check disk A command common to several operating systems and used to check the index and file space allocation of a disk and return a status report.

checksum A computed value which depends on the contents of a **block** of data or **packet**. This value is transmitted or stored along with the data. The receiving system recomputes the checksum based upon the data received and compares the computed value with the one sent with the data. If the two values are the same, the receiver can have some confidence that the data was received correctly. If the two sums do not match, there was probably an error in the transmission.

chemac A copper die used for **blocking**. Made by photochemical methods, unlike a true **brass** which is engraved on brass by hand.

chemical ghosting Ghost images on sheets caused by the chemical reaction of inks.

chemically pure paper Acid-free paper used in preserving old books or maps.

chemical pulp Pulp obtained from wood or other plant sources by chemical removal of impurities rather than mechanical processing.

chemi-thermomechanical pulp (CTMP) Thermomechanical pulp which undergoes further chemical bleaching, resulting in a pulp not far below the quality of woodfree pulp. The very best quality of mechanical pulp made.

cheque paper Special paper used for cheques and having a surface which betrays attempts at alteration.

Cheshire Proprietary name of machine which sticks labels to envelopes or wrappers.

Chicago The development name for **Windows 95**.

CHILL CCITT High-Level Language. A real-time language widely used in European telecommunications. (See also **CCITT**.)

chill roll Cooled roller, used for setting ink after drying in a **web-offset** machine.

Chimera A modular, **X windows** system-based **World Wide Web browser** for **Unix**.

china clay White clay used for loading and coating paper.

chinagraph pencil A waxy, coloured pencil used for writing on or marking film or negative **ozalids**.

Chinese white Paint used in re-touching **artwork**.

chipboard See **unlined chipboard**.

chip or **microchip** 1. A small electronic component containing extensive logic circuits. Two of the leading chip manufacturers whose products are used extensively in microcomputers are Motorola and Intel. 2. Woodchip used in pulpmaking. 3. Trim (US).

chipper A machine which chips logs after debarking.

chlorine bleaching The bleaching of woodpulp using **chlorine dioxide**.

chlorine dioxide A gas used in the bleaching processes of chemical pulp. Environmentally dubious, and being steadily superseded by hydrogen **peroxide bleaching** processes.

chlorine-free paper Paper bleached without the use of environmentally harmful chlorine compounds.

chlorine number The amount of chlorine that is absorbed by a sample of **pulp**, used to calculate the amount needed for the production of white paper.

chop See **channel op**.

chroma Purity of colour.

chromatic aberration The inability of a lens to bring light of all colours to a common point of focus. (See also **apochromatic**.)

chromolithograph or **chromo** Colour print made by a form of lithographic printing used in the late 19th century and conspicuous by its vivid and lasting colours.

chromo paper Heavily coated one-sided paper used for **block proofing** or printing.

cicero The basic typographical unit of the **Didot point system**. See **font size**.

CID See **caller ID**.

CIE The Commission Internationale de l'Eclairage (International Commission on Lighting). The body responsible for standards on colorimetry and photometry. In particular, there are two methods of graphically representing **colour spaces**, called **CIELAB** and **CIELUV**.

CIELAB A method of graphically representing **colour spaces** by plotting **luminance** against values representing the colour axes yellow-cyan and yellow-blue. (See also **CIE** and **CIELUV**.)

CIELUV A method of graphically representing **colour spaces** by plotting **luminance** against values representing the colour axes yellow-cyan and yellow-blue. (See also **CIE** and **CIELAB**.) CIELUV gives a more uniform distribution than CIELAB, following a transformation of the colour co-ordinates, but provides the same information. In addition, its origin is transferred to the reference white.

cif Carriage, insurance and freight. A price quoted cif includes all charges up to delivery at the quayside at the port of destination. Contrast **FOB**.

CIM See **CompuServe Information Manager**.

CIP data See **Cataloguing in Publication data**.

ciphertext Encrypted information, which will require a **password** or **key** to decrypt. The converse of ciphertext is **plaintext**. (See also **encryption**, **public key**, **private key**, **Clipper**, **DES**, **RSA encryption**.)

CIR See **committed information rate**.

circuit A transmission medium linking two or more electronic devices.

circuit board See **printed circuit board**.

circuit-level gateways A **gateway** in a **firewall system** which controls transmission of traffic at the **TCP port** level to prevent unauthorised access to a **host**.

circuit switching A **paradigm** in which a dedicated communication path is established between the sender and receiver along which all **packets** travel. The public telephone system (**PSTN** and **ISDN**) is an example of a circuit-switched network. Circuit switching is also referred to as **connection-oriented**. (Contrast **connectionless** and **packet switched**.)

circular Printed leaflet distributed to prospective purchasers.

circular screen Half-tone screen which can be rotated to obtain proper screen angles for colour half-tones.

circulating matrix The Linotype matrix from which type is cast.

circulation Total copies of a publication distributed.

circumflex Accent printed over a vowel which may change the pronunciation or distinguish the letter from others, shaped like an upside-down 'v' (e.g. â).

CIS See **CompuServe**.

CIT See **computer integrated telephony**.

citation A mention or reference in an academic paper or journal to a published work. The status of academic journals is assessed on the number of citations their papers receive in other journals.

CITED See **Copyright in Transmitted Electronic Documents**.

CityScape A UK re-seller of **Internet** connections to the **Pipex backbone**. Now part of **Demon Internet Ltd**.

CIX (Commercial Internet eXchange) An international co-operative grouping of the major commercial **IP** network providers which have agreed to interwork their networks. The member organisations provide **TCP/IP** or **OSI** data

internetwork services to the general public, providing unrestricted access to other world-wide networks. The CIX also takes an interest in the development and future direction of the **Internet** and provides a neutral forum to exchange ideas, information and experimental projects among suppliers of internetworking services, often leading to consensus positions on legislative and policy issues of mutual interest. It also provides technical and other support to its members.

clamshell A type of small **platen** printing machine.

clasp envelope Envelope held closed by a metal clasp.

class The type of a network, depending on its size and structure. There are four types of network on the **Internet** and these are distinguished in the **IP** addresses. Class A networks are usually large government or educational organisations (over 16 million hosts); Class B is for smaller organisations, but still leaves room for growth (over 65 000 hosts); Class C is for small organisations and individuals; while Class D is currently reserved for **multicast** experiments. The term is also used in many other contexts, e.g. in **object-oriented programming**.

classified Advertisements for job vacancies, articles for sale etc., set in columns and sorted by classification.

clay See **china clay**.

clean Correct a proof, or a list of names and addresses etc.

clean line An electrical power line dedicated to one machine and therefore not subject to **spiking**.

clean proof A printer's proof in which there are no errors.

clean tape Computer tape with no data on it or with all unnecessary codes removed.

clear to send (CTS) Response in a communications system to message **RTS** (**request to send**).

cleat binding A method of binding single leaves using a form of **side-sewing**.

click Pressing a button on a **mouse** or other **pointing device**. This generates an event and specifies the screen position, which is processed by the **window manager** or **application program**. (See also **double-click**.)

clickable image An image displayed on a screen, which when pointed at with a **mouse** (or other **pointing device**) and the mouse then **clicked**, initiates some action on the computer. (See also **button**.)

click-and-drag Pressing a button on a **mouse** (or other **pointing device**), holding it down and dragging the mouse to the required position before releasing the button. (See also **drag and drop**.)

clicker Archaic term for a foreman **compositor**.

client A computer system or process that requests, usually over a network, a service of another computer system or process, called a **server**: e.g. a **workstation** requesting the contents of a file from a **file server** is a client of the file server. (See also **client-server**.)

client application In **Windows**, an application whose documents can accept linked or embedded objects.

client-server A mode of network computing in which a **distributed computing** system is split between one or more **server** tasks which accept requests, according to some protocol, from (distributed) **client** tasks, asking for information or action. There may be either one centralised server or several distributed ones. This model allows clients and servers to be placed independently on **nodes** in a network. Client-server computing allows more effective use of computing resources, higher performance, greater flexibility, simpler upgrades and (for some applications) greater reliability and data integrity.

client to client protocol (CTCP) A type of **protocol** created to allow structured data such as **font** information to be exchanged between users on **Internet Relay Chat**. It is also used to send a query to a user.

clip art Computerised art, often **copyright**-free, but created by professional artists and designers, which can be used in both conventional and electronic publications. A successor to the book of clip art, from which illustrations really were clipped.

clipboard A temporary storage area to which text and/or graphics can be copied or **cut** and from which the stored material can be pasted. In most systems only one item can be stored at a time, but there is software which allows more items to be stored on a longer-term basis.

Clipper An integrated circuit, or chip, on which the **SkipJack encryption** algorithm is implemented. The Clipper chip, which is manufactured to encrypt telephone data, can also be decrypted by the US government (although using a trusted **escrow** scheme), which has tried to make use of the chip compulsory in the US. This has led to a great deal of controversy, with criticism from the civil liberties lobby.

clipping path Outline or silhouette around an illustration or shape which determines the cut-out area or printing boundary for that illustration.

clock A regularly occurring signal that provides a timing reference for a transmission and is used to synchronise reception of a data stream.

closed loop A sequence of computer instructions repeated indefinitely. While closed looping can be introduced deliberately, the phenomenon can also result from a programming fault.

closed user group A subgroup of users on a **network**, who can communicate only with other members of the subgroup.

close up Reduce spacing between characters of type or other elements on a proof.

closing date See **copy date**.

cloth binding The use of cloth to cover the boards of a **case-bound** book.

cloth-centred paper Paper with a linen centre, often used for maps when much re-folding is anticipated.

clothings Pieces of leather or cloth fixed at the backs of stationery books for strengthening.

cloth joint A strip of cloth which strengthens the joints of a bound book (usually attached to the **endpapers**).

cloth-lined paper Paper backed with linen or muslin for additional strength.

club line Strictly, the short last line of a paragraph at the bottom of a page. But also used frequently as a synonym for **orphan** too, and therefore by extension to mean any short line at the foot of a page.

clumps Metal strips or leads used to create blank spaces in type matter.

cluster controller A device which provides a remote communications capability to several terminals located in a cluster.

CLUT See **colour look-up table**.

CLV See **constant linear velocity**.

CMC See **computer-mediated communications**.

CMIP See **Common Management Information Protocol**.

CMIS See **Common Management Information Services**.

CMYK Abbreviation for colour processing based on the four process printing colours: **cyan**, **magenta**, yellow and black (the K distinguishes black from blue).

CNAME See **canonical name**.

CNI See **Coalition for Networked Information**.

Coalition for Networked Information (CNI) A consortium formed to promote the creation of, and access to, information resources in networked environments in order to enrich scholarship and enhance intellectual productivity.

coated cartridge Dull-finish coated paper, normally blade-coated, very commonly used for printing colour books.

coated paper Paper coated with **china clay** or similar to give a smooth surface suitable for **half-tone** reproduction. **Coating slip** is the coating mixture. **Coating binder** is the part of the coating mixture which ensures adhesion to the **body stock**. (See also **coat weight**.)

coating 1. **Light-sensitive** surface applied to litho plate. 2. Clear protective varnish applied to printed surface for protection. 3. **China clay** mixture used on paper. See **coated paper**.

coating binder That part of a coating formulation whose purpose is to bind the pigment system to the **body stock** and to obtain many of the desired properties of the final coated paper, such as **pick** and water resistance, ink receptivity, flexibility, gloss and blister resistance. Binders are obtained from natural sources like starch, casein and soya protein or can be produced synthetically.

coating mix or **coat mix** or **coating slip** White suspension of **china clay** or calcium carbonate and other pigments, which is applied to **base paper** by blade or roller and which when dry forms the matt or gloss coat.

coat weight The amount of coating on a **base paper** expressed as dry weight on a given area, i.e. gsm.

coax See **coaxial cable**.

coaxial cable (coax) A cable with a solid or stranded central conductor surrounded by insulator, in turn surrounded by a cylindrical shield, which is solid or woven from fine wires. It is used to carry high-frequency signals such as television, video, radio and other telecommunications transmissions. The shield is usually connected to electrical ground to reduce electrical interference. It is increasingly being replaced by **optical fibre** or **unshielded twisted pair**.

Cobb size test A measurement of the sizing of paper by water absorbed under specified conditions.

COBOL Common Business-Oriented Language. High-level computer programming language used in commercial data processing.

cocked-up initial Initial letter in a new line which is larger than the characters in the rest of the line, but which sits on the same baseline. Compare **drop initial**.

cockle Puckered finish to a sheet of paper created during the drying process to add crispness.

cockling Wavy edges on paper caused by unstable atmospheric conditions.

COD Cash On Delivery. Method of despatch which requires the recipient to pay on receipt of goods.

code A character string or line of symbolic instructions to a computer.

CODEC COmpressor/DECompressor. Covers a variety of software products that determine how a **video** file, such as **QuickTime**, should be condensed, or compressed, to save space on the hard disk and to make the video run faster. A different CODEC would be used for video images than for still photography images. The choice is intended to create a balance between picture quality and the size of the file.

code conversion The process of altering the numeric representation of one group of characters to that required by a different system, language or process.

code division multiple access (CDMA) Also known as **spread spectrum** and **code division multiplexing**. A form of **multiplexing** where the transmitter encodes the signal using a pseudo-random sequence also known to the receiver so that it can decode the received signal. A different random sequence corresponds to a different communication channel. Motorola uses CDMA for **digital cellular telephones**.

code division multiplexing See **code division multiple access**.

code set Coding system, or systematic set of codes. **ASCII** or **EBCDIC**, e.g., are typical code sets.

co-edition Joint publication of a book by two companies. The originator of the work sells sheets to another or gives them the licence to reprint the book locally.

co-editor Person who has joined with another person to edit a book.

coffee-table book Large, lavishly illustrated book usually left on display for the casual browser.

COLD See **computer output on laser disk**.

cold colour Colour containing blue tones.

cold composition Any typesetting method which does not use hot metal for casting.

cold melt An adhesive such as **PVA** which is applied for binding purposes at room temperature.

coldset Web printing in which the ink is allowed to dry by penetration on an absorbent paper without heat. (See also **heatset**.)

cold start The act of starting a computer after the power supply has been switched off before. At this stage the device has no operating programs in memory and these have to be loaded from backing store or **ROM**.

Collabra See **Netscape Collabra**.

collage Image comprised of a number of items collected together as a visual whole.

collate Loosely used to mean 'gather'; but, strictly, to check the gathered sections to establish that they are in the correct sequence. **Collating marks** on the back folds assist in this.

collating marks Black marks on the back folds of sections in sequential positions used for checking that the sections are in the correct order after gathering. Also **black-step collation marks**.

college electro A plastic-backed electrotype invented at the London College of Printing.

collision The outcome when two **hosts** transmit simultaneously on a **network**, so that their **packets** collide and are corrupted. The **CSMA/CD** protocol used on **Ethernet** specifies that each host should wait for a random time before retransmitting. (See also **carrier sense multiple access/collision detect**.)

collotype A short-run, screenless printing process using gelatine-coated plates to produce continuous tone reproduction.

colophon A printer's or publisher's identifying symbol, printed on spines and title pages.

colour Colours are usually represented on screen using the additive **RGB** system, in which either a colour image may be stored either as three separate images (one for each of red, green and blue) or each **pixel** may encode the colour using separate **bit** fields for each colour component. Subtractive **CMYK** and/or **Pantone** representations of **spot colours** are used for printing.

colour bars Coloured strips on **four-colour process** proofs showing densities across a sheet and revealing other printing characteristics.

colour blanks Printed sheets with illustrations only but no text. Produced in this way typically in expectation of language changes for co-editions etc.

colour breaks The separate colour overlays for each overlay in a four-colour set (US).

colour cast An excess of one shade or hue in a subject for reproduction or in a printed subject.

colour comp print Paper print made from a transparency.

Coloured Books A set of protocol definitions for the different aspects of networking developed and used on the UK Joint Academic Network, **JANET**, for open systems communication before the definition of international standards. Each protocol is usually referred to by the colour of the cover of the publication defining it.

coloured edges Dyed edges on a **book-block**.

coloured tops Dyed tops on a **book-block**.

colour electronic prepress system (CEPS) An image-processing system used in the publishing and prepress industry for designing, laying out and editing colour pages for printing.

colour etching The process of altering dot sizes on a **four-colour separation** film by local retouching in order to strengthen or weaken a particular colour in a particular area and so affect the printed result.

colour fall In multi-unit web-offset printing, the sequences of pages on which colour will be available as dictated by the press configuration used.

colour filters Sheets which are placed in front of a camera lens to filter out all colours except that selected, thereby producing separated films for **four-colour process** work.

colour gamut The range of **colours** which can be produced in **subtractive colour** printing by combining inks of the four **process colours** (**CMYK**) or can be displayed on a screen using additive **RGB**. Note, however, that there are some colours which cannot be made up of a mixture of red, green and blue phosphor emissions and thus cannot be displayed on a screen.

colour guide Instructions on **artwork** indicating colour requirements.

colour look-up table (CLUT) A software palette or set of 256 colours, which is used on a computer with 8-bit colour (which can only display 2^8 = 256 colours) to determine which 256 colours, out of the 16.7 million (= 2^{24}) colours available from a scanned 24-bit colour file, it can use at one time. Many applications allow a choice of the 256 colours to be used and a palette can be set up for each particular file to suit the subject matter of the image being handled, so that, e.g., flesh tones would be appropriate for an image of a face, while a different, probably green-based, palette would be more appropriate for a landscape.

colour-matching system Method of colour specification by matching the colour required to one in a swatch of colours provided as a set. Each colour in the swatch has its ink-mix formula described. An example is the **Pantone Matching System** (**PMS**).

colour overleaf proofs See **acetate proofs**.

colour resolution The number of **bits** per **pixel** in a colour image. (See **1-bit**, **8-bit and 24-bit colour**.)

colour separation Separating **full colour** into the four **process colours** by means of scanning or of **filters**, resulting in four films used to make printing plates.

colour separation negative One negative out of a set of four separated **process colour** negatives.

colour sequence The order in which the four **process colours** are printed.

colour space A graphical or pictorial method of representing colour distributions in terms of combinations of single colours. Used in analysing **colour gamuts**. See **CIE**, **CIELAB**, **CIELUV**.

colour splits Instructions for the allocation of correct printing colours to individual components of a piece of integral **artwork**.

colour swatch A sample of a specified colour.

colour transparency A full colour photographic positive on film.

Columbia AppleTalk Package (CAP) An implementation of Apple Computer's AppleTalk protocols for the Berkeley version 4.2BSD of **Unix**.

column 1. Vertical area of print comprising lines of the same measure. 2. Regular newspaper article.

column balancing In **desktop publishing**, the automatic adjustment of columns to create a visual evenness.

column centimetre See **column inch**.

column guides In **DTP**, the dotted, vertical, non-printing lines which mark the left- and right-hand edges of the columns of text to be created. (See also **margin guides**, **ruler guides**.)

column inch A newspaper measure of text space: one column wide and one inch deep.

COM See **computer output on microfilm**.

comb binding Type of mechanical **binding** where separate pages are held together by the rounded teeth of a plastic comb, which also form the **spine**.

combination folder A machine combining a **buckle folder** and **knife folder**.

combination line and tone A single print or piece of film combining **half-tone** and line work.

Comdex The communications and data processing exposition held in Las Vegas, which is probably the biggest trade show in the world on any subject. Many manufacturers use the show as a platform for product announcements.

comic strip Cartoon drawings in sequence, appearing regularly in a periodical.

coming and going An **imposition** in which two copies of a book result from one set of plates.

Comité Consultatif International Téléphonique et Télégraphique CCITT: International committee that drafts and approves communications protocols and standards.

command A computer instruction specifying an operation.

command interface A **user interface** that requires the user to enter commands at the command prompt. Also called **command line**

interface, **command line interpreter** or **character-based interface**, although the latter can include **menus**.

command line interface See **command interface**.

command line interpreter See **command interface**.

commercial invoice An invoice against which payment is to be made. Compare **pro-forma invoice**.

commercial register Colour printing to a register tolerance of plus or minus one row of dots.

committed information rate (CIR) The guaranteed **bandwidth** over a **virtual circuit**, although, if the network has spare bandwidth, devices can go higher for short bursts.

commodity papers White general-purpose papers produced in enormous quantities by the larger paper-mills.

common Cash column on ruled stationery.

common architecture technology for next-generation Internet protocol (CATNIP) An **Internet-Draft** designed to provide a compressed form of the existing **network layer** protocols and to integrate the protocols currently in use.

common carrier A private company that offers telecommunications services to the public. Can also be described as a telephone company.

common channel signalling A networking procedure in which a special channel, separate from the user channels, is devoted to signalling information.

Common Communication Services (CCS) The standard program interface to networks in IBM's **Systems Application Architecture** (**SAA**).

Common Gateway Interface (CGI) The standard interface between **HTTP** servers and external programs. External programs are known as **gateways** because they provide an interface between an external source of information and the server.

Common Ground A document exchange system, which has similarities to **Acrobat**, although fewer features.

Common Management Information Protocol (CMIP) The part of the **OSI** body of standards that specifies the protocol elements that may be used to provide the operation and notification services described in the related standard, **Common Management Information Services** (**CMIS**).

Common Management Information Services (CMIS) The part of the **OSI** body of network standards describing the services used by **peer** processes to exchange information and commands for the purpose of **network management**. It is similar to the **Simple Network Management Protocol** (**SNMP**), but broader and more complex.

Common Object Request Broker Architecture (CORBA) A standard way of describing the interface between **objects** in **object-oriented** applications.

Common User Access (CUA) The user interface standard of IBM's **Systems Application Architecture** (**SAA**).

communication The electronic transfer of data between different hardware. Also known as 'comms'.

communications protocol A set of signals that computers can use when they want to exchange data. These signals make it possible for computers to send and receive information and to check that the information has been transmitted and received correctly. There is more than one set of protocols and a computer, or group of computers, may use different protocols in different situations. See **full duplex**, **half duplex**, **handshaking**, **parity**.

communications speed This is normally specified in **bits per second** (**bps**) or multiples such as kbps or Mbps. Often described as the **bit rate**.

communication system A system or facility providing information transfer between persons and/or equipment. The system can consist of a combination of individual communication **networks**, transmission systems, relay stations and tributary stations, together with terminal equipment capable of interconnection and interoperation, which forms an integrated whole. The individual components must serve a common purpose, be technically compatible and employ common procedures and protocols; they must respond to some form of control and generally operate together.

COMNET A commercial simulation tool for analysing wide-area voice or data networks.

comp 1. To **compose**. 2. A **compositor**. 3. A **comprehensive** (US): a **layout** showing everything in position.

compact disc See **CD-ROM**.

compact disc eXtended Architecture (CD-ROM XA) A compact disc format jointly developed by Philips, Sony and Microsoft, to allow the storage of, and simultaneous access to, audio and video data.

compact disc interactive (CD-i or **CD-I)** Format of **compact disc** developed by Philips for storing a combination of **video**, **audio**, **text** and pictures, allowing the user limited interaction

with films, games and educational **applications** via a special controller. It was aimed at the consumer market, to be used in systems using a combination of computer and television. An alternative format is **digital video interactive** (**DVI**).

compact disc read only memory (CD-ROM) A data medium using the same physical format as audio **compact discs**. Up to 600 Mbytes of data can be stored on one CD-ROM. There are several formats used for CD-ROM data; **ISO 9660** defines a standard file system. (See also **WORM**.)

compact disc-recordable (CD-R) Type of **compact disc** on which data can be overwritten (compare **CD-ROM**). The disc combines magnetic and optical technology so that during the writing process a laser melts the surface of the disc, thereby allowing the magnetic elements of the surface layer to be realigned.

companding **Comp**ressing/ex**panding**. **Amplitude modulation** process for manipulating a telephone signal to improve the **signal-to-noise ratio**. Allows voice signals to be transmitted at a lower **bit rate**.

compatibility The ability of two pieces of electronic hardware to emulate each other and to communicate with each other.

compensating roller A roller in a **web-fed** press that compensates for any uneven tension in a reel of paper.

compiler A computer program which checks and converts programs from a **high-level language** into **machine code**. The resulting machine-code program then becomes the program accessed by the computer, resulting in faster processing speeds. Compare **interpreter**, which is a program sometimes in ROM that takes a high-level language program one line at a time and changes it into machine-code instructions every time the program is run. (See also **assembler**.)

complementary colour removal See **achromatic separations**.

comp list List of periodical subscribers receiving complimentary copies.

component stress Pertaining to factors of usage such as shock, temperature, voltage level etc. which may affect the efficiency of a component.

compose To make up type into lines and/or pages. The operator is called a **compositor**.

composing stick A hand-held, adjustable tray in which a **compositor** sets type by hand.

composite artwork **Artwork** made up of several elements, such as text, **half-tones**, sketch maps etc.

composite block A **plate** comprising more than one original.

composite video A way of broadcasting video or television signals with the colours and the horizontal and vertical registration information integrated. Gives poorer quality than **RGB**. Used in the US for television.

composition site Printing type size (contrast. **display size**) that can be set by machine (up to 14pt).

composition sizes Types under 14pt in size. As distinct from **display sizes**.

compositor A **typesetter** who makes up pages.

compound document A document file that contains embedded and linked data that was created in other kinds of applications. Particularly used with reference to Microsoft **Windows**. See **Object Linking and Embedding**.

Compound Document Architecture (CDA) **DEC**'s standard for the creation, storage, retrieval, interchange and manipulation of compound documents.

comprehensive layout Advertisement design taken through to finished effect.

compressed video The result of **video compression**.

compression Reduction of file size by software techniques. Files reduced in this way need to be decompressed to be opened.

compression algorithm Algorithm used to achieve file **compression**.

comptometer Automatic counting device.

CompuServe (Formal name CompuServe Information Services – **CIS**.) A commercial online service that can be accessed via **modem**. Widely used for **electronic mail** and **bulletin boards**, it also provides online conferencing, business news, sports and weather, financial transactions, travel and entertainment data, as well as online editions of computer publications.

CompuServe Information Manager (CIM) The official offline reader and navigation tool for **CompuServe**.

computed tomography (CT) A medical-imaging technique in which a sequence of X-ray images is used to build up a three-dimensional representation.

computer aided design See **CAD**.

computer-assisted learning (CAL) In education and training a computer displays instructional material to a student and asks questions about the information given; the student's answers determine the sequence of subsequent lessons.

computer conferencing Collaboration and discussion between people who do not physically

meet. All discussion is carried on using **bulletin boards** or **email**.

computer-controlled inking The use of equipment which sets and monitors correct ink-flows on the press and makes automatic adjustments for **make-ready** and during running.

Computer Emergency Response Team (CERT) Organisation formed after a particularly intrusive worm virus worried the Internet community. Its function is to co-ordinate response to and awareness of security issues.

computer game Computer-controlled game, in which the computer (usually) opposes the human player. Computer games typically employ fast, animated graphics and synthesized sound.

computer graphics The use of computers to display and manipulate images and drawings. Images can be stored as either **raster** (**bitmap**) or **vector graphics**. Computer graphics are used in a wide range of applications, as well as in publishing.

Computer Graphics Metafile (CGM) An international standard file format for graphic images. Most CGM files are **vector graphics**, although it is possible to store **raster graphics** in the CGM format. The standard was created to enable users of different systems and different programs to exchange graphic files.

computer-integrated telephony (CIT) A specification for the integration of computers and **PBX**s, so that applications such as screen-based telephone systems, call centres and **voice mail** can be used. (See also **computer telephone integration**.)

computer-mediated communications (CMC) Computer conferencing, **electronic mail**, access to remote databases and related applications.

computer output on laser disk (COLD) A document storage technique in which scanned images of documents are stored on optical disk, rather than on microfilm, as distinct from **COM** (computer output on microfilm).

computer output on microfilm (COM) (Or computer output micrographics.) Direct output from computer onto microfilm or microfiche.

Computer + Science NETwork (CSNET) The networking organisation which combined with BITNET to form CREN.

computer-supported collaborative learning (CSCL) The use of computer systems (such as computer conferencing) to facilitate collaborative learning. Similar to **computer-supported cooperative work**.

computer-supported cooperative work (CSCW) The use of computer systems to facilitate cooperative working including **workflow** automation and documentation management. Systems to support this include **electronic mail**, **computer conferencing**, group scheduling systems, databases and shared desktop systems. Also described as **groupware**. (See also **Lotus Notes**, **teleconferencing**, **videoconferencing**.)

computer telephone integration (CTI) The use of computer systems to handle and control telephone functions such as making and receiving calls, directory services and caller identification. (See also **computer integrated telephony**, **TAPI**.)

computer-to-plate System which exposes plates by laser or thermal imaging techniques directly from data supplied from a computer file (usually **PostScript**) rather than from film. Abbreviated to **CTP**.

computer typesetting The use of a computer to store and display typesetting and to perform many other functions such as **hyphenation** and **justification**.

computer vision See **vision system**.

computer word Any group of characters that are capable of being treated as a single unit for the purposes of processing or storage.

concentrator A kind of **multiplexer** where many inputs may be active simultaneously so the output **bandwidth** must be at least as great as the total bandwidth of all simultaneously active inputs. May be used to connect a group of terminals to a mainframe or other multi-user system.

concertina fold or **accordion fold** Pages folded so that each parallel fold in a sheet goes in the opposite direction to the previous one.

concordance Index listing the main words used in a large work in alphabetical order, giving reference points and explanations.

concurrency control The controls built into a program running over a **network** to handle the situation where more than one person tries to access a program or data at the same time.

concurrent processing The execution of two programs simultaneously.

condensed type A **typeface** with narrow characteristics.

conditioning 1. The provision of filters on leased **analogue** telephone lines to permit higher-speed data transmission. 2. See **mature**.

cone refiner In papermaking, the cone-shaped piece of machinery into which the **stock** is pumped from the **hydrapulper** in order to undergo further beating or **refining**. After this stage, the stock is cleaned in a series of **centrifugal cleaners** and finally pumped to the

headbox for the beginning of the **Fourdrinier** process.

conferencing A generic term used to cover various types of system which link people together. The main types are **videoconferencing**, **audioconferencing** and **computer conferencing**. All except the last link people together 'synchronously', i.e. the people are present simultaneously, even if not physically together.

Configurable Unified Search Interface (CUSI) A collection of indices to various **World Wide Web** and other **Internet** documents. Also describes a tool for searching the Web.

configuration The arrangement of peripherals into a computer system.

ConflictNet A network connecting those concerned about global conflict. See **Institute for Global Communications**.

conformability The degree in which a paper surface will change shape to contact ink on the press.

connected dot Half-tone dots joined together.

connectionless A mode of data communication in which **packets** are sent from the user to the **network** without the need for a connection to have been established previously to the destination of those packets. Each packet contains its own destination address and is routed individually. Connectionless operation is also known as **datagram** operation and **packet switching**. Examples include **LANs**, **Internet IP**, **UDP**. Contrast with **circuit switching** and **connection-oriented**.

connectionless broadband data service (CBDS) The term used in Europe for **SMDS** (**Switched Multimegabit Data Service**).

connection-oriented A type of **transport layer** data communication service in which an end-to-end logical channel is established prior to the start of communication, allowing a **host** to send data in a continuous stream to another host. The transport service will guarantee that all data will be delivered to the other end in the same order as sent and without duplicates. Communication proceeds through three well-defined phases: connection establishment, data transfer and connection release. The most common example is **Transmission Control Protocol** (TCP). This is the opposite of **connectionless**. (See also **circuit switching**.)

connector Connectors are the parts on the ends of cables that actually make the connection to another piece of hardware. Both the part on the end of the cable and that on the hardware that it plugs into are called connectors, and they are described as either male or female.

console The keyboard which controls the operations of a mainframe computer.

constant linear velocity (CLV) A technique used in **CD** drives to ensure that the linear velocity of the disk is always the same at the point being read. This should be compared with constant angular velocity, which is used on magnetic disk drives.

constant mapping A method of describing an **Internet** address used by some **TCP** systems, in which the Internet address is not independent of the **Ethernet** address. (Contrast with **ARP**.)

constat Short for continuous stationery.

Consultative Committee on International Radio (CCIR) Of the **ITU**. Recommends standards and procedures for radio and television broadcasting.

consumable textbook A book which can be written in by the student and therefore can be used only once.

consumer press Periodicals circulating widely among the general public (as distinct from trade and technical press).

contact print A photographic print of a negative or positive made in contact with, and therefore the same size as, the original.

contact screen Half-tone screen used in direct contact with the photographic film for creating half-tones.

container An **HTML** element that contains text. The term can also be used in **SGML**, with the same meaning.

container boards Boards used in manufacturing box containers.

Content Data Model (CDM) An **SGML**-based US Department of Defense specification for interactive manuals.

contention A condition in which multiple users compete for access to a shared **channel** or computer port.

contention period See **contention slot**.

contention scheme A method of multiple access to a shared medium, such as a **LAN**, in which access units compete with each other for **bandwidth**.

contention slot Also described as **contention period**. The minimum time for which a **host** must transmit before it can be sure that no other host's **packet** has collided with its transmission.

content management system Software system for the ordered structuring, indexing, archiving and retrieval of text and illustration files.

contents page Page of a book or magazine explaining the contents and where they appear.

contextual searching Searching facility that applies **fuzzy logic**, semantic analysis and often the use of an online **thesaurus** in order to enhance a search and extend hits into parallel definitions and contexts.

Continuous Acquisition and Lifecycle Support (CALS) Note that what the acronym stands for has changed several times. Originally a US Department of Defense standard for electronic exchange of data with commercial suppliers. Now, more generally, a global strategy intended to bring about more enterprise integration through the streamlining of business processes and the application of standards and technologies for the development, management, exchange and use of business and technical information. Includes **SGML** for the documentation aspects; a CALS **Document Type Definition** has been defined. This gives particular attention to coding tables and is widely used outside CALS applications themselves.

continuous pulping Pulp produced in a constantly running **digester**.

continuous stationery Reel stationery used on computer printers and other automatic machines.

continuous tone An uncountable range of colour variation or shades of grey such as occurs in a photograph or painting, which cannot be directly printed. All such images must go through a **half-tone** process in order to be reproduced. In the half-tone process the image is broken up into a series of discrete dots which, when printed, give the illusion of continuous tone.

continuous wave (CW) A term dating from the use of circuits containing thermionic valves. The term is still used to mean transmission by means of a signal at a single frequency, which is either on or off (e.g. Morse code), as opposed to a carrier which is modulated in amplitude, frequency or phase.

contone See **continuous tone**.

contract proof Colour proof or set of colour proofs which define the expected standard for the printed job and which are used by the printer as the accepted match for quality. There is a lively debate between publishers and printers on whether **digital proofs** can be viewed as contract proofs, since the technologies of digital proofing and wet printing are so far apart.

contraries Unwanted material in paper or **stock**.

contrast Wide range of tonal gradations.

contrast ratio opacity Paper opacity measured by the **TAPPI** method of gauging reflectance from a backed sheet.

control bus That part of a computer's internal circuitry which transports signals designed to control system operations.

control code A character which provides a control or function, rather than being part of the text or data; these include tab, carriage return etc. Different operating systems and programs have different conventions for what control codes are intended to do. Control codes are also used to control transmission between **hosts**. In some cases, their function is specified as part of the **ASCII** character set.

controlled circulation Magazine or newspaper distributed free to selected names or groups of readers.

control tape Computer tape containing control information rather than data.

control unit Part of a computer **CPU** which sequences operations.

conventional memory In the MS-DOS environment, the first 640K of memory.

conversion systems Systems which convert type or plates into film for subsequent printing by a different method.

converter A computer peripheral which transfers data from one medium to another.

convertible press A press that will print either one-colour on each side of the sheet in one pass, or two-colour on one side of the sheet in one pass.

converting Sheeting, re-reeling or changing the format of sheets or reels of paper. The person who carries this out is known as a 'converter'.

cookie A **World Wide Web** mechanism through which servers can obtain information stored on the client side, usually as part of a **browser** implementation. Storage of such information is an automatic process that occurs as the Web is accessed. A common use of cookies is to identify registered users of a Web site without requiring them to sign in each time they access it.

cooking Treating pulp with heat, water and chemicals.

Co-ordinating Committee for Intercontinental Research Networks (CCIRN) A committee that includes the United States **Federal Networking Council** (**FNC**) and its counterparts in North America and Europe. Co-chaired by the executive directors of the FNC and the European Association of Research Networks (**RARE**), the CCIRN provides a forum for cooperative planning among the principal North American and European research networking bodies.

CopiCat A project, which has developed from **CITED** and other projects, to investigate the use of **encryption** in the control of, and com-

pensation for, **intellectual property rights** in electronic material.

copier paper Paper used in photocopying machines.

copper cable Traditional telephone wire found in much of the local connection services of the public telephone network. Copper cable carries ordinary telephony and can carry **basic rate ISDN** but not the more advanced **primary rate ISDN**.

copper distributed data interface (CDDI) An **FDDI** network running over conventional copper cables. All FDDI connections, **single-attached** or **dual-attached**, can be either fibre or copper.

copperplate A polished copper plate for making engravings.

copperprint The developed image on a plate before etching.

co-publication To publish a book in partnership with another publisher. See **co-publisher**.

co-publisher One of a partnership of publishers.

copy To transfer a copy of text and/or graphics to the **clipboard**, while leaving the original in place. (See also **cut**.)

copy block Block of typesetting treated as a unit.

copyboard Holding frame for material being photographed for reproduction.

copy date Scheduled date for delivering copy to a publisher or printer.

copy-dot scanner Scanner designed to capture pre-screened page films digitally so they can be included in the data going in to a **CTP** or similar all-digital system.

copy editing Preparing manuscripts for **typesetting** and publication by, e.g., checking for errors, style (both typesetting and **house style**), inconsistencies, libel etc.

copy editor One involved in **copy editing**.

copyfitting Determining the typographical specification to which a manuscript needs to be set in order to fill a given amount of space.

copyholder Person who helps a **proofreader** check **proofs** for corrections by reading out the original copy.

copyleft (A play on **copyright**.) The **copyright** notice applying to the works of the **Free Software Foundation**, granting reuse and reproduction rights to everyone. Those who pass on a program must also include the rights to use, modify and redistribute the code; the code and the freedoms become legally inseparable.

copy prep Copy preparation. Putting instructions on a manuscript to ensure understanding of the requirement by the compositor. (See also **electronic markup**.)

copyright The exclusive legal right of the author of a work (or whoever he or she transfers that right to) to make and distribute copies, prepare derivative works, and perform and display the work in public.

Copyright in Transmitted Electronic Documents (CITED) An EC project aimed at addressing the issues of control of and compensation for intellectual property in electronic information.

copyright page Title page **verso** of a book containing bibliographic information. Also known as **biblio page**.

copy typing Typing documents from handwritten originals.

copywriter Person who creates the text for advertisements.

copywriting Scriptwriting for advertisements.

CORA V Linotype's typesetter-command language for the Linotron 202 and other machines.

CORBA See **Common Object Request Broker Architecture**.

cording Putting cord into stationery as a form of loose binding.

core memory Main storage capacity in the central processing unit of a computer. Defined in thousands or millions of bytes, indicated by the term kb or Mb.

corona Discharge of electricity used to charge the toner in a **laser printer**.

corona wire Thin wire in a laser printer that gives a charge to the powdered toner particles as they pass across it.

corrigenda List of errors to be corrected in a printed book.

corrugated Packaging grade of cardboard made by sandwiching fluted **kraft** paper between sheets of cardboard to absorb any impact.

corruption An unsatisfactory alteration of data during transmission or while held on a backing medium.

cotton content paper See **rag paper**.

cotton linters Cotton seed-hair fibres used in fine paper.

couch End of the wet end of a paper machine where the web is passed to the press section.

coucher Person responsible for placing wet paper onto the felt mat.

counter Centre part of a letter enclosed by strokes, such as the bowl of an 'o'. Also, **bowl**.

counting keyboard Keyboard which has logic for **justification** purposes.

country code A two-letter abbreviation used for a particular country. The codes are based on **ISO** 3166 and used as the top-level **domain** for **Internet** hostnames in most countries, although the code for the US, us, is hardly ever used.

courtesy discount Special discount that is given by supplier to purchaser but not for resale purposes.

cover Outer section of a periodical, bearing its title.

cover board See **case board**.

covering 1. See **case material**. Non-woven materials, woven materials and leathers comprise the most commonly used coverings. 2. The fixing of a book cover to the **spine** and **endpapers**.

covering power The opacity achieved by a printing ink.

cpi Characters per inch. Unit of measurement of type in a line.

cpl or **CPL** Characters per line.

CP/M Control Program for Microcomputers. A single-user operating system developed by Digital Research.

cpo In direct mail, cost per order.

cpp Characters per pica. Copyfitting method using average number of characters per **pica**.

C print See **C type**.

cps Characters per second. Used to measure the speed of a printer or communications device.

CPU Central processing unit. The computing unit in an electronic system.

CR Carriage return.

cracked edge Broken edge on a web of paper.

crash 1. Serious hardware or software failure in a computer system. 2. Muslin cloth or mull used as a first lining on the spines of the sections in a case-bound book.

crash finish Linen-look finish on imitation cloth.

crawler See **spider.**

crawling Contraction of ink on paper when it has not penetrated the surface.

CRC See 1. **Cyclic redundancy check**. 2. **Camera-ready copy**.

crease 1. Impress an indented line across a sheet of paper or board to assist folding. 2. A folding fault which leaves a crease in the sheet, hence 'creasing'.

creep 1. Blanket movement during printing. 2. The effect of the back margins of the outer pages in a printed section becoming narrower than the back margins of the inner pages, due to the thickness of paper across the fold. Needs to be compensated for in imposition by shingling (see **shingle**).

creping Crinkling paper to create a soft, elastic sheet.

critical path The sequence of events which takes the shortest time. Analysis of the critical path ensures that events on the path are never delayed, while events on less critical paths may be if necessary.

crocking Dry ink rubbed off after printing.

Cromalin A proprietary plastic-proofing system for proofing four-colour subjects without making machine plates. See **plastic proof**.

crop Cut back part of an illustration to give better effect or achieve better fit.

crop marks Marks printed on a printed sheet, which indicate the edge of the intended physical page. They can also act as **registration** marks if more than one colour is to be printed.

crossbars Metal cross-pieces which divide a chase (a metal frame holding composed type) into sections.

cross direction Across the web of paper.

cross fold A fold at right angles to the direction of the web.

cross grain Used to denote that the grain of the paper in a book runs at right angles to the **spine**, not parallel to it (which is preferable). Also used to refer to **endpapers** as book-covering materials in which the grain is at right angles to the spine.

cross hatching Series of close parallel lines going in two directions to form shading to a line drawing.

cross head A sub-heading ranged centrally over text. As distinct from a **boxed head** which is ranged left.

cross index To give a **cross-reference**.

cross line screen The normal 45° **half-tone screen** used for most half-tone origination.

cross-machine tension burst A paper break at the winding stage.

crossmarks See **register marks**.

cross-posting Sending a news article to several different **Usenet newsgroups** simultaneously.

cross-reference Where one part of a book makes a noted reference to another.

cross sealer Blade in film wrapping machine which cuts and seals ends of wrapping.

crosstalk Unwanted coupling of electrical signals between two adjacent transmission media.

crown Standard size of paper measuring 384×504mm (metric system).

CRPU See **camera-ready paste-up**.

CRT See **cathode ray tube**. Images of type are exposed on a CRT in a third generation phototypesetter.

crusher panel The area on a book cover blocked in preparation for the title lettering to be blocked over it.

crushing Paper defect affecting a small area and showing as a visible surface fault.

cryogenic Materials whose temperatures have been reduced as close as possible to absolute zero, usually as a means of reducing electrical resistance.

cryptography The study of **encryption** and **decryption**. Usually involves taking **plaintext** and applying various encryption algorithms to produce encrypted **ciphertext**. The security of a cryptosystem usually depends on the secrecy of (some of) the keys rather than on the algorithm itself. See **Clipper**, **RSA encryption**, **DES**.

crystallisation Condition of an ink layer which will not accept a second ink overprinting.

CSCL See **computer-supported collaborative learning**.

CSCW See **computer-supported cooperative work**.

C series See **C**.

CSLIP Compressed **SLIP**, producing faster transfer rates than with uncompressed **Serial Line Internet Protocol** (SLIP).

CSMA/CD See **carrier sense multiple access/collision detect**.

CSNET See **Computer + Science NETwork**.

CSS See **Cascading Style Sheets**.

CSU See **channel service unit**.

CSWO Coldset web offset.

C/T Colour transparency.

CTCP See **client to client protocol**.

CTI See **computer telephone integration**.

CTMP See **chemi-thermomechanical pulp**.

CTP See **computer-to-plate**.

CTS See **clear to send**.

C type Proprietary photographic process for producing continuous tone colour prints. Also, **C print**.

CUA See **Common User Access**.

cumulative index An index which combines several other indices.

curl Sheet distortion leading to a tendency to roll up.

cursives Typefaces which simulate handwriting without joined characters.

cursor The screen symbol that indicates where the action initiated by the next keystrokes or **mouse click** will take effect. Cursors in **character-based interfaces** are either a block or an underline (sometimes flashing), while in a **GUI** the cursor can consist of any icon chosen by the software developer or the user.

curtain coating A paper coating system in which the coating is injected horizontally across the **web**.

curved electros **Electros** shaped for use on rotary machines. Sometimes called curved plates.

cushion Soft pad on which a leather-bound book is put for tooling.

CUSI See **Configurable Unified Search Interface.**

custom Non-standard, or specially commissioned.

custom software See **bespoke software**.

cut To copy text or graphics to the **clipboard** but, unlike **copy**, also to delete the original from the current file.

cut and paste In wordprocessing and desktop publishing, the on-screen version of the manual task whereby areas of text or graphics are defined and stored for subsequent insertion into another area, page or file. Otherwise, traditional paste-up methods.

cut-back binding See **adhesive binding**.

cut flush Binding style with the cover cut flush with the pages.

cut-in index Divisions cut into edge of book to indicate alphabetical steps.

cut-in notes Notes in an outside margin of a page but which the text runs round in some degree.

cut-line Mark left on negative or printed copy by failure to **spot** out a shadow left by an edge of patched-in artwork on **CRC**.

cut marks See **crop marks**.

cut-off The web press measure of length of sheet cut, determined by the plate cylinder circumference. Measured in inches or millimetres.

cut-out Illustration with background painted out or removed by process work.

cutscore Blade in die-cutting which scores for folding.

cut-size paper Small-sized paper sheets for stationery.

cut-through index See **step index**.

cutting Sheeting web paper.

cutting ahead Cutting watermarked paper regardless of watermark positions. Compare **cut-to-register**.

cutting marks Marks on copy which indicate cutting lines.

cut-to-register Paper with a watermark in the same position on each cut sheet. Compare **cutting ahead**.

CW See **continuous wave**.

CWIS See **campus wide information system.**

cwt Hundredweight. The short cwt (US) equals 100lbs, the long cwt (UK) equals 112lbs.

cyan The blue colour used in process printing.

Cybercafé A café where not only coffee but also **Internet** access is provided.

CyberCash An electronic payment method using **RSA** encryption. (See also **DigiCash**, **Ecash**, **Mondex**.)

CyberGlove A **data glove** sold by Virtual Technologies. The glove houses 18 sensors to track accurately just about every move the hand is capable of making. The accompanying software includes a three-dimensional model of the hand that can be added to any **virtual reality** application.

cyberspace Term to mean all the information available on computers worldwide that is available through networks and the Internet.

cycle time The duration of a computer process relating to one storage location. Used to measure speed of performance.

cyclic redundancy check (CRC) A method used to detect errors in transmitted data whereby a polynomial algorithm is used to generate a CRC code, which is transmitted with the data block; this code is compared with a code that is calculated at the receiver. If there is a discrepancy, then it will be clear that an error has occurred. A **parity bit** can be considered a one-bit CRC for a string of bits. A single corrupted bit in the data will result in a one-bit change in the calculated CRC but multiple corrupted bits may cancel each other out. **Ethernet packets** have a 32-bit CRC. Many disk formats include a CRC at some level. (See also **checksum**.)

cyclohexylamine carbonate (CHC) Chemical which removes acid from paper.

cylinder 1. In computing, a set of tracks in a disk pack which are positioned vertically underneath each other. 2. In printing, the structure which carries the printing plate or blanket on the printing press.

cylinder dressing Sheets of paper around the impression cylinder of a letterpress printing machine which improve the definition of the print by providing a cushioned impression.

cylinder machine 1. A paper machine that makes paper on a mould revolving in pulp. 2. A letterpress printing machine which uses a revolving cylinder to make the impression.

cylinder mould machine A paper machine that makes high-quality mould-made paper by forming the paper on a cylindrical mould which revolves in the **stock**.

cylinder press Any letterpress printing machine which uses a cylinder to press the paper on the type. Compare **platen** press.

cyrillic alphabet The Russian alphabet.

D

D See **Didot**.

D2-MAC A standard for satellite TV signals. It will probably be superseded by digital technology.

DAB See **digital audio broadcast**.

DAC Digital-to-analogue converter. See **digital-to-analogue conversion**.

D/A conversion See **digital-to-analogue conversion**.

dagger Dagger-shaped symbol (†) used as a footnote reference mark. Usually follows the asterisk in order of use.

dailies National daily newspapers.

daisy-chain bus Pertaining to polling circuits where a device will block the signal, indicating that it requires connection and may, once connected, modify the signal before passing it on to the next device.

daisywheel Flat disc with characters on stalks used as the removable printing element of a letter-quality printer. Hence 'daisywheel printer'.

damper Roller on a litho press which transfers moisture to the plate prior to inking.

dancer roller Roller on a web-offset press which controls the tension of the web.

dandy roll Cylinder on papermaking machine which impresses patterns and watermarks on the surface.

DANTE A European network company set up by the national research networks.

DARPA See **Defense Advanced Research Projects Agency**.

dash A character, similar to but longer than a hyphen. An en dash is the width of 'N' in the **font** being used and an em dash the width of 'M'. While the hyphen has clearly established uses, how em and en dashes are used depends on the style of a publication and on the country in which they are being used.

DAT See **digital audio tape**. The abbreviation is also used within computing generally to mean dynamic address translation.

data Information, usually recorded in a quantifiable, i.e. **digital**, manner.

data bank A collection of data pertaining to a given subject or application.

database A structured container of data of any type. There are several different types of database, which are more or less appropriate for different applications. **Relational databases** are not always appropriate for text-based applications, while **object-oriented databases** are being developed which will handle **multimedia** applications. **SGML** and **HTML** can also be regarded as linear databases. The hierarchy implicit in SGML is more descriptive than a text database, although it requires tools to manipulate it. Databases which will encompass SGML are at a late stage of development.

database query language A language in which users of a **database** can (interactively) formulate

requests and generate reports. The best known is **SQL**. Such requests will often be made over a **network** using a **client–server** approach.

database server A computer in a **network** that holds and manages a **database** (the back end), while the user only manipulates data and applications (the front end). True database servers should be distinguished from simple **file servers** in that with file servers it is necessary to download large parts of the database to the user or **client** because the database software has not been designed for a network. It was the development of later, network-aware software which allowed the use of the database server.

data bus The internal connections in a computer that carry data, essentially between the processor, memory and peripherals. Data buses are able to transfer 8, 16, 32 or even more bits at a time and the width of the data bus is an important factor in determining the processing speed of a system.

data circuit-terminating equipment See **data communication equipment**.

data communication equipment (DCE) (Or data circuit-terminating equipment.) The devices that provide the interface between the data source and the transmitting/receiving equipment (the **data terminal equipment** or **DTE**), so that in an **RS-232** or **serial interface** the **modem** or line interface device is usually regarded as the DCE. In an **X.25** system a network access and packet switching node is regarded as the DCE. DCE and DTE need to be distinguished in order to ensure that they are wired correctly.

data communications Sending and receiving data via any **communications** medium, telephone line, satellite or **wide area network**. Less usually, the term refers to **local area networks**, when the term **networking** is more commonly applied. Data communications are increasingly **digital**, although transfer over the **PSTN** is still **analogue** and **modems** are required to convert the signals from and to digital signals at the end of the line. (See also **analogue-to-digital** and **digital-to-analogue conversion**.)

data compression Techniques used to reduce file size in order to cut down either the amount of storage needed for a given amount of data or the time taken to transmit it over a communications link. Often (but not always) this data is text. On a dial-up line, the **ITU-T** standard data compression technique for low-speed data transmission is **V.42 bis**, which is gradually replacing older and more proprietary techniques. V.42 bis will yield up to 4:1 compression.

Data Discman A Sony trademark for a portable **compact disc** player with a **liquid crystal display** for data disks.

Data Encryption Algorithm (DEA) An **ANSI** standard identical to the **Data Encryption Standard** (**DES**).

data encryption key (DEK) Used for the **encryption** of text and to calculate integrity checks (or **digital signatures**). See **cryptography**.

D See **Didot**.

D2-MAC A standard for satellite TV signals. It will probably be superseded by digital technology.

DAB See **digital audio broadcast**.

DAC Digital-to-analogue converter. See **digital-to-analogue conversion**.

D/A conversion See **digital-to-analogue conversion**.

dagger Dagger-shaped symbol (†) used as a footnote reference mark. Usually follows the asterisk in order of use.

dailies National daily newspapers.

daisy-chain bus Pertaining to polling circuits where a device will block the signal, indicating that it requires connection and may, once connected, modify the signal before passing it on to the next device.

daisywheel Flat disc with characters on stalks used as the removable printing element of a letter-quality printer. Hence 'daisywheel printer'.

damper Roller on a litho press which transfers moisture to the plate prior to inking.

dancer roller Roller on a web-offset press which controls the tension of the web.

dandy roll Cylinder on papermaking machine which impresses patterns and watermarks on the surface.

DANTE A European network company set up by the national research networks.

DARPA See **Defense Advanced Research Projects Agency**.

dash A character, similar to but longer than a hyphen. An en dash is the width of 'N' in the **font** being used and an em dash the width of 'M'. While the hyphen has clearly established uses, how em and en dashes are used depends on the style of a publication and on the country in which they are being used.

DAT See **digital audio tape**. The abbreviation is also used within computing generally to mean dynamic address translation.

data Information, usually recorded in a quantifiable, i.e. **digital**, manner.

data bank A collection of data pertaining to a given subject or application.

database A structured container of data of any type. There are several different types of data-

base, which are more or less appropriate for different applications. **Relational databases** are not always appropriate for text-based applications, while **object-oriented databases** are being developed which will handle **multimedia** applications. **SGML** and **HTML** can also be regarded as linear databases. The hierarchy implicit in SGML is more descriptive than a text database, although it requires tools to manipulate it. Databases which will encompass SGML are at a late stage of development.

database query language A language in which users of a **database** can (interactively) formulate requests and generate reports. The best known is **SQL**. Such requests will often be made over a **network** using a **client-server** approach.

database server A computer in a **network** that holds and manages a **database** (the back end), while the user only manipulates data and applications (the front end). True database servers should be distinguished from simple **file servers** in that with file servers it is necessary to download large parts of the database to the user or **client** because the database software has not been designed for a network. It was the development of later, network-aware software which allowed the use of the database server.

data bus The internal connections in a computer that carry data, essentially between the processor, memory and peripherals. Data buses are able to transfer 8, 16, 32 or even more bits at a time and the width of the data bus is an important factor in determining the processing speed of a system.

data circuit-terminating equipment See **data communication equipment**.

data communication equipment (DCE) (Or data circuit-terminating equipment.) The devices that provide the interface between the data source and the transmitting/receiving equipment (the **data terminal equipment** or **DTE**), so that in an **RS-232** or **serial interface** the **modem** or line interface device is usually regarded as the DCE. In an **X.25** system a network access and packet switching node is regarded as the DCE. DCE and DTE need to be distinguished in order to ensure that they are wired correctly.

data communications Sending and receiving data via any **communications** medium, telephone line, satellite or **wide area network**. Less usually, the term refers to **local area networks**, when the term **networking** is more commonly applied. Data communications are increasingly **digital**, although transfer over the **PSTN** is still **analogue** and **modems** are required to convert the signals from and to digital signals at the end of the line. (See also **analogue-to-digital** and **digital-to-analogue conversion**.)

data compression Techniques used to reduce file size in order to cut down either the amount of storage needed for a given amount of data or the time taken to transmit it over a communications link. Often (but not always) this data is text. On a dial-up line, the **ITU-T** standard data compression technique for low-speed data transmission is **V.42 bis**, which is gradually replacing older and more proprietary techniques. V.42 bis will yield up to 4:1 compression.

Data Discman A Sony trademark for a portable **compact disc** player with a **liquid crystal display** for data disks.

Data Encryption Algorithm (DEA) An **ANSI** standard identical to the **Data Encryption Standard** (**DES**).

data encryption key (DEK) Used for the **encryption** of text and to calculate integrity checks (or **digital signatures**). See **cryptography**.

Data Encryption Standard (DES) The **encryption** algorithm developed at the US National Bureau of Standards. It operates on 64-bit blocks of data and is based on a 56-bit key. DES is identical to the **Data Encryption Algorithm** (**DEA**). DES has been implemented in both hardware and software. DES is not supposed to be used outside the US and US companies are not allowed to export equipment in which DES is implemented. However, companies outside the US have implemented DES and there has been a suggestion that this puts US industry at a disadvantage.

data glove A device used to interact with **virtual reality**. The data glove contains sensors, which measure the movements of the wearer's fingers and transmit them to the virtual reality system. Some data gloves also measure movement of the wrist and elbow and contain control buttons. They can also output signals, such as vibration. The related software is set up so that the user knows what he or she can do and is doing with the glove. (See also **CyberGlove**.)

datagram An independent data entity that carries all the routing information it needs to reach the destination computer without relying on other communications between the source and destination computers and the transporting **network**. The basic unit of information transferred over the **Internet** using the **IP** protocol. See **connectionless** and **User Datagram Protocol** (**UDP**).

data integrity The degree to which data can be trusted or assumed correct.

Data Interchange Format (DIF) A standard file format for spreadsheet and database applications, in which the information is structured in columns and rows. It was originally developed by Software Arts, the company that produced the first spreadsheet, VisiCalc, created for the Apple computer.

data link The medium employed to connect to remote devices such as a telephone line.

data link connection identifier (DLCI) In **frame relay**, the part of the frame header that distinguishes a particular frame of a particular **virtual circuit** in a **link**. As a frame passes from link to link, the DLCI may change. Similar to **virtual channel** identifier (VCI) in **Distributed Queue Dual Bus** and **asynchronous transfer mode**.

datalink layer (DLL) The second-lowest layer in the **OSI seven-layer model**, which is responsible for establishing, maintaining and releasing data link connections between adjacent **network** stations.

data pabx A private (telephone) exchange switch which allows data users to establish connections to host computers or other data users.

Dataphone Digital Service (DDS) The first private-line digital service that was offered by **AT&T**, with data rates up to 56 kbps. Other suppliers now offer similar services.

data privacy In a **local area network**, the restriction of access to a file so that only authorised users are able to view and/or edit it. In more general terms, applied to personal data, it is concerned with the right of individuals to have both access to and control of data concerning themselves. Subject to legislation in many countries. (See **data protection legislation**.) Privacy can also be ensured by **encryption**. See **password**, **Pretty Good Privacy**.

data processing Receiving and classifying information from data supplied on computer.

data protection legislation Legislation that seeks to protect persons from three potential dangers: the use of personal information that is inaccurate, incomplete or irrelevant; the possibility of personal information being accessed by unauthorised persons; and the use of personal information in a context or for a purpose other than that for which the information was collected. The legislation usually covers only personal data in digital form and is concerned with three general categories: factual data about an individual; subjective judgements and expressions about an individual (judgemental data); and statements of intent, rather than statements of opinion (intention data).

data rate See **baud** and **data transfer rate**.

data service level (DS level) A measure of data service rates used to classify the user access rates for various point-to-point **wide area network** technologies or standards, such as **X.25**, **SMDS**, **ISDN**, **ATM** and **PDH**. In North America, the DS levels are classified as DS-0 (64 kbps); DS-1 (1.544 – used, e.g., on **T-1** synchronous ISDN lines); DS-1C (3.15 Mbps, using 48 **pulse code modulation** channels); DS-2 (6.31 Mbps, using 96 **pulse code modulation** channels); DS-3 (44.736 Mbps – used, e.g., on **T-3** synchronous ISDN lines).

data service unit Another term for **digital service unit**.

data terminal equipment (DTE) A device, acting as the source and/or destination of data, which controls a communication channel. This includes terminals, computers, **protocol converters**, and **multiplexers**. Generally, DTE is connected via an **RS-232 serial line** to **data communication equipment** (**DCE**), most probably a **modem**. DCE and DTE need to be distinguished in order to ensure that they are wired correctly.

data terminal ready (DTR) An **RS-232-C** signal raised by the **data terminal equipment** to indicate that it is ready to receive data.

data transfer rate or **data rate** The speed at which data travels from one device to another. This can vary greatly, in that data transfers within computers using internal **buses** are very fast, while transfers via **modems**, over **analogue** lines, can be many orders of magnitude slower. Any transfer which involves a mechanical device, such as a disk drive, is always very slow compared with internal transfer rates. (See also **bit rate**.)

data transparency Transmission such that a signal is not modified by the communications system in any way.

data validation The process of checking that data corresponds to agreed criteria.

day glow Proprietary name for fluorescent inks.

dB See **decibel**.

dB(A) Decibel (adjusted): a measure to approximate the effect of noise on the human ear. 90 dB(A) is the maximum permissible continuous level in a working environment; preventive action should be taken at 85 dB(A).

DBM See **dynamic bandwidth allocation**, **dynamic bandwidth management**.

DBS See **direct broadcast satellite**.

DCA Defense Communications Agency. See also **Defense Information Systems Agency** and **Document Content Architecture**.

DCC See **Direct Client to Client Protocol**.

DCE See **data communication equipment**, **Distributed Computing Environment**.

D-channel The control/signalling channel in **ISDN**. (D stands for 'delta'.) See **basic rate ISDN**, **primary rate ISDN**.

DCM See **dynamic channel management**.

DCS An extension to the standard **EPS** format developed by Quark Inc. used in process colour work and allowing **CMYK** separations to be saved in a format readable by other applications.

DD Double **density**.

DDCMP See **Digital Data Communications Message Protocol**.

DDE See **Dynamic Data Exchange**.

DDES See **Digital Data Exchange Standard**.

DDIF See **Digital Document Interchange Format**.

DDN See **Defense Data Network**.

DDP See **distributed data processing**, **distributed computing**.

DDS See **Dataphone Digital Service**, **digital data service**.

DEA See **Data Encryption Algorithm**, but see **Data Encryption Standard** for information.

deacidify To remove the acid from paper.

dead matter Type which is finished with or which will not be used, and may be 'killed'.

dead metal Non-printing areas on a letterpress metal printing plate.

dead white A white with no modelling tint.

de-archive The retrieval of files held on backing store and placing of them on a system disk.

debarking Stripping bark from logs prior to them being pulped.

debris Used to describe paper dust or edge dust which finds its way onto the offset printing blanket.

debugging The detection and correction of errors in a computer program before it goes into use.

DEC Digital Equipment Corporation: a major computing company

decentralised computer network One in which certain control functions are distributed among several network nodes.

decibel (dB) A logarithmic unit of measurement used to express the ratio of two amounts of power = $10\log_{10} P_1/P_2$, where P_1 and P_2 are measures of the powers being compared. Used in communications to measure response, it is often expressed as $20\log_{10} V_1/V_2$, where V_1 and V_1 are the voltage levels measured.

deciduous trees Hardwood trees which shed their leaves annually.

deck Term used in multi-unit web offset imposition, where a section is being formed from running one web under another into the folder. After cut-off, the two sheets are folded together to form a section (typically two 16pp sheets folded one inside the other to yield one 32pp section). 'A' deck is the top side of the top web, and 'B' deck is the lower side of the top web; 'C' deck is the top side of the lower web, and 'D' deck is the lower side of the lower web. Colour locations may appear in different positions according to the configuration used. See **colour fall**.

deckle The width of a papermaking machine's web. Deckle boards retain the **stock** on the **wire**. Deckle edge is the untrimmed feathering edge of paper. Deckle frame is the rectangular frame which contains the stock on the wire in handmade paper.

DECnet Networking protocols proprietary to **DEC**, which are used instead of **TCP/IP** and are not compatible with the **Internet**. Used on DEC machines such as the VAX.

decoder A logic component, the purpose of which is to convert data from one numeric system to another, e.g. binary to hexadecimal.

decoding The computer process of interpreting instruction codes.

decollate To cut continuous stationery into single sheets.

decompression The reverse of **compression**.

decrypt Decodify **encrypted** material.

decryption To restore information that has been encrypted, i.e. to restore **plaintext** from **ciphertext**. See **cryptography**, **encryption**.

dedicated An item of equipment or electronics used for only one type of application and maybe only running one program.

dedicated circuit or **line** A line reserved for only one user. Also called **private line** and **leased line**.

dedication Inscription by the author dedicating a book to an individual. Carried among the **prelims**.

dedupe or **deduplicate** In data-processing, running a program which identifies and eliminates duplicate entries in a database (typically in a mailing list).

deep-etch half-tone A **half-tone** in which all the smaller highlight dots have been removed to leave plain white. Also **drop-out half-tone**.

deep-etch plate Litho printing plate made from positive film in which the printing areas are recessed below the surface. Used for long runs.

default In computing, the parameters defined by the designer or programmer that will be used in the absence of alternative input by a user.

Defense Advanced Research Projects Agency (DARPA) Former name of **Advanced Research Projects Agency** (**ARPA**).

Defense Data Network (DDN) A global communications network used to connect US military installations. It is made up of **Milnet**, some other portions of the **Internet** and other classified networks. The DDN is managed by the **Defense Information Systems Agency**.

Defense Data Network Network Information Center (DDN NIC) (Also known as 'The NIC'.) The organisation which provides services to the **DDN**, although it used to be responsible for coordinating the **Internet** as a whole. This has now been taken over by **InterNIC**. DDN NIC has now been renamed DISA NIC. See **Defense Information Systems Agency**.

Defense Information Systems Agency (DISA) Formerly called the Defense Communications Agency (DCA), the US government agency responsible for managing the **Defense Data Network** (**DDN**) portion of the **Internet**. Currently, DISA administers the **DDN**, and supports the user-assistance services of the **DDN NIC** (renamed DISA NIC).

definition The degree of detail and sharpness in a reproduction.

deforestation The depletion of natural forest resources by indiscriminate felling.

degradation The deterioration of communications signal characteristics.

dehumidification Removal of humidity from the air.

deinking Removing ink and other unwanted chemicals from printed wastepaper to recover and re-use fibre content.

DEK See **data encryption key**.

del Delete. Proofreader's instruction to erase text or other matter.

delamination Separation of surface from paper by ink tack or separation of film laminate from its substrate, often caused by impurities trapped between the film and the substrate.

delimiter The character used at the beginning and end of **SGML/HTML tags**. In the **reference concrete syntax** (the usual way of encoding using SGML, also used by HTML), the opening delimiters are '' for a **start-tag** and '/' for an **end-tag**, while the closing delimiter is '>' for both start and end tags.

Delphi A US and UK **Internet service provider**. Also used to describe a form of iterative discussion and decision-making, often carried on using **computer conferencing**. Finally, it is an **object-oriented** rapid application development package for Microsoft **Windows**, written by Borland in the Pascal language, using visual, component-based design.

demodulation The extraction of information from a modulated carrier signal.

demodulator Device which extracts information from a **modulated** carrier signal.

demographic edition Edition of a publication designed for a specifically targeted sector of the readership with advertising limited to that edition.

Demon Internet Ltd The first company to provide public low-cost full **Internet** access in the UK.

demultiplexer A device which separates multiplexed signals.

demy Standard size of paper 444×564mm (metric system).

densitometer Device for measuring light absorption or the size of dots in **half-tones**.

density Measurement of the tonal value of a printed or photographic area. Density is the light-stopping, or light-absorbing, ability of an object. In mathematical terms it is the reciprocal (opposite) of 'transmission' or 'reflection', and it is measured by the formula incident light divided by transmitted (or reflected) light expressed as a logarithmic value (power of 10). Logarithmic values are chosen to reflect the fact that perceived density proceeds in steps of 'twice as much as last time', not linearly. In practice, this means a measuring scale of 0.0 at the lightest end of a subject measured by a densitometer (100% transmission/reflection of light) up to 3.0 at the farthest end (0.1% transmission/reflection of light).

density range The range of contrast between the lightest area and the darkest area of a piece of artwork or photograph (see **density**). A good transmission density range in a transparency for reproduction should be between 1.8 to 2.4, with no less than 0.3 in the highlights and no more than 2.7 in the shadows as the outer parameters.

densometer Instrument that measures the air resistance of an area of paper.

dentelle The gold decoration on book covers.

depth gauge 1. Micrometer for measuring etching depth on plates. 2. Typographical ruler for measuring **leading**.

depth of field Area which remains in focus between close and distant objects in a photograph.

depth of focus Position of film behind a camera lens that will produce sharp **images** regardless of the distance beyond.

depth scale Ruler for measuring the space between lines of type.

dermatitis Skin disease with symptoms of itchy rash caused by some of the chemicals used in printing.

DES See **Data Encryption Standard**.

descender The part of a letter extending below the character **baseline**, as, e.g., in j, p, q and y. (See also **ascender**.)

descriptive markup **Markup** that describes the structure of a document in a non-system-specific manner, independently of any processing that may be performed upon it. **SGML** descriptive markup, e.g., uses tags to express the element structure.

desensitise Treat an offset plate with chemicals to ensure that the non-image areas do not retain ink.

desiderata List of secondhand books required by a dealer.

designation marks Identifying letters at the foot of each signature of a book which confirm the sequence. (See also **signature**.)

designer Person who designs graphic work.

desktop In a **graphical user interface** the representation of the working area, showing **icons**, folders and dialogue boxes, which can be accessed using the **mouse**.

desktop conferencing A **conferencing** utility, in which users on a **network** are able to share a **whiteboard** and transfer files between them.

desktop publishing (DTP) The production of fully made-up pages using a computer with a graphics-oriented **WYSIWYG** page make-up package for assembling the components of the page, and a laser printer for generating the output repro.

desktop video The use of a personal computer to view and control still or moving **video** images. Mainly used in the context of **video-conferencing**.

destination address The part of a **packet** header that specifies the destination to which the packet is to be sent, using an address that is unique throughout the whole network, whereas the **data link connection identifier** and **virtual channel** identifier apply only to a given link in a network.

destock To reduce stock levels in a shop or warehouse.

Deutsche Industrienorm (DIN) The German industrial standards organisation.

develop Use chemical or other process to produce an image on photographic paper or a printing plate.

developer Material used to remove unexposed coating on a litho plate.

device control A transmission code that may be used to control a hardware device.

device driver The program which provides access to a particular device, e.g. a printer or a **sound card**.

device independent A **program** that is designed to be able to run with any peripheral **hardware**.

Dewey decimal classification Cataloguing system for library books which uses a series of subject categories numbered 000 to 999.

DFS See **distributed file system**.

DHCP See **Dynamic Host Configuration Protocol**.

diacriticals Marks above and below letters, such as accents or the cedilla.

diagnostics Programs designed to trace faults in a system or program.

dial-in IP Running **IP** direct from a computer linked to an access provider using **dial-up**. The computer remains a **host** for the time it is connected.

DIALOG An online information service which can be **dialled-up** directly to gain access, via a **modem**, to **online** databases.

dialogue box In **DTP** programs, a box that is displayed showing the range of choices available to the user.

dial-up A temporary, as opposed to dedicated, connection between machines which is established over a **public switched telephone network**.

diamond Obsolete term for 4½pt type.

DIANE See **Direct Information Access Network for Europe**.

diapositive A positive photographic slide or transparency.

diaresis Two dots over a vowel to indicate stress, i.e. ë.

diazo A chemical coating in photography or platemaking and the term given to a copying process which uses light-sensitive compounds (diazonium). (See also **blueprints**, **ozalid**.)

dictionary A file used by a wordprocessor or front-end system to check spelling or hyphenation. A dictionary can be a **true dictionary**, which contains all words which can be hyphenated with their hyphenation points or an **exception dictionary** which lists only exceptions to logical rules, and is used in conjunction with a hyphenation logic program.

Didone Group of typefaces previously known as **Modern**, e.g. **Bodoni**.

DIDOS A **RACE** project to describe, realise, test and evaluate a services environment for distributed technical documentation, using a framework of standards, services, products, agreements, business models, networks and applications.

Didot The European measure of type. Based on a point of 0.376mm (0.0148″). Abbreviated to **D**.

Didot point system A method of measuring typesize used in Europe. See **font size**, **cicero**.

diecase Monotype matrix case.

die-cutting The cutting of paper or card with steel rules on a press to give cut-outs or folds in printed material.

die stamping An **intaglio** printing process from a steel die giving a relief surface on the paper.

DIF See **Data Interchange Format**.

differential line A two-wire electrical connection. One wire carries the normal signal and the other an inverted version of the signal. A differential receiver subtracts one from the other with the aim of cancelling out any noise induced in the wires, assuming that the same level of noise will have been induced in both wires, often configured as a **twisted pair**. The two wires may be connected at the receiver to separate **analogue-to-digital converters** and the subtraction performed digitally. The **RS-422 serial line** standard specifies differential drivers and receivers, whereas the **RS-232** standard does not.

differential phase shift keying (DPSK) A version of **phase shift keying** (**PSK**) in which the difference between the signal and the preceding signal is transmitted, needing fewer bits in total.

differential spacing Spacing which allows each **character** to takes the space equivalent to its width.

diffuse reflection Scattering of light away from a surface.

diffusion transfer See **photomechanical transfer**.

digest A selection of messages that have been posted to a **newsgroup** or **mailing list**, prepared by a **moderator** who standardises the format and produces a contents list. The digest is then posted to an alternative mailing list or alternative newsgroup.

digester The container in a chemical pulping system in which wood is processed with chemicals to extract the fibres.

DigiCash A company developing products to support electronic payment methods. **Ecash** is its trial form of software-only electronic money. See **Mondex**, **Cybercash**.

digipad Input device on which drawn images are digitised and displayed on a **VDU** and/or stored in memory.

digit A **character** that represents a whole number.

digital Meaning 'coded as numbers', digital signifies the use of two states – on and off, low and high, black and white – to encode, receive and transmit information. Should be contrasted with **analogue**, which implies continuous variation.

digital audio broadcast (DAB) The broadcast of audio information, particularly stereo hi-fi, using digital transmission at 128-384 kbps to provide audio quality equivalent to that produced from an audio **CD**.

digital audio tape (DAT) A format for storing music, in **digital** form, on magnetic tape, developed in the mid-1980s by Sony and Philips. In order to cope with the **bandwidth** requirements, DAT uses a rotary-head (or **helical scan**) format, where the read/write head spins diagonally across the tape in the same way as in a video cassette recorder. Tape speeds are much higher than for conventional audio tapes and the tapes are single-sided, with a capacity of 120 minutes. DAT technology is also used for storing digital computer data, although the interface is usually different from that used for audio. (See also **Exabyte**.)

digital camera A camera which records images in **digital** form rather than on photographic film. There are both video digital cameras and still-image digital cameras. Images are often stored on standard 3-inch diskettes using a standard **bitmap** format, such as **TIFF**. Digital cameras work in a similar way to **scanners** using **charge-coupled devices**.

digital carrier A **multiplexer** and **CODEC** combining several **pulse code modulation** (**PCM**) encoded channels on one transmission path. If the path is copper telephone wire, the digital signal is amplified and called **T-1**, **T-3** etc.

digital computer Computer which uses numbers to represent and manipulate data.

Digital Data Communications Message Protocol (DDCMP) A **DEC** datalink layer protocol using character count.

Digital Data Exchange Standard (DDES) A standard for exchanging high-resolution image files between colour electronic prepress systems produced by different manufacturers.

digital data service (DDS) The class of service offered by telecommunications companies for transmitting digital data as opposed to voice.

digital display A display that shows discrete values as numbers (as opposed to an analogue signal, such as the continuous sweep of a hand on a clock).

Digital Document Interchange Format (DDIF) A **Compound Document Architecture** (**CDA**) specification for representing compound documents in revisable format; a **DEC** standard for document encoding.

Digital Equipment Corporation Network See **DECnet**.

digital font Electronically stored font in which the characters are stored as computer instruc-

tions for the typesetting machine rather than in any physical, visible form. The instructions can be in **bitmap** form or **vector** form.

Digital Lempel-Ziv 1 (DLZ1) The **compression algorithm** used on **digital linear tape**, which maps variable length input strings to variable length output symbols. During compression, a dictionary of strings is built up, which is then accessed by means of a **hash table**. Whenever an input data string matches a string in the table, it is replaced with the output symbol.

digital linear tape (DLT) A magnetic tape drive format developed by **DEC**, based on the **Digital Lempel-Ziv 1** (**DLZ1**) **compression algorithm**.

digital modulation Encoding analogue signals as a series of discrete or pulsed signals.

Digital Network Architecture (DNA) The **DEC** communications **network** architecture.

Digital Object Identifier (DOI) An identifier and a routing system for **electronic documents**, being developed for the Association of American Publishers by R R Bowker and the Corporation for National Research Initiatives (CNRI). The system is designed to provide a persistent way of identifying and linking to electronic documents and their constituent parts. The first part of the number will identify the publisher or similar body, while use of the second part may vary depending on the publisher and the type of document.

digital papers Papers specially formulated to be used with **digital presses** (Xeikon, Indigo etc.) or **laser printers**.

digital press A printing press in which the image is transferred to the drum by electronic methods, directly from a **PostScript** file. This means that, in principle, every page printed can be different, as on a **laser printer**, and also means that short-run printing becomes economic. See **Indigo**, **Xeikon**, **DocuTech**.

digital printing Printing directly from computer files rather than through the physical media of films or plates using machines such as the Xeikon, Indigo, or DocuTech.

digital proof Any proof produced directly from a computer file rather than via a physical medium such as film or **bromide**. Examples of digital proofs include **Iris proofs.** (See also **analogue proof**.)

digital service unit (DSU) (Or **data service unit**.) A device used in **digital** communications to connect a **channel service unit** to **data terminal equipment**. Performs a similar function to a **modem** in **analogue** communications, so that on transmission the DSU translates the outgoing signal into bipolar pulses, while on receiving the DSU both extracts timing information and regenerates the digital information from the incoming bipolar signal.

digital signal processing (DSP) Manipulation of **analogue** signals (often in **sound** or **image** files) that have been converted to **digital** form (by **sampling** or digital modulation).

digital signature Data at the end of a message that both identifies and authenticates the sender of a message. Uses **public-key encryption**. With a **one-way hash function** the sender generates a **hash code** from the message and then encrypts this with his or her **private key**. The receiver decrypts the received hash with the sender's public key and compares it with a hash code generated from the data. If the two hash codes are the same, this confirms that the sender is who he or she claims to be and that the message has not been corrupted. (See also **digital signature standard**, **EDIFACT**.)

digital signature standard (DSS) The **NIST** standard for **digital signatures** (authenticating both the message and the signer). It is based on an algorithm using discrete logarithms. Its security is comparable to that of **RSA** and is based on 1024-bit keys.

digital speech interpolation (DSI) A **sampling** technique that improves the efficiency of digital voice transmission by using the transmission channel only when someone is talking.

digital-to-analogue conversion (DAC, D/A conversion) Conversion of information from a **digital** form (as information is held in a computer) to **analogue** form (such as sound), e.g. in a **modem** for transmission over analogue telephone lines.

digital-to-analogue converter A device that converts a digital value to a corresponding analogue form. Compare **analogue-to-digital converter** (**ADC**).

digital versatile disk (DVD) The change to the name digital versatile disk from the original **digital video disk** has been made because the DVD disks will carry more than just video. Thus there will be DVD-Video, DVD-Audio, DVD-ROM and DVD-R. Unlike the **CD**, which is single-sided and contains only one layer, the DVD can be dual-layer and double-sided. Its maximum storage capacity is 17Gb, over 25 times the capacity of a standard 640Mb CD, and equivalent to four full-length feature films.

digital video disk (DVD) See **digital versatile disk**.

digital video interactive (DVI) A technology used for storing video images. Uses special

processors for **compression** and **decompression**. (See also **compact disc interactive**, **JPEG**.)

digital workflow system Prepress system for managing the flow of made-up pages from creation through proofing to imposition on plate.

digitise To convert an **analogue** signal, such as **video**, **graphics** or **sound**, into a **digital** format so that it can be input, stored, displayed and manipulated by a computer or transmitted over a digital communications system.

digitiser Any graphic input device such as a monochrome **flatbed scanner** which scans an image and stores it in memory for re-use.

dilitho (or **di litho**) See **direct litho**.

dimension To define the parameters of an array in programming.

dimensional stability Ability of paper to retain its shape despite variations in moisture content or mechanical stress.

dimension marks Marks on camera copy indicating the area of a reduction or enlargement.

DIN Deutsche Industrie Norme. The German standards institute. DIN paper sizes, now renamed **ISO**, have been adopted as the European standard. (See also **A series**.)

dingbat A term for typographical characters, such as arrows, stars, hearts and snowflakes etc., and also called **ornaments**. **Zapf Dingbats** is a font which is provided as standard with most **PostScript** printers.

DIP See **document image processing**. Also used in computing to mean dual inline package (see **dipswitch**), describing computer chips that are fastened to a **printed circuit board**.

dip coating Coating method in which the **web** is passed around a roller immersed in coating solution.

diphthong Letters placed together as in æ, œ etc. Contrast **ligature**.

dipswitch Stands for Dual Inline Package switch. A series of dipswitches controls the default settings of many printers, altering character sets, page lengths etc.

direct access Use of storage medium which can access information without the need for sequential searching, e.g. a disk as compared with a cassette.

direct approach platen Press on which the **platen** approaches the **forme** on a parallel plane with it.

direct broadcast satellite (DBS) A satellite which transmits video signals directly to the standard satellite dish, usually sited on the sides of buildings.

Direct Client to Client Protocol (DCC) An **Internet Relay Chat** (**IRC**) protocol which allows private interchanges (including file transfer) between users rather than going via IRC servers. This means that conversations cannot be logged and it means a much more efficient use of **bandwidth** as the data does not need to be **broadcast**.

direct colour separation See **direct screening**.

direct-duplicating film See **autopositive film**.

direct entry phototypesetter Self-contained phototypesetter with its own keyboard, **CPU** and output device.

direct impression Typewriter-type setting in which the image is created by direct impression from a type character, e.g. an IBM Composer. Also called **strike-on composition**.

Direct Information Access Network for Europe (DIANE) Information search and retrieval services offered over the **EuroNet** system.

direct input Software that allows text to be input directly into the computer **typesetter** using a direct-input keyboard.

direction of travel Direction in which web moves through a paper machine or press.

direct litho Litho press system which transfers the image direct from the printing plate without offsetting it to a blanket first.

direct memory access (DMA) Transfer of data between computer memory and external devices without going through the central processing unit. This speeds up transfer rates. DMA is used for devices such as **scanners**.

directory An index file containing details of all other files held on disk.

Directory Access Protocol An **X.500** protocol used for communication between a **Directory User Agent** (**DUA**) and a **Directory System Agent** (**DSA**).

Directory System Agent (DSA) The software providing the **X.500** directory service, usually for a single organisation or some smaller unit.

Directory User Agent (DUA) The software that accesses the **X.500** directory service for the user, which may be a person or more software.

direct positive Film produced by **direct screening**.

direct screening Reproduction process in which copy is separated and screened in one step. As distinct from **indirect screening** where a scanner output unit produces **continuous-tone** films which are then contacted through a **halftone screen** to produce final hard-dot positives.

dirty 1. Typesetting with many errors introduced at the keyboard. 2. Copy with many handwritten amendments.

DISA See **Defense Information Systems Agency.**

disc The traditional British spelling of **disk**. It has been formalised for use in the term **compact**

disc, this spelling being part of the CD standard, although magnetic disks are almost always spelt with a 'k' (see **disk**).

disc refiner Machine which refines pulp by rubbing fibres between vertical rotating discs.

discrete speech In voice recognition technology, speech that contains short pauses between words to improve the recognition process.

discretionary hyphens Hyphenation points for words, either held in the hypenation exception dictionary of a front-end system or introduced while keyboarding new text. They indicate where a word may be broken if it needs to be hyphenated at the end of a line. Discretionary hyphens will overrule any logical hyphenation program in use.

disc ruling A method of ruling stationery with metal discs.

disk The US spelling, which has become standard for (magnetic) computer disks. (See also **disc**.)

disk cartridge A portable hard disk contained within a protective casing that may be loaded onto a disk drive.

disk crash A hardware or software malfunction resulting in an inability to access the contents of a disk.

disk drive A device which writes information to or reads information from a magnetic disk. See **disk**.

diskette See **floppy disk**.

disk operating system (DOS) In computing, the operating system which controls how input/output routines are handled by the computer.

disk pack A set of disks mounted on a common spindle. Each disk is a thin metal rigid platter coated on both sides with a magnetic material (typically ferrous oxide). The surface is divided into **tracks** (concentric rings) and each track is divided into **sectors** (subdivisions of the tracks). Data is recorded as magnetised spots along each track, and is accessed by **read-write heads**.

dispersion The spreading (over time) of a wave packet as it propagates through a medium, such as **optical fibre**, which is not free space, as each wavelength has a very slightly different speed of propagation.

display adapter Also called **graphics adapter** and video controller, that part of a computer circuitry which interprets data so that it can appear on the screen as text or graphics. Different adapters produce varying resolutions. MDA, or monochrome display adapter, is a very low-level form which supports only monochrome text. **CGA**, or colour graphics adapter, is a basic adapter which supports text and graphics at a resolution of 640×400 pixels in mono or 320×200 pixels in colour. **EGA** (enhanced graphics adapter) produces medium-resolution colour at a maximum 640×350 pixels. **VGA** (video graphics array) produces 640×480 pixels and 256 colours on colour monitors or 64 shades of grey on mono monitors. **SVGA** (super video graphics array) produces 800×600 pixels with 16.8 million colours, and is suitable for running **Windows**. **EVGA** (enhanced video graphics array, also called **XGA** or **extended graphics array**) produces 1024×768 pixels with 16.8 million colours.

display ads Advertisements 'displayed' to occupy part or all of a page rather than set in columns.

display character generator A component of a **VDU** that converts input signals into those that define the character shape on the screen.

display face A **typeface** designed for display sizes rather than for **composition sizes**.

display matter Typography set and displayed so as to be distinguished from the text, e.g. headings. Hence display sizes are sizes of type from 14pt upwards.

display papers and boards Papers and boards used for point-of-sale or exhibition purposes.

Display PostScript A form of **PostScript** which makes it possible to display a true PostScript image onscreen (strictly **WYSIWYG**). However, it is much slower than **QuickDraw** for the Macintosh and various screen drivers for the PC. It is implemented on the NeXT computer.

display sizes Sizes of type larger than 14pt, i.e. used for display rather than text.

display tube See **cathode ray tube**.

display type Type used for headlines, titles etc., rather than for text (see **body type**). Display **typefaces** are usually 14pt type or larger. Some typefaces are designed specifically for this use, while other **expert sets** have special versions of particular typefaces intended for use as **display faces**.

diss Distribute. Return letterpress type to the case after printing.

dissolving pulp Highly processed and pure chemical pulp.

Distiller See under **Acrobat**.

distortion A corruption of a signal as a result of changes to the waveform.

distributed computing (distributed data processing, DDP) The dispersal of computing power, storage and applications throughout a number of computers connected through a **network**, rather than concentrating computing on a mainframe. (See also **client-server**.)

Distributed Computing Environment (DCE) A computer architecture based on **open systems** and promoted and controlled by the **Open Software Foundation**.

distributed database A logical **database** that looks like a single database to the user, but which is divided among several physical locations. An example is the **Internet Domain Name System** (**DNS**). (See also **distributed computing**.)

distributed data processing (DDP) See **distributed computing**.

distributed file system (DFS) A file system which, while accessible to any user and appearing to be local, is actually distributed over a number of computers. (See also **distributed computing**, **distributed database**.)

Distributed Operating Multi Access Interactive Network (DOMAIN) A proprietary network protocol used by Apollo (now Hewlett Packard) **workstations**.

Distributed Queue Dual Bus (DQDB) An **IEEE** standard for the control of access to networks, so that access units queue until **bandwidth** becomes available. DQDB also allows bandwidth to be reserved in advance for voice or video traffic. DQDB is used in **metropolitan area networks**.

distributing rollers Rollers on a press which distribute ink from the duct to the inking rollers.

distribution See **diss**.

dithering A technique used in computer graphics to create the appearance of additional colours and shades of grey. As a **bit** can only be on or off, depending on the **colour resolution** (bits per **pixel**) or number of **grey levels**, there will be a limit to the number of colours (or grey levels) that can be displayed. However, as the dots which make up a conventional **half-tone** illustration are much larger than a pixel, pixels are grouped in ways which fool the eye into thinking that it is seeing more shades of grey (by using pixel groups making up different shapes) or additional colours (by combining pixel combinations of different colours which the eye integrates). Dithering is also used in **anti-aliasing**.

ditto Typographic symbol for 'repeat the above matter'. Set as ".

DLCI See **data link connection identifier**.

DLL See **datalink layer**, **Dynamic Link Library**.

DLT See **digital linear tape**.

DLZ1 See **Digital Lempel-Ziv 1**.

DMA See **direct memory access**.

DNA See **Digital Network Architecture**.

DNS See **Domain Name System**.

doctor blade Soft metal blade that removes excess ink from the surface of a **gravure** printing surface when it is scraped over the top.

document A term which is not generally defined. In some circumstances it is equivalent to a computer file, while in others it may be what can be viewed or even what is printed. Also used for a **hypertext node** or a collection of nodes on related topics. **Multimedia** documents, by definition, contain more than just text and graphics. (See also **document instance**, **structured documents**, **SGML**.)

document architecture Rules for the formulation of text processing applications. These are not part of **SGML**, but may be used in conjunction with SGML to control the structure and semantics of a document. (See also **DSSSL**, **ODA**.)

Document Content Architecture/Revisable Form Text (DCA/RFT) A document format used by IBM's DisplayWrite program. It should not be confused with Microsoft **Rich Text Format** (**RTF**).

document delivery The supply of individual documents, usually copies of already published articles, following a request which has been delivered over a network. The supply of the document may be in electronic form, effectively a **download**.

document image processing (DIP) The scanning of (usually large volumes of) documents and subsequent storage on **CD-ROM** or **WORM** disks, which are indexed. Many companies are using this approach both to reduce storage space requirements and to provide better customer service in that the documents are much more easily accessible. The software used generally also includes facilities for **optical character recognition** (**OCR**), so that the text of the documents can be extracted for use in other applications.

document instance The actual content, i.e. text and markup, of an **SGML** document corresponding to a particular **Document Type Definition**.

Document Interchange Format (DIF) A standard file format used by the US Navy to interchange documents between different computer programs.

document reader An input device that reads marks or characters, usually on specially prepared forms and documents, such as cheques. These devices use **optical mark recognition** (**OMR**), **optical character recognition** (**OCR**) and **mark sensing**.

Document Style Semantics and Specification Language (DSSSL) An **ISO** standard (**ISO**

10179) which defines how to transfer information about the presentation of an **SGML** document to formatting software, associating **style sheet** information with a **document instance**. SGML, by definition, says nothing about how a document is to appear, either on paper or on screen. DSSSL is intended to formalise the process of associating appearance information with the SGML structure.

Document Type Definition (DTD) The definition of a document type in **SGML**. This is a formulation of the hierarchy of the document and the definitions and relationships of the **elements** that make up that hierarchy, together with their **markup tags** and their **attributes**, the rules for applying the tags and definitions of **entities**. The generalised DTD actually forms part of an SGML document, but in many SGML applications is not seen by the user, e.g. in **HTML**, which is defined by a DTD. Other well known and widely used DTDs are the **CALS** DTD and the American Association of Publishers (AAP) DTD, which has been revised and published as **ISO 12083**.

DocuTech A high-speed **laser printer** from Xerox, which produces print-quality output. This makes short-run printing economic. (See also **Indigo**, **Xeikon**.)

Docuverse A concept of the whole world being one document, put forward by Ted **Nelson** in connection with **Xanadu** and one which is embodied in the way the **World Wide Web** has developed.

DoD The US Department of Defense, whose **Advanced Research Projects Agency** set up **ARPANET**, the forerunner of the Internet. (See also **CALS**.)

dodge To block light from selected areas while making a photographic print in order to bring out detail.

dog-eared Description of a book that has been damaged through use, resulting in ragged and worn page and cover corners.

dog-eared pages Corners of pages that are inadvertently folded over during processing. When the book is trimmed and the corners corrected the untrimmed portions protrude.

DOI See **Digital Object Identifier**.

DOMAIN See **Distributed Operating Multi Access Interactive Network**.

domain A group of computers on the **Internet** whose hostnames share a common suffix, the **domain name**. Domains often indicate a country, e.g. .uk, or a type of organisation: .com (commercial), .edu (educational), .net (network operations), .gov (US government), and .mil (US military). Although the .us domain includes subdomains for the 50 states, they are rarely used. Within the .uk domain, there is the .ac.uk subdomain for academic sites and the .co.uk domain for commercial ones. Other top-level **domains** may be divided up in similar ways.

domain address The name of a **host** on the **Internet** which is part of the **hierarchy** of Internet **domains**.

domain name See **domain**.

Domain Name Server (DNS) An alternative name for **Domain Name System**.

Domain Name System (DNS) (Also Domain Name Server.) A hierarchical method of naming **Internet** addresses, based on the domain and subdomains. DNS is also used to describe the distributed data query service which is used for translating **hostnames** into **IP** addresses. (See also **Berkeley Internet Name Domain**, **network information center**.)

dongle A hardware component sold with a software package and without which the package is rendered unusable. The dongle is inserted into the computer's serial port, external expansion port or internal expansion slot.

DOOM A popular three-dimensional monster-hunting action game published by id Software.

DOS See **MS-DOS**.

dot 1. The individual element from which a halftone reproduction is made up. 2. Synonym for **pixel**. Dots per inch (dpi) is the standard measure of resolution, expressed as dots or pixels, for image output systems.

dot address An **Internet** address in **dot notation**.

dot etching Colour correcting on screened colour separations by changing the size of the dots by hand etching to change tonal balance.

dot for dot Reproduction of an already screened **half-tone** by photographing it as if it were fine line.

dot gain The increase in size of dots in a **halftone** illustration when they are printed on paper (using a printing press, rather than a computer printer). The magnitude of the dot gain will depend on the characteristics of the press, the paper and the ink. If there is cooperation between the originator of the artwork and the printer, it may possible to use software to adjust the colour curves and even dot size to obtain the image which is desired.

dotless i An 'i' available in some photocomposition fonts for the purpose of accommodating **ligatures**.

dot matrix Patterns of dots used to create images on screen or printer.

dot matrix printer A computer printer which forms its printed characters from a pattern of dots. Most dot-matrix printers are either 9-pin, 18-pin, or 24-pin models, which describe the number of pins held on the vertical matrix which forms the letters. The more dots the sharper the letters.

dot notation The usual notation for **IP** addresses, consisting of one to four numbers most often given as a decimal (also known as **dotted decimal notation**), e.g. 158.152.28.130 (but can be given in **hexadecimal** or **octal**). Many commands will accept an address in dot notation in place of a **hostname**.

dot pitch A measure of the spacing (and by implication the size) of the individual dots of phosphorescent material that provide the image on a screen when irradiated by the electron beam. On a colour monitor, each spot of light is made up of a group of three separate dots which glow red, green and blue (see **RGB**). In general, the smaller the dot pitch, the sharper the image below a certain dot pitch threshold, although there are other factors involved. The screen **resolution**, in **pixels**, is determined by the electronics of the display and a single pixel may be made up of 4–16 separate phosphor groups.

dot slurring Elongation of dots at their trailing edges.

dots per inch (dpi) The **resolution** of a printer or scanner is measured in dots per inch. For a printer it is the number of dots of toner placed on the paper (in both directions), while for a scanner it is the number of **charge-coupled devices** per inch.

dot spread Unacceptably enlarged dot size formation during printing.

dotted decimal notation See **dot notation**.

double black In printing **four-colour process** illustrations and heavy black solids together, refers to printing the black twice: once for the **half-tone**, and once for the solid. Permits better control of ink weight and **tracking**.

double-black duotone A duotone created from two black plates. Used in very high-quality work to extend the ranges available.

double burn An exposure of two or more images onto a single film or plate to create one composite image. Often applies to half-tone films which are held on a separate foil from line films: the two sets of foils are printed down onto plate as separate operations.

double case A type case combining upper and lower case.

double-click To **click** twice on the button of a **mouse**. While single-clicking usually means selecting an icon, double-clicking almost always means that the command associated with the icon or with a file name should be executed. If a file name is double-clicked, then this is equivalent to (single-) clicking on the name to select it and then (single-) clicking on the 'OK' button.

double-coated Coated paper which is given two coats either side instead of the normal one. Gives increased smoothness and consistency to the sheet.

double density disk A **floppy disk** which can store twice as much information as its 'single density' counterpart.

double dot half-tone Two **half-tone** negatives exposed into a combination image on a plate to give greater clarity to the highlights and shadows (on one neg) and the middle-tones (on the other).

double-duty envelope Envelope which can be re-used by the recipient.

double elephant Drawing paper measuring 27×40 inches.

double-page spread Facing pages in a book or periodical.

double printing Two exposures in register from separate half-tones.

double roll A second press roll over the printing surface when extra inking is required.

double-sided 1. Floppy disk with readable content on each side. 2. Paper with coating on two sides.

double-sided disks Disks which can store information on both sides.

double spread Print going across two facing pages.

double-tone half-tone A colour plate printed slightly out of register to create a duotone effect.

double-tone ink A printing ink which creates an extra tone on drying, due to spreading.

doubling A second out-of-register image produced during a single impression. Caused by the ink on the blanket remaining wet after impression and transferring back from the blanket cylinder to the following sheet. If the following sheet is out of register it appears as a double image.

doublures An ornamental lining to a book cover that covers up the edges of the leather which has been turned in.

doughnut hickey A **hickey** with a white 'halo' around it.

DOVID Diffractive optically variable image device: a hologram is the most common example.

dow etching A powderless etching technique for letterpress plates invented by Dow Chemical Corporation.

down Not functioning or not accessible. The term is applied to **hosts** on the **Internet**, as well as to computers in general.

downlink A satellite earth station that receives signals (such as television) from a satellite. (See also **uplink**, **TVRO**.)

download To transfer data from a distant computer to a local one, often over the **Internet**, using **anonymous ftp** or other technique. The opposite of **upload**, although the distinction between downloading and uploading is not always clear, except that downloading often refers to transfer from a larger **host** system (especially a mainframe) to a smaller **client** system. (See also **downloadable font**.)

downloadable font (Also called **soft font**.) A **font** (or **typeface**) that is not resident (permanently stored) in a printer, but has to be sent, or **downloaded,** from disk to printer before it can be used. It may be necessary to download fonts before sending a file to be printed, but increasingly applications will download the required fonts as part of the printing operation. Exactly how this is carried out depends on the types of fonts used (e.g. **PostScript** or **TrueType**), whether **Adobe Type Manager** is used, and the printing interface.

down-time Non-productive time when a printing machine is being maintained or made ready.

dpi See **dots per inch**.

dp or **DP** See **data processing**.

DPS See **double-page spread**.

DPSK See **differential phase shift keying**.

DQDB See **Distributed Queue Dual Bus**.

draft quality output Low-quality, high-speed printer output from dot-matrix printer. (See also **letter quality**.)

drag To move the **mouse** cursor while holding down the mouse button and then, at a new position, to release the button. Used on scroll bars, to move icons, to resize drawings, to select text and for many other tasks.

drag and drop Technique of using a **mouse** to 'pick up' items on screen and move them elsewhere.

dragon's blood A red powder used for protecting side walls from underbiting during the etching of letterpress plates.

drainability The rate at which paper **stock** parts with water when drained.

draw down A thin film of ink spread on paper with a spatula to evaluate its shade.

draw-in Binding method in which the section threads are pulled through cover boards and glued.

Drawing eXchange Format (DXF) A **graphic file format**, similar to **IGES**. Commonly used by **CAD** systems.

drawing program Software that enables the user to draw and design on screen.

drawing tools Functions in a paint/**drawing program**, normally displayed as icons in a toolbar, which allow the user to draw with preset shapes or freehand.

drawn-on cover A binding style in which the cover is glued directly onto the spine. Also known as 'wrappered'.

draw program A program used to create and edit objects (lines, circles, squares etc.) using a **vector** approach, such as **Bézier** curves. Should be contrasted with a **paint program**, which is used to edit and manipulate **bitmaps**. It is usually possible to import bitmap graphics into draw programs, but not to edit them. If a bitmap is **autotraced**, then a **vector graphic** is produced, which can be edited in the draw program.

draw-type graphic A graphic created from a series of geometric elements stored in memory. Also known as an **object-oriented graphic** or **vector graphic**. Contrast **bitmap graphic**.

dressing 1. The range of typefaces held on a photosetter. 2. Putting the typefaces in a photosetter.

drier A mechanical device, such as a gas oven, used to dry ink on **heatset** web machines.

driers Additives in printing ink such as cobalt, manganese and resinates, which accelerate drying.

drilling Perforating a pile of sheets with holes for special binding methods, such as **looseleaf**.

driography Litho platemaking process in which the non-image areas are silicone rubber.

driver Computer routine which handles communication between **CPU** and peripherals. In typesetting, a program which controls a printer or a typesetter (printer driver, typesetter driver).

drop cable The wiring between a computer and its **Ethernet transceiver**.

drop cap(s) Drop capital. A letter or letters at the beginning of a paragraph which extend beyond the depth of the rest of the text line. Also called **drop initial(s)**. Compare **cocked-up initial**.

drop folio Page number at the foot of a page.

drop guides Guides on a printing machine which position the sheet ready for the grippers.

drop heads See **dropped heads**.

drop in To insert **text** or **artwork** into space left in a typeset page.

drop initial See **drop cap(s)**.

dropout Characters lost in data transmission for whatever reason.

drop-out blue Light blue, invisible to monochrome litho film. Useful for grids, marks on **artwork** etc. Also known as **non-reproducing blue**.

drop-out half-tone Half-tone in which the highlight areas have no screen dots and simply show the white of the paper. Also known as a **deep-etch half-tone**.

dropped heads Chapter headings positioned a few lines below the top of full text pages.

drop shipment Direct delivery to customer, shop or warehouse of large numbers of books by publisher or printer, i.e. circumventing agent or wholesaler.

dross The surface skin on molten type metal.

drum An obsolescent computer storage medium using a rotating magnetic drum.

drum printer A line printing device containing a drum on which each printable character forms a complete row across the drum surface.

drum scanner Scanner with cylindrical platen for mounting transparencies to be scanned, as distinct from a **flatbed scanner**.

dry back The loss of gloss of an ink as it dries.

dry creping See **creping**.

dry end The last function of a **Fourdrinier** papermaking machine whereby the wet **web** of paper is dried by passing between hot rollers.

dry indicator size test Method of measuring paper's water resistance. (See also **Cobb size test**.)

drying cylinder Heated revolving cylinder which dries newly made sheets of paper as they pass over it.

drying section The last part of the papermaking machine, after the press section, which completes the drying of the web.

drying time Time taken for the ink on a printed sheet to dry enough for further work to be done on the sheet, e.g. **binding** or extra printing.

dry litho Offset plate which does not need to be dampened for the ink to be distributed.

dry-mounting A method of photographic mounting which uses pressure-sensitive backing.

dry offset See **letterset**.

dry picking resistance The **picking** resistance of paper in dry conditions.

dry point Method of engraving with a needle directly onto bare copper plate without using acid.

dry proof Plastic proof as opposed to a machine proof from the metal.

dry pulp Pulp in dry sheets.

dry transfer lettering Sheets of typographic characters which can be transferred onto paper by rubbing.

dry-up See **scumming**.

DSA See **Directory System Agent**.

DSI See **digital speech interpolation**.

DS level See **data service level**.

DSP See **digital signal processing**.

DSS See **digital signature standard**.

DSSSL See **Document Style Semantics and Specification Language**.

DSU See **digital service unit**.

DTD See **Document Type Definition**.

DTE See **data terminal equipment**.

DTMF See **dual tone multi frequency**.

DTP See **desktop publishing**.

DTR See **data terminal ready**.

DUA See **Directory User Agent**.

dual-attached An **FDDI** interface where a device is connected to both FDDI **token-passing** rings, so that uninterrupted operation continues in the event of a failure of either of the rings. While all connections to the main FDDI rings and some critical devices such as **routers** and **concentrators** are dual-attached, **host** computers are normally **single-attached** or **dual-homed** to a router or concentrator.

dual-homed A connection to an **FDDI** network in which a **host** computer is simultaneously connected to two separate devices in the same FDDI ring. Normally, one of the connections becomes active while the other is blocked. However, if the first connection fails, the back-up link takes over. The difference between a dual-homed device and a **dual-attached** device is that while the former can tolerate a fault in one of its 'homes', the latter can tolerate a fault in one of the FDDI rings.

dual tone multi frequency (DTMF) Otherwise known as **touch-tone**. The method employed in telephony throughout the US to define the keys pressed when dialling. Pressing a key generates two simultaneous tones, one for the row and one for the column.

Dublin core A core of **metadata** elements proposed (at a 1995 conference in Dublin, Ohio) as a basis for searching for information available over the **Internet**.

duck-foot quotes Arrow-shaped quotation marks (« and »). See **guillemets**.

duct Ink trough on a printing press. The duct roller regulates the amount of ink released.

duct roller Roller that takes inks and passes them to the distributing rollers that ink the **forme**.

dull-coated paper Paper coated with a matt finish.

dull finish enamel An enamel paper with a low gloss.

dummy Mock-up of a book or other piece of printing to indicate specifications.

dump Transfer a computer file into or out of storage.

dump bin Point-of-sale container for easy stacking of goods.

Duodecimo (**12mo**) Book in which each leaf is one twelfth the size of the printing sheet, giving 24 pages.

duoformer The duoformer paper machine has an additional wire running on top of the normal machine wire, which draws water from the topside of the web, producing an evenly formed sheet. As distinct from the **twin-wire** process, which has two separate webs of paper which are brought together before pressing.

duotone A black-and-white photograph (or other artwork) that is reproduced using two colours, both near to black. Two **half-tone** images are generated, one of which is slightly underexposed and the other slightly overexposed, and they are printed one on top of the other. The effect is to give a more striking image, together with more control to the designer, who can vary the proportions of the two images. **Tritones** and **quadtones** are also possible.

dupe See **duplicate block**.

duplex See **full duplex**, **half duplex**, **simplex**.

duplex cutter A sheeting device which cuts two different sheet lengths from the web simultaneously.

duplex half-tone See **duotone**.

duplex paper Paper with a different colour on each side.

duplex printing Double-sided printing.

duplicate block, **film**, **transparency plate** etc. More than one identical item produced from the same original. Used for printing several copies 'up' on a machine, printing in two locations, or for other purposes.

duplicator Small office machine for short-run reproduction from a stencil.

duplicator paper Special absorbent paper for duplicating from a stencil master.

dusting Accumulation of powdered paper on the non-printing areas of a **blanket**.

dust jacket Paper wrapper of a book carrying the title and author's name.

Dutch grey board See **grey board**.

DVD See **digital versatile disk**.

DVI See **digital video interactive**.

Dvorak Keyboard layout in which the keys are positioned so as to be most readily accessible to the fingers which most often use them. Contrast **azerty**, **qwerty**.

DXF See **Drawing eXchange Format**.

dye A soluble colouring matter (pigments are insoluble).

dyed through In bookbinding, a dyed-through cloth is dyed on both sides, not just on the surface. Contrast **whiteback**.

dyeline paper Specially treated paper used in the dyeline copying process. See **diazo**.

dyeline prints or **dyelines** See **blueprints**.

dyeline process Copying and proofing method which uses special coated paper contacted to film.

dye mask Special sort of colour film used when colour separating transparencies by camera to assist with colour correction. (See also **masking**, **trimask**.)

dye transfer Photographic process producing colour prints with dyes which are selectively absorbed.

Dylux Proprietary name for double-sided, light-sensitive proofing paper.

dynamic allocation Assignment of operating system resources to a program at the time of execution rather than at the point that the program is loaded.

dynamic bandwidth allocation, dynamic bandwidth management (DBM) The allocation of **bandwidth** as and when it is required by users, depending on the **burstiness** of their traffic. All **packet-switched** networks provide dynamic bandwidth allocation.

dynamic channel management (DCM) Allocation of the **channels** available as and when required by users.

Dynamic Data Exchange (DDE) A Microsoft Windows **hotlink** protocol that allows **application programs** to communicate using a **client-server** model. DDE is mainly used to include live data from one application in another, e.g. spreadsheet data in a wordprocessed report by reference, so that whenever the latter is processed the latest version of the spreadsheet data is included. In version 3.1 of Windows, DDE was enhanced by **Object Linking and Embedding** (**OLE**).

Dynamic Host Configuration Protocol (DHCP) A protocol in a **Windows NT** server that provides dynamic allocation of **IP** addresses to PCs running on a Microsoft **Windows local area network**. (See also **Reverse Address Resolution Protocol**.)

dynamic IP address A temporary **IP** address, which is allocated when a user connects to the **Internet**, usually over a **dial-up** connection. (Compare with **static IP address**.) Dynamic IP addresses allow a more efficient use of IP addresses, the number of which is finite. See **TUBA**.

Dynamic Link Library (DLL) An executable program component for Microsoft **Windows** that can be loaded and linked as required at run time, and then unloaded when no longer needed. Windows itself uses DLL files to handle such aspects as international keyboards, while Windows wordprocessing programs use DLL files for functions such as spelling and hyphenation checks. Other operating systems – such as SunOS (the Sun Microsystems version of **Unix**) and the RISC OS on the Acorn Archimedes – also use dynamically linked libraries.

dynamic memory Computer memory that will degrade in time if a power source is not permanently or frequently applied.

Dynatext A viewer for **SGML**-based documents, together with the related **graphics** etc., produced by Electronic Book Technologies.

E

E-1 A European leased line service, used by **primary rate ISDN** with a bit rate of 2 Mbps. The equivalent of the US **T-1** service. (See also **E-3, E-4**).

E-3, E-4 European **PDH** services running at 34.368 Mbps (E-3) and 139.264 Mbps (E-4). For the US, see **data service levels**.

E13B Magnetic ink font used on cheques.

E164 The worldwide number plan of the **ITU-T** for identifying network connections via **ISDN** and **SMDS**.

EAN European Article Number. See **barcode**.

e&oe Errors and omissions excepted. Words on an invoice or estimate by which a company covers itself against mistakes in the invoice.

ear Space by the side of the **masthead** on a newspaper, usually reserved for advertisements.

early selling Bookshop sales of a book made prior to the publication date set by the publisher.

earmark Particular characteristic or feature of a **typeface** which distinguishes it from all others and assists recognition.

EARN See **European Academic and Research Network**.

earpieces Small advertisements on either side of a newspaper's masthead.

easer Printing ink additive used to reduce tack.

EBCDIC See **Extended Binary Coded Decimal Information Code**.

Ebone A European-wide **backbone**.

Ecash A trial form of **electronic funds transfer** over the **Internet** (and soon by **electronic mail**). Each user withdraws money from his or her bank account and, using Ecash software, stores it on his or her own computer. The money can then be spent over the Internet at any shop accepting Ecash. Security is provided by a **public-key digital signature**. (See also **CyberCash**, **DigiCash**, **Mondex**.)

ECF Elemental chlorine free, relating to pulp and paper manufacture. ECF pulp is one stage less pure than **TCF**, totally chlorine free, pulp.

echo In telecommunications, the reflection of part of the signal energy from the remote end back to the transmitter. Also a kind of **newsgroup** on **FidoNET**.

echo cancellation A process that isolates and filters out unwanted signals, resulting from **echoes** of the main signal, on a telephone line. Also a technique which permits **full duplex** transmission over two wires.

echoplex A communications procedure in which a receiving station acknowledges receipt of a message by echoing it back to the transmitting station.

ECMS See **Electronic Copyright Management System**.

Econet A network connecting those concerned about environmental preservation and sustainability. (See **Institute for Global Communications**.) Also a network produced by Acorn Computers for the BBC Microcomputer and its successors.

edgeboard connector The most common method of connecting add-on printed circuit boards to computer hardware.

edge cutters Waterjets on a paper machine which 'clean off' the edges of the **web** on the **wire**.

edge decoration Coloured dyes, marbling transfers or gilding on trimmed book edges.

edge gilding Gold-leaf edging on a book.

edge tear Broken edge of web.

edge tearing resistance Resistance of paper to the further development of a small edge tear.

EDI See **electronic data interchange**.

EDIF See **Electronic Design Interchange Format**.

EDIFACT See **ISO 9735**.

edit Check, arrange and correct data or copy before final presentation.

editing terminal Visual display unit capable of retrieving a file and editing the contents prior to processing.

edition All the copies of a printed work from the same set of type or plates.

edition binding Conventional, production-line, case-bound binding.

editor A software utility employed to aid the production and modification of source programs.

editorial 1. Publication's formal views on a subject expressed in a special column. 2. The editorial matter (as distinct from advertisements) in a publication.

edutainment The integration of interactive education and entertainment services or software. In Europe usually on **CD-ROM**, while in North America often supplied via a cable network. (See also **infotainment**.)

EEMA European Electronic Messaging Association.

EFL English as a foreign language.

EFTPOS See **electronic funds transfer at point of sale**.

EGA Enhanced graphics adapter. Category of driver for graphics monitor. (See also **CGA**, **VGA**, **SVGA**.)

eggshell antique Bulky paper with a slightly mottled surface, like that of an egg.

EGP See **Exterior Gateway Protocol**.

Egyptian Type style with a squared serif.

eight-bit clean Describes systems that take advantage of all eight **bits** of a **byte**, using extended character sets (unlike **ASCII).** In programs and communications only using the first seven bits (i.e. a character set from 0 to 127), the eighth bit is often used as a **parity** bit or to contain a flag. If **binary** files, including most wordprocessor files using **ANSI** coding, are sent over a communications link that is not eight-bit clean (and this is many communications links), the files will be corrupted. Coding approaches such as **MIME**, **uuencode** and **BinHex** can be used to convert such files to **ASCII** for sending over the **Internet**.

EIS See **executive information systems**.

E-journal See **electronic journal**.

Ektachrome Alternative name for transparency.

electro **Electrotype**. Duplicate of **block** or **forme** made by coating a mould with copper and nickel.

electron gun See **gun**.

electronic colour retouching The ability to alter local areas of a scanned colour subject by defining and then amending them electronically. Available on most **EPC systems**.

electronic composition Computer-assisted typesetting and page make-up.

Electronic Copyright Management System (ECMS) A system that will allow the electronic submission of copyright registration to the US Copyright Office and electronic notification of registration. Many of the transfers performed in the ECMS will use **Privacy Enhanced Mail** (**PEM**).

electronic data interchange (EDI) (Or electronic dissemination of information.) The exchange of certain business documents – such as orders, invoices, bills of lading – in standard formats between organisations, using **electronic mail**. Can include **electronic funds transfer**.

Electronic Design Interchange Format (EDIF) A format to transfer data between **CAD/CAE** systems.

electronic dissemination of information (EDI) See **electronic data interchange**.

electronic document Any document that is held in electronic, as opposed to print-on-paper, form.

electronic dot generation The ability of an output scanner to generate half-tone dots directly on the output medium in a variety of screen rulings and forms.

electronic engraving Letterpress block engraving with a stylus controlled by a light-sensitive cell scanning the original.

electronic funds transfer The use of telecommunications or a **network** to send payments from one organisation to another, usually via their bank accounts.

electronic funds transfer at point of sale (EFT-POS) Transfer of funds between bank accounts by electronic means, usually implemented at a point-of-sale computer terminal (or check-out) in a supermarket on the basis of information supplied on a debit card; telephone lines are used to make an automatic debit from the customer's bank account to pay a bill. (See also **electronic data interchange** (**EDI**), **Mondex**.)

electronic journal (E-journal) The electronic equivalent of a paper-based journal (or magazine), available either over the **Internet** or by direct **dial-up** (see **OCLC** e.g.). The journal may be an electronic version of a print-on-paper journal, but an increasing number of **E-journals** exist only in electronic form and are regarded by some areas of the academic community as the most efficient way of communicating the results of research. Over the Internet there are many different delivery methods, e.g. via **email**, by using an **ftp archive** (with the contents page distributed by email or **mailing list**), or over **the World Wide Web**. Most E-journals are free but some require a subscription to be paid for access. Those available by dial-up may have a proprietary **browser** program, such as Guidon, which was used by OCLC, and these are available only by subscription. There is much discussion over whether electronic journals will eventually replace printed journals and over the related question of the importance, or otherwise, of peer

review (the refereeing of academic papers before they are published), which is a significant element of conventional printed journals but may or not be part of the operation of an E-journal. The role of the commercial publisher in E-journals is also much discussed. See **E-journal**.

Electronic Libraries Projects (e-Lib) A series of projects in the UK concerned with electronic access to information in UK higher education.

electronic mail Transfer of documents of messages between computers or wordprocessors using direct links, telecommunications or satellites.

electronic mail address The address that is used to send **electronic mail** to a specified destination. On the **Internet** the **RFC** 822 standard is probably the most widely used, although **X.400** addressing is also in used. (See also **bang path**, **fully qualified domain name**.)

electronic markup Generic codes inserted into a text sent on disk or down the wire, which identify headings, different levels of text etc. The codes can be converted into typesetting commands by means of a look-up table at the time of output. See also **generic markup** and **ASPIC**.

electronic money A method of payment without using cash. A card, e.g. **Mondex**, is inserted into a machine (a form of **automatic teller machine**) at a bank and an amount of money is transferred onto the card. This is equivalent to a cash withdrawal in that the money is taken from the user's account. Money is then spent by passing the card through a trader's card-reading machine, so that the requisite amount is transferred from the card and credited to the trader. **Ecash** provides a similar facility, but over the **Internet**.

electronic page composition system (EPC system) An EPC electronic page composition system is one which comprises a series of interlinked computers based on colour scanners. The complete range of processes encompassed by a large electronic page composition system comprises the colour scanning of originals, retouching and colour correction, soft proofing, the scanning-in or direct entry of text, masking and page assembly, tint laying, and final output of one-piece imposed page films in four colours, or press-ready printing plates.

electronic pen See **light pen**.

electronic point of sale (EPOS) System where sales are charged automatically to a customer's credit card and the shop's computer records the resulting changes in stock as they occur.

electronic publishing Any form of publishing in an electronic medium, eg online, CD-ROM.

electronic rights Rights to publish and sell material on electronic devices.

electronic scanner 1. Machine which scans full-colour copy wrapped around a drum and, by reading colour densities, produces separations. 2. Device on a printing press or paper machine which sends control readings back to a console or to the machine itself.

electronic slanting Creation of a slanted **roman typeface** by a photosetter or laser printer to imitate italics.

electronic spreadsheet See **spreadsheet**.

electronic transfer of funds See **electronic funds transfer**.

electronic whiteboard (EWB) (Also described as **audiographic teleconferencing**.) A method in which users can share a writing area over a communications link. Originally this was a device based on a whiteboard, so that the pen movements at one end of the link could be transmitted to a pen at the other end, but the term is now often applied to screen-sharing systems with similar functionality.

electrophotographic printing See under **electrophotography**.

electrophotography The use of electrostatic forces to copy images, as in photocopiers.

electrostatic printing A copying process involving the reflection of light from an original onto an electrically charged drum. Areas affected by the light lose their charge. **Toner**, retained by the charged areas, is fused to the paper, thereby creating an image. Also, **electrophotographic printing**, **xerography**, **xerographic** printing. Laser printers use this principle for output.

electrotype Duplicate of **block** or **forme** made by coating a mould with metal.

element A structural part of an **HTML** or **SGML** document (e.g. paragraph). The name and usage of an element, together with its **attributes**, are defined in a **Document Type Definition**. Elements are coded within a **document instance** by using **tags**. (See also **attribute**, **entity**.)

elhi or El-Hi US. Publishing for elementary and high schools.

e-Lib See **Electronic Libraries Projects**.

elision Omission of a **character** from a series of characters which will not affect the overall meaning, e.g. with dates: 1990–99 vs 1990–1999.

elite Small size of typewriter type: 12 **characters** per inch. Microelite has 15 characters per inch; pica has 10 characters per inch.

ellipsis Three dots (...) indicating an omission.

elliptical dot Elongated dot giving a smoother gradation of tone in middle-tones.

Elm A full-screen-based **Unix mail** (or **electronic mail**) program.

elrod Letterpress casting machine for rules and leads.

ELT English language teaching.

em 1. Width of the body of the lower case 'm' in any typeface. 2. Standard unit of measurement (also called 'pica'). One em equals 0.166044 inches.

email (or **e-mail**) See **electronic mail**.

email (or **e-mail**) **address** See **electronic mail address**.

embossed finish Surface pattern pressed in paper.

embossing See **blocking**.

em dash An elongated hyphen (the width of capital 'M' in the **font** in use), which is used within printed (and electronic) documents as a form of punctuation. Different publishers and different nationalities have different conventions about how the em dash and **en dash** should be used. See **dash**.

emerald Obsolete type size of about 6½pt.

emote icon See **emoticon**.

emoticon (Or emote icon.) An **ASCII glyph** or group of characters used to indicate an emotional state in **electronic mail** or **news**, also described as a **smiley**. (See also **baudy language**.)

emulation Setting up a computer, a terminal, a network or communication equipment in such a way as to make it appear to another computer etc. as a different device. For example, it is possible to make a PC appear as a **terminal** to a mainframe.

emulator A program that permits a computer to imitate a different system.

emulsification Dispersing of water into another liquid, e.g. when water **bleeds** into the ink on a litho plate and degrades the image.

emulsion Photosensitive coating on film or plate. Hence, 'emulsion side'.

en Half the width of an **em**. The width of the average type character, used as the basic unit of measurement for **casting off** copy. Also character or keystroke, in the sense of ens per hour (= characters set in one hour) or ens of setting (= character count in a manuscript).

enamel paper Paper coated on one side with a very high finish.

Encapsulated PostScript (EPS) A **PostScript** file format that has special structure, which will allow **application** programs to view it and manipulate it in certain ways (crop, scale or rotate), but not to change it otherwise. The EPS file format consists of two parts: the first is the PostScript code which will generate the image on an output device, while the second is a low-resolution **bitmap** image for viewing and editing in the other applications. There are different versions of the EPS format for the **Macintosh** (which uses a **PICT** format for the bitmap image) and for the PC (which uses a **TIFF** format).

Encarta The Microsoft **multimedia** encyclopaedia.

enclosure Contents of **mail shot**.

encode To code groups of characters.

encrypt Codify material so that it requires decoding in order to be read.

encryption Conversion of a **plaintext** file to **ciphertext**, so that it can be used or understood only by those who have the information to decode or **decrypt** it.

encyclopedia Reference book, often in several volumes, giving information on many subjects or on a single subject, usually arranged in alphabetical order and indexed.

en dash An elongated hyphen (the width of capital 'N' in the **font** in use), which is used within printed (and electronic) documents as a form of punctuation. Different publishers and different nationalities have different conventions about how the en dash and **em dash** should be used. (See **dash**.) There are two almost universal uses of an en dash. The first is to indicate a range, as a substitute for the word 'to' (or 'through' in the US), e.g. 'pp 20–30' (pages 20 to 30), while the second is to denote a relationship, e.g. 'speed is a time–distance relationship'.

endmatter The final parts of a book after the main text: appendices, notes, index etc.

endnotes Explanatory text positioned at the end of a book in the form of extra **notes**.

end of file (EOF) The physical termination point of an amount of data or the mark used to indicate this point.

end-of-line decisions Decisions on **hyphenation** or **justification** made either by the operator or automatically by the typesetting system.

end or **end leaf** See **endpaper**.

endpaper Strong paper used for securing the body of a book to its case. Endpapers may be plain, coloured, marbled etc. and should be specified with the **grain direction** parallel to the spine.

endsheets See **endpapers** (US).

end-tag The tag which indicates the end of an **element** in **SGML** or **HTML**. The logical structure of a document may mean that end-tags are not always necessary, because they are implied by the next **start-tag** or another end-tag. Whether or not end-tags should be included for particular elements is defined in the **Document Type Definition** (**DTD**).

end-to-end performance A measure of network performance, which will be related to **bandwidth** and other factors.

engine-sized pulp See **beater-sized pulp**.

engine sizing Sizing paper in the beating machine or refiner rather than at a later stage in manufacture. See **size**.

English Obsolete type size, approximately 14pt.

English finish Smoothly calendered book paper.

engraving 1. Printing plate etched for use in letterpress. 2. Print made from such a plate.

ennage Total area of type, measured in **ens**.

entity A code used in **SGML** and **HTML**. There are two types: the first is the **character entity**, used to code non-**ASCII** characters using ASCII coding, while the second use is as a kind of macro and inclusion facility. (See also **attribute**, **element**.) The second use is not currently implemented in HTML.

envelope paper Paper made for high-speed envelope die-cutting machines.

envelope-stuffer Mail shot promoting or advertising products or services, sent out in an envelope.

environment In personal computing, the screen presentation (**user interface**) of information. **User-friendly environments** concentrate on the pictorial representation of instructions (see **WIMP**). More traditional environments require knowledge of the operating system's particular conventions (e.g. **MS-DOS**).

Envoy A document exchange format, originally part of the PerfectOffice package, which also included the WordPerfect wordprocessor. Now distributed by Corel. Has some similarities to **Acrobat**, but is less widely used. Also a **personal digital assistant** produced by Motorola, which incorporates two-way wireless communication.

EOL End of line.

EOT End of tape.

EP See **electronic publishing**.

EPC system See **electronic page composition system**.

ephemera Small printed item, such as a theatre or match ticket, intended to last just for the specific event but which some people collect.

epigraph Quotation in book **prelims**.

epilogue Closing section at the end of a novel or play.

EPOS See **electronic point of sale**.

EPROM Erasable Programmable Read Only Memory. May be overwritten with special equipment. See **ROM**, **PROM**, **firmware**.

EPS/EPSF See **Encapsulated PostScript**/Encapsulated PostScript File.

equalisation Compensation, in high-speed **modems**, for the differences in attenuation at different frequencies on a telephone line.

equilibrium moisture content Moisture content of paper at the same relative humidity as its environment.

erasable optical disc See **compact disc-recordable**, **floptical disc**.

erasable storage Storage medium that can be erased and reused as required, i.e. a floppy disk.

ergonomics The study of equipment design in the context of man/machine interface, with the express purpose of reducing operator fatigue and discomfort, and to ensure maximum operating conditions.

erlang The standard unit for measuring telecommunications traffic. One erlang of traffic indicates continuous 100% loading of one circuit or 50% loading of two circuits.

erratum slip Slip of paper pasted into a book and containing list of author's post-press corrections.

error correction See **error detection and correction**.

error detection and correction Detection of errors in transmitted or stored data and the correction of them. The simplest form of detection is to use a single added **parity** bit, a **cyclic redundancy check** (CRC) or a **checksum**, which will indicate that an error has occurred. Use of multiple parity bits will also indicate which bits have been inverted and should therefore be corrected to restore the original data. The more extra bits that are added, the greater the chance that multiple errors will be detected, and therefore be correctable. (See also **hamming code**, **forward error detection**.)

escalator clause Clause in a contract that allows royalties to increase in line with certain levels of sales.

escape sequence Refers to Epson Standard Code for Printers, a standard set of printer-control codes widely used in the industry.

escrow Deposit of information with a third party for safe-keeping. The practice is used for the deposit of software source material to ensure that it will be available should the supplier cease to trade. It is now being used for deposit of **encryption** keys by the US government. See **Clipper**.

esparto Long-fibred grass used in pulp for papermaking.

esquisse Rough layout or design.

etch To produce a printing plate by chemical removal of non-printing areas. Etching ink protects the plate from the etching solution.

etching 1. See **colour etching**. 2. Form of print created by cutting the image into a specially coated plate using acid.

Ethernet A **local area network**, developed by

Xerox, Intel and Digital Equipment Corporation, for connecting computers together with **coaxial cables** or **twisted pairs** so that the computers can share information. (For cabling options see **10Base2**, **10Base5**, **10Base-T**.) Within each main branch of the network, Ethernet can connect up to 1024 personal computers and workstations, uses **CSMA/CD** access control and runs at 10 Mbps. It is specified by the **IEEE 802.3** standard. Ethernet is not very suitable for the transmission of real-time signals such as speech or compressed video. **Fast Ethernet** runs at 100 Mbps. (See also **cheapernet**, **EtherTalk**.)

Ethernet address A six-part **hexadecimal** number identifying a controller board. This number, in which the parts are separated by colons (:) indicates that an Ethernet communications board is installed in a PC and is used to identify the PC as a member of the **network**.

EtherTalk An implementation of **AppleTalk** on an **Ethernet LAN**, allowing a Macintosh to connect into Ethernet networks; the Macintosh must have an Ethernet interface card installed.

ETSI See **European Telecommunications Standards Institute**.

ETX/ACK handshaking A **handshaking** technique in which the end-of-text character ETX (**ASCII** value 3), also called Ctrl+C, is used to pause transmission.

Eudora Electronic mail software for mail operations using **TCP/IP**, available for a number of operating systems.

EUnet The European part of the international network that links Unix systems running **UUCP**. It is the largest European component of the **Internet**; also provides for **X.400** access.

Euro-ISDN A standard for **ISDN** introduced in 1994. Euro-ISDN allows full transparent interworking between many European countries.

EuroNet Company offering **Internet** connection from Amsterdam.

Europallet Standardised pallet (120×100cm) used in Europe.

EuropaNET A combination of pan-European **network backbone** services run by **DANTE**.

European Academic and Research Network (EARN) A network for universities and research in Europe, originally set up by IBM. It uses **BITNET** protocols and connects to BITNET in the US.

European article number (**EAN**) Form of **barcode** used in Europe.

European Conference of Posts and Telecommunications See **CEPT**.

European Laboratory for Particle Physics See **CERN**.

European Telecommunications Standards Institute (ETSI) An organisation set up in 1988 by the European **PTT**s with the support of the European Commission. ETSI is taking over much of the standardisation work previously carried out by **CEPT** and other bodies, including the harmonisation of **ISDN** standards across Europe. It can be regarded as a European version of the **ITU-T** (formerly **CCITT**).

EUTELSAT EUropean TELecommunications SATellite organisation. Owned by the European **PTT**, it runs the main European communications satellites.

evaporation One of the ways in which inks dry (see also **absorption**, **oxidation**, **penetration**). Heatset inks dry mainly by evaporation.

even pages Left-hand, or verso, pages, with even numbers.

even small caps Small capitals without full capitals.

even working A total of pages in a publication which can be produced entirely by printing sections of the same numbers of pages (16s, 32s etc.). (See also **oddment**.)

everdamp paper Transfer paper for laying down images on lithographic plates.

EVGA Enhanced video graphics array. See under **display adapter**.

EWB See **electronic whiteboard**.

eWorld An online system from Apple.

Exabyte A tape format (based on the company name) for computer data back-up and transfer, using data-quality 8mm video cassette recorder tape. Exabyte tapes can store between 5–14 gigabytes of data and are most often attached to **Unix workstations**. (See also **digital audio tape** (**DAT**).)

exception dictionary Computer store of words which do not hyphenate in accordance with the machine's rules of logic. See also **hyphenation exception dictionary** and **discretionary hypens**.

exclusive type area Type area exclusive of **headline** and **folio**. The type area inclusive of headline and folio is known as the **inclusive type area**.

execute The function that initiates performance of user-specified operations.

executive information systems (EIS) Software which extracts data from an organisation's computer applications and files and presents the information in a form required by management. How the information is presented depends both on management requirements and on the software used; graphical information tends to be preferred.

ex libris **Bookplate** or label pasted inside a book showing the owner's name.

exotic typefaces Typefaces, such as Russian or Chinese, which do not use Latin characters.

expanded memory In MS-DOS applications, memory beyond the conventional 640K. Expanded memory (or 'EMS memory') is an older standard and has been mainly replaced by the use of extended memory ('XMS memory').

expanded type **Typeface** with **characters** wider than the normal **font**.

expansion board A component added to a computer system in order to enhance its capabilities. Also known as **add-on boards**, they may provide the user with additional memory, graphics, colour, communications features etc.

expert set (or expert collection.) A **font** with an extended **character set**, including such characters as true small capitals, non-aligning (or old-style) numerals and additional accented characters.

export To copy out from one program into another, typically from a page-make-up program to a wordprocessing program.

export filter A program which converts text from one format and code structure into another.

exposure The process in which light-sensitive materials (e.g. plates or film) are exposed to a light source.

exposure unit See **output scanner**.

expurgated edition Edition which has had objectionable material removed.

extended ASCII An alternative term for **high-level ASCII**.

Extended Binary Coded Decimal Information Code (EBCDIC) An 8-bit character code set developed by IBM, mainly used on **mainframes**. Within IBM a number of variants of EBCDIC are used but more generally **ASCII** is the standard.

extended graphics array See **XGA**.

extended-level synthesizer An extension to the minimum capability required by the Microsoft **Multimedia Personal Computer** (**MPC**) specification for a music synthesizer within Microsoft **Windows** (see **base-level synthesizer**) so that it is capable of playing at least 16 simultaneous notes on 9 melodic instruments, together with 16 simultaneous notes on 8 percussion instruments. (See also **Musical Instrument Digital Interface** (**MIDI**).)

extended type See **expanded type**.

extender Substance added to paint, glue and ink to make it less **opaque** or increase its bulk.

extenders Ink additives used to increase coverage. Typical extenders include whiting, borytes, blanc fixe.

eXtensible Markup Language (XML) A simplified version of **SGML**, developed under the auspices of the **W3 Consortium**, with the aim of enabling SGML to be 'served, received and processed on the **Web** in the way that is now possible with **HTML**'. XML has been designed for ease of implementation and to be interoperable with both SGML and HTML. One area in which XML has an advantage over SGML is that it is designed to handle international **character sets** corresponding to **ISO 10646** (which includes **Unicode**).

extensible paper Paper which has tear resistance due to stretching properties.

extension Name used in some applications software for additional programs whch add functionality.

extent Length of a book in pages.

Exterior Gateway Protocol (EGP) A protocol which distributes routing information to the **routers** which connect **autonomous systems**. (See also **gateway**.)

external modem A **modem** which has its own housing, cables and power supply, which is usually connected to a computer via a **serial line**, as opposed to an **internal modem**. While using an external modem means having an additional piece of equipment, there are advantages in that it is possible to obtain an indication of the operational state from the configuration of the indicator lights and, on some modems, it is possible to control functions by using push buttons.

extract Quoted matter within a text, often set indented and in a smaller type size.

extranet The extension of an **intranet** to allow access to other, authorised, users.

F

face 1. The printing surface of a piece of type. 2. A style of type, i.e. typeface.

face-down feed When the side of the sheet to be printed faces downward on the feed board.

facility fee See **access fee**.

facing Lining of fibreboard.

facing editorial Appearing opposite editorial pages. A special position used when ordering advertisement space.

facing pages Pages which face each other in an open book or magazine. Also **double-page spread**.

facsimile 1. Exact reproduction of a document or part of it. 2. Machine which copies and transmits documents by telecommunications. Hence **facsimile transmission**.

facsimile transmission or **fax** Method for the electronic transmission of printed material by means of special transmitting and receiving equipment. The document to be transmitted is scanned at a resolution of around 200 lines per inch; the signals are sent along conventional dial-up telephone lines; at the receiving end, a thermal imaging head or laser writes a facsimile of the transmitted message. **ITU-T** standards define several facsimile reresentations: Group 3 defines digital transmission taking less than 1 minute per page; Group 4 defines digital transmission over **ISDN**. While Group 3 is for black and white only, Group 4 will also handle colour.

factoring The business of buying invoices at a discount and taking responsibility for collecting the money.

fade-out See **ghosting**.

fair copy A correction-free copy of a document.

fair dealing A provision in copyright law which permits the copying of an otherwise protected work for the purposes of criticism, review, or private study.

fake Imitate or copy material for fraudulent purposes.

fake duotone Imitation duotone obtained by printing the **half-tone** in one colour (normally black) over a flat screen tint of another colour (lighter). Contrast **duotone**.

fake process Colour separation achieved by means of the artist producing separate overlays.

fall back When two **modems** which experience data corruption, e.g. as a result of line noise, can renegotiate to use a lower speed connection. (See also **fall forward**.)

fall forward When two **modems** which **fall back** to a lower speed because of data corruption later return to the higher speed if the connection improves.

family A series of fonts related to the basic text roman face.

f&c Folded and **collated**.

f&g sheets Folded and gathered sheets of a book.

fanfold A web of paper folded into connected sheets by alternate folds across the web.

fanning-in The condensing of the image on the trailing edge of a sheet caused by the sheet stretching temporarily on the press.

fan-out Moisture-distorted edges of paper on the press, creating waviness in the sheet.

FAQ Frequently asked question(s); selected, sometimes summarised and specially listed to help newcomers to a particular topic. Probably originated with new users of **email** and **Usenet newsgroups**, but now appears in many contexts.

FAQ list See **FAQ**.

fascicle or **fascicule** Unbound instalments of a book which will be collected by purchasers on each publication and bound up into a volume.

fastback binding See **tightback binding**.

Fast Ethernet A **networking** protocol which provides **bandwidth** of 100 Mbps, as opposed to the 10 Mbps of ordinary **Ethernet**. See **100Base-T**.

fastness Resistance of colour to fading. (See also **lightfast ink**, **blue wool scale**.)

fast packet switching (Also called **cell relaying**.) A **wide area network** technology based on the high-speed transmission of fixed-length short packets (or cells). Operates at the **datalink layer** of the **OSI seven-layer model**, and is capable of handling data, voice and video.

Fast SCSI A variant on the **SCSI-2 bus**, which uses the same 8-bit bus as the original **SCSI** but runs at up to 10 Mbps, which is twice the speed of SCSI-1.

father of chapel See **FOC**.

fax See **facsimile transmission**.

fax modem A **modem** that is designed for sending and (usually) receiving faxes via the computer, in addition to its usual **communications** facilities. This means that, using special **fax** software, documents produced by any **application** can be sent as faxes without the need to print them out. Documents can also be received, but this means either leaving the computer switched on continuously or using some special hardware to provide a storage buffer until the computer is used again.

FBS See **flexible bandwidth service**.

FCC See **Federal Communications Commission**.

FCS See **frame check sequence**.

FDA regulations Food and Drug Administration's rules governing the use of packaging materials for food and drugs.

FDDI See **Fibre Distributed Data Interface**.

FDMA Frequency division multiple access. See **frequency division multiplexing**.

FDX See **full duplex**.

feathering 1. In printing, ink-spread on inadequately sized paper. 2. In typesetting, the addition of fractions of a point of leading between all lines in a page to 'stretch' the text to a predefined depth – a form of **vertical justification**.

featherweight antique paper Light, very thick paper, originally used for children's books.

feature 1. Newspaper or magazine article. 2. Specially promoted item of merchandise or characteristic of that item.

FEC See **forward error correction**.

FECN See **forward explicit congestion notification**.

Federal Communications Commission (FCC) The US government body responsible for regulating communications.

Federal Information Exchange (FIX) One of the interconnection points between the US government **networks** and the **Internet**.

Federal Networking Council (FNC) The co-ordinating group of representatives of US federal agencies concerned with federal networking, especially those networks using **TCP/IP** and the **Internet**.

feed The active electronic part of an antenna where the signal is either originated or is concentrated for reception. (See also **newsfeed**.)

feed board The surface over which paper is passed to the printing mechanism of a press.

feed edge Edge of a sheet presented to the lays of a press. Also called **gripper edge**, **leading edge** or **pitch edge**.

feeder The mechanism on a press which separates and lifts sheets into the printing position.

feed holes Holes in paper tape used by the sprocket on the mechanical reader to feed the tape in.

feet The base of a piece of metal type.

feint ruling Horizontal pale blue lines running across stationery.

felt finish A finish to paper created by felts with special weaves.

felt-side Top side of paper formed on a paper machine wire. As distinct from the underside or **wire** side.

fenchel tester Device for comparing the stability of two papers when wet.

festoon In web-offset printing, an arrangement of long loops at the paper feed which allows paper to be tensioned during autopasting on the fly using a **flying paster**.

festoon dryer Method of drying paper by hanging it over heated pipes in loops.

Fetch A program for the **Macintosh**, which enables the transfer of files using **ftp**.

fibre The cellulose constituents in wood pulp.

fibre cut Damage to the web on a papermaking machine caused by a bundle of fibres.

fibre distributed data interface (FDDI) A **local area network** standard based on a **token ring** made up of **fibre-optic cable** at 100 Mbps (although copper cabling can be used, in which case it is termed CDDI). It is suited to data traffic and is replacing **Ethernet** at many sites. FDDI 2 operates at 200 Mbps and incorporates voice and video as well as data.

fibrefelt Another name for **imitation cloth**.

fibre-optic cable A protective glass or plastic cable containing a pure fibre of the same material, used to transmit light from LEDs or lasers in the communication of signals.

fibre-optics The technique of communicating data by the transmission of light through plastic or glass fibres.

fibre-optic transmission A transmission method that uses modulated infra-red or visible coherent light, which is transmitted down dozens (or hundreds) of strands of glass fibre (or other transparent material – optical fibres). Optical fibre is less vulnerable to external noise than other transmission **media** and is cheaper than copper wire, although it is much more difficult to connect. In addition, it is more difficult to tamper with the signal (to monitor it or inject **data** in the middle of a connection), which makes **fibre-optics** appropriate for secure communications. The light beams do not escape from the medium because they are totally internally reflected. Each fibre can carry many signals (a single fibre can transmit 200 million telephone conversations simultaneously) and, as the frequency is high (10^{14}–10^{15}Hz), the information transfer rate is also high. **Fibre-optics** is a vital element of the **information superhighway**, because fibre-optics is one of the few methods that can provide the **bandwidth** necessary for such services as **video on demand** (VoD) and full real-time **videoconferencing**.

fibre puffing Coated paper surface roughening caused by heatset drying on a web press.

fibrilla Part of cellulose fibre separated during the refining process.

fibrillation In papermaking, the process of roughening the outside of the fibre to increase bonding capabilities.

FidoNET A worldwide hobbyist network of personal computers accessible from a range of low-end machines.

field A predefined area of a computer **record**.

FIFO See **first in first out**.

figure 1. A line illustration referred to in the text of a book. 2. A numeral, either in **arabic** or **roman** form.

file Text, or any collection of related records held on a computer in structured form.

file compression The **compression** of **data** in a file, usually to reduce storage requirements or transmission time.

file conversion The process of changing either a file medium or its structure.

file management An established procedure for the creation and maintenance of files.

file server A computer in a **network** that holds files, which can be accessed by users on the network. File servers often also act as **print servers**, while **database servers** provide database intelligence such as transaction processing, indexing, logging, security and so on. Storing files on a file server means that it is unnecessary to have multiple copies stored on individual computers, which both saves disk space and makes controlling and updating files easier, particularly for software upgrades.

file transfer Copying a file from one computer to another computer over a **network** or a direct connection.

File Transfer, Access and Management (FTAM) An **application layer** protocol for file access, transfer and remote manipulation (ISO 8571).

File Transfer Protocol (ftp) A **client-server** protocol that enables a user on one computer to transfer files to and from another computer over a **TCP/IP** network (often over the **Internet**); ftp is also used to describe the client program that the user executes to transfer files.

fill The pattern and the colour inside an object produced in a **draw program**. The parameters controlling the fill are almost always handled separately from those controlling the **outline** of the object. Fill is also used in some text processing programs to indicate whether lines should be run on to make a single paragraph or set line for line as keyed in. This is to allow for editing programs which do not allow **soft carriage returns** on-screen.

fill character A character, typically a space, that is added to a set of characters to make the set up to a given size.

filler advertisement Advertisement used to occupy redundant space rather than booked for insertion.

fillers Pigments added to the **furnish** of paper to improve the printing or opacity characteristics.

fillet A decorative line on the binding or page of a book.

fill-out forms Often abbreviated to **forms**. The principal way in which **World Wide Web** sites request information from Web users. Users enter appropriate data within a form (as with conventional printed forms) or they select options from amongst a number given and this information is transferred back to the **host**.

fill pattern A choice of patterns and shades used to fill objects created under most **WYSIWYG** graphics packages. Originally a MacDraw/MacPaint feature, now emulated by other software packages.

film advance The distance by which film in a photosetter advances between lines of type to create **leading**. Also called **film feed** or **line feed**.

film feed See **film advance**.

filmless proofing Also called filmless hardcopy proofing or digital proofing. Proofs generated off an electronic page composition system through the medium of, e.g., a laser or thermal colour printer. As distinct from **plastic proofs** which are made by contacting films, or **machine proofs** which are made from plates.

film make-up Positioning pieces of film ready for platemaking. Page make-up is used as the term for pages or assembly for full imposition.

film master See **image master**.

film mechanical Camera-ready material composed in film rather than paper.

film plotter See **output scanner**.

film processor Machine which automatically develops, fixes, washes and dries exposed film.

film recorder An output device that captures data and records it onto film, usually at high resolution. See **imagesetter**.

filmsetting Creating type on film by means of a photosetting system.

film wrapping See **plastic wrapping**.

filter 1. An electronic or optical device which removes unwanted frequencies from a signal. 2. A program which converts one file coding structure into another, e.g. in converting from one wordprocessor format to another or from a wordprocessor format to a **desktop publishing** format. 3. A control within a **firewall machine** that blocks transmission of certain kinds of traffic.

filter factor The extra exposure necessary to counteract the light-reducing effect of a filter.

Finder The file and memory management system generally used in the Apple **Macintosh**. Finder allows only one program to be run at a time. **MultiFinder** allows **multi-tasking** and is built into the System 7 **operating system**.

fine etching Dot etching on metal plates to improve tone values.

fine grain Photographic paper with emulsion characteristics which are not obtrusive through the picture.

fine papers High-quality printing and writing papers.

fines Small fragments of fibre remaining after refining.

fine screen A screen with ruling over 120 lines to the inch.

finger A program which can be used over the **Internet** to obtain information about a particular user, or about all users logged on to a system,

local or remote. Typically shows full name, last log-in time, idle time, terminal line and terminal location (where applicable). May also display other information; e.g. if mail facilities are accessed from a mail server over a **dial-up** link, then it is possible to see what mail messages are waiting to be downloaded to the local computer.

fingerprint A method of software protection in which a unique signature is written to a floppy disk. When the program is run, a test sequence checks for the presence of the signature and disables the program if it is found to be absent.

finial Decorative curved part of a letter that ends in a hook.

finish The type of surface on a particular grade of paper, e.g. machine finished or supercalendered. Also, varnish or lamination on a cover or jacket.

finishing Bindery processes taking place after a job is printed and bringing it to its final form ready for despatch, i.e. folding, stitching, cutting, inserting etc.

FIPP International Federation of the Periodical Press.

firewall Any kind of security barrier to prevent external changes to a system by **hackers** etc. (See **firewall code**, **firewall machine**.) Often a system that prevents external access from the **Internet** to an organisation's computers. Internet access may, however, be provided using a **proxy** system. The firewall is intended to protect other machines at the site from potential tampering via the Internet.

firewall code Code put into a system both to ensure that users cannot cause any damage and to keep the **user interface** friendly. Also used to limit the damage which a known programming bug could cause if not correctly fixed.

firewall machine or **firewall system** A system that isolates an organisation's computers from external access, e.g. through the **Internet**. An organisation sometimes provides some Internet access through use of a **proxy** system. The **firewall** is intended to protect other machines at the site from potential tampering by external users.

firmware Software which is necessary for the general routines of a computer and which cannot be changed by the user. Usually held in **ROM**.

first and second linings The two linings applied to the back of the book in case binding. The first lining is normally **mull**, a form of muslin cloth, the second lining normally **kraft**, a strong form of brown paper.

first and third Printed sheet which contains pages one and three after folding. See **outer forme**.

first colour down The first colour printed on a sheet when more than one colour is being used.

first copy time In page printing, the time taken to produce the first copy in a set of identical copies, as distinct from the time taken to produce each subsequent identical copy. When each page of a multipage document is different, each page will be produced at this (much slower) speed.

first edition The first print run of a book that often gains value as a collector's item.

first-generation computers Early computers that used vacuum tubes.

first-generation photosetters Early photosetters modelled after hot metal machines and largely mechanical in operation.

first in first out (FIFO) Data storage method in which the first item recorded is the first to be retrieved.

first-level heading First (and most important) level in a series of headings in a book.

first proof The earliest proof used for checking by proofreaders.

first revise The corrected proof made after errors noted on the first proof have been re-set.

First Virtual A US bank that provides a method of secure payment over the **Internet** by issuing an identification number that references back to a credit card number, avoiding the necessity for the credit card number itself to be transmitted.

fist A printing symbol shaped like a black hand, used to indicate a **cross-reference**.

fit Space between letters which can be reduced or expanded. See **character compensation**, **character fit**, **kerning**.

FITS See **Flexible Image Transport System**.

FIX See **Federal Information Exchange**.

fixative Protective spray used on surface of **artwork**.

fixed back Book back glued directly to the back of the pages. Also **fastback**, **tightback binding**.

fixed length record A record that is of the same length as others with which it is associated.

fixed position Set location for an advertisement within a periodical, often specified by reference to other material, e.g. facing leader page.

fixed space The amount of space between letters and words which cannot be varied for **justification** needs. Contrast **variable space**.

flag In general, a variable or quantity that can take on one of two values (often 'on' or 'off'). May be a **bit** (within operating systems) or a **byte** in some programs. In communications bit-oriented protocols, it is a unique bit pattern used to identify the beginning and end of a **frame**.

flame An **electronic mail** or **Usenet** news message that is the equivalent of an angry retort or a strong opinion, intended to rebuke or even to insult or provoke. Also used as a verb to describe the sending of such a message.

flame bait A message which is intended to provoke a **flame** or even a **flame war**.

flame war An acrimonious dispute consisting of a series of **flames**.

flange See **bevel**.

flap Protective cover for piece of **artwork**.

flash exposure Additional exposure given to a **half-tone** to enhance shadow areas.

flat 1. Lacking contrast when printed. 2. Assembled film on a carrier sheet ready for printing. Also **foil**.

flat artwork **Artwork** which is drawn on a solid base and which cannot always be directly scanned.

flat ASCII A text file that contains only **ASCII** (7-bit) characters and uses only ASCII-standard control characters. Thus it includes no 8-bit embedded codes specific to a particular program or output device. Also called **plain ASCII**. **SGML** files are flat-ASCII in that all non-ASCII characters are represented by **character entities**.

flat back Bound with a flat back (as distinct from **rounded**). Also, **square back**.

flatbed A press with the printing surface flat rather than curved as on a rotary press.

flatbed press Mechanical printing machine where the printing plate on the bed of the machine is laid flat so the inking rollers and then the impression cylinder with the paper can roll over it.

flatbed proofing press A litho **flatbed** press designed for producing machine proofs from colour separation plates in limited numbers.

flatbed scanner A scanner with a flat platen, rather like a photocopier, as opposed to one with a scanning drum.

flat etching Etching of a plate in a tray of solution.

flat file A representation of a database or tree structure as a series of single files from which the structure can be rebuilt.

flat plan Diagrammatic scheme of the pagination of a magazine or book. Indicates available colour positions, so that colour illustrations can be positioned for printing in the most economical way.

flat-stitching Method of sewing sections of a book by passing the thread through the side of the section near the fold (contrast **saddle-stitching**).

flat tint plate Letterpress block used for printing a tint.

flat wrapping Wrapping a magazine with film or paper without folding it.

flax tow Linen fibres used in papermaking.

fleuron Typographical flower ornament used for decorative purposes. Known as a **dingbat** in **DTP**.

flexiback binding Binding with reinforced spine using paper or fabric lining.

flexible bandwidth service (FBS) An alternative to **leased lines** and **multiplexers**, allowing changes to the **bandwidth** available to any site.

Flexible Image Transport System (FITS) The standard data interchange and archive format of the astronomy community.

flexichrome Hand-coloured photograph.

flexography **Relief** printing process using flexible, deformable **plates**.

flexstabil binding Binding method used for heavy books and catalogues. A centre portion of the back of the book is scooped out, flooded with glue, and resealed, prior to the cover being drawn on. Extremely durable adhesive binding method.

flier Promotional leaflet or handbill.

flight simulator A computer-controlled device for training pilots. It consists of an artificial cockpit mounted on hydraulic legs, so that the pilot feels that he or she is flying a real aircraft. Also, a popular computer program giving a similar on-screen display.

flippy disk Double-sided **floppy disk**.

float Centre a piece of **artwork** in an area which is too large for it.

floating accents Accents which are not tied to a given character in type font and can therefore be positioned over any letter.

flocculation Ink-mixing fault caused when pigment floats as particles in the ink vehicle rather than dispersing smoothly. Solid areas have a spotty, pimply, appearance.

flong The special paper used for making moulds in stereotyping.

flooding Excess of ink on a printing plate.

flop Reverse film so that a mirror-image is produced.

floppy disk Small flexible plastic disk widely used for magnetic storage of information on small computers. The standard size is 3.5 inches.

floppy disk drive A device into which a floppy disk may be loaded and from which data may be read or written.

floptical disc A removable **optical disc** which is the same size as a 3.5 inch floppy disk, but has

a capacity of up to 25Mbs. Floptical disk drives can often also be used for conventional 3.5 inch disks. (See also **SyQuest disk**.)

floriation Tooled decoration on leather binding in the form of little flowers.

flotation de-inking Removing ink from recycled paper by creating a 'froth' which can be skimmed off.

flourish Freehand, often curling, finish at the end of a normal **character**.

flow The spread of ink over press rollers.

flowchart Diagram showing the sequence of steps in a computer program.

flow control The techniques used in serial communications to indicate when the sender begins and ends sending data and when the receiver is able to accept it. May be either **software** flow control or **hardware** flow control. Typically, received data will be written to a fixed-size **buffer**. When the amount of buffered data reaches a certain level, a signal will be sent to the transmitter to stop transmission until sufficient data has been read from the buffer so that another signal can be sent to start transmission again. (See also **x-on/x-off**.)

flowers Flower and leaf decoration tooled onto leather binding and used by designers.

flowing In **desktop publishing**, the entering of text into a pre-formatted page such that it continues to fill out columns and/or pages until a rule or image is encountered, or until the text is exhausted.

fluff Loose surface fibres on paper. Also, **lint**.

fluffing Build-up of loose fibres of fluff especially found on the surface of soft paper.

fluorescent Radiating a white glow, as in a substance added to paper stock to make very white paper.

fluorescent ink Ink with extreme brightness qualities which react to ultraviolet light. **Fluorescent papers** have fluorescent pigments added. Fluorescent whitening is included in pulp to add brightness to paper.

flush Cut to match the edge with that of the cover.

flush centre, left or right In wordprocessing or **DTP**, alignment of text to the centre, left or right of the column or page. (See also **justification**.)

flush cover A cover trimmed flush with the pages of the text of the book.

flush left/right Type aligned with either the left- or right-hand margins.

flush mount A **letterpress** plate mounted on its base with adhesive.

flyer See **flier**.

flying paster Pasting mechanism which joins a new reel of paper to that currently running out on a web press without stopping the press.

flying spot Light source used to scan documents in **OCR** machines.

flyleaf Plain sheet in a book next to the covers. Usually pages 3–4 of the front **endpaper**.

FM See **frequency modulation**.

FM screening See **frequency modulation** screening.

FMV See **full-motion video**.

FNC See **Federal Networking Council**.

F number Defines the aperture of a lens at different settings, and is obtained by dividing the focal length of the lens by the diameter of the aperture. Also referred to as **f-stop**.

FOB Free on board. Carriage paid only up to the point of placing goods on board a vessel at the departure port. Contrast **cif**, which includes carriage payment right up to the point of placing goods on the quayside at the arrival port.

FOC Father of Chapel. Print union equivalent of shop steward.

focal length Distance between an optical lens' centre and the focusing plane, with the lens focused at infinity.

focal plane The plane where light entering a lens forms a sharp image.

focus Sharpness of definition in photography or in projection of a product or service.

fog Unintended light penetration of photographic materials.

foil 1. Carrier for planning films. 2. In bookbinding, short for **stamping foil**: a plastic film coated with clear or coloured lacquer and a thin layer of condensed aluminium, which is used to block covers. The aluminium layer and coloured lacquer on top of it detach from the plastic carrier under heat and pressure from a blocking brass during the blocking process, leaving the design or lettering engraved on the block transferred into the surface of the case material with the thin, coloured metallic layer on top of it. Popular colours are 'imitation gold' and 'imitation silver'.

foil papers Papers with metallic surface.

folding boxboard High-quality carton maker's board which has good scoring and folding characteristics.

folding chases **Chases** which join to form a complete signature.

folding endurance Measure of deterioration of paper along a constantly repeated fold.

fold-out Folded sheet in text which opens out beyond the page size. Also, **gatefold**, **throw-out**.

foliation The numbering of manuscript pages.

folio 1. Page number at the head or foot of a page of text. 2. Sheet of copy.

FolioViews A **content management system**, mainly for textual information, although links can be made to graphics etc. Requires **structured documents**, but not necessarily **SGML**. Can provide its own **database** structure.

follow-on posting A contribution to a **newsgroup** or **forum** that is a public response to a previous **posting**.

follow style Instruction to **compositor** to set to the publisher's specified style.

font A complete set of **characters** all of the same **typeface** and point size.

font metrics The detailed design specifications of a font, which include the widths of individual characters, the **x-heights**, how tall the capital letters are, the **kerning pairs** and many other items. Different font systems store this information in different ways: for **QuickDraw** on a Macintosh, the metrics form part of the screen fonts; the font metrics for a **TrueType** font are stored in the TrueType font file itself; for **Type 1 PostScript** fonts the metrics are stored in PFM (PostScript font metrics) files. Type 1 fonts usually also have corresponding AFM (Adobe font metrics) files, but these are not used by most applications.

font size In the UK and US, font size is usually given in **points** (1 point = 0.351mm) and 12 points make up a **pica**, the basic unit of typographic measurement. Elsewhere in Europe, point sizes and measurements are given using the **Didot** system, based on a 12-point **cicero**, which measures the same as 12.8 British points, so that 1 Didot point = 0.376mm.

font substitution Printing an **outline font** to replace a **bitmapped** screen font. When output is sent from a Macintosh to an Apple LaserWriter printer, e.g., the driver will substitute Times, Helvetica and Roman for the New York, Geneva and Monaco screen fonts. In a slightly different context, Adobe **Acrobat** will use **Multiple Mastering** technology to generate a font if the font called for in a **pdf** file is not present on the system where the Acrobat file is being viewed.

foolscap Paper size measuring 13.5×17 inches.

foot Bottom of a book or page.

footer In books, the running footline that sometimes appears at the bottom of each page. (See also **header**.)

footnotes Notes explanatory to the main text, set in smaller type at the bottom of the page.

footprint 1. The surface area of a desk or bench that is required by an item of computer hardware. 2. Area over which the signal from a transmitter can be received.

force card Male die used in **die-stamping**.

fore and aft Method of printing two copies of a book simultaneously with the pages joined head to head (two-up).

fore-edge Outer edge of a book, opposite the binding edge.

foreword Introduction to a book, not written by the author. As distinct from a **preface**.

format 1. Trimmed page size, or physical specification for a page or a book. 2. Frequently occurring set of typographical commands stored as a code on a phototypesetter. 3. Structure imposed on a floppy disk by an operating system utility before it can be used to accept data.

formation The fibre distribution of a sheet of paper. The two extremes are described as 'wild' or 'even'.

Format Output Specification Instance (FOSI) An **SGML-marked-up** document that uses the **CALS** output specification as its **Document Type Definition** (**DTD**). A FOSI contains formatting information structured according to SGML. FOSI styles define all features of composition: **font**, **leading**, **quadding**, spacing etc. (about 125 characteristics in all). FOSIs map SGML documents to appearance-based markup ready for composition by a FOSI-capable system. FOSIs were originally intended for print but can equally be applied to composition on-screen. FOSIs use the same constructs as documents but apply them to format instead of to structure and content.

forme The printing surface as imposed and mounted ready for printing. By extension, a flat of pages imposed for printing one side of a sheet.

former folder Type of web press folder which draws paper over a **kite** to make first fold. As distinct from a **ribbon folder**.

forme rollers Rollers in contact with the plate on a press.

forms See **fill-out forms**.

formula publishing Publishing a series of books according to a classification or format established by the publisher.

forum A discussion group accessible through a **bulletin board** system, a **mailing list**, or a **Usenet newsgroup**. Users submit postings for all to read and discussion follows. A forum is both **asynchronous** and available to all (or all those authorised) and can be contrasted with both real-time **Internet Relay Chat** (**IRC**) and point-to-point personal **email**.

forward error correction (FEC) An **error-correction** technique which adds extra bits to a transmission over a communications link. This

allows errors to be detected and corrected without any retransmission of data.

forward explicit congestion notification (FECN) A notification, in **frame relay**, that a **network node** is congested. FECN allows the receiver to reduce the traffic in certain circumstances, e.g. by delaying acknowledgement messages.

forwarding Binding stages from after sewing until casing-in.

FOSI See **Format Output Specification Instance**.

foul proof **Proof** with corrections added.

foundry chase **Chase** used in stereo making.

foundry lockup A **forme** locked up for making moulds of **electrotypes**, **stereotypes** etc.

foundry type Hard-wearing metal type characters used in hand composition.

fountain Damping solution reservoir on a press. Fountain rollers measure out the damping solution to the damping rollers.

fountain solution Solution of water and chemicals used in litho to prevent the non-printing areas from accepting ink. Also, damping solution.

four-colour process See **CMYK**, **colour separation**.

four-colour separation See **colour separation**.

Fourdrinier Papermaking machine named after the brothers who invented it. Uses a wire belt to convey the wet paper.

Fournier A stylish, italic **typeface** designed by Pierre Simon Fournier.

fourth cover Outside back cover of a periodical.

fourth estate Newspapers and magazines regarded as the fourth power in the land.

fourth-generation computers Computers using large scale integration (LSI) technology.

fourth-generation photosetters Photosetters using lasers to expose the characters.

fourth wave Used to describe typesetting and origination systems based on standard hardware and software, and with a high degree of compatibility with other systems and components.

four-way entry Reference to a pallet that may be picked up by a fork-lift truck in any of the four directions.

foxing or **fox marks** Discolouration on paper by brownish marks ofen caused by damp affecting chemical impurities in the paper. It can also occur if ink leaks from another page, especially from an illustration.

fps Frames per second. See **frame rate**.

FQDN See **fully qualified domain name**.

fractal An irregular, fragmented, geometric shape. The term was invented by Benoit Mandelbrot in 1975. Fractal objects contain structures that are nested within each other, so that each smaller structure is a reduced version of the larger form, although not identical. Many mathematical structures are fractals, but fractals also describe natural objects, such as clouds, mountains and coastlines, which do not have simple geometric shapes and generally cannot be described using conventional Euclidean geometry. Fractals are also not definable in terms of specific numbers of dimensions. Fractals can be generated using a number of easily obtainable programs. See **fractal compression**.

fractal compression A method of compressing images by expressing the image as an **iterated function system** (**IFS**), which can then be expanded to generate the required number of levels of (synthetic) fractal detail. Generating the IFS from the image is the most difficult step and involves running a (patented) compression algorithm on the bit pattern of the image.

fraktur German gothic characters.

frame 1. A sequence of contiguous **bits**, enclosed by opening and closing **flags**, transmitted over a **serial link**. A frame generally contains its own **addressing** and error-checking information and is sent between **datalink layer** entities. The size of the frame will depend upon the protocol used. 2. A single image that forms part of a series that make up either a **video** or an **animation**. See **video capture card**.

frame-check sequence (FCS) A field containing error-checking information which is added to a **frame** in bit-oriented protocols, such as **frame relay**.

frame grabber A device which allows a single **frame** of a video to be captured and subsequently used as a still image.

frame rate The number of **frames** of an animation, video or television picture displayed every second. The higher the frame rate, the smoother the movement will be, although, for an animation, more processing power and system **bandwidth** will be required. A rate of about 30 **fps** is necessary to give the impression of smooth movement. A European standard (**PAL**) television signal displays 25 fps and a US standard (**NTSC**) signal displays 30 fps. Various kinds of compressed or simplified video (such as **QuickTime**) often use fewer frames per second but the results may not appear natural.

frame relay A **connection-oriented wide area network** interface standard which caters particularly for **bursty** data communications. It includes error detection but not error correc-

tion, and is suited to the interconnection of **LAN**s, and to the connection of dedicated lines and **X.25** to **ATM**, **SMDS** and **B-ISDN**.

frames A facility available in **HTML-3** onwards, implemented by current **World Wide Web browsers**, which allows the browser screen to be broken into several different areas, some of which may remain static, acting as menus, while new information is downloaded into the main screen area.

frame switching An extension of **frame relay**, in which the full **data link** protocol is implemented, including frame acknowledgement, **flow control** and **error correction**.

franco Free.

freeness Measure of purity in woodfree pulp (i.e. the degree to which the pulp is free of **lignin** traces).

Freenet A US community-based **bulletin board** system. Freenets are funded and operated by volunteers; they are part of the National Public Telecomputing Network (NPTN), an organisation based in Cleveland, Ohio, devoted to making computer communication and networking services as freely available as public libraries.

free sheet 1. Periodical or newspaper distributed free to its readers. 2. **Woodfree paper** (US).

Free Software Foundation An organisation devoted to the creation and dissemination of software that is free from licensing fees or restrictions on use. Its main work is supporting the **GNU** project, which has produced replacements for many Unix utilities and other tools. Software is distributed under the terms of the GNU General Public License, which also provides a good summary of the Foundation's goals and principles. (See also **copyleft**.)

free-text search Searching text files for any combination of characters, often words. **Search engines** which are able to carry out free-text search often include **Boolean** facilities and **proximity searching** so that, e.g., one can search for the occurrence of a group or string of characters within, say, 20 words of another group or groups. Some search engines offer switchable **contextual searching** as a further feature. Such engines are usually based on **indexing** and the approach should be contrasted with **keyword** search.

freeware **Software** made available by the author at no cost, often over the **Internet**. The author still retains copyright and thus it is not quite the same as **public domain** software (PDS). (See also **shareware**.)

freight forwarder Person or company that arranges the shipping and customs documents for shipments from several companies, which are then sent out as one large shipment.

freight forwarding The organisation of freight handling for customers. A freight forwarder can offer a variety of services, ranging from a comprehensive service including packing, full documentation, customs clearance, pick up and delivery of all his customer's freight, to a specialised service offering any part of the freight operation, e.g. customs clearance of a package at an airport.

French fold The fold used on greetings cards, which folds a sheet into four pages, exposing only one side of the sheet and leaving the join at the edges.

French groove In binding, the groove or channel left by bringing the **case board** slightly away from the shoulder of the book. Also, **joint**.

French sewing Plain, conventional sewing. Also called **section sewing**.

frequency The number of repetitions per unit time of a periodic waveform. The number of cycles per second for an electromagnetic waveform is expressed in **hertz** (Hz, kHz, MHz or GHz). **High frequency** (**hf**) comes between 3–30MHz, and is used mainly for long-distance communication. **Very high frequency** (**VHF**) comes between 30–300MHz, and is used for television, FM radio broadcasting and voice communication**. Ultra high frequency** (**UHF**) comes between 300MHz–3GHz and is used for television and voice communication.

frequency division multiplexing (FDM) The simultaneous transmission of many signals through one medium (such as a wire) by modulation at the transmitter into separable frequency bands.

frequency modulation (FM) A method for encoding a **carrier signal** by changing the **frequency** according to the data being transmitted.

frequency modulation (FM) screening Type of electronically-generated screening where the dots produced are all the same or very similar minuscule size (**microdots**) and are spread over an area to lesser or greater degrees to give the shades of grey required. Contrast **AM screening**.

frequency shift keying (FSK) A **modulation** technique in which two different tones are used to represent the 0 and 1 states of binary data.

frequently asked questions See **FAQ**.

fret Interlaced pattern used in border and cover design.

friar Pale printed area where not enough ink has been applied, contrast **monk**.

friction feed Printer mechanism where the paper is secured and fed by two rollers.

friction glazing Form of glossy finish imparted to paper by a special **calender**.

frisket Device on a hand-press for holding down paper during printing.

front end General term for all the parts of a photosetting system before the output unit/imagesetter, e.g. input keyboards, screens, editing terminals etc.

frontispiece Illustration on the page facing the title page of a book.

frontlist Publisher's list of books currently being published or about to be published, contrast **backlist**.

frontmatter **Prelims** of a book.

front of book Part of a periodical before the bulk of the editorial pages, often dedicated to advertisements.

FSK See **frequency shift keying**.

FSP A **connectionless** protocol for moving files around networks, rather like **ftp**, with protection against server and network overloading. It is probable that FSP is an acronym for file server protocol.

f-stop See **F number**.

FTAM See **File Transfer, Access and Management**.

ftp See **File Transfer Protocol**.

ftp archive See **archive site**.

ftp by mail A service offered by **DEC** so that people without **Internet** access can obtain copies of files which are available by **anonymous ftp**.

fudge To touch up a photograph by, e.g., **airbrushing**.

fugitive inks Inks which fade or change colour in unstable atmospheric conditions or in bright light.

fulfilment Supplying a complete order.

full-bound Binding style in which the case-covering material is one piece of cloth or leather. As distinct from **quarter-bound**, **half-bound** or **three-quarter bound**.

full capitals or **full caps** Full-sized, regular capitals as distinct from **small capitals**.

full colour **Four-colour process**.

full duplex Data transmission in both directions simultaneously. Contrast **simplex**, **half duplex**.

full duplex (FDX) Communication in which it is possible to transmit and receive at the same time. The usual data communications channel (the **V.24** interface) between a computer and a **modem** is full duplex. (See also **half duplex**, **simplex**.)

full measure Complete width of a column of text.

full-motion video (FMV) System used to deliver moving images and sound on a computer.

full-out Set flush with no indentations.

full point See **full stop**.

full run All the editions of a newspaper.

full stop A punctuation mark in the form of a dot on the baseline that shows that a sentence has come to an end. Sometimes used after initials and abbreviations.

fully qualified domain name (FQDN) The full name of a system, including its local **hostname** and its **domain name**, so that 'eps-edge' is a hostname and 'eps-edge.demon.co.uk' is an FQDN. See **network**, **network address**.

function codes Codes which control the function of a phototypesetter or output device rather than generating characters.

furnish The components in a paper.

furniture **Letterpress** spacing material.

fuzz Loosely bonded fibres projecting from the surface of paper.

fuzzy logic In the context of word searching, fuzzy logic programs encompass words which look or sound very similar to the word required, e.g. a search for the name Smith might also pull in Smithe, Smythe, Smyth, Smitt etc.

FWA Fluorescent Whitening Agent. A loading similar to an **OBA** added to paper to increase whiteness and brightness.

FYI For your information. A subseries of **RFC**s which convey general information about topics related to **TCP/IP** or the **Internet**.

G

gallery The camera department in a process engraving house.

galley An oblong metal tray for holding metal type.

galley proof Proof of typematter not made up into page. Also known as **slip proof**.

galvanised Inconsistent in colour or density of printed ink.

Gameboy Proprietary hand-held hardware for running computer games.

gamma A measure of contrast in photographic processing.

gamma version Preview version of an electronic publication at the stage where everything should be ready for commercial release.

gang printing Running more than one job on the same sheet.

gap 1. The space between records on disk or tape. 2. The space between a read/write head and the recording medium.

gapless Refers to the elimination of any gap on the printing cylinder, so allowing smaller waste trim in the printed product and higher running speeds.

Garalde Generic term for the group of typefaces also known as **Old Face**.

garbage Redundant programs or data.

gas plasma display An alternative to the **cathode ray tube** in a **VDU**, a gas plasma display consists of a sealed unit made from two sheets of flat glass filled with a neon/argon gas. Conductors are etched onto the glass plates (vertical on the front plate, horizontal on the rear plate) and images are formed when currents coincide at conductor junctions.

gate Part of a computer circuit which tests a precondition in a program, e.g. the statements 'and' and 'or'.

gatefold A page in a magazine or book which folds out to double its size.

gatekeeper See **gateway supplier**.

Gates, Bill William Henry Gates III, Chief Executive Officer of Microsoft, which he cofounded in 1975 with Paul Allen.

gateway A communications device or program that passes data between networks which have similar functions but dissimilar implementations. Should not be confused with a **protocol converter**. Thus, a **router** is a layer 3 (**network layer**) gateway, and a **mail gateway** is a layer 7 (**application layer**) gateway. The term 'router' is now used in place of the original definition of 'gateway'. Also an interface between an external source of information and a **World Wide Web server**. **Common Gateway Interface** (**CGI**) is a standard for such interfaces.

gateway supplier In newspaper production, an approved prepress supplier who checks and standardises files coming into the newspaper from external sources. Also **gatekeeper**.

GATF Graphic Arts Technical Foundation, Pittsburg, US.

gathering Collecting sheets or signatures of a printed job into the correct sequence for binding. (See also **collate**.)

gauge Device for measuring length, thickness or other dimensions.

gauze Thin woven fabric used to strengthen hinges in **binding**.

Gb Abbreviation for **gigabyte**.

GCR See **grey component replacement**.

gear streaks Marks on a printed sheet caused by the gears on a press cylinder.

Geek of the Week A program, broadcast over **Internet Talk Radio**, in which **Internet** experts are interviewed.

gelatine Water-soluble protein obtained from animal bones and used to make glue and size for coating paper.

GenCode A **generic coding** project set up by the US Graphics Communications Association. An important precursor of **SGML**.

Generalised Markup Language (GML) The **generic markup** language developed at IBM in 1969; the principal precursor of **SGML**. The acronym originally comprised the initials of the three inventors, Charles Goldfarb, Edward Mosher and Raymond Lorie.

generation 1. Stage of reproduction from an original. 2. Stage of development of a technology, e.g. fourth-generation phototypesetters.

generic coding **Coding** the structure of a document rather than its typographical constituents.

generic font A font used in screen display or a proof printer to represent an entire category of higher-quality output fonts. To ensure that line endings in the generic font match the eventual output, inter-character spacing is adjusted to compensate for the variations in set width between the generic font and the ultimate output font.

generic markup A method of adding information to text, indicating the logical components of a document, such as paragraphs, headers or footnotes. **SGML** is an example of such a system. Specific instructions for layout of the text on the page do not appear in the markup. Essentially the same as **generic coding**.

genre publishing Publishing a series of novels classified in a particular way, such as science fiction, mystery, romance etc.

geographical information system (GIS) Software that makes possible the visualisation and manipulation of spatial data, and links such data with other information such as customer or maintenance records.

geosynchronous orbit The position where communications satellites remain stationary in orbit above the same point on the equator – about 23300 miles above the earth's surface. Such satellites may be described as 'geostationary'.

geosynchronous satellite A satellite in **geosynchronous orbit**.

ghosting An unintended faint printed image caused by problematic ink conditions, normally **ink starvation**.

Ghostscript The **GNU PostScript** interpreter with previewers for a number of systems.

Ghostview An interface to the **Ghostscript PostScript** interpreter, which allows PostScript files to be viewed in **X windows**.

GIF See **Graphics Interchange Format**; '.gif' is also the filename extension for files in Graphics Interchange Format.

gigabyte (Gb) One thousand million **bytes**. One gigabyte of computer storage is roughly equivalent to 150 million words of text, or the text content of 2000 average-sized novels.

gigo Garbage in, garbage out. Programmer's slang to describe bad output caused by faulty data.

gilding Decorating a binding, **top edge** or **fore-edge** of a book with gold leaf.

gilt in the round Fore-edge of a book gilded after the book has been rounded. Achieves better cover than **gilt in the square**: gilded before rounding.

gilt in the square Gilded before **rounding**.

GIP Glazed imitation parchment.

GIS See **geographical information system**.

give-away Free promotional leaflet or gift.

GKS See **Graphical Kernel System**.

GKS-3D The three-dimensional version of the **Graphical Kernel System** (**GKS**).

glair Substance which bonds gold leaf to leather.

glassine Tough but partially transparent paper used for protective purposes and for overlays on **artwork**.

glazed Paper with a glossy or shiny finish.

glazed vellum Vellum paper with a glazed surface, used for decorative documents.

glitch Unexpected irregularity or malfunction of a computer.

Global Network Navigator (**GNN**) A collection of free services provided by publisher O'Reilly & Associates. 'The Whole Internet Catalog' (based on the book by Ed Krol) discusses the most useful **Internet** resources and services and provides live links to those resources. The 'GNN Business Pages' list companies on the Internet. The Internet 'Help Desk' provides help in starting Internet exploration and **NetNews** is a weekly publication that gives news about the Internet.

Global Network Service (GNS) The service which connects national **PSS** services. Formerly known as **International Packet SwitchStream** (**IPSS**).

global search and replace The facility of a computer program to find all examples of a word or group of words in a file and replace them with an alternative.

Global System for Mobile Communications (GSM) The standard for **digital** cellular communications, which is in the process of being adopted by over 60 countries. The GSM standard is currently used in the 900 MHz and 1800 MHz bands.

gloss Smooth, shiny finish.

gloss art Shiny artpaper as opposed to matt art or coated cartridge which have a dull finish.

glossary Alphabetically arranged list of terms and their meanings.

glossy Photographic print with a glossy surface.

glueability Measure of speed of paper adhesive bonding and its strength.

glyph A sculpted character or symbol with reference to the character's shape rather than its identity within a **character set**. Whether two representations of the same character in two different **Glyphic fonts** constitute one or two glyphs is not agreed, so, for example, the sans-serif 'g's in the typefaces Arial and Helvetica might be regarded as two glyphs or two representations of the same glyph.

Glyphic BS 2961 classification for typefaces based on a chiselled rather than a calligraphic form, usually used in display sizes. Examples are Albertus, Chisel, Festival, Latin.

glytch Program error.

GML See **Generalised Markup Language**.

GNN See **Global Network Navigator**.

GNS See **Global Network Service**.

GNU Acronym standing for 'GNU's Not Unix!', the **Free Software Foundation**'s project to provide a freely distributable replacement for **Unix**, including GNU Emacs, the GNU C compiler, **gzip** and much more. GNU software is available from many GNU archive sites.

go back N A **datalink layer** communications protocol which allows retransmission of faulty blocks.

goldenrod paper Opaque orange paper on which film is assembled for platemaking.

golden section or **golden rectangle** Perfect page proportions, based on the ratio of 34:21.

gold foil Paper with a foil coating. 'Gold leaf' comprises thin sheets of real gold.

golfball typewriter Typewriter using a replaceable spherical head, or 'golfball'. Each golfball represents one **typeface**.

Gopher A menu-driven hierarchical document retrieval system, which began as a **campus wide information system** (**CWIS**) at the University of Minnesota and is now available over the **Internet**. Gopher allows a single **Gopher client** to access information from any accessible Gopher server, providing the user with a single 'Gopher space' of information. Gopher has been largely superseded by the **World Wide Web**, which includes access to Gopher documents as one of its protocols.

Gopher client A program which runs on the local machine and provides a user interface to the **Gopher** protocol.

GOSIP See **Government Open Systems Interconnection Profile**.

gothic See **black letter**.

Goudy **Old face** type designed by American typographer Frederic Goudy.

gouge Tool used to make a groove or indentation for decorative lines on a book cover.

Gouraud shading A method of surface shading or **rendering** used in **animation** to make the surface of rounded objects look smoother and more natural. (See also **Phong shading**.)

Government Open Systems Interconnection Profile (GOSIP) Used by both US and UK governments. A procurement specification for **OSI** protocols, although the protocols used by the two governments are not identical.

gradient fill Another term for a **graduated fill**.

graduated fill A gradual shift from one colour to another, from a dark tone to a light one in an object **fill**. An ideal graduated fill avoids **banding**. (See also **Gouraud shading**, **Phong shading**.)

grain direction Direction of fibres in a sheet of paper. **Long grain** describes fibres running parallel with the longest side of a sheet; **short grain** along the shortest side. (See also **machine direction**.)

graining 1. Mechanical roughening of a litho plate to retain water. 2. Treatment of paper, board, or laminated board to give a textured effect.

grainy Photographic film or print with coarse grain visible usually due to high speed of film.

grainy edge Surface roughness on edges of web caused in the drying process.

gram Metric unit of weight.

grammage Weight of paper expressed as grams per square metre.

Graphical Kernel System (GKS) A standard for **outline** graphical input/output. (See also **PHIGS**.)

graphical user interface (GUI) (Pronounced 'goo-ey'.) An interface that allows users to choose commands and other options by pointing to a graphical icon or by pulling down a menu and then activating the choice, either by using the keyboard or by **clicking** with a **mouse**. Provides what is often thought of as a more **user-friendly** approach than a **command line interface**. A GUI runs under a **windowing** system, such as **X windows**, Microsoft **Windows** or **Macintosh**. Although the Apple Macintosh **operating system** was the first commercially available GUI, the concept originated in the early 1970s at **Xerox PARC** with the **Xerox Star**. (See also **WIMP**, **WYSIWYG**.)

graphic boundary In **DTP**, the dotted line set around a graphic which defines the boundary up to which text can flow. (See also **standoff**.)

graphic file format The format in which graphics are stored and transmitted. There are two main types: **raster** or **bitmap graphics** (in which the image is stored as a **bitmap**) and **vector** or **outline graphics** (in which the image is stored using geometric formulae). There are many different file formats, some of which are used by specific computers, **operating systems** or **applications**. Some formats use **file compression**, particularly those which handle colour.

graphic papers Papers for printing or writing.

graphics The creation, modification and manipulation of (usually static) graphic images. The two basic forms are **bitmap** or **raster graphics**, and **vector graphics**. In general, bitmapped graphics are handled using **paint programs**, able to access individual **pixels** or groups of pixels, while vector graphics are handled using **draw programs**, which allow the manipulation of graphics as mathematical **objects**. A third way of representing images uses **fractals**. Graphics are stored in a wide variety of **graphic file formats**.

graphics adapter See **display adapter**.

graphics-based software Software which requires a **graphical user interface** (**GUI**) for it to be able to operate, unlike 'character-based' or 'text-based' software, which can be operated using a **command line interface**. The **Macintosh** is graphics-based, while PCs and Unix require **Windows** or **X windows** software to allow them to be run in graphics mode. Graphics-based software allows operation in **WYSIWYG** mode, so theoretically anything can be shown on the screen, subject to resolution and colour limitations.

graphics display terminal A **VDU** capable of displaying pictures in line or tone in addition to text.

graphics insertion Text and pictures photoset in one operation.

Graphics Interchange Format (GIF) (Pronounced with a hard 'G', as in 'gift'.) A **graphic file format** in which images are compressed with the **Lempel-Ziv Welch** algorithm. It was originally developed by **CompuServe** and is widely used for images in **online** services and particularly the **World Wide Web**.

graphics primitive In a **vector** (**object-oriented**) **graphics** program, one of the basic graphic units, e.g. circle, rectangle, line.

graphics scanner An input device, which allows **images** on paper to be input into computer systems as **bitmap graphics** files.

graphics tablet An input device in which a stylus or cursor is moved by hand over a flat surface. The computer keeps track of the position of the stylus, making it possible to input drawings or diagrams. Graphics tablets are generally used with **graphics** programs, though they can be used instead of a **mouse** with most programs. Some graphics tablets are sensitive to pressure, so that with appropriate graphics software the line thickness can be recorded. Recent developments in handwriting recognition may lead to wider use of graphics tablets.

grater roller Roller on a web-offset press which carries the web. (See also **air bar**.)

grave accent Small sign placed over a vowel to alter the pronounciation to a specific phonetic sound.

graver Engraving tool.

gravure Process in which recesses on a cylinder are filled with ink and the surplus removed with a blade. The paper contacts the cylinder and 'lifts' the ink from the recesses. Used for long-run magazines and catalogues.

gray scale See **grey scale**. 'Gray' is the US spelling and is widely used.

greaseproof Translucent paper with high resistance to grease penetration.

great primer Obsolete term for 18pt type.

Great Worm See **Internet worm**.

greeked text Simulated text used to display small type on a screen. Line breaks in greeked text correspond to the correct breaks in the text simulated.

Green Book See **rainbow series**.

grey balance The ability to print a neutral grey from four-colour printing plates with no coloured tinges showing through. Monitored by a grey balance patch on colour bars.

grey board or **Dutch grey board** Homogenous **case board** made from newsprint **furnish**. Grey board or unlined **chipboard** are the normal boards used for case-making. **Millboard** is used for specific heavy-duty bindings, e.g. stationery or archive bindings.

Grey Book The document defining the electronic mail protocol used in the **JANET Coloured Books** software suite.

grey component replacement (GCR) Colour separations where the black printer carries more detail than with conventional separations and the tertiary, or complementary, elements of any colour hue are removed. Also called **ICR** (**integrated colour removal**) or **achromatic separation**.

grey levels Separate **tones** of grey reflecting back from a continuous-tone original. Grey levels are frequently defined computer terms in 256 steps from pure white to pure black, each step identified by a different **8-bit** number. The grey-level value of each **pixel** of an **original** is sampled by an **analyse scanner** in scanning an original and allocated its grey level value as one of these 256 steps. See **grey scale**.

grey scale The use of (discrete) shades of grey, from black to white, to represent an image. If the **pixels** of a grey-scale image have N **bits**, then 2^{N-1} levels can be represented. If N = 1 the image is **monochrome**, i.e. black and white. Grey-scale monitors represent pixels by using different intensities, often with up to 256 different levels. Grey scaling is used to represent **continuous tone** images. (Note the difference from **dithering**.) The US spelling of grey is 'gray'.

grid 1. Sheet with ruled lines used to ensure square makeup of photocomposed material. 2. Systematic division of a page into type areas and positions for other regularly occurring features (**headline**, **folios** etc.). Sometimes printed in **drop-out blue** and used for camera-paste-up purposes.

grinder Machine that crushes wood in the first step of the papermaking process.

grip Margins needed at the feed edge of a sheet of paper for the grippers on the press. Also gripper edge and gripper margin.

gripper edge See **pitch edge**.

grippers Metal fingers that position the paper and pull it through the printing press.

groove Space at the book's hinge, between the **cover board** and the **spine**, which should enable the book to lie flat when open.

gross profit Monies remaining after direct costs have been subtracted from revenue.

grotesque Form of sans serif typeface.

ground An electrical connection or common conductor connected to the earth. Also known as the 'earth wire'.

grounded Connected to the earth.

groundstation (Also known as 'earth station'.) A communications and control installation on earth for a satellite relay.

groundwood American term for **mechanical pulp**.

groundwood sheet **Mechanical paper** (US).

Group 3 fax The standard which is currently widely used for **facsimile** over **PSTN**. It operates at 9600 **bps** and approximately 200 **dpi** resolution. The average transmission time of an A4 page is about 30 seconds.

Group 4 fax The standard for **facsimile** over **primary rate ISDN**. Compared with Group 3, it offers better resolution, more grey levels and improved error-correction and data-compression

facilities. It also provides for colour. (See also **Joint Bi-level Image Experts Group** (**JBIG**).)

group addressing Addressing a message to a group of addresses. Makes **multicasting** possible.

groupware General applications software intended to help groups of people working together over a **network** to co-ordinate and organise their activities (**workgroup computing**). Such software usually includes **electronic mail** facilities and scheduling programs and may also allow computer conferencing and **audioconferencing**, **audiographic teleconferencing** and **videoconferencing**. (See also **CSCW**, **Lotus Notes**.)

GSM See **Global System for Mobile Communications**.

gsm or g/m2 Grams per square metre: the measure of substance of paper or board.

guard Linen or paper put on the back of a book section to provide additional strength. The process of doing this is known as 'guarding a section'. The first and last sections of a heavy reference work may be 'guarded' in this way.

GUI See **graphical user interface**.

guide Non-printing line in DTP used to align content.

guideline Line on **artwork** indicating the printing area. Also, **keyline**.

Guidon Viewer software for **SGML** documents, developed for **OCLC** and used for the world's first purely electronic refereed journal, 'Clinical Trials'. Now no longer used by OCLC, which is moving journals to the **World Wide Web**.

guillemets Arrow-shaped quotation marks not used in English. See **duck-foot quotes**.

guillotine Machine which cuts paper into sheets. Programmatic guillotines can perform a whole series of measured cuts without re-setting for each measurement.

gum arabic Gum exuded by some acacia trees used for the adhesive layer on a stamp, label etc.

gummed paper Paper coated on one side with adhesive.

gumming Applying adhesive to paper.

gum up To apply **gum arabic** to a litho plate. Gum arabic protects the image area and prevents oxidation.

gun The component of a **cathode ray tube** that provides a continuous stream of electrons. A monochrome display will require a single gun while colour displays must be provided with three, one each for red, green and blue.

gunzip Decompression utility for files compressed with **gzip**.

gusseting Waving occurring at the heads of untrimmed **signatures**.

Gutenberg Project See **Project Gutenberg**.

gutter Binding margin of a book.

GWHIS A commercial version of **NCSA Mosaic** for Microsoft **Windows** 3.x and Windows for Workgroups, released by Quadralay Corporation.

gypsum Mineral from which plaster of Paris is made, used in papermaking as a **loading**.

gzip The **GNU** compression utility, developed by the **Free Software Foundation**. Uses **Lempel-Ziv** LZ77 compression. Compressed files can be restored to their original form using **gzipd** or **gunzip**. All GNU compressed files available by **anonymous ftp** are in gzip format and their names end in '.gz'.

gzipd Decompressor for **gzip**.

H

H.120 A standard for **video compression** at transfer rates of 2 Mbps, now superseded by (and not compatible with) the newer **H.261** set of standards.

H.261 A **video compression** standard developed by **ITU-T** to work with **ISDN** principally to support **videophone** and **videoconferencing** applications. Data can be compressed on the fly at the rate of 64p kbps, where 'p' is the number of ISDN channels used (from 1 to 30). The standard includes a system of frame difference, so that each frame in a video sequence is encoded only as the differences between it and the preceding frame, thus saving space. Now part of **H.320**.

H.320 A recent **ITU-T** standard embracing the **H.261** video compression standard. Used in most **videoconferencing** systems.

hache Symbol either meaning a number or indicating a space is required.

hack In journalism, someone who writes to order, contrast investigative journalist.

hacker One who gains unauthorised access to machines or networks, often with malicious intent. Originally, a computer enthusiast.

hair cut Curved cut in a **web** on a papermaking machine.

hairline Very fine line or stroke in a letter. Hairline register is colour register within ± half a row of dots.

hair spaces Very thin letterpress spaces used between letters in a word.

halation Blurred halo effect in the highlight areas

of a photo, caused by reflection back from the emulsion substrate.

half-binding Type of bookbinding in which the spine and corners are bound with a different type of material to the cloth or paper covering the rest.

half-bound Book case binding style: covered in one material on the spine and corners and another material (paper or cloth) on the remainder.

half duplex **Asynchronous** communication in which data can be relayed in only one direction at a time. Two-way transmission is possible but the transmissions must be alternate.

half leather bound Book bound with leather binding on the **spine**, part of the front and back, and the corners.

half page Advertisement occupying half a periodical page, horizontally or vertically.

half plate Photo measuring 6×4 inches.

half sheet work See **work and turn**.

half-size press Printing press designed for a maximum sheet approximately 710×1010mm (28″ × 40″), i.e. half the size of a quad sheet. (See also **mini-web**.)

half stuff Paper **pulp** that is ready for the **beater**.

half title Title of book, sometimes shortened, printed on the first right-hand page in the book – the half-title page. Sometimes called **bastard title**.

half-tone Illustration created by dots of varying size, resulting in the appearance of **continuous tone**. Therefore, 'half-tone negative' and 'half-tone positive'.

half-tone screen 1. Cross-ruled film or glass plate used to create half-tone dots. Dot formations can be round, elliptical, rectangular, or pin-cushion. 2. The same effect ahieved through software.

half-up Instruction to prepare **artwork** at 150% of final size.

HALGOL A simple language developed by Hewlett-Packard for communicating with devices such as **modems** and **X.25 PAD**s.

halide Silver compound used to put a **light-sensitive** coating on photographic film and paper.

halo effect Build-up of ink at edges of printed letters and half-tone dots, creating a darker perimeter to the dot.

hamming code Extra **bits** added to transmitted data in order to improve **error detection and correction**. Hamming codes are used with data sent from space probes, since requesting retransmission is not very practical because of the long delays involved.

handbill Publicity sheet, normally printed on one side only, for delivery by hand.

H&J Abbreviation used for **hyphenation and justification**.

handle A nickname used online. The term is taken from CB (community broadcast) radio.

handles In **DTP**, those areas of a selected item of text or of a graphic which can be clicked and held so that the selected subject can be acted upon. Examples are the eight small solid rectangles which surround a selected shape: the two small rectangles at the ends of a selected line; the horizontal lines with loops at the top and bottom of a selected **text block** (called **windowshade handles**) etc.

Handle System A distributed and scalable system developed by the US Corporation for National Research Initiatives (CNRI) for storing the names of digital objects and the information needed to locate those objects via the **Internet**. (See also **Digital Object Identifier** (**DOI**).)

handling stiffness Rigidity of paper when held, e.g. stiffness of a newspaper held by the reader.

handmade paper Paper made by hand in a mould. Decorative content can be introduced into the pulp. The edges are **deckled**.

handout Publicity leaflet for handing out on the street, at exhibitions etc.

hand setting Making up lines of metal type by hand, usually in a composing stick.

handshake A data communications technique consisting of prearranged signals which monitor the transmission of data by halting and restarting the flow as necessary and ensuring the integrity of the whole.

handshaking An electronic exchange between two devices which confirms that they are communicating with each other and establishes the communications channels and protocols necessary for the devices to send and receive data. **Hardware** handshaking uses voltage levels or pulses on wires to carry the handshaking signals, whereas **software** handshaking uses data units, i.e. **ASCII** characters, carried by some underlying communication medium. Handshaking is also used to control the flow of data: two devices use a handshaking signal to stay in sync with one another.

hanging indent Typesetting style in which the first line of a paragraph is set full out and the remainder are indented.

hanging punctuation Punctuation marks at the end of justified lines which are allowed to jut out very slightly in order to give a visually straight right-hand edge to a column or page. Effect achievable only on sophisticated hyphenation and justification programs.

hardback Book bound in a stiff cover, or cased binding.

hard-bound See **case-bound**.

hard carriage return A carriage return that is inserted by the user, i.e. at the end of a paragraph, rather than the **soft carriage return** inserted by software.

hard copy Copy written, typed or printed as distinct from stored in electronic form.

hardcover See **case-bound**.

hard disk A rigid magnetic storage disk capable of higher data density and speed than floppy disks. See **floppy disk**, **Winchester disk**.

hard-dot positives Film produced either by contact or by direct laser scanning where the dot edges are hard and can be retouched by hand to a limited extent.

hard-hyphen Hyphen essential to the spelling of a word. Contrast **soft hyphen** or **discretionary hyphen**.

hardness Resistance of paper to indentation by printing plate, type or pen.

hard-sectored Pertaining to floppy disks physically divided into sectors by means of index holes in the disk surface. Compare **soft-sectored**.

hard-sized Paper with a high degree of **sizing**.

hardware Computer term for equipment as distinct from programs.

hardware flow control An alternative term for **hardware handshaking**.

hardware handshaking A technique for regulating the flow of data across an interface by means of signals carried on separate wires. A common example is the use of **RTS** (**request to send**) and **CTS** (**clear to send**) signals on an **RS-232 serial line**. (See also **handshaking**, **software handshaking**.)

hard-wired Circuit or program as constructed by the manufacturer of a piece of hardware and which cannot be changed.

hardwood Wood from some deciduous trees (not conifers).

hardwood pulp Pulp made from hardwood (deciduous) trees, e.g. oak, beech, birch, eucalyptus. As distinct from **softwood pulp**.

harlequin Ornamented typographical character.

Hart's Rules A reference book of rules for spelling, hyphenation and punctuation, widely used by most printers and publishers in the UK. It was originally written for staff at Oxford University Press.

Harvard system System of displaying bibliographical references which originated in Harvard University. References in the text are cited as author and year of publication (rather than a simple number in the **Vancouver system**), and the full references are at the end of the section displayed in alphabetical order. Also called **author-date system**.

hash or **hash code** An index number, otherwise meaningless, that is generated from a list or series of **pointers**.

hash table An array of **pointers** used to provide rapid access to data items which are distinguished by some key. Used, e.g., in compression algorithms.

hatch Draw closely spaced lines in a drawing to give the effect of tone.

Hayes AT command set The *de facto* standard according to which almost all **modems** are designed today. Each command is preceded by the attention code (AT). A listing of the full command set will be found in the manual of any modem which is **Hayes compatible**.

Hayes compatible The term used to indicate that a modem is able to understand the **Hayes AT command set**, which has become the *de facto* standard according to which almost all modems are now designed.

HCI See **human-computer interaction**, **human-computer interface**.

HCOM An **Apple Macintosh audio format**

HDLC See **high-level data link control**.

HD-MAC See **high-definition multiplexed analogue coder**.

HDTV See **high-definition television**.

head 1. Top or top margin of a page. 2. **Heading**.

headband Cotton or silk cord attached to the top of the back of a book. (See also **tailband**.)

headbox The part of a papermaking machine which dispenses the **stock** on the moving wire.

headcap The ends of leather **binding** on the **spine** that are folded in and tucked into the spine.

head end A broadband network component that converts the transmit frequency band to the receive frequency band, making it possible for stations to transmit and receive over a single-cable network.

header The portion of a **packet**, preceding the actual data, containing source and destination addresses, error checking and other fields. Also used to describe the part of an **electronic mail** message or news article that precedes the body of a message and includes the sender's name and email address and the date and time the message was sent. In conventional books it is sometimes used to describe the running headline appearing at the top of each page. (See also **footer**.)

heading 1. Title of a section or chapter in a work, set in displayed type. 2. See **headline**.

headline A displayed line or lines at the top of a page or a piece of text. (See also **running head**.)

HeadLiner A **World Wide Web push technology**, similar to **BackWeb** and **Castanet**, providing personalised delivery of public information, such as news. Similar, but not identical, to **PointCast**.

headliner Typesetting machine used for producing display setting.

head margin The white space above the first line on a page.

head-mounted display (HMD) A stereoscopic set of goggles, with a separate display for each eye, used in **virtual reality** systems to give the user the impression that he or she is actually in the virtual world created by the virtual reality application.

headpiece Ornamental design at the head of a chapter.

head-to-head, **head-to-tail** Alternative imposition schemes for a pair of books or printed covers/jackets, which are printed as one, and cut apart at the final stage.

headword Word that forms the heading for an entry in a dictionary or encyclopedia.

heat-resistant splice Join in paper which will resist the heat of a heatset press.

heat sealing Closing plastic bags by semi-melting techniques.

heat seal paper Paper coated on one side with adhesive activated by heat.

heat sensitive Paper which responds to heat in such a way that it can attract an image or otherwise be used for reproductive purposes.

heatset Drying of ink on paper using heat, on a web-offset machine. Hence heatset inks.

heat sink Material employed to conduct heat away from a component.

heat transfer Transfer of ink from paper to another material (e.g. fabric) by heat and pressure. Special paper and ink are necessary.

hectograph Machine that makes copies by using gelatine plates to take impressions of the master copy.

height to paper Standard height of letterpress type and blocks. Varies from country to country.

helical scan A way of writing data to a video tape or **digital audio tape** (**DAT**).

help A method of providing information to the user. Often **hypertext**-linked to the **application** itself and to an index. Usually also includes a search facility.

Hempel quoins Expandable wedges used to lock up letterpress **formes**.

hemp fibre Papermaking fibre made from rope or from the hemp plant.

HEPnet An association concerned with networking requirements for high-energy physicists.

Hercules graphics adaptor (**HGA**) Standard developed by the Hercules Corporation for **high-resolution** mono graphics adaptor that displays text or graphics at a resolution of 720×348 **pixels**.

Hermes UK teletext and electronic mail system.

hertz (Hz) A measure of frequency. One hertz is one cycle per second; 1kHz = 1000Hz; 1MHz = 1 000 000Hz. (See also **bandwidth**.)

heterogeneous network A **network** running more than one **network layer protocol**.

Hewlett-Packard Graphics Language (HPGL) A **vector graphics** language originally used by Hewlett-Packard plotters. Now HPGL has been incorporated into **PCL** Level 5, used to control HP LaserJet printers.

hexadecimal or **hex** A numeric notation scheme with a base of 16. In hex, decimals 0–15 become 00, 01, 02, 03, 04, 05, 06 07, 08, 09, 0A, 0B, 0C, 0D, 0E, 0F. Decimal 16 is then 10; decimal 17 is 11; decimal 27 is 1B; and so on.

hf See **high frequency**.

HGA See **Hercules graphics adaptor**.

hickey Spot on a printed sheet caused by dust, lint or ink imperfections. Particularly noticeable in solids, large type half-tones, tints etc.

hierarchical addressing and routing When a network is divided into a hierarchy of smaller networks, each level can be made responsible for its own routing. **Internet addresses**, or **fully qualified domain names**, have a hierarchical form, which reflects this hierarchical routing. Names on the Internet are **little-endian**, while names on **JANET** are **big-endian** (although, in order to avoid confusion, JANET addresses are often given as little-endian). (See also **Exterior Gateway Protocol**, **protocol**, **Interior Gateway Protocol**.)

hierarchy An inverted tree structure. Examples in computing include: a directory hierarchy where each directory may contain files or other directories; a hierarchical **network**; a **class** hierarchy in **object-oriented programming** (**OOP**); and the structure of a **Document Type Definition** (**DTD**) in **SGML**.

high-definition multiplexed analogue coder (HD-MAC) A **high-definition television** (**HDTV**) standard used in Europe. (See also **MUSE**.)

high-definition television (HDTV) Has twice the resolution of normal television, giving a very clear picture at about 1200 lines per screen with a height-to-width ratio of 3:4. **HD-MAC** is the standard in Europe, while commercial **MUSE** services are run in Japan.

high-density plastic Thin, strong plastic film used for wrapping magazines where weight is critical.

high frequency (hf) (Also known as the short-wave band.) The part of the electromagnetic spectrum between about 3–30 MHz, which is used mainly for long-distance communication.

high key Tonal values lighter than mid-grey.

high-level ASCII or **extended ASCII** The term often used to describe characters with code numbers from 128 to 255, as the true ('basic', **plain**, **flat**) **ASCII** character set only includes the characters from 0 to 127. Because there is no standard for extra characters, **DOS**, **Windows** and the **Macintosh** each assign different characters to the high-level ASCII code numbers, although generally they are used for accented characters and other commonly used symbols. See **ANSI character set**.

high-level data link control (HDLC) A bit-oriented **data link** control protocol specified by **ISO** for transmitting variable-length **packets** over a datalink. Functionally equivalent to **ADCCP**.

high-level language A computer programming language which uses English-language instructions. Use of a high-level language then requires a translator program within the computer to convert these instructions from high-level language into machine-code. See also **low-level language**.

highlights Lightest tonal values in a **half-tone**.

high resolution High density of detail. Is often used to describe the numbers of **pixels** or dots per unit area in an image. The higher the **resolution**, the more information there is in a given amount of visual space.

high-resolution or **high-res** Capability to display or detect a vast number of **pixels** in a unit area.

High Sierra standard A standard defining the file system for **CD-ROM**s. It is equivalent to **ISO 9660**. The name derives from the name of the hotel where a significant meeting to agree on the standard took place.

high spaces Letterpress spaces cast to shoulder height of type and used in **formes** for **stereotyping**.

high speed Data communications speeds above 9600 bits per second, being in excess of speeds normally attainable via voice-grade circuitry.

highspeed skip Rapid movement in a printer which enables it to skip over the perforations in continuous stationery.

high-yield pulp Synonym for **CTMP**, or **chemithermomechanical pulp**.

hinge Line which allows a bookcover to bend where the front or back is joined to the **spine**, strengthened in cased books by a strip of gauze.

hinged style Type of **paperback binding** cut **flush**, where the cover is creased to facilitate opening.

hinting A method developed by **Adobe Systems, Inc**. to reduce the effects of **aliasing** when **outline fonts** are printed. It uses a series of priorities, either encoded as extra information in the font or applied using set mathematical formulae, to correct noticeable distortions, such as uneven stem weight. **PostScript Type 1** and **TrueType** fonts are hinted. Hinting is only required for small characters or for printers with a low **resolution** when the presence or absence of a single dot makes a visible difference to a character.

histogram Graph with values depicted as vertical rectangles drawn from the baseline.

HLS See **hue**, **lightness** and **saturation**. A method of representing colour in computer graphics. (See also **RGB**, **HSV**.)

HMD See **head-mounted display**.

hold Retain matter for subsequent use.

holding fee Also called a **blocking fee**. The fee charged by a picture library when a picture is retained by a client beyond the agreed period.

holding lines Design lines which indicate the area of a piece of artwork on a page (US).

holdout Resistance to ink absorption of a paper.

Holland cloth Smooth, hardwearing linen used to strengthen hinges.

hollow 1. Space between the case and the back of the sewn sections in a hardbound book. 2. By extension, the material used for reinforcing the inside spine of a case. Examples include a **board hollow**, **presspahn hollow**, **Oxford hollow**.

hologram or **holograph** A three-dimensional image created by lasers.

holography A method of recording and then reconstructing three-dimensional images (**holograms**) using coherent light beams from lasers. The laser beam is split into two and one part used to illuminate the object. The light waves scattered by the object are then recombined with the other, reference, part of the original beam and the interference pattern thus created is stored as a hologram on a photographic plate. When the hologram is illuminated a three-dimensional image is created.

home page (Sometimes called a 'welcome page'.) The first page accessed on the **Web site** of an individual or institution on the **World Wide Web**. This may have a **URL** that consists of just

a hostname, e.g. 'http://www.pira.co.uk'. All other pages on a server are usually accessible by following **links** from the home page. There can also be links to other home pages. It is also used to describe the page that is fetched when a user starts his or her **browser**.

homogenous A homogenous board is made on a Fourdinier machine of one furnish throughout. A **pasteboard** is made up of two or more plys of different papers or homogenous boards which are pasted together.

honorarium Voluntary payment made to a professional person who has not charged a fee.

hooked An illustration or plate can be hooked in a book by folding the paper along the edge and wrapping the edge round the outside of a section. The illustration/plate is then secured with that section in the binding.

hop One of a series of file transmissions required to get a file from point A to point B on a **store-and-forward** network. On such networks, e.g. **UUCPNET** and **FidoNET**, an important metric is the number of hops (number of network segments or **routers** passed through) in the shortest path between machines, irrespective of their geographical separation. (See also **bang path**.)

hopper Station on a machine (especially in binding) where printed sections are stacked and dropped onto a conveyer belt.

horizontal format US. Book format where top and bottom edges are longer than the spine and **fore-edge.** UK: known as **landscape** format.

host A computer system which provides services to users of a network. Also a computer to which one connects using a **terminal emulator**.

hostname The unique name by which a computer is known on a **network**.

host number The **host** part of an **Internet address**.

hot-ground pulp Paper **pulp** that has been ground using very little water, so that the pulp becomes hotter.

HotJava A **World Wide Web** viewer developed by Sun Microsystems and written in the Java **object-oriented language**. It is able to pull down **applets**, applications also written in Java, from the server on the fly in order to perform specific tasks, such as viewing an **MPEG** movie, if no MPEG viewer already exists on the client system. Java is now implemented in other viewers such as **Netscape Navigator**.

hotlink See **link**. Also a mechanism for sharing data between two **application** programs where changes to the data made by one application appear instantly in the other's copy.

hotlist A list of documents which the user wishes to access frequently, stored as part of the set-up in a **World Wide Web** viewer, such as **Netscape**. Clicking on the name of the document (strictly speaking, its **URL**) will activate a **link** to that document and fetch it to the screen. (See also **bookmark.**)

hotmelt Type of synthetic resin adhesive used in **perfect binding**. Can be used alone (one-shot binding) or in conjunction with **PVA** (two-shot binding).

HoTMetaL Editing and parsing software from SoftQuad which enables the user to create and edit documents coded in **HTML** and conforming to the HTML **Document Type Definition** (**DTD**). HoTMetaL is a specialised version of the more general Author/Editor software for creating and editing **SGML**-conforming documents.

hot metal composition or **hot type** **Typesetting** where instructions for setting characters, whole words or lines of type using molten metal are fed to the setting machine by perforated tape produced by the compositor's keyboard.

hot-pressed paper Paper that is made smooth by being pressed between heated metal plates.

hot-pressing Using a hot stamp to **block** letters onto a cover.

hot spot The active location of a cursor on a **bitmap** display. Also described as a screen region that is sensitive to **mouse clicks**, which trigger some action, often to activate a **link** to another application or another part of a document. Used widely in **hypertext** applications and now in **World Wide Web** viewers to access other documents or applications, such as **email** or **ftp**.

house advertisement **Filler advertisement** for periodical's own company.

house copies Copies of a magazine for use within the publishing house rather than for sale.

house corrections Errors introduced by the typesetter and either corrected before proofs are sent to the customer, or marked on the customer's proofs for his attention.

housekeeping File initialisation, creation, maintenance and back-up tasks.

house style See **style of the house**.

HPGL See **Hewlett-Packard Graphics Language**.

hqx The filename extension for **Macintosh BinHex** format files.

H series The series of **ITU-T** recommendations governing audio-visual services, including **video compression**. Some of the most signicant are given separately.

HSV **Hue**, **saturation** and value (or **brightness**). A method of representing colour in computer graphics. (See also **RGB**, **HLS**.)

HSWO Heatset web-offset.

HTML See **HyperText Markup Language**.

HTML-3 The 1997 version of HTML.

HTML-4 The current (1999) version of **HTML**.

HTTP See **HyperText Transfer Protocol**.

HTTPS See **HyperText Transmissiom Protocol (Secure)**.

hub A device or computer to which several other devices are connected (like spokes to the hub of a wheel). The central **node** of a **network**. Hubs provide flexibility in logical interconnection of networks and data equipment.

Hubnet A 50 Mbps **fibre-optic network** developed at Toronto University.

hue Essentially, a representation of how colour is perceived, based on the artist's colour wheel from violet to red (red and violet then being adjacent). The relationship between hues is thus represented in terms of the number of degrees separating them on the colour wheel.

Huffman coding A data **compression** technique, first described by D A Huffman in 1952, in which the length of the encoded symbol varies in inverse proportion to its information content. Thus the more often a symbol or token is used, the shorter the binary string used to represent it in the compressed stream.

human-computer interaction (HCI) The study of how humans use computers and of the design of computer systems to make them easy, quick and productive for people to use. (See also **user-friendly**, **human-computer interface**.)

human-computer interface Any tool or utility which allows a user to interact with a computer, e.g. **WIMP**, **command line interface** or even **virtual reality**.

Humanist Generic term for Venetian-style typefaces.

humidification Addition of water vapour to air.

humidity Quantity of water vapour in the atmosphere. (See also **absolute humidity** and **relative humidity**.)

Hunter Lab values American scales, used to measure colour.

hybrid computer One which has elements of both digital and analogue computers.

hydrapulper Large circular metal tank in which dry pulp is mixed with water, and other ingredients added, in the first stages of papermaking. The stock from the hydrapulper passes on for **refining** in a cone refiner system prior to release to the paper machine.

hydration Pulp state where water does not drain away through the mesh.

hygro-expansivity Growth or shrinkage of paper due to moisture content. Hence also 'hygro-instability'.

hygrometer Instrument used to measure relative humidity.

hygrometry Measurement of humidity.

hygroscopic Absorbing moisture.

HyperCard Software for information storage and retrieval on the **Macintosh**. Consists of a 'stack' of 'cards', each of which can hold text, graphics, sound, animation etc., together with **links** to other cards. HyperCard is very similar to **hypertext**, although it does not conform to the rigorous definition of hypertext. (See also **HyperTalk**.)

Hyper-G Now called **HyperWave**. An advanced **World Wide Web** server technology, based on an **object-oriented database**, developed especially for hypermedia at the University of Graz, Austria. Hyper-G provides tools for structuring, maintaining and serving heterogeneous **multimedia** data, including automatic hyperlink consistency and advanced navigation tools. As HyperWave, it includes authoring utilities (Harmony for **Unix** and Amadeus for **Windows**).

hyperlink A **hypertext link**. A reference from some point in one **hypertext** document to another document or another place in the same document. A hyperlink is usually displayed in some distinguishing way, such as a different colour, **font** or **style**, or even as a **symbol** or **graphic**.

hypermedia A combination of **hypertext** and **multimedia**, or the extension of hypertext to include graphics, sound, video and other kinds of data. (See also **HyperText Markup Language**, **World Wide Web**, **HyTime**.)

HyperNeWS A **hypertext** system developed at the Turing Institute, Glasgow, based on **NeWS**.

HyperTalk The programming language which can be used to control **HyperCard** stacks.

hypertext A term, used originally by Ted Nelson as part of his vision 'Xanadu' in the mid-1960s, to describe a collection of documents (or **nodes**) containing cross-references or **links** so that, with the aid of an interactive **browser** program, the reader can move easily from one document to another in a non-sequential manner. Although Xanadu is still in existence, the **World Wide Web** is now the most widely used implementation of hypertext. See **hypermedia**.

HyperText Markup Language (HTML) The underlying **hypertext language** of the **World Wide Web**. **HTML** is based on an **SGML Document Type Definition** (**DTD**). HTML can be viewed using one of a number of viewers, or **clients**, the best known of which are **Internet Explorer** and **Netscape**. In addition, browser

extensions or **plug-ins** provide extra functionality. A fairly recent development is **Cascading Style Sheets**, which allow **typographic** and **layout** information to be embedded in an HTML document. (See also **XML**.)

HyperText Transfer Protocol (HTTP) The client-server **TCP/IP** protocol used on the **World Wide Web** for the exchange of **HTML** documents. (See also **uniform resource locator** (**URL**).)

HyperText Transmission Protocol (Secure) (HTTPS) A **URL** access method, used by **Netscape**, for connecting to **HTTP servers** using **SSL** (**secure sockets layer**), which runs underneath HTTP. See **secure HTTP**.

HyperWave See **Hyper-G**.

Hyphen The (UK) company which produced the first commercial **PostScript** clone. This was principally used for high-resolution output on **imagesetters**.

hyphenation Literally, the use of a hyphen to connect two words or numbers. In typography, however, it is usually employed to mean the use of a hyphen at the end of a text line (usually when **justification** is also used, hence **H&J** as an abbreviation for hyphenation and justification) to indicate that a word does not fit completely on that line and the remainder is at the beginning of the next line. There is much discussion of the merits of hyphenation in printed documents. In electronic documents, particularly those where the lines **wrap** on screen as the **window** or type size is changed, justification (and thus in most cases hyphenation) is not used.

hyphenation exception dictionary Wordprocessing and typesetting programmes have dictionaries, held in computer memory, which allow words to be hyphenated according to a general logic. This may cause certain words to break at an unacceptable point. A hyphenation exception dictionary allows the user to override the normal logic and allocate discretionary hyphen points for a given word. Subsequently, when the programme needs to break a word at the end of a line, it will first refer to its hyphenation exception dictionary to see if the word is there and, if so, will break it at one of these points. If the word is not in the dictionary, it will break it according to the rules of logic programmed in it.

hyphenation logic Programming to break words according to logical rules.

hyphenation zone The area towards the end of a text line within which a wordprocessing or page make-up program may break the line, hyphenating the final word if necessary.

hyphenless justification Justification without breaking words. On narrow measures this creates widely varying word spaces.

hypo Abbreviation for sodium hyposulphite, a chemical used to fix photographic images after development.

HyTime Hypermedia/Time-based Structuring Language: an emerging **ANSI/ISO** standard which is essentially a **hypermedia** extension of **SGML**. (See also **MIPS**.)

Hz The standard abbreviation for the unit of frequency. See **hertz**.

I

IAB See **Internet Architecture Board** (previously stood for Internet Activities Board).

IANA See **Internet Assigned Numbers Authority**.

IBC Inside back cover.

ibid or ***ibidem*** Abbreviation meaning 'in the same book, passage or place'.

IBM-compatible A term applied to personal computers which will accept hardware add-ons and run software designed to run on an IBM-PC.

ICI See **Image Compression Interface**.

ICMP See **Internet Control Message Protocol**.

I-Comm A **shareware** graphical **World Wide Web browser** for use with a **modem** on MS-DOS, which does not require a **SLIP** or **PPP** connection.

icon A small picture representing something (a file, a directory or an action) in a **graphical user interface** (**GUI**). When the user **clicks** on an icon, a program is run. Icons are usually stored as **bitmaps**.

ICR 1. **Integrated colour removal**: see **achromatic separations**. 2. **Intelligent character recognition**.

IC See **Integrated circuit**.

IDEA See **International Data Encryption Algorithm**.

idem or ***id*** Means 'the same word or author', usually referring to a **reference** that has just been used.

idiot tape Unformatted tape with no line ending commands.

idler or **idling roller** Roller on a **web press** that rotates freely.

idle time Time on a machine when it is not in use for productive work.

IDN See **Integrated Digital Network**.

IE See **Internet Explorer**.

IEC See **International Electrotechnical Commission**.

IEE See **Institution of Electrical Engineers.**

IEEE See **Institute of Electrical and Electronics Engineers.**

IEEE 802 The **IEEE** standards for **local area networks** (**LAN**s). IEEE 802.3 covers **CSMA/CD,** IEEE 802.4 **token bus** and IEEE 802.5 **token ring.**

IEPG See **Internet Engineering and Planning Group.**

IESG See **Internet Engineering Steering Group.**

IETF See **Internet Engineering Task Force.**

IETM See **Interactive Electronic Technical Manual**.

IF In high-level programming a conditional statement in which action is taken only if the condition is met.

I/F Abbreviation for **interface**.

IFF See **interchange file format.** IFF/8SVX is an Amiga audio file format**.**

IFS See **iterated function system.**

IGC See **Institute for Global Communications.**

IGES See **Initial Graphics Exchange Specification.**

IGP See **Interior Gateway Protocol.**

IINREN See **Interagency Interim National Research and Education Network**.

illuminate To draw decorative illustrations on a **manuscript**.

illumination Decoration of an initial or letter in an old manuscript with gold, silver or bright colours.

illustration board One-sided heavy drawing card.

ILMI See **Interim Local Management Interface**.

image A two-dimensional rectangular array of **pixels**, each pixel consisting of one or more **bits** of information, representing brightness, colour etc. (see **RGB**, **HLS**, **HSV**). Images may be created on screen or taken from an image capture device, such as a **scanner**, **digital camera** or **frame grabber**. (See also **image compression**, **image file formats**, **fractal**.)

image area piling Build-up of lint and ink on litho press blanket in the image area.

image compression The reduction of the amount of information required to represent an **image**, so that the file size is smaller, which means that it will require less space in computer memory and storage and that it takes less time to transfer over networks and communications systems. Is used in **fax** transmission and in videophone and **multimedia** systems. (See also **JPEG**, **compression**, **fractal**.)

Image Compression Interface (ICI) A standard interface to compression algorithms, produced by C-Cube Microsystems.

image-editing software See **paint program**.

image file formats There are many formats used to store images in files: **GIF**, **TIFF**, **pcx** and **JPEG** are common.

image map An image in which different computer actions are initiated when part of the image is selected. See **ISMAP**.

image master Photographic original for second-generation photosetting fonts. Also, **film master**.

image plotter See **imagesetter**.

image processing The manipulation of **images**, usually using algorithms e.g. to enhance contrast, reduce noise (remove spots) or change colours.

image recorder See **imagesetter**.

imagesetter A high-resolution output device that usually provides output on photographic material (either bromide or film) or directly on printing plates. The software technology is essentially the same as that of the laser printer, although the hardware will probably be different. Resolutions can be as high as several thousand dots (or spots) per inch, which are necessary to achieve the output of high-resolution **half-tones**. Most imagesetters today use **PostScript**. Imagesetters were previously called typesetters. Synonyms include **image plotter**, **image recorder**, **laser plotter**, **laser recorder**, **laser setter**, **laser output unit**, **film recorder** etc.

imaging model How output is represented on screen, e.g. in a **GUI**. See **QuickDraw GX**, **TrueImage**.

IMEI See **International Mobile Equipment Identity**.

imitation art Paper loaded with **china clay** in the **pulp** and highly finished to give an 'artpaper' appearance. As distinct from true art paper, which has a china clay surface applied to a conventional base paper.

imitation cloth Reinforced and embossed paper commonly used for binding hardback books instead of cotton cloth. Also, **fibrefelt**. Contrast **woven material**.

imitation gold foil Aluminium foil with gold lacquer on plastic carrier. Used for blocking the covers of books.

imitation parchment Tough greaseproof paper.

imitation silver foil Aluminium foil with clear lacquer on plastic carrier. Used for blocking the covers of books.

impact printer Any printer in which the required character strikes the paper through an inked

ribbon. See **daisywheel** printer, **dot matrix printer**.

imperfection Book with printing or binding faults.

imperial A former British size of large paper (30×22 inches).

import To copy across from an external program into a current program, typically from a word-processing application into a page make-up program.

import filter A program which accepts input from an external program and converts it into a format suitable for the user's current program.

imposed colour proofs Colour proofs produced from machine **forme**s which are imposed to the final page sequence of the job. Contrast **scatter proofs**. The main advantage of imposed colour proofs is that the effects of **tracking** can be properly considered.

imposition The arrangement of pages on a printing plate so that, when a publication is folded and bound, the pages are in the correct sequence. Traditionally, this was done by physically arranging the film or bromide before creating the plate, but now either computer or photographic methods are frequently used. Software is available to impose **PostScript** files.

impregnating Running book binding cloth through starches or chemicals to enhance its quality or appearance.

impression 1. Pressure of the plate in contact with paper or blanket at the moment of printing. 2. All the copies of a book from one printing.

impression cylinder Cylinder which holds the paper against the printing surface.

impression tolerance The flexibility with which paper receives letterpress impression.

imprint Publisher's and/or printer's identifying text printed in a book or other work.

IMSI See **International Mobile Subscriber Identity**.

incised **Typeface** based on letters engraved in stone, such as Perpetual. Also known as 'glyphic'.

inclusive type area Type area inclusive of headline and folio. Contrast **exclusive type area**.

incunabula Early printing.

indent 1. Set type further in from the left-hand margin than the standard measure of surrounding text. 2. In paper trading, an indent paper is one which is available from the mill by special making order only, and is not held in common stock by the mill as a standard line.

index 1. Alphabetical list of subjects contained in the text of a work, together with their page numbers. 2. The contents of a file with references for locating the contents.

index board Board suitable for index cards and similar stationery.

index hole A hole in a floppy disk which is used to signal the start of a track or sector.

indexing The creation of ordered lists of entries or terms. Most **World Wide Web search engines**, such as **AltaVista** and **Yahoo**, use indexing in order to speed up access to data, as does most **database** software.

Indian ink Intensely black drawing ink.

india paper Very thin opaque **rag paper** often used for high-quality bibles.

indicia Formal mailing information or permit printed on envelope or item to be mailed.

Indigo One of the leading **digital presses**.

indirect letterpress See **letterset**.

indirect printing Process where the printing surface is not in direct contact with the paper, e.g. **offset lithography**.

indirect screening Four-colour origination in which the final output films are in continuous tone, and are screened afterwards separately, rather than as they are output from the scanner. Contrast **direct screening**.

inferior Small character set below the baseline at the foot of another character.

Infobahn A term (taken from the German 'Autobahn') for the **information superhighway**.

Information Engineering A research programme of the European Commission, concerned with how information and data are created, stored, distributed, changed or manipulated, and used. A major area of interest is **electronic publishing**.

information highway See **information superhighway**.

information retrieval A term used in the context of obtaining information from online databases in response to a query formulated in an appropriate way. Large companies and libraries still access online databases in this way, usually by directly dialling into the database provider and, for structured information, this is still a very efficient way of obtaining information, particularly for someone familiar with the data structure and query syntax. However, for the individual, access to information via the **World Wide Web** and indexes and search tools, such as **AltaVista**, **Yahoo** and **Lycos**, is now a real alternative.

information superhighway (Also called **information highway**, **Infobahn**, **infostrada**, **National Information Infrastructure**.) A term first used by US Vice-President Al Gore in the early 1990s for high-speed communications networks carrying **multimedia** applications and information around the world. The term is

widely used but rarely defined, meaning different things to different people. For successful implementation it will require high communications **bandwidths**, generally not currently available over the **Internet**.

infostrada A term (taken from the Italian 'autostrada') for the **information superhighway**.

Infosync Software that is used to **download** updates to information at the **bit** level. Information is downloaded from a **database** to the **client**. Then, whenever the client accesses the server, either via the **World Wide Web** or over a **dial-up** connection, Infosync checks the local database (on the client) against the master database (on the server) at the level of the bits stored, and downloads any changes since the last access. In this way the amount of data transferred is kept to a minimum, but the database can be accessed locally, both of which keep down communication charges.

infotainment The integration of **interactive** information and entertainment services or **software**. In Europe usually on CD-ROM, while in North America often supplied via a cable **network**. (See also **edutainment**.)

infra-red The part of the electromagnetic spectrum with wavelengths between about 0.7-100 µm. It is used extensively for **fibre-optic** communications.

infra-red port Port which accepts data via a wireless infra-red link.

ingrain paper Rough-surfaced paper for book covers.

in-house typesetting Typesetting carried out inside a publisher's premises, and controlled by the publisher.

initial First letter in text when set in such a way that it stands out, e.g. bigger than its normal cap text size. See **cocked-up initial**, **drop initial**.

Initial Graphics Exchange Specification (IGES) A standard for the exchange of **CAD** (computer-aided design) files.

initialise Run a program which sets all data values at nil and prepares a storage medium such as a floppy disk to be compatible with the system in use.

ink duct Part of printing machine which holds ink before it is released to the cylinders.

ink flotation sizing test Test which measures paper sizing by floating paper on ink and calculating penetration time.

ink fountain Device which supplies ink to the inking rollers.

ink hickey See **hickey**.

ink holdout See **holdout**.

inkjet printer A non-impact printing mechanism which forms the image at high speed by deflecting ink droplets electromagnetically. The quality of printed text is not as good as that on a **laser printer** at the same resolution, but inkjet printers provide a relatively cheap way of printing both monochrome and colour images of acceptable quality.

ink mist Ink filaments thrown off the rollers during high-speed coldset web offset printing.

inkometer Instrument which measures the **tack** of ink.

ink piling Build-up of ink on offset blanket.

ink receptivity Uniform acceptability of ink on paper surface.

ink rub Smears of ink caused when the surface of an abrasive paper, often matt art, rubs against the ink film before it is completely dry. Often occurs during the binding process.

ink set-off Unintentional transfer of wet ink from one printed sheet to another in the delivery stack.

ink starvation Ink starvation is caused by the image on one part of the plate cylinder requiring more ink to cover it than that particular track of the inking rollers can handle.

inline Typographic style in which the characters comprise white inner areas contrasting against the outlined shape.

inner forme The imposed **forme** which forms the inside of the sheet when folded and which therefore contains the second page of the section. Contrast **outer forme**.

in pro In proportion. Also **RIP**.

input Data going into a **CPU**.

INRIA The French National Institute for Research in Computer Science and Control, which is working with the **World Wide Web Consortium** in developing standards for **HTML** and the **World Wide Web**.

INRIA Videoconferencing System (ivs) A **videoconferencing** tool for the **Internet**, developed at **INRIA** and based on the **H.261 video compression** standard.

insert Plate section placed into the middle of a text section in a book. Contrast **wrap**.

inserting Placing loose material inside a section or book. Contrast **insetting**.

insertion Inclusion of an advertisement in a periodical.

insetting Placing and fixing one section inside another.

inspection copy Copy of a book sent to a potential customer (often a school) for inspection prior to buying.

Institute for Global Communications (IGC) A provider of networks and networking tools for

international communications and information exchange. The IGC networks – **PeaceNet**, **Econet**, **ConflictNet** and **LaborNet** – are the only networks dedicated solely to environmental preservation, peace and human rights.

Institute of Electrical and Electronics Engineers (IEEE) (Often known as 'I triple E'.) US professional society, which is involved in academic publishing, organisation of conferences and formulation of standards. IEEE standards are widely used in computing and communications. In particular, IEEE 802 standards are concerned with **local area networks** (**LAN**s) including **EtherNet** and **Token-Ring**.

Institution of Electrical Engineers (IEE) UK professional society (not to be confused with the **IEEE**). Publisher of *Physics Abstracts* and the INSPEC databases. Also publisher of *Electronics Letters*, the first refereed journal to be available in both printed and electronic forms (via **OCLC** and based on **SGML**, using the **Guidon** viewer).

instruction Order in a program telling a computer to carry out an operation.

intaglio Printing from a recessed image, e.g. gravure, **die stamping** etc.

integrated book Book with text and pictures together throughout (as opposed to pictures in a plate section).

integrated circuit Silicon chip.

integrated colour removal (ICR) See **achromatic separations**.

integrated digital network (IDN) A network which uses digital technology with the switching and transmission functions integrated.

integrated half-tone density See **percentage dot area**.

integrated production system Production system where all the processes work together automatically.

integrated publishing house Publishing house which publishes both in **hardback** and **paperback.**

integrated services digital network (ISDN) A network that provides end-to-end digital connectivity to support a wide range of services, both voice and non-voice, e.g. **fax**. **ITU-T** standards have been recommended for interfaces and operating procedures. More simply described as a **digital** telephone service as opposed to the **analogue** service which has been used ever since telephone services were introduced. **Bandwidths** vary from 56 kbps in the US and 64 kbps in Europe upwards. ISDN has the advantage that lines can be combined to increase bandwidth. (See also **basic rate ISDN**, **primary rate ISDN**.)

integrated services local network (ISLN) A local network technology that can handle voice and non-voice services on the same network.

Intel Company that designs and manufactures the microprocessors used in most PCs. The range 80086–80486, used from about 1980 on, has now been extended with various versions of the **Pentium**.

intellectual property rights The rights of an author or creator to the use and re-use of material created by him or her, including **copyright**. How such rights can be protected in an age of **electronic publishing** and the **World Wide Web** is the subject of much debate.

intelligent agent An automated network information gathering tool, which searches the **Internet** either to locate documents on subjects specified by the user or to create indexes. Sometimes referred to as a **knowbot** or **spider**. (See also **AltaVista**, **Microcosm**.)

intelligent character recognition (ICR) Optical character recognition equipment which can be programmed to recognise an infinite variety of styles, as distinct from earlier **OCR** systems which would recognise certain strictly limited typewriter faces only.

intelligent terminal A computer, with its own memory and processor, but not necessarily storage memory, which is used as a terminal to another system. On a dumb terminal, all the processing is carried out on the system accessed. (See also **client-server**.)

INTELSAT See **International Telecommunications Satellite Consortium**.

interactive Being able to accept and react to user input. This is generally applied to a program or to a communications medium. Thus almost all computer applications are interactive, while normal television is not and teletext is only interactive in that the user can choose the page to go to.

Interactive Electronic Technical Manual (IETM) A **hypertext** standard developed in association with the **CALS** initiative.

interactive video See **video**. Applications in which it is possible for the user to interact with and control information (including text, sound or moving images) stored on video disk. It is widely used for training purposes, but also forms an intrinsic part of **CD-I**.

Interagency Interim National Research and Education Network (IINREN) A still-evolving, high-bandwidth US network, part of **NREN**.

Intercast A hardware and software technology, developed by **Intel**, which allows PC users to

watch television and simultaneously receive broadcast Web pages related to that cable or television programme.

interchange file format (IFF) Type of audio file format. See **Audio IFF**.

intercharacter spacing In wordprocessing, the use of variable spaces between characters which, in conjunction with variable interword spacing, combine to give an impression of typeset quality. Also, **letterspacing**.

interface The physical boundary between two systems or devices (hardware interface). Also used to describe the specifications for the protocols, procedures, codes etc. (software interface) that enable communication between two dissimilar systems or devices. (See also **user interface**: how the user is able to interact with the computer.)

interfacing codes Generic tags used for the electronic markup of headings etc. in text.

Interim Local Management Interface (ILMI) A **network** management specification for **B-ISDN/ATM** networks, based on the **Simple Network Management Protocol** (**SNMP**).

Interior Gateway Protocol (IGP) An **Internet** protocol which controls the **routing** of information to the **routers** within an **autonomous system**. (See also **Exterior Gateway Protocol**, **Routing Information Protocol**.)

interlacing A technique for increasing resolution on graphic displays or screens. The electron beam traces alternate lines on each pass, providing twice the number of lines that would appear on a non-interlaced screen. However, screen refresh is slower and screen flicker may be increased over that seen on an equivalent non-interlaced screen because any given **pixel** is only refreshed half as often.

interlay (cut or mechanical) Cut-out paper placed between a letterpress plate and its mount which increases pressure on the solids or dark tones.

interleaves 1. Sheets of paper put between wet printed sheets to prevent **set-off**. 2. Different types of paper interleaved with the text paper in a book.

inter-library loan (ILL) Service involving libraries borrowing from one another those titles not held in their own collection which have been requested by a user.

interlinear Written or printed between lines of text.

interline spacing **Leading**: space between lines in text. Also, **film advance**, **film feed**, **line feed**.

Intermedia A **hypertext** system developed by a research group at Brown University, US. Also a UK company which pioneered disk format conversion in the early 1980s, when there were many more disk formats than there are today.

Intermedia Interchange Format A standard **hypertext** interchange format based on the **Intermedia** hypertext system.

intermediates Films used in the intermediate stages of reproduction between the original and final printing films. Normally **continuous tone**.

internal memory Memory of a computer which is immediately accessible (i.e. in **RAM** or **ROM** form), as opposed to in external storage (disk etc.).

internal modem A **modem** which takes the form of a card or board which is situated within the computer. (Compare with **external modem**.)

internal sizing Rosin, alum or starch sizing added to the papermaking stock at the refining stage to prevent ink spread on paper. Also called **engine sizing** or 'beater sizing'. As distinct from **surface sizing** which is carried out at the size press on the papermaking machine.

International Data Encryption Algorithm (IDEA) An encryption algorithm used by **Pretty Good Privacy**.

International Electrotechnical Commission (IEC) An international standards body at the same level as **ISO**.

International Mobile Equipment Identity (IMEI) The 15-digit serial number which identifies the **GSM** handset (sometimes found on the back of the phone).

International Mobile Subscriber Identity (IMSI) A number which is used by the **SIM** card in a digital mobile phone to identify itself to a **GSM** network.

International Organisation for Standardisation (ISO) A voluntary organisation, founded in 1946, responsible for creating international standards in many areas, including computers and communications. These include the **seven-layer model** for network architecture, **Open Systems Interconnection** and **SGML**. Some important standards are listed under their ISO number. (See also **International Telecommunications Union**.)

International Packet SwitchStream (IPSS) The service which connects national public data network **PSS**s to other national networks operated by **PTT**s. It is now known as **Global Network Service** (**GNS**).

International Phonetic Alphabet (IPA) A system that provides special characters (IPA characters) and **ASCII** equivalents for phonetics (how characters or combinations of characters are pronounced).

International Standard A standard which has been approved and published by the **International Organisation for Standardisation** (**ISO**).

International Standard Book Number (ISBN) A 10-digit identification number, individual to each book (and edition) that is published. While there is no legal requirement for books to carry these numbers, they are used by both librarians and booksellers. The numbers are allocated on a national basis and part of the number is unique to the publisher of the book, while the last digit is a check digit. (See also **ISSN**, **PII**, **DOI**.)

International Standard Serial Number (ISSN) An 8-digit identification number that is allocated to each journal that is published. It remains the same for all issues and volumes of a journal. Unlike the **ISBN**, it does not contain any information that identifies the publisher, but is an arbitrary number made up of seven digits plus a check digit. The **PII** and **DOI** initiatives have been developed to make it possible to identify individual articles within journals.

International Telecommunications Satellite Consortium (INTELSAT) Established in 1964, it launched its first communications satellite, Intelsat 1 (or 'Early Bird') in 1965. It currently has over 30 communications satellites in orbit. See **satellite communications**.

International Telecommunications Union (ITU) An international body, part of which, the telecommunication standardisation sector (**ITU-T**), is responsible for making technical recommendations about telephone and data (including fax) communications systems. Before 1 March 1993, ITU-T was known as **CCITT**. Plenary sessions are held every four years and new standards are adopted and published. ITU-T is responsible for the **H series**, **I series**, **T series**, **V series** etc. of standards widely used in communications.

internegative Negative for a colour print.

Internet (With a capital 'I'.) The largest internet in the world, made up of a three-level hierarchy composed of backbone **networks**, such as **ARPANET**, **NSFNET** and **Milnet**, mid-level networks and stub networks. These are connected using the **Internet Protocol** (**IP**). Access to the Internet can be either from a network such as **JANET** or via a **point of presence** provided by such companies as Demon, and the major online services – AOL, **CompuServe**, **Microsoft Network**. Although the international links within the Internet operate at high **bandwidth**, the bandwidth available to the individual user will usually depend on the speed of the local connection. Many utilities and services, such as **email**, **newsgroups**, **ftp** and **Gopher**, are available on the Internet, but the **World Wide Web** has become the most important way of distributing and accessing information. There are several bodies associated with the running of the Internet, including the **IAB** (**Internet Architecture Board**), **the IANA** (**Internet Assigned Numbers Authority**), **the IEPG** (**Internet Engineering and Planning Group**), **the IESG** (**Internet Engineering Steering Group**) and the **ISOC** (**Internet Society**).

internet (Without a capital 'I'.) Any set of **networks** interconnected with **routers**.

Internet address (Or **IP address**, **TCP/IP** address.) The 32-bit host address defined by the **Internet** protocol and usually represented in dotted decimal notation, e.g. 158.152.28.130. The address can be split into a **network number** (or **network address**) and a **host number** unique to each host on the network, and sometimes also a **subnet address**. The way the address is split depends on its **class**. The Internet address must be translated into an **Ethernet** address by, e.g., **ARP** (**Address Resolution Protocol**).

Internet Architecture Board (IAB) The body that is responsible for the development of **Internet** protocols. It has two task forces: the **Internet Engineering Task Force** (**IETF**) and the **Internet Research Task Force** (**IRTF**) and also includes the **Internet Assigned Numbers Authority** (**IANA**).

Internet Assigned Numbers Authority (IANA) The central registry for various **assigned numbers**, such as **port** and **protocol** numbers, and options, codes and types. Part of the **Internet Architecture Board** (**IAB**).

Internet Assistant An add-on for Microsoft **applications**, which allows the user to edit **HTML** files and to convert wordprocessing and other formats to and from HTML. Can also act as a **World Wide Web browser**.

Internet Control Message Protocol (ICMP) An extension to the **Internet Protocol** (**IP**), which allows for the generation of error messages, test packets and informational messages.

Internet-Draft Working document of the **Internet Engineering Task Force**.

Internet Engineering and Planning Group (IEPG) A group set up to promote a technically coordinated operational environment of the global **Internet**. However, the IEPG is not a group which conducts activities of a technical developmental nature.

Internet Engineering Steering Group (IESG) A body which provides the first technical review of **Internet** standards and is responsible for the day-to-day management of the **Internet Engineering Task Force** (IETF).

Internet Engineering Task Force (IETF) An open international community of network designers, operators, vendors and researchers, who work to co-ordinate the operation, management and development of the **Internet**, including **protocol** and architectural issues in the short to medium term. The IETF meets regularly and proceedings are made generally available.

Internet Explorer (IE) **Microsoft**'s **browser** for the **World Wide Web**.

Internet Multicasting Service See **Internet Talk Radio**.

Internet Network Information Center (InterNIC) The joint name for the providers of registration, information and database services to the Internet. Funded by the US National Science Foundation, each service is run by a different company. General Atomics provides information services, AT&T provides directory and database services and Network Solutions, Inc. (NSI) provides registration services. The companies work closely together, as well as in collaboration with other **network information centers** (NICs) in the US and elsewhere in the world.

Internet number See **Internet address**.

Internet phone A software and hardware solution, which allows long-distance telephone calls to be made via the **Internet**, so that connection is via the **TCP/IP** network, rather than through the usual telephone network. Although the costs are lower, in that the caller pays only local telephone charges, the quality can be much poorer than for standard telephone connections.

Internet Protocol (IP) The **network layer** for the **TCP/IP protocol** suite widely used on **Ethernet** networks. IP is a connectionless, best-effort **packet-switching** protocol, providing packet **routing** through the datalink layer.

Internet Registry (IR) The registry of **network** address and **autonomous system number** identifiers operated by the **Defense Data Network Network Information Center** (DDN NIC) on behalf of the **Internet Assigned Numbers Authority**.

Internet Relay Chat (IRC) A facility that allows people to 'talk', i.e. interact directly, with others in real time over the **Internet**. This facility does not allow actual **audio** communication, but see **Internet phone**.

Internet Research Steering Group (IRSG) The governing body of the **Internet Research Task Force**.

Internet Research Task Force (IRTF) The body which considers long-term **Internet** issues from a theoretical point of view. It has Research Groups, similar to **Internet Engineering Task Force** Working Groups, each of which is allocated a different research topic. **Multicast** audio/video conferencing and **Privacy Enhanced Mail** (**PEM**) are examples of developments which have been initiated in the IRTF.

Internet service provider (ISP) Also called **access provider**. A company providing a **point of presence** (**PoP**) on the Internet.

Internet Society (ISOC) A non-profit-making, professional membership organisation concerned with the technical evolution of the **Internet** and with stimulating interest in the scientific and academic communities, industry and the public about the technology, uses and applications of the Internet, as well as promoting the development of new applications for the system.

Internet Talk Radio (Internet Multicasting Service.) A US-based service that broadcasts radio programmes of technical interest over **MBONE**. The best known is probably **Geek of the Week**.

internetworking The interconnection of two or more **networks**, usually **local area networks** (**LAN**s), using some kind of **router** or **gateway**, so that they appear to be one network.

Internetwork Packet eXchange (IPX) Protocol used by **Novell NetWare**. If a **router** has IPX routing, **local area networks** (**LAN**s) can interconnect so that Novell NetWare **clients** and **servers** can communicate.

Internet worm (Or **Great worm**.) A **worm** perpetrated in 1988 by Robert T Morris, which quickly used up all available processor time on the systems it infected via **email**. It was a significant event in public awareness of the **Internet** and its vulnerability to **hackers**. (See also **Computer Emergency Response Team**.)

InterNIC See **Internet Network Information Center**.

interpositive Photographic positive which will be subject to further camera work to obtain the finished result.

Interpress A **page description language**, developed at **Xerox PARC**, and in many ways the forerunner of **PostScript**.

interpreter A program **translator**.

Intertype Proprietary name of a linecasting machine similar to a Linotype.

interword spacing In wordprocessing and desktop publishing, the use of variable interword spacing to achieve justified columns of text. See **intercharacter spacing**.

intranet A network providing similar services to those provided by the **Internet**, but only within an organisation, e.g. a **World Wide Web** server on an internal network to provide information within a company. (See also **extranet**.)

introduction Introduction to the subject matter of a book, as distinct from **preface**, **foreword**.

inventory Complete list of stock or goods held in a warehouse or shop.

Inverform machine Type of papermaking machine used particularly in board making. A series of head boxes feed consecutive layers of wet **stock** over the main, first, layer at the wet end of the machine to build up a thick final layer of stock on the wire.

inverse video (Also called **reverse video**.) When the image on the screen appears as a 'negative', so that the parts which are conventionally black appear as white and vice versa. Inverse video is often used to indicate that something, e.g. a portion of text, has been selected for copying, moving, deletion etc.

invert half-tone Gravure printing which uses half-tone dot structures.

I/O Input/output. Relating to systems which can input and output to and from a computer.

ion deposition Reproduction process which creates an image by toner sticking to an electrically charged area of paper.

IP See **Internet Protocol**.

IPA See **International Phonetic Alphabet**.

IP address See **Internet address**.

iph Impressions per hour. The normal measure of printing speed.

IP-Multicast The **multicast** system operating over the **Internet**. Subsequently called **MBONE**.

IPSS See **International Packet SwitchStream**.

IPX See **Internetwork Packet eXchange**.

IR See **Internet Registry**.

IR Infra-red.

IRC See **Internet Relay Chat**.

IR coating Coating varnish cured by infra-red light.

Iris proofs Full-colour digital proofs generated from PostScript files and increasingly used as **contract proofs** in place of **Cromalin proofs** or **machine proofs**.

irrational screening See **stochastic screening**.

IRSG See **Internet Research Steering Group**.

IRTF See **Internet Research Task Force**.

ISBN See **International Standard Book Number**.

ISDN See **integrated services digital network**.

ISDN-2 See **basic rate ISDN** (operating over two channels).

ISDN-30 See **primary rate ISDN**, where 30 channels are available to the user.

I series The series of **ITU-T** recommendations concerning data transmission over **ISDN**.

ISLN See **integrated services local network**.

ISMAP An attribute of the **HTML** tag '<IMG>' (inline image) which specifies that if the image is selected in a **World Wide Web browser**, clicking on a point will generate a request relating to the coordinates of that point. This is often used in maps (as the name might suggest) to provide information about a feature at the coordinates selected.

ISO See **International Organisation for Standardisation**. Also a prefix to the reference numbers of standards issued by that body.

ISO 646 The **ISO** standard for seven-bit characters. **ASCII** is the US equivalent, although it differs in a few bracket characters. See **ISO 8859**.

ISO 8613 The **ISO** standard defining **Open Document Architecture**.

ISO 8859 (**ISO Latin**.) An **ISO** standard for eight-bit single-byte coded graphic **character sets** for the major European languages that can be represented using Latin characters. In addition, covers the Greek, Cyrillic, Hebrew and Arabic alphabets. Latin alphabet No. 1 is often used as an extension of and replacement for **ASCII**. **ISO 8879** includes some extra characters used in **SGML**.

ISO 8879 The **ISO** standard defining **SGML**.

ISO 9069 The **ISO Standard Document Interchange Format** (**SDIF**).

ISO 9241 Part 8 of this **ISO** standard is concerned with representation of colour on computer terminals.

ISO 9660 The **ISO** standard defining a file system for **CD-ROM**s. This is equivalent to the **High Sierra** standard.

ISO 9735 or **EDIFACT** The **ISO** standard for **electronic data interchange** for administration, commerce and transport. First published in 1988, it was amended and reprinted in 1990. It defines **appplication layer** syntax.

ISO 10179 The **ISO** standard for the **Document Style Semantics and Specification Language** (**DSSSL**).

ISO 10180 The **ISO** standard for the **Standard Page Description Language** (**SPDL**).

ISO 10646 The **ISO** standard for 32-bit and 16-bit character encoding, which includes **Unicode**. Originally ISO 10646 (32-bit) and Unicode (16-bit) codes were developed separately but, fol-

lowing the failure of the Draft ISO 10646 to be accepted, Unicode was taken within the scope of ISO.

ISO 10744 The **ISO** standard for **HyTime**.

ISO 12083 A revised version of the American Association of Publishers (AAP) **SGML DTD**, covering books and academic journals.

ISO 13818 The **ISO** standard for **MPEG-2** compression.

ISO/OSI seven-layer model The **ISO Open Systems Interconnect seven-layer model**, which standardises levels of services and types of interaction for exchanging data through a communications network. The model separates computer-to-computer communications into seven layers: the **application layer** (top), **presentation layer**, **session layer**, **transport layer**, **network layer**, **datalink layer** and **physical layer** (bottom). Note that **TCP/IP** does not conform to the OSI model.

ISOC See **Internet Society**.

isochronous A form of data transmission in which the time between two characters is an integral number of bit times, whereas in **asynchronous** transmission, characters may be separated by random-length intervals. Asynchronous data can thus be transmitted over a **synchronous** data link. An isochronous service is used when time-dependent data, such as video or voice, is to be transmitted. **Asynchronous Transfer Mode** (**ATM**) can provide isochronous service.

ISODE ISO Development Environment. An implementation of the upper layers of **OSI**.

isolated Advertisement with no other advertisements surrounding it.

ISO Latin See **ISO 8859**.

ISO sizes Formerly **DIN** sizes. International range of paper and envelope sizes, comprising **A series**, **B series**, and **C series**.

ISP See **Internet service provider**.

ISPBX Integrated services private branch exchange. A telephone switchboard oriented to switching **ISDN** connections both within an organisation and from that organisation to the outside world.

ISSN See **International Standard Serial Number**.

issue All copies of a publication with the same content.

issue life Average reading life of a periodical before it is no longer topical.

IT Information technology.

ital Abbreviation for **italics**.

italic Specially designed letters that slope forward. Contrast **sloped roman**.

italicise To print a word or text in **italics**.

iterated function system (IFS) The **fractal** system, discovered by Michael Barnsley, that is used in **fractal compression** (as marketed by Iterated Systems Ltd). Iterated function systems have been described (by the mathematician Heinz-Otto Peitgen) by comparing them to a multiple-reduction copying machine, which is just like a normal copier except that: there are multiple lens arrangements to create multiple overlapping copies of the original (which is what makes IFS a system); each lens arrangement reduces the size of the original (the contraction aspect); and the copier operates in a feedback loop, with the output of one stage as the input to the next (the iterative aspect). Thus, each image is treated as a combination of many smaller, self-similar images. However, although these principles are widely known, the exact compression algorithm used (and marketed) by Iterated Systems Ltd is a very well kept secret.

ITU See **International Telecommunications Union**.

ITU-T See **International Telecommunications Union**.

ivory board Fine board manufactured by laminating two high-quality sheets together.

ivory paper Thick writing paper that is the colour of creamy white ivory.

ivs See **INRIA Videoconferencing System**.

J

jacket Dustcover on book.

jacket paper High-quality, one-sided coated paper used for book jackets.

jacketwrap US term for jacket paper.

jaggies The visual effect caused by **aliasing**, so that curves look like a series of steps. (See also **anti-aliasing**.)

JANET See **Joint Academic NETwork**.

JANET IP Service (JIPS) **Joint Academic NETwork Internet Protocol Service**. Note that **JANET** used the **Coloured Book** protocols before establishing JIPS.

Janus See **Joint Academic Network Using Satellite**.

Japanese vellum Paper made in Japan from the bark of the mulberry tree.

Java An **object-oriented progamming** language, designed for **programming** the **Internet**. While

it is possible to write complete **programs** in Java, one of its strengths is that **Java applets** can also be written, which can be run within **browsers** such as **Netscape Navigator**, providing additional functionality. In addition, these applets can be linked to specific documents or files so that if, e.g., an **MPEG** video is downloaded over the Internet, and if appropriate viewing software is not available on the **client system**, an applet will automatically be downloaded so that the video can be viewed. There is also a version of Java called **JavaScript**, which lacks some of the features but can be included within an **HTML** page. In addition, there is a special browser called **HotJava**, but increasingly Java functionality is being included as part of standard browsers, such as **Netscape Navigator** and **Internet Explorer**. (See also **Java beans**.)

Java applet A form of **Java** program, dedicated to performing a particular task, such as reading a particular type of file, e.g. an **MPEG** video. Applets are not stand-alone **applications** in that they need a Java-compliant application such as a **World Wide Web browser** to be running in order to function.

Java beans A platform-independent **application program interface** (**API**) that will enable **Java**-based applets and objects to interoperate with other **object** technologies such as **OpenDoc**.

JavaScript A version of the **Java** language that can be included directly within an **HTML** page in order, e.g., to provide interaction between the user and the **host** system such as validating entries in a form. JavaScript lacks some of the functionality of Java, but is thus easier to learn. Using applications such as **LiveWire**, it is possible to produce the equivalent of **CGI-scripts**.

jaw folder A type of folder in which a partly folded section is thrust into a jaw to complete its fold. Typically one of the units in a web offset folder system. Sometimes called a 'nip and tuck folder'.

JBIG See **Joint Bi-level Image Experts Group**.

jiffy bag Name of a type of padded envelope used for protecting items sent by post.

JIPS See **JANET IP Service**.

JIS Japanese Institute for Standards. The Japanese equivalent to the **ANSI** in the US or the **British Standards Institution** in the UK.

JIT See **just-in-time**.

jitter Small changes in the timing or the phase of a signal transmitted over a **network**, possibly leading to errors or loss of synchronisation.

JNT Association The body responsible for the operation of **JANET**, trading under the name **UKERNA**. Formerly the **Joint Network Team**.

jobber A wholesaler (US).

jobbing General printing.

job press or **jobbing press** Platen press used for business cards and other small jobs.

jockey roller First roller on a **web-fed** machine whose function is to corrent the uneven tension in a reel of paper.

jog Align edges of a pile of papers by vibrating them.

jogger Device that shakes sheets of paper in order to align them.

joint Recessed part of a book case between the inside edge of the front and back boards and the shoulder, forming a hinge. Also, **French groove**.

Joint Academic NETwork (JANET) The **wide area network** linking UK academic and research institutes. JANET is operated by the **JNT Association**, trading under the name **UKERNA**. It is an **internet** providing connectivity within the academic community as well as **gateways** to external services, including the **Internet**, of which JANET is a component. The **hub** is a private **X.25** packet-switched network connecting over 100 sites, at most of which **local area networks** (**LAN**s) are connected.

Joint Academic Network Using Satellite (Janus) A joint EC-funded research and development project, in which a prototype satellite-based network has been built linking several European academic sites, with courses delivered over the network. The links between sites operate at a bandwidth of around 64 kpbs and the system uses **VSAT**.

Joint Bilevel Image Experts Group (JBIG) A **bilevel coding** standard, developed by a joint group of **ISO**, **IEC** and **ITU-T** with the same name. Compression is done using a **Q-coder**. JBIG is **lossless** and can be regarded as a combination of two algorithms, the first of which sends or stores multiple representations of images at different resolutions with no extra storage cost, while the second is a very efficient compression algorithm, mainly for use with bi-level images. Compared with **ITU-T Group 4 fax**, JBIG is claimed to be approximately 10-50% better on text and line art and even better on half-tones. (For compression of still and moving images, see **JPEG** and **MPEG**.)

jointing The process of forming the joint or groove in bookbinding. Also known as **backing**.

Joint Network Team The body responsible for the operation of **JANET** prior to 1994. Now called **UKERNA**.

Joint Photographic Experts Group (JPEG) A

standard from the **ISO** and **ITU-T** for coding and **compression** of colour images. Named after the committee (sometimes also called the Joint Picture Encoding Group) that designed the image compression algorithm. JPEG works best on full-colour or **grey-scale** digital images of real world scenes and not so well on non-realistic images, such as cartoons or line drawings, because the technique involves smoothing of the image and loss of detail. JPEG does not handle compression of black-and-white (1-bit-per-pixel) images or moving pictures.

Joint Picture Encoding Group Another name for the **Joint Photographic Experts Group** (**JPEG**).

Joint Technical Committee (JTC) A standards body reporting to both **ISO** and **IEC**.

Jordan Type of paper machine refiner.

journeyman A print worker who has completed his apprenticeship.

joystick A device, like an aircraft pilot's joystick, consisting of a hand-held device that can be moved in a horizontal plane, the position being transmitted to a computer. Usually used to control games, with one or more push-buttons on the top, whose state can also be read by the computer. Needs a joystick (game control) port. Simple games joysticks are often only capable of moving an object in one of eight different directions.

JPEG See **Joint Photographic Experts Group**.

jpg The usual filename extension for **JPEG** files.

JTC See **Joint Technical Committee**.

jughead An **Internet** search utility which operates within **Gopher**. Similar to **Veronica**, but only searches directory names.

jukebox A way of storing and accessing large numbers of **compact discs**. Used mainly in **document image processing** applications.

Julia set A type of **fractal** image, named after French mathematician Gaston Julia. (See also **Mandelbrot set**.)

jumbo reel The large reel of paper formed and wound up at the end of a paper-machine.

Jupiter project A project at **Xerox PARC** based on the development of **Multi-User Dungeon** (**MUD**) role-playing environments to include a **virtual reality** implementation of the real world, so that participants can communicate about their actual physical environment.

justification The arrangement of text on a page or screen so that it is aligned with either the left or right margin, or with both. Fully justified text has lines of the same length that are perfectly aligned with both the left and the right margins. Both margins are even; full justification is produced by increasing (or sometimes decreasing) the space either between words (wordspacing) or between letters (**letterspacing**) or both. **Hyphenation** is often used in conjunction with full justification, hence the use of the expression **H&J**. Full justification tends not to be used in electronic publications that are viewed on screen, particularly if the text **wraps** when the window size or the type size is changed.

justify In **wordprocessing** and **desktop publishing**, the use of intercharacter and/or interword spacing to achieve even left and right margins.

just-in-time (JIT) Production technique based on the concept of acquiring materials and components at the very last moment which still allows production and selling to schedule.

jute Indian plant used to produce pulp for especially hard papers.

juvenilia Works produced by an author or artist as a child.

K

K Measure of computer storage. K = 1024 computer bytes but often used loosely as 1000.

K56 flex A **modem** technology which provides speeds of up to 56 kbps on the **download** side.

Kalamazoo Proprietary system of scheduling and listing documents.

kamyr digester Digester used in production of chemical pulp.

K and N absorbency Test for comparing rate of ink absorbency of different papers.

kaolin Fine clay used as a filler in papermaking.

kappa number Grading number which indicates the ability of paper to be bleached. The test involves treating the paper **pulp** with permanganate.

Kb See **kilobyte**.

kbps Kilobit(s) per second. Transfer rate of 1000 bits per second. See **bps** and **Mbps**.

keep standing Instruction to keep type made up for possible reprinting.

kenaf Type of plant fibre used in papermaking.

Kerberos An authentication and **key** distribution system, in which authorised users share a secret key with the key distribution centre. This key acts as a master, which effectively gives them access to the system.

kerfs Shallow indents in the back of a book section which the sewing threads lie in.

Kermit A widely used **public domain asynchronous file-transfer protocol**, originally developed at Columbia University and made available without charge. Kermit is available as part of most communications packages and on most operating systems. The UK centre for Kermit distribution is at the University of Lancaster. Kermit uses intensive encoding and error detection, and hence is fairly slow but very robust.

kern Part of a typographic character projecting beyond the body.

kerning Adjusting the spacing between two adjacent letters to create a better visual fit, also called 'aesthetic kerning', which explains the rationale. Traditionally meant decreasing the amount of space, but has come to mean either increasing or decreasing the space between the letters. Note that this is not the same as **letterspacing**.

kerning pairs Pairs of letters which invariably need spacing adjustments made to them for visual neatness. **Autokerning** performs this function automatically.

kettle-stitch Stitch joining one signature of a hand-sewn book to the next. (See also **blind stitch**.)

key A sequence of characters which is used in **encryption** and **decryption**. (See also **public key**, **private key**.) Also part of the **keyboard**.

keyboard The array of keys used to input into a system.

key escrow encryption The deposit of **encryption** keys in **escrow**. (See also **Clipper**.)

key forme The **forme** or plate positioned first in colour work. Hence also 'key negative'.

key frame A frame in an animated sequence of frames which was drawn or otherwise constructed directly by the user rather than generated automatically, e.g. by **tweening**.

keyline A line drawn on artwork to show where illustrations or other material should be placed. As documents become more integrated with illustrations included as part of the file, this use is becoming less frequent. However, the concept still survives in software packages which allow display of pages without illustrations, either to reduce transfer time over a communications link or to cut down the refresh time of the screen.

key numbers Numbers on advertisements which identify the source in which they appeared.

key plate The printing plate which sets the register position for the other plates.

keystroke One key depression, often used as a measure of productivity of an operator. 10000 keystrokes per hour (approximately 1500 words) is a fairly typical output rate for a trained operator on average work. This equates to around 10000 words per working day/shift.

keyword A word which is indexed to improve the speed of **searching**. (Contrast with **free-text searching**.) The term has a special meaning in **SGML** to indicate a property of an **element** or a **marked section**.

keyword and context (KWAC) Library indexing system with index entries selected from significant words in the text and a book's title.

keyword in context (KWIC) Library system whose index entries use **keywords** from the title or text of a book, and include the title or text it relates to.

keyword out of context (KWOC) Library system that indexes book titles under relevant **keywords**.

KI A secret key or algorithm (or formula) embedded within the **SIM** card in a digital **GSM** telephone, employed to validate the user.

kicker Short line above a headline, set in smaller type.

kill Delete unwanted matter. Distribute type.

killfile A list of subjects or names which a user does not want to appear in the list of messages sent to him or her from a **newsgroup**.

kilo/kilogram Measure of weight.

kilobit 1024 bits of data.

kilobyte (kb) One thousand computer bytes, or more loosely, characters. As continuous text, in disk storage terms, this works out at around 150 words.

Kilostream A private leased-line 64 kbps service available from **BT**.

Kimball tag A stock-control device used in clothes shops. It consists of a small punched card attached to each item, containing serial number, price etc. as a pattern of small holes, a barcode or a magnetic strip (and probably as text). The tag (or part of it) is removed at the till and kept as a computer-readable record of the sale. The removable part of the tag often also carries an electronic trigger, so that an alarm is set off if the tag is taken past detectors near the shop door.

kinetic friction Resistance to sliding of one material over another.

kiosk A booth set up in a place where the public can obtain information. The number of computer multimedia kiosks, where the user can access an **interactive** display to obtain information conventionally provided by a human, is growing rapidly.

kiosk-mode browser A **World Wide Web browser** configured to allow the user access to only a restricted range of documents.

KIS See **Knowbot Information Service**.

kiss-fit Printing on an offset press different colours that touch each other, but using no **traps**. Kiss-fitting is not always suitable for all

printing jobs but when it is, the result should be clearer than when traps are used.

kiss impression Very light printing impression.

kite 'V'-shaped plate over which the web of paper is drawn to create first fold.

Kleenstick Proprietary name of pressure-sensitive adhesive-backed paper.

knife folder A type of folding machine which uses a knife between inwardly rotating rollers. Contrast **buckle folder**.

knocking up To line up the edges of a pile of paper.

knowbot A tool which searches a network for specific information. Also known as a **spider**.

Knowbot Information Service (KIS) A **white pages** 'meta-service' that provides a uniform interface to various white pages services on the **Internet**. With the Knowbot Information Service, a single query can be formed, which will search for white pages information from the **NIC whois** service, the **RIPE** European white pages service and others, and the responses will be displayed in a single, uniform format. KIS can be accessed via **telnet**, **whois** or **email**.

Knuth, Donald E The author of *The Art of Computer Programming*, to typeset which he wrote the **TEX** document formatting system and its **font**-design program **Metafont**. TEX is widely used for formatting mathematical equations.

Kodak Photo CD A format developed by Kodak and **Philips** for the storage of images originated from 35mm slide or negative film. Originally intended for display, via a television, from a special photo CD player, but now displayable by most graphics display programs.

kraft Strong brown paper used as a second lining, and in many forms of packing application.

kraft pulp See **sulphate pulp**.

Kromecote Proprietary name of a **cast-coated** paper with glossy finish.

KWAC See **keyword and context**.

KWIC See **keyword in context.**

KWOC See **keyword out of context**.

L

L/C See **letter of credit**.

label 1. A record which identifies the items stored on a disk or tape. 2. Caption on a technical line drawing.

label paper Paper gummed on one side and usually coated on the other, for labels.

LaborNet A network connecting those concerned about industrial relations. See **Institute for Global Communications**.

laced-on-boards **Signatures** of a case-bound book 'laced on' to the **case boards**.

lacquer Synthetic coating applied to a printed piece for protection or gloss.

laid lines The narrow parallel lines in a laid paper, as opposed to the wider lines at right-angles to these called the **chain lines**.

laid paper Paper with watermark lines parallel to each other formed by a **dandy roll**.

laminated Thin plastic film applied by heat and pressure to a printed sheet for protection and/or appearance. (See also **OPP lamination**.)

lampblack Carbon pigment ink with dull, very black appearance.

LAN See **local area network**.

landscape The orientation of a picture, **screen** or page such that its width is greater than its height. Most screens are landscape, while most books, and certainly journals, are **portrait**. This is a limitation on using **Acrobat** technology when reproducing printed pages on-screen, because when a full page is viewed the text is generally unreadable. (See also **aspect ratio**.)

language In computing, a structured communications vocabulary using codes and words, which can be translated into the machine code which runs the computer. See **high-level language**, **low-level language**.

LAN Manager The Microsoft local area networking environment.

LAP See **Link Access Protocol**.

LAPB See **Link Access Protocol (Balanced)**.

LAPD See **Link Access Protocol on the D channel**.

LAPM See **Link Access Protocol for Modems**.

large post Standard size of paper 419×533mm.

laser An acronym of Light Amplification from the Stimulated Emission of Radiation (developed from Maser, where the initial 'M' stands for 'microwave'). Lasers create coherent light, i.e. with a single frequency and phase. This has two effects: the energy is concentrated, so that high-powered lasers can be used for applications such as surgery and welding; and the coherence means that the beam can carry information. The second property is used in **laser printers**, **fibre-optics** and **holography**.

laser disc An **optical disc** (also known as a **video disc**) that holds both audio and visual images. Generally used to store long recordings of films, plays, opera etc. Uses **analogue** storage and plays back via a television or monitor. Disks are typically 12 inches in diameter.

laser output unit See **imagesetter**.

laser plotter See **imagesetter**.

laser printer A high-speed, non-impact device which employs laser technology and xerographic technology to sensitise selected areas of a belt or drum coated with a photosensitive material. As the belt or drum revolves it picks up toner which is transferred to the paper via heated rollers.

laser recorder See **imagesetter**.

laser setter See **imagesetter**.

laser xerography See **laser printer**.

last colour down The final colour to be printed in colour work.

latency The time it takes for a **packet** to travel from sender to receiver across a **network**, or the period of time that a frame is held by a device on a network before it is forwarded. Latency and **bandwidth** are two of the most significant factors in the performance of a communications channel.

latent image The latent electrostatic image generated by a photocopier and which powder turns into a visible image.

lateral reversal Change of image from wrong- to right-reading or vice versa.

LATEX A document preparation system based on the **TEX** typesetting system and developed by Leslie Lamport. LATEX uses commands which relate to the structure of the document, rather than to how it should appear, and thus has similarities with **SGML**. The LATEX formatting software then converts these to native TEX. LATEX is probably the most widely used version of TEX, although there are similar systems such as AMS-TEX, developed by the American Mathematical Society, with particular emphasis on mathematical material.

latex-treated paper Paper impregnated with latex for toughness.

latin alphabet Western European alphabet, as this.

lay Guide on a printing machine which positions a sheet before printing. Hence, **lay edges**.

layboy A stacking device on a paper sheeter.

lay down Impose a job.

lay edge Edge of a sheet laid against the front or side **lay** of the machine.

layer An aspect of communications architectures, which are organised using relatively independent protocols, each in a different layer. Each layer is concerned with a different aspect of the communication, so that the lowest layer controls communication between the hardware of different hosts, while the highest is concerned with **application** programs. For each layer, programs at different hosts use **protocols** appropriate to a particular layer to communicate with each other. Each layer uses the layer below it and provides facilities for the layer above; how this is done also forms part of the protocol suite. The use of layers simplifies communications protocols. **TCP/IP** has five layers of protocols (also called a TCP/IP stack); **OSI** has seven.

layering A technique used within **draw programs** for handling **vector** or **object-oriented graphics**. Each object is drawn on its own **layer**, so that objects can be placed 'in front of' or 'behind' any other object; this arrangement can be changed with the draw program. In addition, most draw programs allow objects to be grouped on layers (each object still occupies its own layer within that group layer). This gives great flexibility to the expert user. Image editing programs, such as **Adobe PhotoShop**, also use layering and it is used in other types of program, such as Apple's **HyperCard**, to improve presentation and access to information.

layer-on Machine-minder who feeds sheets to the machine.

layout Sketch of a book or other publication, showing the plan to work to.

lc (or **l.c.**) **Lower case**. (See also **u/l** or **u/lc**; **c&lc**.)

LCD See **liquid crystal display**.

lead Thin metal strip used for separating lines of type.

leader 1. Row of dots used to lead the eye across a page. 2. See **editorial**. 3. A length of blank paper or magnetic tape used for loading purposes.

lead-in The introduction in a piece of setting, often in a bold or different face.

leading The spacing between lines of type. Also **interline spacing**, **film advance**, **film feed**, **line feed**.

leading edge The edge of a sheet or plate at which printing begins. Also, **gripper edge**, **pitch edge**.

lead time The time it takes for a requirement to be satisfied.

leaf Single sheet, comprising two pages.

leaflet Folded printed sheet comprising only a few pages.

leaf site On a network or the **Internet**, a machine that merely originates and reads **email** and does not relay traffic. The ratio of the number of leaf sites to **backbone** sites can affect the efficiency of the network.

learned journal A scholarly journal published on an occasional basis by a university or academic research body, concerned with a specialised academic subject.

leased line A private telephone circuit permanently connecting two points. Most **wide area**

networks are built out of leased lines. While leased lines can be **analogue** or **digital**, today most are digital. Typically, the **bandwidth** is from 64kbps upwards. The bandwidths are frequently the same as those of **ISDN**, which can be regarded as an extension of digital leased lines to **dial-up** communications. This equivalence should make it easier for leased lines, forming part of networks, to be integrated with ISDN.

leather Leathers used in bookbinding include goathides, pigskins, calfskins, vellum, sheepskins, forels.

leathercloth Bookbinding grade of cloth: a plasticated cotton, dyed-through and calendered.

leatherette Paper that has been made to imitate leather by **embossing**.

leather pulp Pulp made from leather scraps and used for reconstituted leather coverings.

leave edge The edge of the sheet which leaves the machine last as it goes through the printing rollers into the delivery.

LED See **light emitting diode**.

ledger paper A strong paper for clerical use.

LED printer A printer, similar to a **laser printer**, which uses a bank of **LED**s as the image source, rather than a single **laser** beam.

leg Short column of type.

legend **Caption**.

legibility The ease with which a page, design or typeface can be read.

Lempel-Ziv compression Also known as **substitutional compression**. Two lossless data compression schemes were proposed by Jakob Ziv and Abraham Lempel in 1977 and 1978, **LZ77** and **LZ78** (of which **Lempel-Ziv Welch** (**LZW**) compression is a variant).

Lempel-Ziv Welch (LZW) Variant of a form of lossless data compression.

length The 'flowability' of a printing ink. 'Short' ink does not flow as easily as 'long' ink.

LEO satellite See **low earth orbiting satellite**.

Letraset Proprietary name of sheets of transfer lettering.

letterbomb A piece of **email** containing code that can act rather like a virus, affecting the operation of the recipient's computer, e.g. locking up the terminal. Often not particularly serious but the potential for serious damage is there, just as with real letter bombs, from which they take their name. (Does not mean quite the same as **mail-bomb**.)

letter-by-letter alphabetisation See **alphabetisation**.

letter-fit Spacing between **characters** in a **typeface**.

Letterflex plate Proprietary letterpress photopolymer plate, similar to an APR plate.

letterform The shape of a letter.

letterhead The name and address of a person or organisation printed at the top of a piece of headed stationery.

lettering Hand-drawn typography or a typeface designed to look hand-drawn.

letter of credit (L/C) A letter addressed by a bank in an importing country to its agent bank in the exporting country, authorising the latter, providing an agreed set of conditions is met, to release a specified sum of money to the account of the exporter. A 'Confirmed Irrevocable Letter of Credit' carries the absolute guarantee of the issuing bank, and cannot be revoked unless agreed by all parties.

letterpress Printing from images with a raised surface which impresses on the paper.

letter quality (LQ) Output from printers, typically daisywheel printers, that are of a similar quality to office typewriters. Compare **near letter quality**.

letterset Also called 'dry offset', 'offset letterpress' and 'indirect letterpress'. A relief plate transfers the image to a blanket and thence onto the paper.

letterspace Space between letters.

letterspacing Adding or reducing the space between individual characters, as opposed to between words, in a formatted document. When used correctly, the effect should be pleasing. However, when done automatically in order to reduce the interword spacing in **justification**, the effect can often be the reverse. Although the default of some **DTP** programs, such as **QuarkXPress**, is to use letterspacing, most typographic designers would agree that it should only be used as a last resort in justified text. In **electronic publishing**, letterspacing should only be used as a design tool.

levant Soft, pliable goatskin for bookbinding covers.

lexical analyser A tool, designed for use in program compilation, but also useful in text applications for string comparison and conversion. The **Unix** tool Lex is one of the most commonly used.

lexicographical order Listing of words in alphabetical order, as in a **dictionary**.

lexicon A term for **dictionary**, esp. of Latin, Hebrew, Arabic or Greek.

Lexis/Nexis An online legal, news and business information service, owned by Reed-Elsevier, providing full-text legal information (LEXIS) and news (NEXIS).

LHA A **shareware** **DOS** program for compressing and archiving files in a similar way to

PKZIP. LHA used to be called **LHARC**. Compressed files have extensions lha and lhz.

LHARC The previous name of **LHA**.

lhz The filename extension for a file produced by the **LHA** program.

Lib Con number See **Library of Congress number**.

library binding Durable type of case binding used on books in libraries.

library material Text or pictures held on file for subsequent use.

Library of Congress number US system for bibliographical data. The number is printed on the title-page verso.

lick-coated paper Paper with a very light coating. Also **pigmented paper**, **light-coated paper**, **size-press coated paper**.

lift Take typeset material or pictures from elsewhere to reuse.

ligature A **glyph** (or character) that is a combination of two or more single characters. In the past, particularly when hot metal or cold type were used for typesetting, a whole range of ligatures was used, but their use has become less common as computer typesetting has developed. They are virtually never used in on-screen presentation of text, although they may be specified in **HTML** documents as part of a (designed) **text block** transmitted as a graphic.

light box Box with glass top illuminated from within so that transparent **artwork** can be viewed on its surface.

light-coated paper See **size-press coated paper**.

light emitting diode (LED) A diode which glows red, green or amber when energised by low voltage. They are commonly employed as a light source in multimode **fibre-optic** systems. In some applications, such as digital watches, they have been replaced by **LCD**s which require less power. LEDs are also used in printers.

lightface Lighter version of a roman typeface.

lightfast ink Ink which will fade less readily than normal ink on prolonged exposure to strong light. See **blue wool scale**.

light gate array An array of cells which can be programmed to allow or prevent light passing through to expose photographic material in the creation of an image. Used in some photosetters.

lightness A measure of relative **brightness**. Used in the **HLS** method of representing colour in computer graphics.

light pen A device which looks like an ordinary pen, but which can be used to instruct the computer to modify part of a screen image. At its tip, the pen has a photoreceptor that emits signals when it receives light from the screen. With an appropriate interface program, the computer is able to calculate the position of the light pen on the basis of a grid stored in memory.

light pipe A **fibre-optic cable** in contrast to copper wire.

light primaries See **additive primaries**.

light secondaries The complementary, or 'opposite' colours to the **additive primaries**.

light-sensitive Paper which changes its condition when exposed to light.

lightweight coated paper (lwc) Coated paper (often part-mechanical) below 60gsm.

lightweight paper Normally taken to mean paper less than 60gsm in substance.

lignin The substance in wood which binds the fibres together. Removed during the pulping process.

limp Paper that is pliant.

limp binding Paperback binding.

limp-bound Referring to a book with a limp or paper binding. (See also **case-bound**.)

line 1. Rule. 2. Copy which consists of solid black lines or dots only, and has no intermediate grey tones. Contrast **tone**.

lineage Calculation of number of lines taken up by a piece of text; similarly, system of charging for advertisement space based on the number of columns used.

Lineale Typeface without serifs, otherwise known as **sans serif type**.

line and tone combination An origination made by combining the line elements of an original, shot for line, with the tone elements of the same original which are shot for tone. Hard, sharp outlines are retained as line.

line block A relief plate produced from a line drawing.

line conversion Conversion of continuous-tone copy to line copy by photographing it without a half-tone screen.

line copy Copy which has no gradation of tones, i.e. comprising solid black lines or shapes. Also 'line drawing', 'line engraving' etc.

line feed Advancement of paper in a photosetter or printer by one line. Equivalent to **leading**.

line gauge Measuring ruler used for copyfitting and measuring type. Also called **type gauge** and **depth gauge**.

line high The upper level, i.e. the character 1, in **serial communications**. See **break**.

line length Column width.

line mechanical Paste-up of line copy ready for the camera (US).

line negative Negative of line illustration or text.

linen finish Imitation linen texture on paper surface.

line noise Spurious characters (electrical noise) in a communications link, particularly an **RS-232 serial** connection. Can have many causes, e.g. poor connections, interference or **crosstalk**, electrical storms, cosmic rays, birds on telephone wires, or telephone wires rubbing against tree branches.

linen screen Half-tone screen giving a linen effect.

line overlay Line work on overlay separate from **half-tone**.

line printer Output device which prints one line at a time usually with non-letter-quality resolution.

line probing A feature that will allow a **modem** to identify the capacity and quality of the telephone line and adjust itself for maximum throughput using the highest possible data transmission rate. Line probing is available on some **V.34** modems.

liner Paper used to cover another paper or board for extra strength, thickness or finish.

linespacing Space between lines of photoset type.

lines per inch (lpi) Measure of image resolution. (See also **dots per inch**.)

lines per minute A measure of line printer speed.

line turnaround time In a communications link, the transmission delay between the end of one block of data and the beginning of the next. It is particularly significant in **half-duplex** links. For **RS-232-C** interfaces line turnaround time is the delay between **request to send** (**RTS**) and **clear to send** (**CTS**) signals.

lining Part of the spine strengthening in a **case-bound** book. See **first and second linings**.

lining figures Arabic numerals the same height as capitals, also known as **aligning numerals**. As distinct from **non-lining** or **old-style figures**.

link (Also called **hotlink**.) In **hypertext** documents, a connection from one **document** to another (see also **anchor**). The use of **links** within **HTML** documents can be regarded as perhaps the most appealing aspect of the **World Wide Web**, in that links can be followed between documents, irrespective of where in the world they are situated. Linking is also used within **programs** and **applications** in order either to save space by not duplicating data, or to ensure that data is always up to date. Links within hypertext documents may be explicit, i.e. they need to be clicked on, or implicit, in that the link is triggered automatically (see **linked image**). In application programs the link is almost always automatic. Links are also used in the **Unix** file system to avoid storing files twice and ensure consistent updating, although the user sees two or more different file names.

Link Access Protocol (Balanced) (LAPB) A balanced version of the **Link Access Protocol**.

Link Access Protocol (LAP) A protocol specified for the **datalink layer** in the **ITU-T X.25 packet-switched** interface standard. (See also **Link Access Protocol (Balanced)**.)

Link Access Protocol for Modems (LAPM) The **automatic repeat request** system used in the **V.42** protocol.

Link Access Protocol on the D channel (LAPD) An **ISDN datalink layer** protocol.

linkbase A **database** that contains a series of **World Wide Web links** for specific text strings. See **Webcosm**.

linked image A **graphic** image that is stored in a different file from the current **hypertext** page, so that it is displayed by selecting a **link**, although the image may also be included automatically, depending on the coding of the hypertext page.

linocut 1. Design made by carving in relief on a block of linoleum. 2. A print made from a linocut.

Linofilm Proprietary name of a once-famous but now obsolete photosetter.

Linotron Name for high-speed **cathode ray tube** photosetting machines manufactured by Linotype.

Linotype Linecasting machine manufactured by Linotype.

lint Surface fibres released from paper during printing.

linting The build-up of lint on an offset blanket causing **hickies** in the printed result.

LINX A UK **neutral interconnect**, based at **Pipex**'s London **point of presence**.

liquid crystal display (LCD) Consisting of a sandwich of two glass plates and a fluid. The liquid darkens when a voltage is applied, thus creating an image.

liquid lamination A high-gloss nitrocellulose varnish applied to book covers or jackets (US).

list Often used for **mailing list**.

list broker Someone who sells lists of names and addresses in specific market-oriented categories.

listing Computer print-out of data or a file.

listing paper The paper used for computer listings, traditionally printed with light green horizontal stripes and punched with sprocket holes at the sides.

listserv An automated **mailing list** manager, originally designed for the **BITNET/EARN**

network, which processes **email** requests for addition to or deletion from mailing lists, of which there are now thousands, on many different subjects. Some listservs also provide other facilities such as retrieving files from archives.

literal Mistake introduced in keyboarding, often only affecting one or two characters.

lith film A high-contrast film.

litho See **lithography**.

lithograph A print made from a stone or plate by **lithography**.

lithographic plate Printing **plate** used in the litho process.

lithography Planographic printing process in which ink is applied selectively to the plate by chemically treating the image areas to accept ink and the non-image areas to accept water. Shortened to **litho**.

litho prep Litho film assembly and platemaking.

little-endian The ordering of the components of a hierarchical name in which the **domain name** is specified last.

live link Also known as a **hotlink**. (See also **link**.)

live matter Copy which will go to press rather than be deleted.

live net Any **World Wide Web** server which provides access to live material, probably using video cameras.

LiveWire A visual development environment, developed by **Netscape** and based on the **Java** language.

LLC See **logical link control**.

loading Substance (**clay** or **gypsum**) added to paper **furnish** during beating to make the paper more **opaque** and solid.

loadings Minerals and fillers added to the **furnish** of paper.

loan A rag writing paper.

local area network (LAN) A geographically limited **data communications network** (typically to a 1 km radius or within a building), which allows resource sharing. A LAN allows computers to have access to common data, **programs** and **peripherals**, and it typically consists of **PC**s with adapter cards, file servers, printers and gateways to other networks. **Ethernet**, **Token-Ring**, **FDDI** and **LocalTalk** are examples of standard LANs and data rates up to 100 Mbps are possible. LANs use **software** to manage the components and the two best known programs are **Novell NetWare** and **Microsoft LAN Manager**, so that **client-server** computing can be supported. (See also **wide area network**.)

local bus A **bus**, designed to match the speed of the processor, which extends the central processing unit (CPU) bus in order to speed up data transfer between the CPU, disks, graphics boards and other devices. This benefits **video** applications in particular. There are two common specifications, **VESA** and **Intel**'s **PCI**, although PCI is likely to become the standard, allowing a wider choice of video boards.

local echo A term recently used instead of **half duplex**. The term comes from the need to display (or echo) input at a **terminal** connected to a mainframe computer by a **half-duplex** link.

local loop The telephone circuits between a subscriber's installation and the switching equipment at the local exchange.

local loopback address The special **Internet address**, 127.0.0.1, which is defined by the Internet Protocol for a **host** to send messages to itself.

LocalTalk One of the types of network hardware available in the **AppleTalk** system. PCs can also be connected to a LocalTalk network with the right adapter board.

loc cit Abbreviation from the Latin phrase '*loco citato*' meaning 'in the passage already quoted' used in a footnote to refer to another note.

lock up 1. To secure metal type in a **forme** ready for the next stage of production. 2. In program execution, a state from which the system cannot escape.

loft-dried High-grade papers dried in a drying shed to allow natural evaporation.

logical link control (LLC) A protocol specified in **IEEE 802.2** for **data link** level transmission control. It forms the upper portion of the **OSI datalink layer**. The LLC sublayer presents a uniform interface to the user of the datalink service, usually the **network** layer. Below the LLC sublayer is the **medium access control** (MAC) sublayer.

login An alternative term for **log on**, used on **Unix** systems.

logo See **logotype**.

log-off A computer instruction issued by a user indicating the termination of a session.

log-on An instruction, issued by a user, requesting access. A log-on sequence will usually include entry of a password.

log on, **logon**, **logging on** The process of connecting a user to a **network** or to a multi-user computer system.

logo scanner A flatbed scanner which converts a **logo**, or other special symbol, into digital signals for computer input and displays it on a VDU. The image may then be manipulated or changed in some way before output to a laser printer.

logotype Company name or product device used in a special design as a trademark. Shortened to **logo**.

long grain Sheet of paper in which the grain direction (or machine direction) runs parallel with the longest side.

long-grain press Web-fed magazine or paperback printing press which prints all the pages with the long edge of the page in the direction of travel of the printing cylinder, i.e. produces **long-grain** publications. Contrast **short-grain** press.

long ink An ink that flows easily.

long primer Obsolete type size, approximately 10pt.

long run A high printing number for a job.

long ton Imperial ton (2240lb), equal to 1.12 short (US) tons, or 1.0161 metric tonnes.

look-and-feel The general appearance and function of a **user interface** (usually a **graphical user interface** or **GUI**) including such things as the way **icons** are used, conventions for the meaning of different buttons on a **mouse** and the appearance and operation of **menus**. The first GUI was developed on the **Xerox Star**, but this was not a commercial success, its main look-and-feel concepts being exploited in the Apple **Macintosh**. Subsequently, Apple sued Microsoft claiming that the look-and-feel of Microsoft **Windows** infringed Apple's copyright. The case was mainly decided in Microsoft's favour.

lookthrough The **finish** or **opacity** of paper as viewed when held up against the light.

look-up table A table of conditions written as an instruction program. In typesetting, look-up tables are used mainly for hyphenation decisions, font-width information, and code conversion when text is being transferred from one system to another. Also, **translation table**.

loop Series of computer instructions repeated until a condition is reached which diverts from the loop.

loopback A communications diagnostic procedure, in which the transmitted data stream is looped back to its source, so that it can be compared with the transmitted data.

loose leaf Binding which uses steel rings passing through drilled holes in the paper to hold the sheets together.

loose proof Proof of one colour separation out of the four (US).

lossless Term describing a data compression algorithm in which all the information in a file is retained, allowing it to be recovered perfectly by decompression.

lossless compression A term describing a data **compression** algorithm in which all the information in a file is retained, allowing it to be recovered perfectly by decompression. Examples of lossless compression are the **Unix** compress and **PKZIP**. (See also **lossy compression**, which is the opposite of lossless.)

lossy compression A term describing a data **compression** algorithm in which the amount of information in the data, as well as the number of bits used to represent that information, is reduced. The lost information is usually assumed to be less important to the quality of the data (usually an **image** or **audio**) because it can be recovered reasonably by interpolation. **MPEG**, **JPEG** and **fractal compression** are examples of lossy compression techniques.

Lotus Notes A group of **workflow application** programs developed by Lotus, but now owned by IBM, which allows organisations to share and co-ordinate documents and exchange **electronic mail** messages. Notes supports **replication** on multiple **servers** and between the server and the desktop **client**. (See also **computer-supported cooperative work**.)

low earth orbiting satellite (LEO satellite) A polar-orbiting satellite in a low orbit used for communication with hand portable terminals.

lower case Small letters as distinct from capitals. Abbreviated as **lc**.

lower-case letters Uncapitalised letters, such as those that make up all this sentence (except the first letter). The term is derived from the days of cold type, when the capitals were kept in the top typecase and the small letters in the bottom (or lower) case. Capitals are thus sometimes referred to as **upper-case** letters.

low-level language In computer programming, a language closely related to the machine-code of the computer. A low-level language is converted by an assembler program into the final **machine-code** instructions. More efficient than high-level languages but more difficult to write.

low resolution (Often shortened to low-res.) The opposite of **high resolution**. While some graphics are just low-resolution to begin with, other graphics are created or scanned as complex, high-resolution images (probably for offset printing). However, in order to save disk space and/or to shorten screen display times, low-res versions are produced for use in **page make-up** and placement of the image. Usually the high-resolution version is merged using the **Open PrePress Interface**. (See also **resolution**.)

lpi See **lines per inch**.

LPM Lines per minute.

LQ **Letter quality** (applying to a daisywheel or laser printer).

LSI Large-scale integration. Referring to fourth generation computers which contain high-performance chips, each incorporating from several thousand to a quarter of a million components. (See also **VLSI**.)

Ludlow Proprietary name of a display-size typecasting machine which uses hand-assembled matrices.

luminance See **brightness**.

luminous Inks or paints which glow in dark conditions.

Lumitype Proprietary name of a now obsolete filmsetter.

lurker Someone who participates in a mailing list or **Usenet newsgroup** etc. by reading but not contributing (or **posting**). Although occasionally used in such a way, the term was not meant to be pejorative and, indeed, beginners are encouraged to 'lurk' so as to become familiar with a given community or group.

lwc Lightweight coated (paper). Refers to coated papers, normally with a part-mechanical base, which are 60gsm or lighter in substance.

Lycos A **World Wide Web** index and search engine served by Carnegie Mellon University. It allows users to search on document title and content for a list of keywords. (See also **AltaVista**, **Yahoo**.)

LZ compression See **Lempel-Ziv compression**.

LZ77 compression The first algorithm (proposed in 1977) to use the **Lempel-Ziv substitutional compression** schemes. In LZ77 compression, a fixed-size 'sliding window' is moved over the data and when a phrase is encountered that has already been seen, a pair of values is output, giving the position of the phrase in the buffer containing the data that has already been seen and the length of the phrase. There are a number of variants of, and improvements to, the method. All popular archivers, including **lha** and **zip**, are variations on LZ77. (See also **LZ78**, **LZFG**, **Huffman coding**.)

LZ78 compression A **Lempel-Ziv substitutional compression** scheme which enters phrases in a dictionary and then, when that particular phrase is found again, outputs the dictionary index instead of the phrase. Of the several algorithms based on this principle, which mainly differ in how they manage the dictionary, the best known scheme is the **Lempel-Ziv Welch** (LZW) variant of LZ78.

LZFG A **Lempel-Ziv compression** scheme.

LZW compression See **Lempel-Ziv Welch compression**.

M

M 1. Abbreviation for 1000. 2. Used to indicate the machine direction (grain direction) of a sheet when placed against one dimension, e.g. 890(M)× 1130 is a **short-grain** sheet.

Mac Common abbreviation for the **Apple Macintosh** computer. As distinct from **PC**, its main rival in the personal computing arena.

MAC **Medium access control**.

MAC address The hardware address of a device connected to a **network**. See **medium access control**.

MacBinary A data format used on the **Macintosh**.

machine-aided translation The use of a computer to aid translation by relieving the human translator for routine tasks.

machine binding Binding by machine rather than manually.

machine clothing The various felts and wire materials on a paper machine.

machine coated Paper coated on the papermaking machine.

machine code Primary code used by the computer's processor. Few programs are written directly in machine code, but in a **high-level language** or **low-level language** which is then translated by a separate translator program into machine code.

machine composition General term for composition of metal type using typecasting equipment.

machine deckle Width of the wet web on a papermaking machine.

machine direction The direction in which fibres lie on the wire of a paper machine, i.e. along the web. Also called **grain direction**. As distinct from the **cross direction**.

machine fill A making of paper which uses the full width of the **machine deckle**.

machine finished (MF) Smooth paper calendered on the paper machine.

machine glazed (MG) Glossy finish to one side of paper obtained by drying against the polished surface of a heated cylinder of a yankee-type paper machine.

machine language See **machine code**.

machine minder Printer who supervises the running of a printing machine.

machine proof Proof made by printing from plates, as opposed to using plastic proofing techniques. Also known as a **wet proof**.

machine readable Data that is in a form that can be read directly by a machine via floppy disk or magnetic tape.

machine revise Printed sheet for checking against the press proof.

machining Printing.

MacinTalk The **speech synthesis** utility on the **Macintosh** that, with appropriate programs, makes things talk. Used in educational packages.

Macintosh See **Mac**.

macro A combination of commands, used in various kinds of interactive programs, e.g. wordprocessors, as well as in text formatting or typesetting programs such as **TEX**. In an interactive program, a series of commands can be 'recorded' and then can be 'played' to create the same effect, by using either a function key, a menu command or a **button**. Alternatively, macros can be written essentially as small computer programs, including functions and conditional expressions. The more complex macros can take parameters such as a text string or a value for such items as page number, interline spacing or typesize.

Macromedia Director One of the **multimedia** applications development packages from Macromedia. **Authorware** from the same company provides an alternative approach. (See also **Shockwave**.)

macron Mark (¯) printed above a long or stressed vowel.

made ends See **joints**.

mag 1. Magazine. 2. Magnetic (as in tape).

magazine 1. Regularly appearing publication (typically weekly or monthly) covering a subject area with less topicality than a newspaper but with current events and fashions considered. 2. Container for storing matrices of a linecasting machine.

magazine supplement Magazine inserted in a newspaper.

magenta Process red. One of the colours used in **four-colour process** printing.

magnefite pulp A **sulphite pulp** made using magnesium bisulphite rather than calcium bisulphite in the cooking process. The magnesium waste liquor can be chemically recovered.

magnetic card A wordprocessing recording medium.

magnetic disk A disk with a magnetisable surface coating onto which data may be recorded. See **floppy disk**, **hard disk**, **Winchester disk**.

magnetic head See **read-write head**.

magnetic ink character recognition (MICR) The ability of suitable devices (character recognition systems) to read characters printed in magnetic ink for rapid input to a computer. Because magnetic-ink characters are difficult to forge, MICR is used extensively in banking for marking and identifying cheques.

magnetic inks Inks with magnetic content that can be read by electronic sensing. Used on cheques.

magnetic tape Narrow tape magnetically coated for the storage in serial form of computer data.

magneto-optical A hybrid technology that is used in **compact disc-recordable** (**CD-R**). Data storage is magnetic. However, the **laser** beam heats the very small area involved before it 'writes', i.e. re-orients the relevant magnetic domains. When this area cools, it becomes twice as resistant to change as the equivalent area on a standard magnetic disk. A lower-power laser is used to 'read' the disk. If the area is to be overwritten, then it is again heated by the 'writing' laser.

mail Often used to mean sending a message via **email** to a specific recipient. Also a program running under the Berkeley version of **Unix**.

mail-bomb To send, perhaps together with others, a huge number of **email** messages to one person or to a system, aiming to crash the recipient's system. The actual way in which this will happen will vary from system to system. Mail-bombing is rather like 'road rage', in that it is used against someone who has apparently offended against the rules of **netiquette**, but in turn is itself a breech of netiquette, causing inconvenience not only to the target, but also to many other people and systems.

mailbox (or **mail box**) A file, a directory or a message queue on a specific system in which incoming **email** messages are stored for a particular user or for distribution to a **mailing list** or via a **mail server**.

mail bridge A **gateway** that forwards **email** messages between **networks**. (See also **mail gateway**.)

mail exchange record (MX record) A record type used in a **Domain Name Server**, showing which host can handle **email** for a specific **domain**.

mail exploder The part of an **email** system which enables multiple mailing and **mailing lists**. The sender uses a single address and the mail exploder distributes the message to the individual addresses in the list.

mail gateway A **gateway** between two or more **email** systems, transferring and, where necessary translating, messages between them. The translation can sometimes be quite complex and in early mail gateways there were often problems with characters being lost or mistranslated. This was particularly true if non-**ASCII** characters were involved. The use of **MIME** has virtually solved that problem.

mailing list List of names and addresses to which mailing pieces can be sent.

mailing piece Promotional material mailed out.

mail merge A wordprocessing utility enabling name and address files to be merged with a text file containing a letter.

mail path (Or **source route**.) An **email address** which gives the route of a message, listing the **hostnames** through which it must pass. This is infrequently used on the **Internet**, where the route is determined at each host through which the message passes.

mail reflector An **email address** that provides a mail forwarding function, either if the recipient has moved (or just changed address) or sometimes to protect the identity of the recipient.

mail server A program that sends files or information in response to **email** requests. Mail servers were used before **Internet** access was so wide. They are less used today, when information is easily available via the **World Wide Web** or **File Transfer Protocol** (**ftp**).

mail shot A single sending of promotional material to a list of names and addresses.

mainframe Large computer.

Majordomo A widely used **freeware mailing list** processor that runs under **Unix**.

majuscule Capital or **upper-case** letter.

makegood Periodical advertisement re-run because the original was faulty.

make-ready Setting up a printing machine ready to run a specific job.

make-up Making-up typeset material into pages.

making order An order for paper to particular specifications needing to be made specially rather than withdrawn from stock.

making-up Assembly of printed sections prior to sewing.

mall A set of linked **URL**s on the **World Wide Web**, which give information about commercial products and services for sale that can often be purchased using credit cards or special banking services, such as **First Virtual**, or by using **electronic money**.

MAN See **metropolitan area network**.

management information base (MIB) The collection of objects managed, as part of **SNMP** (**Simple Network Management Protocol**), by an agent or piece of software running in a network component, such as a **router**.

Manchester encoding A digital encoding technique in which a negative-to-positive voltage transition within a fixed period indicates a binary 0 and a positive-to-negative voltage transition indicates a binary 1.

Mandelbrot set A mathematical set representing one kind of **fractal** image. It is named after Benoit Mandelbrot, who discovered the fractal principle and this set. Another fractal set is the **Julia set**.

manifold paper A lightweight paper used for copies or for airmail. (See also **bank**.)

manila A tough paper made from hemp and often used for envelopes.

Man-Machine Language (MML) A language developed by **ITU-T** for telecommunications applications.

manual Book giving instructions about a technique or details of operation of a device.

Manual of Style Instruction manual covering spelling, hyphenation and punctuation, published by the University of Chicago Press, and used by American editors, printers and publishers.

Manufacturers Automation Protocol (MAP) An **applications-layer application** for office automation over **networks,** developed by General Motors on the basis of the **OSI** model based on **token bus**. (See also **TOP**.)

manuscript Abbreviated to **MS**. Typed or handwritten copy for setting. Also **typescript**, **copy**.

MAP See **Manufacturers Automation Protocol**.

MAPI See **Microsoft Mail Application Program Interface**.

marbled paper Paper covered with a marbled design, used for **endpapers** of books. True marbled paper is made by hand: paper is dipped into a bath containing liquid pigment colours floating on a viscous gum solution, and then dried. Imitation marbled paper is normal paper printed with this pattern by **litho**: this is the sort more commonly used.

marching display Visual display of one line of type displayed sequentially as keyboarded.

marginalia Marginal notes.

margin guides The non-printing dotted lines in **DTP** programs which mark the basic **margins** of the page within which the text is fitted. One of three sorts of page layout guide.

margins Areas of white space left around printed matter on a page.

mark A data circuit impulse corresponding to the active condition of the receiving device. Compare **space**.

marked proof The proof on which the printer's reader has marked corrections.

marked section A section of an **SGML** document that is to be treated in a special, usually conditional, manner.

markings or **marks** Identifying description written onto a label, e.g. the title of a book on a consignment of paper sent to a printer to show the

printer the use for which the paper has been sent.

mark sensing A technique for reading into a computer pencil marks on specially prepared forms. Because the pencil marks contain graphite, which conducts electricity, when the mark sense reader, a series of small metal brushes, touches a mark, an electrical contact is made and thus the mark is detected.

markup Instructions on a layout or copy for the compositor to follow when typesetting or making up pages. (See also **electronic markup**.)

markup language A language (or **metalanguage**) designed to formalise the **markup** process for text. Markup languages also give facilities for including links to **multimedia** items, such as **graphics**, **audio** and **video**.

marquee A method of selecting **objects**, usually in a **draw program**, as an alternative to clicking on specific objects. The **mouse** is held down and moved, forming a rectangle on the screen (indicated in different ways in different programs). Everything that is completely within the rectangle is selected.

mask Opaque overlay which masks out the unwanted portion of a photograph.

masking In process colour origination using a camera, masking meant the use of colour compensation techniques during the separation process to achieve results more faithful to the original and less liable to colour correction (e.g. applying a **trimask** or other specially made mask to an original to reduce contrast or enhance detail in separate areas and for specific colours). In colour film make-up, masking is the process of marking out specified areas, either electronically or mechanically, which are to undergo tint-laying, reversed out illustration, reversed lettering etc. (See also **unsharp masking**.)

masking paper See **goldenrod paper**.

masking tape A translucent adhesive tape for masking out unwanted areas on film.

massaging Manipulation of copy on a **VDU**.

mass market Broadly based market; in book publishing, general-interest paperbacks.

mass storage device Backing storage such as magnetic disk or magnetic drum which is capable of holding large amounts of data.

master 1. A plate for a duplication machine. 2. Original tape, disk, film etc. from which copies will be made.

master page grid In **DTP**, the basic page layout, held in memory as a job **template** for the design and kept independently from the text itself.

master proof Printer's proof or reader's proof. (See also **marked proof**.)

masthead Graphic device which displays a newspaper's name on the front page.

mat See **matrix**.

Matchprint Proprietary dry proof, similar to a **Cromalin**.

matrix Also 'matrice'. Mould from which typeface is cast or photographic master of type font.

matrix printer or **dot matrix printer** One in which each character is represented by a dot pattern. (See also **daisywheel printer**, **laser printer**.)

matt or **matte** Dull finish, as distinct from glossy.

mature Acclimatise paper to pressroom humidity. Also called **conditioning**.

maximise button In Windows applications, resizes a window to fill the full screen rather than a small part of it.

Mb Abbreviation for **megabyte**.

MBONE See **Multicast Backbone**.

Mbps Megabit(s) per second. Transfer rate of one million bits per second. (See also **bps**, **kbps**.)

MCA See **Micro Channel Architecture**.

McCain sewing See **side-sewing**.

MCI See **Media Control Interface**.

MCI Mail A large commercial **email** service. Note that this is not related to **Media Control Interface**, but named after the US company MCI which operates the service.

MCR Magnetic character reading.

MD In papermaking, **machine direction**. As distinct from CD (**cross direction**).

MDI See **Multiple Document Interface**.

mean line Imaginary line which runs along the top of the lower-case letters in a line of text. Also, **x-line**. Compare **baseline**.

measure Length of line of type.

mechanical Camera-ready paste-up (US).

mechanical binding **Binding** held together by metal or plastic coils. (See also **spiral binding**.)

mechanical composition See **machine composition**.

mechanical ghosting Ghosting caused by blanket irregularities.

mechanical paper Paper made from **mechanical pulp**.

mechanical pulp Pulp produced mechanically, by grinding, rather than chemically. There are several sorts. See **stone groundwood mechanical pulp** (**SGW**), **refiner mechanical pulp** (**RMP**), **thermomechanical pulp** (**TMP**), **chemi-thermomechanical pulp** (**CTMP**).

mechanical separations Separate colour overlays in register with each other.

mechanical tint Patterned sheet which can produce tonal effects on line work.

media The materials onto which data can be recorded, i.e. floppy disk, magnetic tape etc.

Media Control Interface (MCI) A standard control interface for multimedia devices and files, used under **Windows**.

media converter Device which reads from one medium (normally a disk) and translates its content in order to output to another medium (often a disk). (See also **multi-disk reader**.)

media data form Method of presenting information about a publication for use by advertisers for comparison with other publications.

Media Lab at the Massachusetts Institute of Technology One of the leading research organisations concerned with developments in **multimedia** and **communications**. Headed by Nicholas **Negroponte**.

Media Player A **Windows** utility which allows both **audio** and **video** files to be replayed.

medium The means of conveying something; an intermediate.

medium access control (MAC) A protocol for controlling access to a specific network. Part of the **IEEE 802** network standards. The lower portion of the **datalink layer**, **OSI** layer 2. Essentially the interface between a computer and a network, determining which unit transmits at any particular time. (See also **MAC address**, **logical link control**.)

megabyte (Mb) One million computer bytes or, more loosely, one million characters. As continuous text in disk storage terms, this works out at around 150000 words or two average-length novels. See also **kilobyte**.

Megafloppy A text **compression** technique, developed by Eurofield Systems, Australia, designed to enable the publication of large amounts of data on floppy disk. The technique also provides **encryption**, so that the files may be transferred to hard disk and accessed, without **decompression**, but so that the data cannot be copied or accessed without a **PIN** number.

melinex Thick, polyester-based **film**.

memory Internal storage of a computer. The memory of a computer is where it finds its instructions and the data it is to work with, as well as where it stores its results. It is organised as a series of locations or cells each of which can hold one computer word. The locations are given numbers which enable the computer to identify their positions. See **RAM**, **ROM**.

menu A type of **user interface** in which the user is presented with a series of options, from which he or she can select, either with a **mouse** or by entering a text string, often just a number.

menu bar In a **graphical user interface** (**GUI**), the bar across the top of the **screen** or a **window**, containing the names of **pull-down menus**.

menu-driven Software program laid out in the initial form of a number of questions to which the user replies in order to action the program.

merge Combine two or more files into one.

message handling system (MHS) The services and protocols that provide **OSI email**, specified in the **ITU-T X.400 series** of recommendations and also defined as the **Message-Oriented Text Interchange Standard** (**MOTIS**) by **ISO**. It is used by **CompuServe**.

Message-Oriented Text Interchange Standard (MOTIS) The **ISO** version of **MHS**.

message switching A method of transmission in which messages are stored at an intermediate switching centre until a channel is available for them to be transmitted to their final destination. (See also **packet switching**.)

meta An **HTML** tag, defining **metadata**, which is used by many of the **World Wide Web search engines**, either as part of the **indexing** or as part of a **keyword** search.

metadata Often called information about information. Structured data which describes types of information. Often used for searching, e.g. using the **Z39.50** protocol, although the data may not actually form part of the viewable document.

metafile See **Windows Metafile Format**.

Metafont A **font** design and generation package which is a companion to the **TEX** typesetting language.

metalanguage A (computer) language in which the logic and statements of another language are discussed and specified. **SGML**, e.g., is a metalanguage in that it specifies how to do things, rather than what to do.

metallic inks Inks containing metallic powders to give a gold or silver printed effect. Best printed in conjunction with a **primer**.

metamerism In colour printing, used to describe the phenomenon whereby certain colours shift in hue under different lighting conditions.

metric system The decimal system of measurement. See Appendix.

metropolitan area network (MAN) A network linking users that usually covers an area the size of a city. Often implemented using **optical fibre**. (See also **SMDS**, **SONET**, **local area network**, **wide area network**.)

mezzotint Form of print created by removing a roughened surface to a greater or lesser degree from a specially burred metal plate, thus creating areas of continuous tone; used to simulate the effect of painting. By extension, a form of **half-tone screen** which imitates this effect.

MF See **machine finished**.

MG See **machine glazed**.

mg **Milligram**. One-thousandth of a gram.

MHEG See **Multimedia/Hypermedia Information Coding Experts Group**.

MHS See **Message Handling System**.

MHz One million **hertz**.

MIB See **management information base**.

MICR See **magnetic ink character recognition**.

microbilling A billing technique, gradually being introduced on the **Internet**, which allows small amounts due (**micropayments,** e.g. for download of an item of information or software) to be accumulated and invoiced together at the end of an agreed period.

Micro Channel Architecture (MCA) (Or just 'micro channel'.) An expansion **bus** used in **PC**s, now superseded by later technologies, such as **local bus**.

microchip See **chip**.

Microcom Networking Protocol (MNP) A series of widely used **modem** protocols, which include **compression** and **error correction**. (See also **V series**.)

microcomputer Small computer, usually without multi-user capabilities except when forming part of a **network**.

Microcosm Software developed at the University of Southampton for automatically inserting cross-references into electronic and **multimedia** documents. The **Open Journal Project** is using an extension of this software, now released commercially as **Webcosm**, to develop automatic cross-referencing for **electronic journals**.

microdot A very small dot. Microdots generated during **stochastic screening**, e.g., vary from 10–20 microns in size (a 20 micron dot would be around the smallest generated in conventional **AM screening** using a 150 screen ruling).

microelite Small size of typewriter type: 15 characters per inch.

microfiche A sheet of film onto which text and images are photographically reduced. Usually 105×148mm, holding 420 A4 sheets. (See also **microfilm**, **microform**.)

microfilm A roll of film, usually 35mm, onto which text and images are photographically reduced. **Computer output on microfilm** (**COM**) is a common form of archival storage, although it is being superseded by **computer output onto laser disk** (**COLD**) and **document image processing** (**DIP**). (See also **microform**.)

microform Generic name for media onto which text or images are photographically reduced. The main examples are **microfiche** and **microfilm**.

micrometre One-thousandth of a millimetre.

micron Alternative term for **micrometre**.

micropayments See **microbilling**.

microprocessor See **microcomputer**.

microsecond One-millionth part of a second. Measurement used in computing. Compare **nanosecond**, **millisecond**.

Microsoft Corporation The world's largest software company. Was first successful in writing PC-DOS (which became **MS-DOS**), the operating system used by PCs, under contract to IBM. Later products include MS **Windows**, **Windows NT** and **LAN Manager**, as well as many applications software products.

Microsoft Mail Application Program Interface (MAPI) Microsoft's **email** system developed for **local area networks** (**LAN**s). (See also **VIM**.)

Microsoft Network (MSN) An online service providing information, weather reports, **database** links to the **Internet** and **email** for **Windows 95** users.

Microsoft Windows See **Windows**.

MICR paper **Magnetic ink character recognition** paper.

middle space or **mid space** A letterpress spacing piece equal to one-quarter of a 'mutton' or em space.

middleware Software that is used between an **application program** and a **network** or between a **client** and a **server** in order to allow applications to have standard **user interfaces** and yet be usable across heterogeneous platforms and networks.

MIDI See **Musical Instrument Digital Interface**.

mid-level network (Also called **regional network**.) The **networks** of the **Internet** that connect the **stub networks** to the **backbone** networks.

mid tones or **middle tones** Tonal ranges between highlights and shadows.

millboard True millboard is a very dense, hard board used in stationery binding and for archival use. The term millboard is sometimes used to describe normal caseboards, which are more properly **grey board** or **unlined chipboard**.

mill conditioned Paper conditioned for normal atmospheric humidity. See **conditioning**.

mill finished See **machine finished**.

mill glazed See **machine glazed**.

milligram One-thousandth of a gram.

millimetre One-thousandth of a metre.

millisecond One-thousandth part of a second. Measurement used in computing. Abbreviated to **ms**. Compare **nanosecond**, **microsecond**.

mill waste **Broke** and other by-products of a paper mill's normal making processes which

can be recycled within the mill. Paper made using mill waste as a majority furnish should not really be termed **recycled** even though it sometimes is.

Milnet Military Network. Part of the US Defense Data Network. Also part of the **Internet**.

MIME See **Multipurpose Internet Mail Extensions**.

mimencode (Originally 'mmencode'.) An improvement on **uuencode** for use in **email**. Uuencode uses some characters that become corrupted across certain **mail gateways** (particularly those converting to and from **EBCDIC**). Uuencode also has a number of variants. Mimencode is more robust.

mini See **minicomputer**.

miniature A small-scale, minutely finished portrait or similar illustration in a medieval **manuscript**.

mini-cassette Used as a backing storage device, usually in smaller portable computers. These cassettes are similar in design to those used in pocket dictation machines.

minicomputer Small but powerful computer, usually dedicated to one job rather than general data processing.

minifloppy disk A name given to 5¼″ floppy disks to identify them as different from 8″ floppy disks. As 5¼″ disks became the type in widest use the term fell into misuse.

minimise button In **Windows** applications, turns a window into an **icon** at the foot of the screen.

minion Obsolete term for 7pt type.

Minitel The French **viewdata** system provided free by the French telephone system as a way of obtaining directory information. However, Minitel is now widely used to provide information on a range of services.

mini-web Small web offset machine typically producing 16pp A4 colour sections (8p A4 to view). Also known as **narrow-web**, or **half-size press**.

minuscule or **miniscule** **Lower case** letter.

mips Millions of instructions per second. Measurement of computer processing speed.

mirror An **Internet archive site** holding a copy of files from another site, so as to allow users to access them more quickly, as well as reducing the load on the source site. Usually whole directories are mirrored in a structured way, e.g. to provide access in Europe or the UK to a US source. This is different from a **cache** or **proxy server**, which just stores everything which is requested through it, to speed up subsequent access. The term is also used to describe duplication of storage on disk, e.g. in **RAID** systems.

misprint Typographical error.

misregister One colour or more printed out of alignment with other colours.

mitre 45° angle join at corners of metal rules.

mixed furnish Referring to papers which have mechanical and woodfree pulps in their furnish. See **part-mechanical paper**.

mixing Usually applied to typefaces of different fonts in one line of text.

mm **Millimetre**.

mmencode The original name for **mimencode**.

MML See **Man-Machine Language**.

MMX An extra set of instructions built into later (1997) versions of **Intel**'s **Pentium** microprocessors to support operations on multimedia and communications data types. They can handle many common multimedia operations, such as digital signal processing, normally handled by a separate sound card or video card. Intel states that this is not an acronym for MultiMedia eXtension, but an Intel brand name.

mnemonic codes Easily remembered codes: abbreviations or tags which suggest their meanings (e.g. bd1 = bold style 1).

MNP See **Microcom Networking Protocol**.

Mobile Station International ISDN Number (MSISDN) The telephone number (0902 XXXXXX) dialled to contact a mobile user.

Mobile Switching Centre (MSC) A telephone exchange for a cellular network.

mock-up A layout or rough of artwork. Also called a **visual**.

mod A filename extension for a sampled music file format, which is made up of digitised sound samples (unlike **MIDI** files), arranged in patterns to create a song.

modelling tint A **tint** added to pure white to make it brighter, usually blue or red.

modem or **modulator/demodulator** Device which converts analogue communication (e.g. telephone transmission) into digital form and vice versa. Modem transmission speeds are rated in **kbps**. Common ratings are 14.4 and 28.8. By comparison, the data rate of **ISDN** transmission goes from 64 upwards.

moderated The term describing **mailing lists** and **newsgroups** which are edited and managed by a **moderator**.

moderator A person or persons editing and managing a **moderated mailing list** or **Usenet newsgroup**. The moderator will read all incoming submissions and decide which ones will be sent out to the mailing list or newsgroup.

Modern Late 18th century typestyle, also called **Didone**.

modern figures See **lining figures**.

modular Hardware system capable of being expanded by adding on compatible devices.

modulated Subject to **modulation**.

modulation The modification of the amplitude, frequency or phase of an analogue carrier wave so that information can be transmitted. See **amplitude modulation**.

modulator Device which modifies the aplitude, frequency or phase of an analogue carrier wave so that information can be transmitted.

moiré An undesirable pattern that can appear in graphic images; a result of the superimposition of one regular pattern or **screen** on another, so that interference takes place, causing a periodic variation of intensity. It is similar to the phenomenon of 'beats', which occurs with sound. (See also **aliasing**.)

moisture content Amount of moisture in paper, expressed as a percentage of weight. A moisture content of around 7–8% is recommended for printing papers in optimum press room conditions (20°C, 55–65% **RH**).

moisture welts Wrinkles in a paper roll caused by moisture absorption after drying.

molleton Cotton material used on damping rollers.

Mondex Electronic money scheme first trialled in Swindon.

monitor Screen which displays the operations of a machine in real time.

monk Dark printed area resulting from too much ink being added, contrast **friar**.

mono See **monochrome**.

monochrome Literally means one colour, often black on white (although see **bilevel bitmap**), but used for **grey scales**. Used to describe black and white printers and displays, which will usually be white, green or orange on black, or black on white. A grey-scale monitor displays a range of grey values, not just black or white, even though there is still no colour.

monogram Device made from the linking together of two or more letters, usually someone's initials.

monograph Academic book concerned with a single specialised subject or aspect of it.

monoline Typeface with all strokes appearing to have the same thickness, e.g. **Univers**.

monomode fibre A type of **optical fibre** that has a very fine core, the diameter of which is approximately the wavelength of light. There is very low dispersion of the optical signal and therefore monomode fibres are used for high bandwidths over long distances. (Compare with **multimode fibre**.)

Monophoto Proprietary name of an early British phototypesetting system.

monospaced Letters which have all the same **set widths**, as in typewriter faces or non-**WYSIWYG VDU** screen displays.

monotone Illustrative material in one colour.

Monotype Proprietary name of a hot metal typecasting machine which assembles characters individually rather than line-by-line.

montage Several images assembled into one piece of artwork.

MOO See under **Multi-User Dimension**.

moral right Right of editors or illustrators to have some influence on the publication of a work they have contributed to, even when they do not own the **copyright**.

morgue Newspaper reference library.

morocco Goatskin with fine grain for bookbinding.

morphing The gradual distortion of one image into another by moving points on the original image to certain corresponding points in the second image. Used in **animation** software. (Compare with **tweening**.)

Mosaic An early **World Wide Web browser** or **client** from **NCSA**, which runs on a number of different platforms. Has been largely superseded by **Netscape Navigator** (developed by the same team) and by **Internet Explorer**.

motherboard The printed circuit board containing the main components of a computer. See **add-on board**, **expansion board**.

Mother of Chapel See under **FOC**.

Motif The standard **graphical user interface** (**GUI**) for **Unix** systems, based on **X windows**.

Motion Picture Encoding Group Another name for the **Moving Pictures Expert Group** (**MPEG**).

MOTIS See **Message-Oriented Text Interchange Standard**.

mottle Uneven printing in solid areas caused by poor ink or uneven absorption characteristics in the paper.

mould See **matrix**.

mould-made paper Paper either made by hand, or made on a **cylinder mould machine**.

mount Base of wood or metal which supports a letterpress printing plate.

mouse Small electronic puck which may be moved laterally and vertically on a plain flat surface to control the movement of a **cursor** on a **VDU** screen. (See also **puck**, **trackball**.)

mouse mat A mat on which a **mouse** can be moved around. For a mechanical mouse, this is usually a plastic surface on a foam-rubber backing, while for an optical mouse, the surface is usually a firmer plastic carrying a grid ruled in two dimensions.

moveable type Type cast as individual metal units, contrast **slug**.

moving JPEG A **compression** technique for moving images in which each **frame** is compressed using **JPEG** still compression. Although there is no agreed standard for moving JPEG, there are chips available that are appropriate for television resolutions and frame rates.

Moving Pictures Experts Group (MPEG) (Also called Motion Picture Encoding Group.) An **ISO** standard for coding full-motion video information in a compressed form. Encoding is done offline while retrieval is performed in real time. (See **MPEG-1**, **MPEG-2**, **MPEG-3**.) MPEG can also be used for audio files.

Mozilla An alternative name for **Netscape Navigator**, when it was first designed as a version of **Mosaic**.

MPC See **Multimedia Personal Computer**.

MPEG See **Moving Pictures Experts Group**.

MPEG-1 The first version of the **MPEG format**, which was optimised for **CD-ROM**. It works in a similar way to **JPEG** to compress data within a frame and then uses block-based motion compensated prediction (MCP) to remove data between frames, essentially keeping only information that changes between frames. Audio is also compressed using **sub-band encoding**. MPEG-1 will give quality which is at least as good as VHS video, although the audio quality is not as high.

MPEG-2 An improved version of **MPEG-1** intended for broadcasting compressed video over satellites. Now also includes **HDTV**.

MPEG-3 A development of **MPEG-2** to handle **HDTV** applications. However, after it had been developed, it was later discovered that with some (compatible) fine tuning, MPEG-2 and **MPEG-1** syntax worked satisfactorily for HDTV. Because of this and pressures for standardisation, HDTV is now handled under MPEG-2.

mpg The usual filename extension for a file in **MPEG** format.

MS See **manuscript**.

ms See **millisecond**.

MSC See **Mobile Switching Centre**.

MS-DOS The **operating system** used on the IBM PC and its clones. Note that **Windows 95** and **Windows NT** run as operating systems themselves, although **MS-DOS** commands can still be accessed in a **window**.

MSISDN See **Mobile Station International ISDN Number**.

MUD See **Multi-User Dimension**.

mu-law A **companding** scheme, based on **sampling**, for **analogue-to-digital conversion** of speech. It is used in **PCM CODEC**s (COder/DECoder) in the US telephone network.

mull Muslin fabric fixed to the back of a case-bound book under the spine covering. See **first and second linings**.

multicast A form of **broadcast** in which packets are delivered only to specified destinations. Implemented over the **Internet** as **MBONE**.

multicast addressing An addressing scheme used to send **packets** over **Ethernet** to all devices of a certain type or as a **broadcast** to all **nodes**.

multicast backbone (MBONE) A **virtual network** which runs on top of the **Internet** and supports **multicast** and **multimedia** transmission, including **videoconferencing**, shared **whiteboard** and shared editing of documents. The quality is not very good, at about 3–5 **fps** (commercial television is about 10 times that), but this keeps telecommunications data rates low.

multicast IP See **IP-Multicast**.

multicode One keystroke which generates several commands.

multicolour keyline artwork **Baseboard artwork** with overlays to show the divisions of the colours.

multi-disk reader Machine which reads a variety of disks in different formats and translates their content to output disks. Also, **media converter**.

multidrop A network configuration which has multiple stations, but ensures that only one can transmit at any one time. (See also **multipoint**.)

MultiFinder The **Macintosh** utility which allows **multi-tasking** to be incorporated into the **System 7 operating system**.

multi-layer headbox A **headbox** which distributes up to three different layers of stock onto the wire simultaneously.

Multilith Proprietary name of a small offset press once in wide use.

multimedia Initially a **human-computer interface** term describing interactions with text, graphics, audio and video. In general terms, however, the interactive use of these various media together. This may involve the use of **hypertext** and **generic coding** schemes, such as **SGML** and **HTML**. Multimedia became widely available with the development of the **CD-ROM**, but is now being exploited more and more over the **World Wide Web**, using such facilities as **MBONE** and **MPEG** compression.

Multimedia/Hypermedia Information Coding Experts Group (MHEG) An **ISO** group working on the development of standards for **bitstream** specifications for **multimedia** and **hypermedia**.

Multimedia Internet Mail Extensions (MIME) See **Multipurpose Internet Mail Extensions**.

Multimedia Personal Computer (MPC) A specification covering hardware and interoperability published by the Multimedia PC Marketing Council.

multimode fibre **Optical fibre** with a core that is capable of propagating light signals of more than one wavelength. It has a larger core than **monomode fibre** and is cheaper to manufacture. However, it introduces more **dispersion** and is therefore used for lower bandwidths over shorter distances.

multi-part stationery Continuous stationery with each piece made of two or more sheets for simultaneous copying, with carbons between or **carbonless**.

Multiple Document Interface (MDI) Describes applications in Windows that allow more than one document (file) to be used at the same time. See **active document**.

Multiple Mastering A font technology developed by Adobe Systems for use in conjunction with **Acrobat** and the **portable document format** (**pdf**). Multiple Mastering allows the generation of a substitute font when a pdf document is displayed and the specified font is neither installed on the viewing system nor included as part of the pdf file. This means that any pdf file can be displayed with an Acrobat viewer.

multiple subNyquist sampling encoding (MUSE) A Japanese coding system for **HDTV**.

multiplexer or **multiplexor (mux)** A device that combines (see **multiplexing**) several signals so that they can be transmitted via a common physical transmission medium. Used in telephone systems. (See also **demultiplexer**.)

multiplexing The combination of a number of signals for transmission over a shared medium, e.g. a telephone line. The signals are combined at the transmitter by a **multiplexer** and split up again at the receiver by a **demultiplexer**. Common forms of multiplexing are **time division multiplexing** (**TDM**), **frequency division multiplexing** (**FDM**), **wavelength division multiplexing** and **code division multiplexing**. If the inputs use the output channel in turn (TDM), then line bandwidth needs only to be the maximum bandwidth of any input. However, if inputs are active simultaneously, then the bandwidth must be at least the total bandwidth of all those active inputs. In the latter case the multiplexer is also known as a **concentrator**.

multipoint A network configuration in which a communications channel is connected to more than two stations. **Multidrop** operation is used to ensure that only one station transmits at any one time.

multiprocessing Computer operation of several tasks simultaneously.

Multipurpose Internet Mail Extensions (MIME) An **email** standard that permits the inclusion of non-text files (programs in binary form, image files, and so on) in an email message as attachments. MIME works automatically only if both sending and receiving mail-handling programs are MIME-compliant. Uses **mimencode** to encode binary data using a subset of **ASCII**.

multisession When applied to a **WORM CD** or similar device, implies that the CD can be written to on different occasions (i.e. in different sessions), until it is full.

multi-tasking The ability of a computer to work with more than one program at a time without any further action from the user. In fact, the computer uses **time-slicing** to switch between applications, but this happens so fast that users are unaware of it, although all the applications slow down to a greater or lesser extent.

multi-threading An addition to **multi-tasking** which enables individual actions within an application to run simultaneously, so that it is not necessary to wait for the result of one action before implementing a second. An example might be a **draw program**, where it is unnecessary to wait for the screen to redraw after each change.

multi-user Computer system allowing multiple users access to the same machine, software and data files.

Multi-User Dimension (MUD) (Also called **Multi-User Domain** and originally **Multi-User Dungeon**.) A type of multi-player interactive adventure game, accessible via the **Internet** or a **modem**, the name originally being based on 'Dungeons and Dragons'. The game has undergone various developments and modifications since first being launched in 1979. MUDs have also been used as conferencing tools and educational aids. A **MOO** is an **object-oriented** MUD.

Multi-User Domain See **Multi-User Dimension**.

Multi-User Dungeon See **Multi-User Dimension**.

multivolume A work consisting of several volumes.

mump To move/copy fonts between one typesetting house and another.

Munsell system A colour gradation system which uses numbers for identification.

MUSE See **multiple subNyquist sampling encoding**. Also used as an abbreviation for Multi-User Shared Environment, a kind of **MUD**.

Musical Instrument Digital Interface (MIDI) (Pronounced 'middy'.) A standard covering how computers and musical instruments or synthesizers interact. MIDI covers both the hardware and the protocols for how music is encoded and transferred between different devices, which may be an instrument, synthesizer or computer. A MIDI interface is required and is standard on some **Macintoshes**. It is then possible to input at a standard piano-type keyboard or synthesizer and edit the music on-screen, each channel being separately editable. The basic unit of information is 'note on/off', together with the pitch and volume, but other information can be added.

mutton An em **quad**.

mux See **multiplexer**.

MX record See **mail exchange record**.

mylar Polyester film made by Du Pont and used for stripping positives.

N

NAK See **negative acknowledgement**.

Name Registration Scheme (NRS) A scheme defining the organisation, structure and translation of names of network services in the UK academic community.

name resolution Mapping an **Internet** name into its corresponding address, e.g. a **fully qualified domain name** into its **network address**. (See also **Domain Name System**.)

name server See **Domain Name Server**.

nanosecond One-thousand-millionth part of a second. Measurement of computer processing speed. Abbreviated to **ns**. Compare **microsecond**, **millisecond**.

nap The raised pile on the surface of fabrics or rough paper.

nap roller Leather-covered ink roller.

narrowband The opposite of **broadband**. Generally applied to networks with **bandwidths** less than either 2 Mbps or 34 Mbps. The definition is fuzzy, depending on the user's experience.

narrowcast (Also described as 'personalcast'.) Transmission of information to a defined group of recipients, in contrast to **broadcast**.

narrow-web See **mini-web**.

NAS See **Network Application Support**.

NAT See **network address translator**.

National Center for Supercomputing Applications (NCSA) The organisation where the first version of **Mosaic** was developed.

national characters An expression used for characters of the Roman alphabet with accents and other diacritical marks that are used in certain written languages, but not in English. They are listed in **ISO 8859**.

National Information Infrastructure (NII) (Or the **information superhighway**.) The planned integrated communications structure of the US, based on a nationwide network of **broadband networks**, which is intended to give all Americans access to the country's information, communication and computing resources. The NII is planned to include all current and future public and private networks, as well as satellite communications and to cover all aspects of information, communication and entertainment.

National Information Services and Systems (NISS) An information archive service, based at the University of Bath, intended primarily for UK educational institutions. (See also **BIDS**.)

National Institute of Standards and Technology (NIST) US government body that is involved in the development of standards. Formerly the National Bureau of Standards.

national press Newspapers with a countrywide circulation.

National Research and Education Network (NREN) A high-bandwidth network in the US, devoted to high-performance computing and communications. Similar to **SuperJANET** in the UK.

National Science Foundation (NSF) A US government agency whose purpose is to promote and fund the advancement of science. **NSFNET** is funded by NSF.

National Science Foundation Network (NSFNET) A high-speed hierarchical 'network of networks' in the US (maximum bandwidth 45 Mbps), funded by the **National Science Foundation**. The NSFNET forms part of the **Internet**.

National Technical Information Service (NTIS) The official resource for US government-sponsored and worldwide scientific, technical, engineering and business-related information.

National Television Standards Committee (NTSC) The body defining the television video signal format used in the US. NTSC is also used to refer to the format itself (30 fps with 525 lines per frame). The UK equivalent is **PAL**. (See also **SECAM**.)

natural Description of a kind of case-covering material finish.

navigate Generally, to find one's way around. However, often used of **hypertext** systems and,

in particular, the **World Wide Web**. A **browser** provides navigation facilities for **hypertext documents** via **links**, which in the World Wide Web are implemented using **HTML** and **HTTP**.

Navigator A program that helps the user to make the most of **CompuServe**. **Netscape Navigator** is a **World Wide Web browser**.

NBA **Net Book Agreement**.

NCR Proprietary name of a paper which, being impregnated with dye, transfers an image onto the sheet below when written or typed on.

NCSA See **National Center for Supercomputing Applications**.

NC varnish Nitrocellulose varnish: a high-gloss varnish applied to book covers.

ND No date, meaning no fixed date mentioned in publishers' reports as to when a book will be in stock.

NDIS See **network device interface specification**.

NE New edition. Used in publishers' reports to confirm that a new edition of a book will be published.

near letter quality (NLQ) The top level of quality that can be obtained by dot matrix printers. They attempt to emulate higher-quality output by printing a line and then reprinting it to enhance the characters by the addition of serifs.

nearside lay The sidelay on the operating side of the press. (See also **offside lay**, **lay**.)

neckline White space under a headline.

needle printer Term for **matrix printer**.

neg Abbreviation for **negative**.

negative Reverse photographic image on film.

negative acknowledgement (NAK) A mnemonic for **ASCII** character 21. Sent from a receiving station to a transmitting station, indicating that a previous transmission(s) has not been received correctly.

negative assembly Combining negatives on a flat ready for platemaking.

negative-positive print The standard colour 'en' print.

negative-working plates Litho plates which are exposed using negatives.

Negroponte, Nicholas Director of the Media Laboratory at Massachusetts Institute of Technology, a founder of **Wired** magazine and author of 'Being Digital'.

Nelson, Ted The originator of the concept of **hypertext** in his 1967 proposal for **Xanadu** and the **Docuverse**.

NE/ND New edition/no date.

NEP New edition in preparation.

nest To place a program routine within a larger routine.

nested indent A left or right indent applied to a paragraph or more which insets the text affected inside the previous margin. Typically used to highlight a piece of **extract** setting within main body text.

Net A rather loose term, sometimes applied to the **Internet** itself, at others to specific networks. Also used as a prefix to describe people and events related to **Usenet** and the Internet.

netaddress Another name for the **Knowbot Information Service**.

NetBEUI See **NetBIOS Extended User Interface**.

NetBIOS An **applications programming interface** (**API**) which controls **network** operations on PCs running under MS-DOS. It is a set of network commands issued by an application program and interpreted by a **network operating system**.

NetBIOS Extended User Interface (NetBEUI) The **network transport layer** protocol relating to the **NetBIOS** applications programming interface.

Net Book Agreement Agreement in the publishing and bookselling trades to sell books at the retail price dictated by the publisher. An example of retail price maintenance.

Netcaster See **Netscape Netcaster**.

netCDF See **Network Common Data Form**.

Netfind A **white pages** directory, based on people's names, which will try to find telephone and email information.

netiquette Network etiquette. Mainly refers to the conventions recognised on **Usenet** and in **mailing lists**.

netmask A 32-bit mask that shows how an **Internet address** is divided into **network**, **subnet** and **host** parts.

NetNews A weekly publication that gives news about the **Internet**.

Netscape See **Netscape Communications Corporation**, **Netscape Communicator**, **Netscape Navigator**, **Netscape Netcaster**.

Netscape Collabra An information exchange forum that is part of **Netscape Communicator**, intended to be used either publicly or privately.

Netscape Communications Corporation Originally Mosaic Communications Corporation, a company set up in 1994 by, among others, Marc Andreessen, who created **NCSA Mosaic**, to market a new version of **Mosaic**, which was called Netscape (also Mozilla), now **Netscape Navigator**.

Netscape Communicator A suite of software including the latest version of **Netscape Navigator**, as well as **Netscape Netcaster** and **Netscape Collabra**.

Netscape Navigator A **World Wide Web browser**

produced by **Netscape Communications Corporation** (now part of **Netscape Communicator**). It evolved from NCSA Mosaic and was first made available free on the Internet in 1994. Its functionality is continually being expanded and one feature is the development of **Netscape plug-ins**, which allow other **programs**, such as **Acrobat**, to be integrated with **Netscape Navigator**.

Netscape Netcaster A **push technology** from **Netscape**, with similarities to **Castanet** and **BackWeb**. Part of **Netscape Communicator**.

Netscape plug-ins Applications which can be integrated with **Netscape Navigator**. These include an **Acrobat** reader, **MPEG** and **JPEG** viewers, and a **QuickTime** viewer.

Net TV The combination of the **Internet** and conventional television on the same hardware. Two approaches are being made: adding a 'set-top computer' to a television and adding TV functionality to a computer. Currently, all US developments rely on using cable TV, but satellite delivery is being developed in Europe. Net TV is generally considered in the context of **push technologies**.

NetWare See **Novell NetWare**.

network An arrangement of linked computers which typically draw on a common database of information resident on a fileserver while retaining considerable local processing capabilities.

network address Can be considered as the **Internet address** or as part of that address, excluding the address of the **host**. Which bytes of the address are which depends on the **class** of the network: for a class A network, the network address is the first byte of the IP address; for a class B network, the network address is the first two bytes of the IP address; for a class C network, the network address is the first three bytes of the IP address. Also used to describe the **nodes** on a **local area network** (LAN), such as printers.

network address translator (NAT) A hardware device which has been proposed for extending **Internet addresses**.

network application A program, or combination of program and data, that performs a task over a **network**, usually involving more than one computer.

Network Application Support (NAS) **DEC**'s approach to integrating applications in a distributed multivendor environment.

network architecture A specification of how a network is to be organised; the hardware and software components which will make it possible to carry out a specific task.

Network Common Data Form (netCDF) A machine-independent file format for scientific data.

network computer A cut-down computer without local storage, i.e. with no disks, which is designed to be used on a **local area network** (**LAN**) or connected to a **network** via an **intranet** or even the **Internet**. Because of the lack of storage, network computers are cheaper than standard PCs.

network device interface specification (NDIS) A programming interface for different **network** protocols sharing the same network hardware.

Network extensible Window System (NeWS) A **PostScript**-based windowing environment, invented by James Gosling of Sun Microsystems for **X windows**. It was the first windowing system which allowed PostScript documents to be viewed on screen. (See also **HyperNeWS**, **OpenWindows**.)

Network File System (NFS) A protocol developed by Sun Microsystems, which makes files on a network appear to a local computer as if they were on its local disk. This protocol is now a *de facto* standard and is widely used. NFS uses the **connectionless User Datagram Protocol** (**UDP**) in order to make it **stateless**. (See also **PC/NFS**.)

network information center (NIC) An advisory centre for **network** users. May provide telephone and **email** help desk services, as well as network information services based on programs such as Sun Microsystems' **Network Information Service**. Not necessarily the same as a **network operations center**.

Network Information Service (NIS) A **client-server** protocol developed by Sun Microsystems for distributing system configuration data, such as user and host names, between computers on a network. Runs under **Unix**. Originally called 'Yellow Pages' but the name was changed because BT (in the UK) has copyright on that name.

networking Linking computers so that they can exchange data and programs.

network interface card (NIC) The card or board which it is necessary to have in a PC in order to connect to a network, such as **Ethernet** or **Token-Ring**.

network layer The third-lowest layer of the **ISO seven-layer model**, which determines the switching and **routing** of **packets** from the sender to the receiver using the **datalink layer**. It is in turn used by the **transport layer**. **IP** is a network layer protocol.

network management The set of tasks that are necessary to ensure that a **network** provides the required level of service to its users at a reasonable cost. The **ISO** model defines five categories: fault management; configuration management; security management; performance management; and accounting management. Many network management systems are based on the **Simple Network Management Protocol** (**SNMP**).

Network News Transfer Protocol (NNTP) A protocol for the distribution, retrieval and posting of **Usenet news** articles over the **Internet**. It is basically a **client-server** system. While NNTP is usually built into a news reader program, it can also be used via **telnet**.

network number Part of the **network address**.

network operating system The system software used to integrate the computers on a **network**. Examples include **Novell NetWare**, Microsoft **LAN Manager** and IBM **System Network Architecture** (**SNA**).

network operations center (NOC) The location at which a **network** or **internet** is managed. This will include the monitoring and resolution of any problems. (Compare with **network information center**.)

Network Time Protocol (NTP) A protocol that synchronises clocks located on the **Internet**.

network to network interface (NNI) An interface between two **networks** operating the same protocol.

network topology The physical and logical relationship between the elements (**nodes**) of a **network**. Common topologies include a star, bus, ring and tree.

neutral interconnect A **network** infrastructure in which network service providers can freely exchange traffic without any policy restrictions. Examples are the GIX (Global Internet Exchange) at MAE-East (a Metropolitan Area Ethernet in the Washington area), and the **Ebone** or European backbone and **LINX**, a UK neutral interconnect based at **Pipex**'s London **point of presence**.

neutral sized paper Paper which is sized with neutral pH7, acid-free, size. This gives it considerable qualities of longevity, but less than those required for the standard of permanent paper which must be acid-free in furnish as well as surface.

NeWS See **Network extensible Window System**.

news chase Special chase of newspaper-page size which incorporates its own locking mechanism.

newsfeed A source from which a regular 'feed' of **Usenet newsgroups** can be obtained.

newsgroup An electronic **Usenet** interest group devoted to a particular topic. Groups can be either moderated or unmoderated. Some **newsgroups** also have parallel **mailing lists** for those without news access, while some moderated groups are distributed as moderated digests, with an **index**.

newspaper Publication containing topical reportage.

newspaper lines per minute (nlpm) An early measure of photosetter speeds. Specifically, output measured in 8pt lines to an 11em measure.

news posting Item sent to put up on a **newsgroup**.

newsprint Paper made from mechanical pulp for the printing of newspapers, usually between 45 and 58gsm.

news-reader A program which makes it straightforward to read **Usenet news** articles. It may run either on the access provider's machine if there is only terminal access, or on the user's machine if there is full **IP** access.

news stall circulation Periodical distribution through retail newsagents as distinct from the mail.

NEWT A **TCP/IP** communication stack for **Windows**, which provides users with direct network access.

Newton The Apple **personal digital assistant**.

NEXIS See **LEXIS/NEXIS**.

next to editorial Instruction to position advertisement adjacent to editorial text.

NFS See **Network File System**.

NIC See **network information center**, **network interface card**.

nick Groove in metal type which appears uppermost during assembly.

nickletype An electrotype plated with nickel.

NII See **National Information Infrastructure**.

Nintendo A Japanese company that produces hardware and software for games.

nip Pressure point between two rollers.

nipping Pressing a book to flatten the signatures and remove air from between the sheets. This takes place after the **book-blocks** are sewn and before they are rounded and backed, and sent on for further processing. Also known as **crushing** or **smashing**.

NIS See **Network Information Service**.

NISS See **National Information Services and Systems**.

NIST See **National Institute of Standards and Technology**.

NLP Network layer protocol, see **network layer**.

NLQ See **near letter quality**.

NNI See **network to network interface**.

NNTP See **Network News Transfer Protocol**.

no break area In text setting, a defined sequence of words or characters within which hyphenation is disallowed for grammatical or contextual reasons.

NOC See **network operations center**.

node A **host** or device attached to a **network** or, more strictly, a point in a network where communications lines terminate or where a device is connected to the communications lines. Also used to describe a **hypertext** or **HTML** document.

no flash Photosetting command which prevents exposure of characters. Used to create space of specific length.

noise Unwanted signals or information which interferes with the required information. This may be literal noise in telecommunications; it may be visual in computer **graphics**, where there are, say, spots on an image; or it may be metaphorical in the sense that a communication contains irrelevant information which obscures the real message.

nominal weight American system of specifying **basis weight** of paper.

non-consumable textbook Textbook which will be re-used constantly rather than written in.

non-counting keyboards Keyboards which cannot access justification logic and whose output therefore must be further processed by a **CPU**.

non-destructive cursor A **VDU** cursor that can be moved about the screen without altering or destroying displayed characters.

non-image area Area on a **lithographic plate** that does not take ink and will therefore not be printed.

non-impact printing Electronic methods of image transfer without striking paper. See **inkjet printer**, **laser printer**.

non-interlaced Not using **interlacing**.

non-lining figures See **old-style figures**.

nonpareil Obsolete term for 6pt type.

non-printing codes Codes that are directions for the printer, not a printed character.

Non-ranging figures See **non-lining figures**.

non-reflective ink Light-absorbing ink used to print machine-readable characters.

non-reproducing blue See **drop-out blue**.

non-returnable Cannot be returned.

non-return to zero (NRZ) A binary encoding technique in which symbols 1 and 0 are represented by high and low voltages with no return to the zero reference voltage between bits.

non-return to zero inverted (NRZI) A binary encoding technique in which a signal is inverted for 1 and not inverted for 0, so that a voltage change means 1 and no change at the bit boundary means 0. It is also called **transition coding**.

non-scratch inks Inks resistant to marking.

non-tarnish paper Paper free from chemicals which will tarnish metal surfaces in contact with it.

non-volatile memory Memory (e.g. **bubble memory**) that retains information when the power supply is removed.

non-woven material See **imitation cloth**.

non-WYSIWYG Standard typewriter-style display.

Nordsen binder Device which applies a line of glue beneath the shoulder of a **book-block** to reinforce the casing-in process. Useful for heavy books.

normal 'Upright' letters as distinct from **italic**. Also called **roman** or **plain.**

notch binding A form of unsewn binding in which notches are punched in the backs of the sections as they are folded on the folding machine, and glue applied in through the notches to hold the leaves together. Also called **slotted binding**. (See also **burst binding**.)

notes Explanations at the bottom of page or end of book expanding on material in the text. **Endnotes** are at the end of the book, **footnotes** at the bottom of the page.

Not Yet Published (**NYP**) **Answer** in book distribution indicating that a book is not yet available for sale.

Novell The company that sells **NetWare**, the most widely used operating system software for **local area networks** (**LAN**s).

Novell NetWare Operating system for **local area network** from **Novell** running on **Ethernet**. Uses **IPX/SPX**, and **NetBIOS** or **TCP/IP** network protocols. It supports various operating systems: **MS-DOS**, **Windows**, **OS/2**, **Macintosh** and **Unix**.

np New paragraph

NREN See **National Research and Education Network**.

NRS See **Name Registration Scheme**.

NRZ See **non-return to zero**.

NRZI See **non-return to zero inverted**.

ns A **nanosecond**.

NSF See **National Science Foundation**.

NSFNET See **National Science Foundation Network**.

nslookup A **Unix** program for querying an **Internet Domain Name Server** to find the **Internet address** corresponding to a given **host** name or vice versa.

NT See **Windows NT**.

NTIS See **National Technical Information Service**.

NTP See **Network Time Protocol**.

NTSC See **National Television Standards Committee**. Also used to describe the US television format defined by the Committee.

null characters Characters that have no effect on the meaning of a sequence of characters. May be used to pad fields to a required length or to fill in gaps between data blocks. Note that a null character usually has the **ASCII** value 0. (It is not the character zero, which has ASCII value 48.) Note also that the null character does have significance in some programming languages, e.g. C.

null-modem A special cable that is used to connect the **serial interfaces** of two computers, so that they can exchange data. Essentially it connects pin 2 (transmit) of the **RS-232-C** port of each computer to pin 3 (receive) of the port on the other computer. It also has a male connector at both ends.

numbering machine On- or off-press device which numbers printed sheets consecutively, e.g. for tickets.

nut An en **quad**.

NYP Not yet published.

O

OBA Optical bleaching agent. Added to the **furnish** of bright white papers.

OBC Outside back cover.

object A combination of data that has a well-defined, distinct existence. This may be a graphic object, a group of database fields (see **object-oriented database**), a cell in a spreadsheet, a range of cells, or even an entire spreadsheet or a **video clip**. Such objects are handled in **object-oriented programming** and used by such systems and protocols as **Object Linking and Embedding** (**OLE**). **Draw programs** treat **graphics** as objects, e.g. a line, a circle, a triangle, an irregular shape etc. (See also **object-oriented design**.)

object code or object language Machine code, as translated from a **source program**.

object graphics See **object-oriented graphic**.

Object Linking and Embedding (OLE) (Pronounced 'olé') A distributed **object system** and protocol from Microsoft. A general enhancement to **Dynamic Data Exchange**, which makes it possible not only to include live data from one application, as an object, in another application, but also to edit the data in the original application without leaving the application in which the data has been included. **OLE-2** is an improved version of OLE-1 and is a full implementation of object orientation, allowing access to parts of applications without loading the full application associated with the embedded object, so, e.g., a spreadsheet's @function engine could be called up from within a wordprocessor to sum, a column of numbers. (See also **OpenDoc**.)

object-oriented (OO) To do with **objects**. **Object-oriented graphics** and **object-oriented programming** appear to use the term in slightly different ways but, at a certain level, object-oriented graphics are a particular application of object-oriented programming. Similarly, while the use of objects in **Object Linking and Embedding** (**OLE**) seems at the **application** level to be transparent to the user, **object-oriented programming** underlies this.

object-oriented database (OODB) A system offering database management facilities in an **object-oriented programming** environment. Data is stored as **objects** and relationships are defined between objects. **Multimedia** applications can be handled as objects, with the type of multimedia object being part of the object's definition, so that it can be handled correctly (in a similar way to associating specific applications with specific file types).

object-oriented design (OOD) A design method in which a system is modelled as a collection of **objects** and objects are treated as belonging to a **class** within a hierarchy of classes, each class having properties and relationships with other classes, including inheritance, in which properties are 'inherited' from classes further up the hierarchy. Object-oriented design is one aspect of **object-oriented programming**.

object-oriented graphic See **draw-type graphic**.

object-oriented language A language for **object-oriented programming**. Examples are Smalltalk, C++, Modula-2, SIMULA-67, **Java**.

object-oriented programming (OOP) A type of programming which operates on **objects**, or collections of discrete data structures (see **object-oriented design**). Operations that can be performed on particular objects form part of those objects, and will be common to all objects in a particular **class**. This has great advantages in terms of the **user interface** in that, as long as the interface to an object remains consistent, other aspects of the program can be varied as necessary. (See **middleware**.) There are an increasing

number of object-oriented languages. The release of **Java** has brought object orientation to the **World Wide Web**.

object program Program in machine code translated from a **source program**.

oblique Slanted, usually used of **type**, or sometimes **graphics**. Note that oblique type, i.e. upright type slanted with the computer, is not the same as italic type, i.e. a font that has been designed as italic. However, if a **sans serif type** is used, it may only be the expert who can tell the difference.

oblong Bound at the shorter dimension. Also, **landscape**.

OCLC See **Online Computer Library Center, Inc**.

OCR **Optical character recognition**. The interpretation of typewritten characters by a machine which scans the text and stores it in memory, often for subsequent typesetting.

OCR-A A typeface designed to aid machine readability. Compare **OCR-B**.

OCR-B A machine-readable typeface that is designed to be more legible to humans than **OCR-A**.

OCR paper High-quality **bond** suitable for optical character recognition equipment.

octal A counting system based on 8, widely used in computing, essentially because it is based on powers of two (see **binary system**). The octal digits are 0–7 so that, e.g., the decimal number 12 is 14 octal, while octal 10 is equivalent to decimal 8. Compare **binary**, **hexadecimal**.

octavo Abbreviated as 8vo. The eighth part of the traditional broadside sheet. Used to describe book sizes, e.g. Demy Octavo.

octet Eight bits. This term is used in **networking**, rather than **byte**, because some systems have bytes that are not eight bits long.

ODA See **Open Document Architecture** (originally Office Document Architecture).

ODBC Open Database Connectivity interface: a facility in Windows which allows the user to open and query a structured database file.

oddment A book signature, with fewer pages than the others, which has to be printed separately.

ODIF See **Open Document Interchange Format**.

ODP See **Open Distributed Processing**.

OEM Original Equipment Manufacturer. An OEM product is one which is a rebadged and possibly enhanced version of an original manufactured product, and which sells under its rebadged name.

OFC Outside front cover.

offcut Superfluous pieces of paper left over when the paper is cut down to the correct size.

Office Document Architecture (ODA) The original name for **Open Document Architecture**.

offline The opposite of **online**. Many people read and write **email** messages offline and then go online to send the new messages (see **offline reader**). Offline is also used on **Usenet** to mean private, i.e. a private (email) discussion, rather than inclusion in a public **newsgroup**.

offline reader Software which allows **email** to be read and written offline (generally to save telephone costs, when users connect to a **point of presence** via a **modem**).

off-machine coating Coating applied to a paper as a separate operation. Contrast **on-machine coating**.

offprint Part of a book or journal printed separately, e.g. an article from a journal.

offset Printing which uses an intermediate medium to transfer the image onto paper, e.g. a rubber blanket wrapped around a cylinder as in **offset litho**.

offset letterpress See **letterset**.

offset lithography See **offset**.

offset paper Any paper suitable for offset litho printing.

offset press Lithographic press which offsets the image onto a **blanket** before transferring it to paper.

offside lay The lay opposite the operating side of a press. As distinct from **nearside lay**.

OK Press Approved for press.

OKWC OK with corrections. Instruction to a typesetter to make corrections and then proceed to next stage.

Old English A **black letter** typeface.

Old Face Early 17th century typestyle. Also called 'Old Style' and **Garalde**. A **roman** typeface such as Bembo, which has oblique, rather than vertical, shading; no great differentiation between fat and thin strokes; and with bracketed, not hairline, serifs.

old-style figures Also called **non-lining figures**. Numerals which do not align on the baseline but have ascenders and descenders. As distinct from **modern** or **lining figures**.

OLE See **Object Linking and Embedding**.

OLE-2 See **Object Linking and Embedding**.

OLTP See **online transaction processing**.

OMR See **optical mark reader/optical mark recognition**.

on-demand publishing The concept of printing books one at a time from computer store 'on demand', rather than tying up capital by printing for stock.

one-letter index Index with divisions by letter (but often including x, y and z together).

one-shot binding **Perfect binding** with one applicaton of hot-melt glue only. As distinct from **two-shot binding**.

one-shot periodical rights One-off right to reprint part of a text in a single edition of a magazine or newspaper.

one-sided art Paper coated on one side only (such as jacket art).

one-up One copy of a book printed at a time.

one-way hash function A function that produces a fixed-length hash code from a variable-length message. It is impossible to determine the original message from the hash code. Used in **digital signatures**.

one-way screen Half-tone screen with the lines one-way only, vertically.

onionskin Lightweight **cockle**-finish blank paper often used for airmail stationery.

online Connected, so that data can be transferred, say, to a printer or a **network**.

Online Computer Library Center, Inc. (OCLC) A US not-for-profit membership organisation offering computer-based services and research to libraries and educational organisations. Provides online library services, but has also hosted 'Electronic Journals' online, over a dial-up link, including the world's first purely electronic journal 'Clinical Trials'. Previously used **Guidon** as its principal viewing software, but has now moved journals to the **World Wide Web**.

online public access catalogue (OPAC) A term used to describe any type of computerised library catalogue. The largest in the UK is that put up by the British Library.

online system Originally used to describe any system that allowed user interactivity with the computer. Subsequently used to describe a large database, such as **DIALOG**, which allowed searching and other interactivity. Now refers to almost any system accessed via a **modem** or **network**, more often than not a connection to the **Internet**.

online transaction processing (OLTP) The processing of transactions by computers in real time. Used widely in banking and financial institutions.

on-machine coating Coating applied to the base paper on the paper machine itself. As distinct from **off-machine coating**, where the base paper is coated as a completely separate operation, giving a superior result.

on-the-fly Refers to any process which occurs as output is being performed, such as the screening of half-tones simultaneously with output to an image recorder.

OO See **object-oriented**.

OOD See **object-oriented design**.

OODB See **object-oriented database**.

OOP See **object-oriented programming**.

OP **Out of print**: information from a publisher that a book is no longer available.

OPAC See **online public access catalogue**.

opacity The quality of opaqueness in a paper. Opacity is measured in %, with around 90% being an average for 80gsm printing paper.

opaque 1. To paint out areas on film with an opaque paint. 2. The paint used in opaquing, also called **photopaque**.

opaque printing An **MF** printing paper with high opacity.

op cit Abbreviation from the Latin '*opere citato*' and used to mean 'in the work already quoted', found in **notes** and **bibliographies.**

open If applied to a file, either within a programming environment or via a **graphical user interface** (**GUI**), open means available for manipulation (editing, printing etc.), as well as for writing to, so that a file must be opened before it is accessible by the user or by software. Open is also used to refer to systems which provide good connectivity. (See also **open systems,** where the term has a special meaning.)

open architecture In computer system design, the ability to allow for extra peripherals in order to expand the system at any time in the future.

Open Distributed Processing (ODP) A standard describing the extension of the **OSI application layer** communications architecture to the behaviour of the end system in order to make possible distributed multi-vendor systems.

OpenDoc An **object linking** architecture, with similarities to **OLE-2** (with which it is compatible), developed by Component Integration Laboratories (CILabs) and supported by leading vendors, including Apple and IBM. OpenDoc is based on **CORBA**, which OLE-2 is not, and is therefore a more **open** product. It aims to enable embedding of features from different **application** programs into a single working document in the same way as OLE-2, but will work over a wider range of operating systems. Note that, although it is described as an open document architecture, this can be confusing in that OpenDoc is quite different from **ODA** and is not concerned with structured documents in the sense that ODA and **SGML** are.

Open Document Architecture (ODA) (Originally called Office Document Architecture.) **ISO 8613** for describing **structured documents**. It

has similarities with **SGML**, but also two main differences: firstly, it does not use simple **ASCII** coding and requires special software (and ideally hardware – only prototype systems have so far been constructed); while, secondly, it provides not only **generic coding** structures based on content, but also a coding system for formatted documents, based on blocks, pages etc. It can therefore be used to exchange formatted documents, in either revisable or non-revisable forms. See **Open Document Interchange Format**.

Open Document Interchange Format (ODIF) The part of the **ODA** standard concerned with document interchange.

opening Facing pages of a book.

Open Journal Project An **Electronic Libraries** (**e-Lib**) project concerned with automatic cross-referencing and **hyperlinking electronic journals**.

Open Pre-Press Interface (OPI) Proprietary system which automatically replaces low resolution images with high resolution images so that design work can be handled using relatively small files.

Open Software Foundation (OSF) A consortium of computer companies, the aim of which was to develop a **Unix**-based **open systems** standard. Its first operating system release was called OSF/1.

open systems Systems that conform to **Open Systems Interconnect** or **POSIX** standards, almost all based on the **Unix** operating system. However, any system that can communicate with other systems is often described as an open system, particularly by vendors who wish to emphasise the connectivity of their system in contrast to the proprietary systems, such as large mainframe computers, which tied users to a single manufacturer.

Open Systems Interconnect (OSI) ISO standardised network model built in seven layers in such a way that different operating systems can work together, also known as the **ISO/OSI seven-layer model**. The layers each have a separate group of tasks and are known as: the application layer (top), presentation layer, session layer, transport layer, network layer, datalink layer, physical layer (bottom).

Open Systems Interconnection (OSI) An alternative term for **Open Systems Interconnect**. (See also **ISO/OSI seven-layer model**.)

open time In binding, the time between an adhesive being applied and when it sets. In printing, the time an ink stays fluid on the press.

OpenType A **font** specification combining **PostScript** and **TrueType** technologies. Endorsed by all the major font developers. It is intended to remove font compatibility problems.

OpenWindows A **GUI** server for Sun Microsystems workstations.

operand Item of data being operated on by program.

operating system The underlying computer software that controls the operation of a computer. Operating systems include **MS-DOS**, **Unix**, **Windows 95**, **Windows NT**, **OS/2** and the **Macintosh** operating system.

operation Result of a computer command.

OPI See **Open Pre-Press Interface**.

OPP lamination Oriented polypropylene lamination. The standard book-jacket lamination film.

optical brightener Dye which emits visible radiation. Used to 'brighten' paper.

optical centre The 'visual' centre of a page, about 10% higher than the mathematical centre.

optical character recognition See **OCR**.

optical density Light-absorbing capacity of an image area.

optical disc A storage medium in which **laser** technology is used to write to and read from the disk. (Note that, because certain standards were spelt thus, the normal convention is to spell optical disc with a final 'c', while magnetic disk is spelt with a final 'k'.) Optical discs can be **analogue** (audio **CDs**) or **digital** (all discs used in computer applications). Types include **CD-ROM**, **CD-R**, **laser discs** and **WORM**.

optical fibre See **fibre-optic transmission**.

optical letterspacing Space between letters which accommodates their varying shapes and gives the appearance of even space.

optical mark reader (OMR) A scanning device that can read pencil marks on specially designed documents. Can either be optical (similar to **OCR**) or use **mark sensing**.

optical mark recognition (OMR) The use of an **optical mark reader** in **mark sensing**.

optical scanner Device that copies an image by using electronic signals so that it can be displayed and stored on computer.

optical storage Data stored on viewing equipment, such as **microfiche**, **optical disc** etc.

optical wand Device that reads data from a **barcode**.

O/R address See **originator/recipient address**.

Orange One of the principal providers of mobile communications networks in the UK.

Orange Book The US government's document that characterises secure computing architectures and defines levels A1 (most secure) through to D (least secure).

orange peel Multi-indentation effect on paper.

order form Form on which a buyer can fill in the detail of his intended purchase as an order to supply.

orientation In **wordprocessing** or **DTP**, the positioning of a page or illustration on a page, the options being described as **landscape** or **portrait**.

original Photograph or drawing to be reproduced.

original plate Letterpress plate produced by photo-mechanical etching as distinct from **stereotyping**.

origination All the processes involved in the reproduction of original material, including make-up, up to plate-making stages; and also including typesetting.

originator/recipient address (O/R address) A structured address used in **X.400** mail.

ornamented Typeface embellished with decorative flourishes.

ornaments Another term for **dingbats**.

orphan The first line of a paragraph alone at the bottom of a column or page (in printed material). Occasionally used to mean the last line of a paragraph at the top of a page (more commonly described as a **widow**). Widows and orphans are generally not a problem with **electronic publishing** (on-screen) as the text can easily be scrolled to show subsequent lines (unless a page-based program, such as **Acrobat**, is used).

orthochromatic film Photographic material insensitive to red. The standard grade of phototypesetting film and origination film.

OS See **out of stock**.

OS/2 An **operating system**, originally developed jointly by IBM and **Microsoft Corporation** and planned to be a successor to **MS-DOS**. However, once the cooperation between the companies ended, IBM continued to develop OS/2, as OS/2 Warp, while Microsoft extended its development to produce **Windows NT**.

oscillator rollers Rollers that control the amount of ink that is fed to the **impression cylinder**.

OSF See **Open Software Foundation**.

OSI See **Open Systems Interconnect**.

OSI seven-layer model See **Open Systems Interconnection** (**OSI**).

outdent To move part of a line of text into the margin, contrast **indent**.

outer forme The imposed **forme** which forms the outside of the sheet when folded and which therefore contains the first page of the section. Contrast **inner forme**.

outline Typeface comprising only an outline with no 'solid' area. Contrast also **inline**, in which the characters have white inner areas against a bolder outline shape.

outline font (Also described as a **vector font** or **scalable font**.) A **font** that is stored in terms of its outline shape rather than as a **bitmap**. Because it is a type of **object-oriented graphic**, an outline font can be scaled to any size and transformed, e.g. by sloping or just using the outline. The most common types of outline fonts are **PostScript** and **TrueType**. In addition, PCL 5 uses outline fonts to print. Normally, the fonts are stored in association with the printer or software **RIP** and the output bitmaps generated on the fly at the appropriate printer (or screen) **resolution**.

outline graphics Another term for **vector** or **object-oriented graphics**.

out of focus Blurred, not properly focussed by a camera.

out of print (OP) See **OP**.

out of register One or more colours out of alignment with the others in a piece of printing.

out-of-round Distorted paper reel.

out of square Corners not cut at right angles.

out of stock (OS) Computer response to an order for a book title which is no longer in stock.

output Data or any form of communication coming out of a computer after processing.

output recorder The output half of a colour scanner which records the image onto film. See also **output scanner**.

output scanner The output half of a colour scanner which records the image onto film, typically by laser. Also known as **output recorder**, or **exposure unit**, or **film plotter**.

outsert Item of promotional material on the outside of, rather than inside, a pack or periodical.

outset See **outsert**.

out-turn sheet 1. Specimen printed sheets of a book dispatched to the publisher for approval. 2. Sample sheets of plain paper taken from a shipment for the purchaser to approve.

outwork Operations put out to another company for reasons of specialism or capacity.

overcasting Method of attaching leaves together to make a section that can be bound, in particular the first and last sections.

overexposure Too lengthy an exposure of film, causing a thin, 'chipped', image. **Underexposure** leads to a dense, dark, murky image.

overhang cover Cover larger than the text pages. Also **yapp cover**.

overhead In communications, all the information that is transmitted in addition to the user data. This may include control and status information, routing information, error-detection information and any repeated data. The term is also used in other contexts, with a similar meaning.

overlay 1. Transparent cover to artwork containing instructions or additional detail. 2. Paper used on machine cylinder to increase pressure on solid areas of blocks.

overmatter Typeset matter which was not used in the final printing.

overprinting An additional printing over a previously printed sheet. See **colour blanks**.

overrun Copies printed in excess of the specified printing number.

overs See **spoilage**.

overset See **overmatter**.

oversewing Attaching single leaves to a sewn book with thread sewing.

overstock Hold more stock than is required.

overstrike A method by which a wordprocessor might produce a character not in its character set. A Yen symbol, e.g., could be produced by printing a 'Y' and overstriking an 'equals' symbol.

own ends **Endpapers**, blank leaves at the beginning and end of the text.

Oxford hollow A **hollow** on the back of a book which consists of a tube of brown paper attached to the back of the folded sections and the inside of the case hollow. Used for heavy books where reinforcement is necessary.

oxidation Chemical action with the oxygen in the air: one of the principal ways in which sheetfed offset ink dries. Oxidation also affects litho plates, attacking the non-image area. Gumming up a plate helps prevent this.

ozalid Print made by a form of **diazo** copying process and often used for proofing film. (See also **blueprints**.)

P

PABX See **private (automatic) branch exchange**.

package Set of software bought 'off-the-shelf' rather than specifically written for a purpose.

package insert Promotional material contained in a product's packaging.

packager Organisation which provides complete publications ready to be marketed.

packet A block, or specified number of bytes, which contains both control information and data. Can be sent by **connectionless** (packet switching) or **connection-oriented** communications.

packet assembler/disassembler (PAD) Device (can be hardware or software) for splitting a data stream into discrete **packets** so that it can be transmitted over the specified medium and then the packets recombined at the receiver. Most often used in connection with **X.25** systems.

packet driver Software for **local area networks** (**LAN**s) that divides data into **packets** for transmission over a network. It also reassembles the packets of incoming data so that **application programs** can read the data as a continuous stream, as if arriving at a **serial port**. The use of packet drivers allows multiple **applications** to share the same **network interface** at the **datalink layer**. Different types of packet driver allow applications to make more or less use of network facilities.

Packet InterNet Groper (PING) A program which is used to check whether hosts can be reached. PING sends an **ICMP** echo request and waits for a reply, reporting success or failure, together with various statistics. The term is also used as a verb, so that 'pinging' means running the program and sending the signal. The acronym was probably devised in analogy with the sound produced by ASDIC equipment, when looking for submarines.

packet radio (PR) Communication between computers using amateur (HAM) radio. Can be used for **email** etc. Can be connected through the **Internet** and has a special **domain** in **IP** space. Must be used only by licensed radio amateurs (HAMs).

packet-switched See **packet switching network**.

packet switching network Computer-controlled communications network in which data is divided into 'packets' transmitted at high speed.

packet switch node (PSN) A computer used in a **packet-switched network** to accept, **route** and forward **packets**.

Packet SwitchStream (PSS) BT's packet-switching system.

packing Paper placed next to the impression cylinder in letterpress, or the plate of blanket in litho, to adjust printing pressure.

packing density Amount of information which can be stored on a magnetic medium.

PAD See **packet assembler/disassembler**.

page One side of a leaf.

page count Synonym for extent (US).

page description language (PDL) In **desktop publishing**, software necessary for the composition of combined text and graphics, encompassing factors such as scaling, font rotation, graphics and angles. Some examples, such as Adobe's PostScript, are device-independent.

Other PDLs include Interpress from Xerox, DDL from Imagen Corporation and Interleaf's RIP print.

page layout program See **desktop publishing** (**DTP**).

PageMaker The original **DTP** program; still a leading product. Its main rival is **QuarkXPress**.

page make-up The use of a **page layout** or **DTP** program to arrange text and pictures on a page.

page make-up terminal A specialised **desktop publishing** workstation used to assemble type and graphics in finished page form for output as a piece.

page printer or **page-oriented printer** A printer in which the complete image of a page is formed and then printed. Page printers generally use a **page description language**. Virtually all printers used in graphic arts and the printing industry are page printers, including **imagesetters** as well as **laser printers**. The term was originally developed to distinguish these printers from line printers, such as **dot matrix** and **daisywheel** printers. **Inkjet printers** can use either method.

page proof Proof of a page before printing.

page pull test Test to determine the strength of binding of an adhesive-bound book.

pager (Also called a bleeper.) A small personal radio (receive-only) which is used to alert the person using it. Models are also available which will receive short messages.

page scrolling The movement, on a **VDU**, of an entire page (or screen) of data.

pages per inch Number of pages per inch of thickness. US measurement of bulk. Abbreviated **ppi**.

page traffic Readership of a given page of a publication calculated as a percentage of total readership.

page view terminal **VDU** which can display a page in its made-up form.

paginate To display the page munbers.

pagination Page numbering.

paging Scanning text on a **VDU** page by page.

paint program A software application that provides the ability to create and edit **bitmaps**. Also called **image-editing software**. (Contrast with a **draw program**, used for editing **vector graphics**.)

paint-type graphic See **bitmap graphic**.

pair-kerning In typography, the automatic kerning of selected pairs of letters for better aesthetic effect.

PAL See **phase alternate/alternating line**.

palette An analogy to the paint palette used by artists, this is a window showing the colours available for use in a **paint** or **draw program**. The colours available in the palette will depend on the screen resolution (and thus the number of colours) chosen. See **CMYK**, **RGB**, **colour**.

pallet Wooden base on which paper or books are stored. Also known as **skid** and **stillage**. The 'European standard' pallet size is 1000× 1200mm, four-way entry. A maximum pallet weight of 1000kg and maximum height of 1219mm (4′) is commonly specified. Typical pallet loads might come to 1000–1250 books of average octavo size; or around 12500 sheets of quad demy (one tonne in 80gsm).

palletise To load goods on pallets.

Palo Alto Research Center (PARC) See **Xerox PARC**.

pamphlet Booklet comprising only a few pages.

pamphlet binding See **saddle-stitching**.

panchromatic film Photographic material sensitive to all colours.

panel Display board.

Panorama A **browser** for **SGML** documents, produced by SoftQuad, Inc., which can be used in conjunction with an **HTML** browser, such as **Netscape Navigator**, to view SGML documents over the **World Wide Web**.

pantograph Mechanical apparatus for copying a line drawing.

Pantone Proprietary name of a widely used colour-matching system.

Pantone Matching System (PMS) See **Pantone**.

paperback Book bound with stiff paper.

paper basis weight See **basis weight**.

paperboard Lightweight board in the range 200gsm–300gsm. See **board**.

paper master Paper plate used on small offset machine.

paper surface efficiency (PSE) Printability of paper.

paper tape Strip of paper which records data as a series of punched holes arranged in 'channels' or 'tracks' across the width.

papeterie Smooth, stiff paper used in greeting card manufacture.

papier maché Repulped paper with stiffening additives which can be used for moulding.

papyrus Egyptian reed from which the earliest form of paper was made.

paradigm Set of norms and values associated with an operation or environment which becomes the accepted 'way of doing things'.

paragraph formatting The application of a format or style (including such factors as typeface, typestyle, indents, space before and after) to a whole paragraph in a **desktop publishing** system or **wordprocessor**. (Contrast with **character**

formatting, where only the selected characters are affected.)

paragraph opener Typographic device marking the start of a paragraph which needs emphasising, e.g. ●.

paragraph widow A very short line (one or two words) appearing as the last line of a paragraph anywhere on a page. To be avoided if possible. See **widow**.

parallel Two parallel lines used as a symbol for **footnotes**.

parallel communication Data transfer in which each **bit** is transferred along its own line, in contrast to serial connection, in which bits are transferred one at a time. Parallel communication is generally used only over short distances, mainly because data integrity is lost over longer distances.

parallel folding Folding a sheet with all the folds parallel to each other. Contrast **right-angle folding**.

parallel interface An interface over which **parallel communication** is carried out. Also called a **Centronics interface**.

parallel port See **parallel communication**. Usually, 'parallel port' describes the physical connection on a computer, most frequently used for connecting printers.

parallel transmission Data communications method where each bit in the computer byte travels in parallel with its fellows and bytes arrive intact. (Contrast **serial transmission**.) Widely used for transmission to printers. (See also **Centronics interface**.)

parameter A variable set to a constant value for a specific operation.

PARC See **Xerox PARC**.

parchment The skin of a sheep or goat which was soaked in lime and scraped to make it smooth for use as a writing or painting surface in the Middle Ages. Also refers to a high-grade, thick, cream-coloured paper, made to resemble old parchment.

parchmentise To treat paper to make it **translucent** and waterproof, like **parchment**.

parenthesis A round bracket.

parity The general meaning is equivalence. In computing and communications parity usually means the number of 1s, as opposed to 0s, in a **byte** or **word**. A redundant parity bit is added to each byte and this is set to make the number of 1 bits in the byte even (for even parity) or odd (for odd parity). Parity bits are a basic form of **error detection**, but will detect only single bit errors because, if an even number of the bits are incorrect, then the parity bit will not show the error. Also, unlike more complex **error detection and correction** systems, it is impossible to tell which bit is wrong. (See also **checksum**.)

parity bit A check bit added to a series of binary digits to make the total odd or even according to the logic of the system.

parity error An error discovered by checking the **parity**.

parser An algorithm or program which is used to check the syntactic structure of a file or **structured document**. An **SGML**, e.g., parser checks that a **document instance** (i.e. a document coded in SGML) corresponds to the specified **Document Type Definition** and will report any errors. SGML parsers are often integrated with editing programs, so that documents can be parsed as they are created or edited.

part-mechanical paper Paper containing up to 50% of mechanical pulp with the balance chemical pulp. Compare **mechanical paper**, **woodfree paper**.

part-title The title of a section of a book on the recto page, see also **half-title**.

partwork Publication issued in a number of parts which can be purchased separately and which then combine to make up the whole.

pass 1. One run through a printing press. 2. An operation that realises the completion of a job from input through processing to output.

pass date See **copy date**.

pass for press Authorise the final form of a publication for printing.

passive matrix A design of **liquid crystal display**.

pass-on rate Estimated number of readers of a publication per copy sold.

password A secret (or private) arbitrary string of characters which has to be typed into a computer in order to allow access to a system or a particular program. Normally it is not displayed on the screen, so that it remains private.

paste To insert text or graphics from the **clipboard** into an open document.

pasteboard 1. Board made from several laminations of thinner sheets. Also known as pasted board. Contrast **homogenous board**. 2. In DTP programs, the area which surrounds the page display in a **publication window**.

paste drier Type of drier used in inks.

pasted unlined chipboard See **unlined chipboard**.

paster Rotary printing press device that changes the reel of paper automatically as required.

paste-up Dummy or artwork comprising all the elements pasted into position.

patch Sub routine inserted into a program after writing.

patch corrections Small patches of corrected typesetting which are intended for pasting over the original (wrong) text.

patching Pasting corrections into film or artwork.

patching-up Letterpress packing during make-ready.

patent base Base on which electrotypes are mounted.

path The explicitly routed, node-by-node, **Internet address** or the link between two machines. (See also **bang path**.) Path is also used in computer operating systems to specify the order in which directories should be accessed when a program (or executable file) is called.

PBA Periodicals Barcoding Association.

PBEM See **play by electronic mail**.

PBM See **play by electronic mail**.

PBX See **private (automatic) branch exchange**.

PC Personal computer. Microcomputer for home or office use.

PC/NFS A version of **NFS** that will allow PCs to connect over an **Ethernet** to a **Unix** system

PC-DOS Version of Microsoft's Disk Operating system specific to the IBM PC. Slight, mainly insignificant, variations from **MS-DOS**.

PCI See **Peripheral Component Interconnect**.

PCL See **Printer Command Language**.

PCM See **pulse code modulation**.

PCMCIA See **Personal Computer Memory Card International Association**.

PCN See **personal communication network**.

PCS See **personal communication services**.

pcx A widely used **bitmap graphics** format, originally developed for the program PC Paintbrush by Z-Soft. The filename extension is '.pcx'.

PD See **public domain**.

PDA See **personal digital assistant**.

pdf See **portable document format**.

PDH See **plesiochronous digital hierarchy**.

PDL See **page description language**.

PDS Public domain software. See **public domain**.

PDU See **protocol data unit**.

PE Printer's error. Normally a literal in typesetting.

PeaceNet A **network** concerned with issues of peace and social justice, including human rights, disarmament and international relations. (See also **Institute for Global Communications**.)

pearl Old type size, similar to 5pt.

pebble finish Textured surface on paper, added after making or sometimes after printing.

pebbling Embossing paper after printing with a pebbled pattern.

peculiars Special characters outside a normal font range.

peer A communications unit (hardware or software) on the same **protocol layer** of a network as another.

peer-to-peer Network arrangement in which each computer has equal power: any can hold applications and data and control network traffic, as distinct from the more common **client-server** architecture.

peer-to-peer network A group of computers, usually PCs, connected with network cards and cable. Each workstation is as important as its **peers**, acting both as **client** and **server**. With appropriate software, it is possible for each computer to see the disk drives of every computer as a local drive. There is no separate **file server**.

PEIPA See **Pilot European Image Processing Archive**.

pel See **pixel**.

PEM See **Privacy Enhanced Mail**.

penetration One of the ways in which inks dry. (See also **absorption**.)

pen name Name adopted by authors other than their own.

pen ruling Method of printing ruled sheets with a set of pens, under which the sheet travels.

Pentium A series of chips developed by **Intel**, widely used in PCs, especially those handling **multimedia**.

Pentium II Processor chip launched by Intel providing processing speeds of 233MHz and 266MHz and using **RISC** technology.

percentage dot area The percentage of a halftone that is black as opposed to white.

perfect binding Adhesive binding widely used on paperbacks. Glue is applied to the roughened back edges of sections to hold them to the cover and each other. Also called **adhesive binding**, **cut-back binding**, **thermoplastic binding**, **threadless binding**.

perfect bound Book that has **perfect binding**, in which leaves are attached to the spine with glue that does not dry out completely, rather than by sewing.

perfecting Printing both sides of a sheet at one pass. Such a press is called a **perfector**.

perfector Printing machine that prints both sides of a sheet of paper concurrently.

perforate To make a row of small holes in, e.g., paper so that a section may be torn off easily.

perforated tape See **paper tape**.

perforating Punching a series of holes in paper, either as a coding process or to facilitate tearing off a section.

perforating rules Letterpress steel rules which indent the sheet.

perforations The row of small holes in a sheet of paper which allows a designated section to be torn off easily.

perforator Keyboard which produces punched paper tape.

peripheral Computer input or output device which is not part of the main **CPU**, e.g. a printer.

Peripheral Component Interconnect (PCI) A **local bus** designed by **Intel**. It is more efficient than the **VESA** local bus, running at 33MHz. It is used on **Pentium**-based computers but is processor-independent.

PERL (Practical Extraction and Report Language) An interpreted computer language mainly used for processing and converting text and text strings. It is widely used in developing **World Wide Web** tools and applications.

permanence Paper's resistance to ageing.

permanent inks Inks which do not fade. Also, **lightfast inks**.

permanent paper Paper which is acid-free and made to stringent conditions for archival purposes. The accepted standard for manufacture is laid out in American standard ANSI Z39 1984 and specifies neutral pH, alkaline reserve, chemical furnish, and specified tear resistance and fold endurance.

permissions 1. Permission given to a publisher for him to reproduce material which is someone else's copyright. Normally the subject of a fee. 2. Authorisation to read or write a file or to execute a program. Forms an integral part of the **Unix** operating system but, as Unix is the operating system used by most **servers** on the **Internet**, will be encountered by anyone using utilities such as **ftp** and **telnet**.

peroxide bleaching The bleaching of woodpulp using hydrogen peroxide. More environment friendly than **chlorine bleaching** which it is steadily supplanting.

personalcast See **narrowcast**.

personal communication network (PCN) The communications network based on cellular and fixed telephone networks. (Called **PCS**, **personal communication services**, in the US.)

personal communication services (PCS) The US term for **personal communication network**.

Personal Computer Memory Card International Association (PCMCIA) A group of manufacturers which developed the cards used for peripherals in (mainly) portable/notebook computers. These cards are described as PCMCIA cards and include memory circuits, modems, network adapters and even disk drives.

personal digital assistant (PDA) A small, handheld computer. Many, including the Apple **Newton**, will now take handwriting input. The original idea was that eventually PDAs would become multi-functional, acting as telephones, faxes and remote terminals to other systems, as well as providing local services, such as a diary, scheduler etc. **BT** has already produced a prototype which straps to the wrist.

personal identification device (PID) A device, such as a magnetic card, which carries machine-readable identification, so as to provide authorisation for access to a computer system. PIDs are often used in conjunction with PIN numbers in, e.g., **automatic teller machines**. (See also **smartcard**.)

personal identification number (PIN) A **password** which is used for access, either physical via a digital door lock, or to a computer system. Often used in conjunction with a **PID**.

personal information manager (PIM) Software that includes a diary, address book etc., as well as various other programs, which may include small databases and basic spreadsheets (for expenses). May well be used on a **personal digital assistant** and potentially can be extended to include personal communications.

PET Polyethylene terephthalate: the most common plastic used for bottles, replacing glass.

petal printer See **daisywheel** printer.

PGP See **Pretty Good Privacy**.

pH Measurement of acidity or alkalinity.

phase alternate/alternating line (PAL) The television standard used in most European countries including the UK. France, which uses **SECAM**, is the principal exception. (See also **NTSC**.)

phase modulation An alternative term for **phase shift keying**.

phase shift keying (PSK) A **modulation** technique used to transmit digital information. The phase angle of the carrier wave is changed to represent the values of different bits (or groups of bits).

PHIGS Programmers' Hierarchical Interactive Graphics System. A three-dimensional **graphics** standard including language-independent functions for applications that produce computer-generated images on either **raster-** or **vector-graphic** output devices.

Philips Dutch electronics company. Has had great influence, with **Sony**, on the development and standardisation of the **CD**. In particular, developed **compact disc interactive** (**CD-i**) and, jointly with Kodak, the **Kodak Photo CD**.

phloroglucinol Chemical used on paper to test for **woodfree** or mechanical **furnish**. Phloroglucinol is applied to a paper: if the stain remains yellow

it is woodfree; if the stain turns red it contains **mechanical pulp**. The depth of colour of the red stain indicates the percentage of mechanical fibre present.

phoneme In speech recognition systems, a unit of sound. Spoken words are divided into phonemes in much the same way as written words are divided into characters.

PhoneNet A networking system connecting devices that are **AppleTalk**-compatible. It uses ordinary telephone cabling.

phonetic alphabet Alphabet with special phonetic characters which instruct the reader how to pronounce the words or phrases referenced.

phonetics Symbols designed to have a direct correspondence with sounds and used to indicate correct pronunciation.

Phong shading A method of shading or **rendering** used in **animation**. It is similar to **Gouraud** surface shading but instead of the colour being linearly interpolated between normals to adjacent polygons, the normals themselves are interpolated, so that there is one normal per **pixel** in the rendering window, from which the colour shades are calculated. The results are similar to Gouraud shading, except that any reflections on the surface of an object are sharper. Phong shading also allows detailed editing of the rendering.

Photo CD See **Kodak Photo CD**.

photocomposition Typesetting performed by a photosetter.

photocopy 1. Duplicate of a photograph. 2. Duplicate of a document etc. produced on a copying machine.

photoengraving Letterpress printing plate.

photogram Print made by exposure of object directly on photographic paper.

photogravure Gravure printing in which the cylinder image is photographically produced.

photolettering Method of setting display-sized type from photographic fonts.

photolithography Lithographic process with photographically produced plate image.

photomechanical Assembled type and/or illustrations as film ready for platemaking or further processing.

photomechanical composition Filmsetting, see **photocomposition**.

photomechanical transfer Abbreviated to **PMT**. Paper negative which produces a positive print by a process of chemical transfer. Extensively used for line artwork and screened prints.

photomontage Print comprising several other photographs.

Photon Proprietary name for a photosetter once widely used.

photonics The optical equivalent of electronics, i.e. transmission of information using photons rather than electrons, or light instead of electricity. Often used as an equivalent for **fibre optics**.

photopaque Opaquing fluid used to spot negatives.

photopolymer Plate coating which polymerises (solidifies) on exposure to strong light. Used for long runs.

photopolymer plate Letterpress printing plate made with **photopolymer** material and once used extensively for paperback printing.

photoprint Photographic print.

photoproof Phototypeset proof.

photo retouching The modification of **bitmap** images, using **image-editing software** or **paint programs**.

photosensitive Paper or film that reacts to light.

photosetting See **phototypesetting**.

Photoshop An image manipulation (**paint**) program from **Adobe**. Probably the most widely used program of its type in the graphic arts industry.

photostat Trade name for a photocopy.

phototypesetter Device for producing **high-resolution** text on photosensitive paper or film.

phototypesetting Setting type onto photographic paper or film. Phototypesetters employ various techniques to create the image, with computers assisting in the operation logic.

photounit The part of a phototypesetter in which the photographic image is created and exposed.

pH value Measure of acidity or alkalinity of a substance. 7 = neutral; less than 7 = progressive acidity; more than 7 = progressive alkalinity.

physical addressing The **Ethernet** low-level addressing scheme. Uses a 48-bit address in a single **packet**. (See also **Internet address**.)

physical layer The lowest layer in the **OSI seven-layer model**. It is concerned with the electrical and mechanical connections and **MAC**. It is used by the **datalink layer**. Typical physical layer protocols are **CSMA/CD** and **token ring**.

pic Abbreviation for picture. Plural: pix.

pica A typographical unit of measurement. Each pica is divided into 12 points. Although originally 6 picas equalled 0.996 of an inch, in the development of **PostScript** the point has been standardised so that there are 72 points per inch (thus on a screen with 72 **pixels per inch**, one pixel equals one point). Although most **desktop publishing**, **wordprocessor** and **graphics** programs allow size specification in inches or centimetres, typographic units are almost always another option. Typesize is always specified in

points. Pica was also used for typewriters with 10 characters per inch, as opposed to **elite**, which had 12 characters per inch. Pica and elite are sometimes used to describe typefaces, but really refer to pitch. (See also **font size.**)

pi characters Special characters outside the normal alphabetic range and not normally contained in a standard font, e.g. special maths symbols.

pick Fibres that have been pulled from the paper surface by smudges of ink on the printing plate.

pick-away See **pull-away**.

picking The lifting of areas of paper surface during printing which happens when ink tack is stronger than the surface strength.

PICS See **Platform for Internet Content Selection**.

PICT A **graphic file format** used on the Apple **Macintosh** for **draw-type** (**vector**) **graphics** files. The format uses **QuickDraw** to display images on-screen. PICT is not **PostScript**-compatible and the incompatibilities can lead to unpredictable results.

pictogram Pictorial symbol for a word, phrase or chart statistics.

picture element See **pixel**.

picture list List of illustrations intended for a book drawn up by a picture researcher.

Picture Quality Scale (PQS) A system in which image quality is rated on the basis of image features that are perceived by the human eye, rather than on the **signal-to-noise ratio**, in which quality is assessed **pixel** by pixel.

picture research The process of locating illustrations for a book from picture libraries, museums, galleries etc.

PID See **personal identification device**.

pie Jumbled type. Sometimes spelt pi.

piece fractions Fractions built up typographically out of more than one piece of type.

pie chart A graphic diagram representing a pie, the portions of which vary to indicate values or percentages.

pierced block Letterpress block with a hole cut through it to leave a large area of white on impression.

PIF Print image file: the printing format generated by the pdf **RIP** in Agfa's Apogee system.

piggyback form A continuous-stationery tractor-fed carrier designed to feed headed stationery and envelopes into a printer.

pigment The constituent of a printing ink that gives it its colour.

pigmented paper **Size-press coated** or **light-coated paper**.

pigment foil Foil which is of coloured pigment rather than imitation gold or silver.

PII See **Publisher Item Identifier**.

Pilot European Image Processing Archive (**PEIPA**) Archive at the University of Essex, UK, devoted to image processing, computer vision and computer graphics.

PIM See **personal information manager.**

PIN See **personal identification number**, **positive intrinsic negative**.

Pine (Program for Internet News & Email.) A menu-driven program, running under **Unix**, for reading, editing, sending, and managing electronic messages.

pin feed The method of feeding continuous stationery by lining up pins on the machines with a series of small holes in the paper.

pin feed platen A printer cylinder that feeds paper through the machine via sprocket holes.

PING See **Packet InterNet Groper**.

ping Alternative name for the **Portable Network Graphics** format.

pinholes 1. Small holes in paper surface. 2. Small holes in the dense black image area of a negative which let through the light, and need to be spotted out using an opaquing fluid.

Pink operating system An **object-oriented operating system** developed jointly by IBM and Apple. Also called **Taligent**.

pinless Refers to the elimination of the standard pin mechanisms which control paper webs going through folders.

pin register system The use of holes and pins to provide a system of aligning copy, film and plates in register. The Protocol system is one of the best known. Also **punch register system**.

pipelining Breaking information up into **packets** which traverse networks successively. This leads to fewer network delays.

pipe roller The roller on a web press that rotates freely.

Pipex A UK **Internet** provider to other commercial companies and public-sector organisations. Services include a commercial **internetworking** service and a **backbone** with multiple international links. Pipex uses re-sellers connected to its backbone to provide services to end-users.

piping Small ridges on the paper surface.

PIRA Printing Industries Research Association: British organisation that does research into printing techniques and offers advice and staff training to member companies.

pitch The horizontal spacing of printer characters. Common pitches are 10, 12, and 15 (10, 12 or 15 characters to the linear inch).

pitch edge The edge of the sheet which is fed into

a printing or folding machine. Also known as the **gripper edge** or **leading edge**.

pix Pictures, particularly photographs.

pixel An abbreviation for 'picture element' (or 'picture cell'). The smallest resolvable rectangular area that can be displayed on-screen or stored in memory. In a monochrome image the pixel may be just black or white but, if **grey scales** are used, then each pixel will have its own brightness, from 0 for black to the maximum value (255 for an 8-bit pixel) for white. On a colour monitor, each pixel is made up of a triple of red, green and blue phosphors (see **RGB**) and each is controlled by a number of bits (see **8-bit colour**, **24-bit colour**). This will affect the **palette** and will be related to the **screen** resolution. (Compare **voxel**.)

pixel depth The number of bits of information contained in each **pixel** of information scanned or displayed**.** Scanners will typically run 8 bits per pixel, resolving 256 shades of grey overall in the case of grey-scale images or 16.7 million shades of colour overall in the case of full-colour images. In the case of colour images, not all the shades may be capable of display on many monitors – see **CLUT**.

pixel editing The ability to examine and delete individual pixels, typically around the outside of images, in order to tidy up outlines.

pixels per inch Measurement of graphic resolution. See **pixel**.

pixmap (A contraction of 'pixel map'.) A three-dimensional array of bits that corresponds to a two-dimensional array of **pixels**, so that properties or attributes can be associated with specific pixels. Can be thought of as a stack of N **bitmaps**. Is used in **X windows** and **QuickDraw GX**. Improves handling of **icon** images and **animation**. A pixmap can be used only on the screen on which it was created.

PKUNZIP A program for decompressing files compressed with **PKZIP**.

PKZIP Probably the most widely used file compression and archiving utility on PCs. Also used for transferring files over the Internet. It uses a variation on the **sliding window compression** algorithm. (See also **PKUNZIP**, **gzip**.) There is also a related Windows version, **WinZip**.

PL/1 An early structured programming language, devised in the mid-1960s by IBM, and containing many of the features of FORTRAN, ALGOL and COBOL.

placeholder In **DTP**, a piece of specimen text placed in position on a page template for subsequent replacement by the real text. Used to establish the correct positioning for the real text and the correct typography for it.

plain 'Upright' letters as distinct from **italic**. Also called **roman** or **normal**.

plain ASCII Means just the real **ASCII** characters including none of the **extended ASCII** characters. See **flat ASCII**.

plaintext A message before **encryption** or after **decryption**, in its readable form, rather than its encrypted form. (Compare with **ciphertext**.)

planer Block of wood used to tap letterpress type into place on the surface of the stone.

planning All the processes involved in imposition, laying pages down onto foils in imposition sequence etc., ready for platemaking.

planographic printing Printing from a flat (as distinct from indented or relief) image, e.g. litho.

Plantin Widely used typeface designed by Christopher Plantin.

plastic plate Letterpress printing plate made of plastic.

plastic proof Proof such as **Cromalin**, **Matchprint** etc. made by exposing colour separations to a special material which images in the process colours corresponding to each separation. Also called a **dry proof**. As distinct from a **machine proof** (wet proof) which is made by printing from plates.

plastic wrapping Wrapping magazines in polythene, usually by machine.

plate 1. A one-piece printing surface. 2. Single leaf printed on separate paper and attached to a book.

plate cylinder The press cylinder which carries the plate.

plate finish High, calendered finish given to paper.

plate folder See **buckle folder**.

plate hooked and guarded Printed plate fixed into a book by extending the back margin under a signature and sewing it in.

platen Small letterpress printing machine on which the paper is pressed up against the vertically-held type-bed.

plate scanning Electronic scanning of a press-ready plate generating a magnetic file which can be used to set the printing machine ink keys for make-ready. (See also **CCI**.)

plate section Printed illustrations separated from the text matter and often on different paper.

platesetter Imaging unit on a **CTP** device which exposes the plate either by laser or by **thermal imaging** techniques.

plate size A size of negative or photographic print 8″ × 6″.

plates joined on the guard Two printed plates joined by adhesive at the back margin to form a four-page section.

platesunk Area of paper compressed (for display purposes) below the surrounding surface by a forcing plate.

platform A rather loose term, which means a combination of a particular computer and **operating system**.

Platform for Internet Content Selection (PICS) An infrastructure for associating labels (**metadata**) with **Internet** content. Originally designed to help parents and teachers control what children access on the Internet, it can also be used to cover other aspects, including privacy and **intellectual property rights**.

plating Fitting the plates to the plate cylinder. The plating sequence is the order in which they are affixed to the cylinder.

play by electronic mail (PBEM, PBM) A kind of game in which the players use **email** to communicate. A natural extension of 'play by mail' games in which the players use **snailmail**.

Playstation A games console produced by **Sony**.

plesiochronous Nearly synchronised. A term describing a communication system where transmitted signals have the same nominal digital rate, described as bit-synchronous, but are synchronised on different clocks of comparable accuracy and stability. Signals can be regarded as plesiochronous if significant events occur at nominally the same rate, with any variation in rate constrained within specified limits.

plesiochronous digital hierarchy (PDH) A transmission system for voice and data communication using **plesiochronous** synchronisation. PDH is the conventional **multiplexing** technology for networks, including **ISDN**, but is gradually being replaced by **SONET** and other **SDH** (**synchronous digital hierarchy**) schemes.

Plexus A **World Wide Web server**.

plot To draw an image or graph from variables or information supplied as a series of coordinates.

plotter Device which draws graphics from computer instructions using either laser techniques or mechanical techniques. See **imagesetter**.

plotter font See **outline font**.

plough Hand cutter used for cutting the edges of cased books.

PLR See **Public Lending Right**.

plucking See **picking**.

plug compatibility Pertaining to the manufacture of equipment that can be connected to that produced by other manufacturers via cable and plug. A form of connection commonly employed in IBM PC and compatible microcomputers.

plug-in A term describing **applications** associated with **Netscape Navigator** (although the term is now used more widely). Plug-ins are rather like **applets**, in that they enable certain types of file, e.g. **QuickDraw** movies, to be accessed from within Netscape Navigator.

ply Layer of paper or board joined to another for strength, thus: 2-ply, 3-ply etc.

PMS See **Pantone Matching System**.

PMT See **photomechanical transfer**.

PNG See **Portable Network Graphics**, **ping**.

POC See **point of contact**.

pocket portable A portable microcomputer developed from, and in general terms little more use than, pocket calculators.

POE See **PowerOpen Environment**.

point 1. A typographical unit of measure, one-twelfth of a pica. (See **pica** for more details.) 2. To locate a **pointing device** (usually the **cursor**, controlled by a **mouse**) on a screen item, such as a word, **menu** or **icon**, in a **graphical user interface** (**GUI**). See **point-and-click**.

point-and-click To **point** at something on the screen and then **click** a **mouse** button. This is a common way of selecting an item, such as an **icon**, a **menu** item or a word in a **graphical user interface** (**GUI**). However, it is a somewhat generic, not to say ambiguous, term, in that sometimes it means point-and-click (once), sometimes it means point and double-click, while occasionally it really means point and then hold the mouse button down.

PointCast A free service, based on **push technology** and providing personalised delivery of public information, such as news, weather, sport etc. Displays the information in a **screen saver**. A later rival service is **HeadLiner**. (See also **BackWeb**, **Castanet**, **Netscape Netcaster**.)

pointer 1. Arrow-shaped cursor, used in DTP systems. See **pointing device**. 2. Within certain computer programming languages, pointers are used to describe the location of data. (See also **hash table**.)

pointing device A device used to control the movement of a pointer or cursor on the screen, usually in a **graphical user interface** (**GUI**). The **mouse** is the most common pointing device.

pointlining **Beard** on typefounders' type.

point of contact (POC) An individual who is associated with a particular **Internet** entity (**network**, **domain**, **ASN** etc.).

point of presence (PoP) A site, run by an **Internet service provider**, which users can access via **modem** or **ISDN** connections. Such a site will usually have banks of modems and other telecommunications, together with access to an

Internet backbone. PoPs may be geographically distributed to improve access and keep telephone costs down. **Virtual PoP**s may also be accessible through third parties.

point of sale (POS) The place in a shop (or other business operation) where a sale is transacted, e.g. a supermarket checkout.

point-of-sale terminal (POS terminal) A computer terminal (often part of the checkout equipment, or cash register) used in shops to input and output data at the **point of sale**. At a POS terminal, information about items sold is input, often using a **barcode** or **Kimball tag**. Details of price etc. are then retrieved from a central computer and a fully itemised receipt is printed. The transaction may also provide input to a stock-control system and be used for aspects of market research. In addition, it may be possible for **electronic funds transfer** to be carried out from the POS terminal. See **EFTPOS**.

point system The main system of typographic measurement. 1pt = 0.351mm (0.013837″) (See also **Didot**, **pica**.)

point-to-point A circuit connecting two **nodes** directly.

Point-to-Point Protocol (PPP) The protocol which provides the **Internet** standard method for transmitting **IP packets** over **serial point-to-point** links. PPP was designed to be an improvement on **SLIP**, operating both over **asynchronous** connections and bit-oriented **synchronous** systems.

poke A high-level language instruction designed to place a value into a specific memory location.

Polite Agent A patented agent that is part of **BackWeb** and monitors online activity.

polling Checking every so often to see if an operation needs to be carried out, e.g. if there is email to be transferred from a server. The term is sometimes also used to include actually carrying out the operation itself.

polymerisation Drying of ink by ultraviolet curing.

polythene wrapping See **plastic wrapping**.

polyviny chloride See **PVC**.

polyvinyl alcohol (PVA) Synthetic cold-melt glue used in binding.

POP See **Post Office Protocol**.

POP3 Version 3 of the **Post Office Protocol**. Email software often provides this as an alternative to **SMTP**.

pop-up menu A **menu** that is brought to the screen by clicking on a word or **icon**, which can be anywhere on the screen, or even in some applications just by **clicking** the right **mouse** button.

pop-ups Cardboard cut-outs which stand erect.

porosity The degree to which a paper is porous to air. Very open, porous papers give difficulties with feeding.

port An input and/or output connection to or from a computer.

portability In software terms, the design of programs that allows them to be run on more than one computer system. An identical name is no guarantee of portability. **BASIC**, e.g., has many dialects, few of which are truly portable.

portable computer A computer which has all its constituent parts (processor, disk drives, keyboards, display and power source) in a single enclosure and weighs less than 30lbs.

portable document Any document – for instance, in **pdf format**, **SGML** or **HTML** – which can be transferred between systems.

portable document format (pdf) The format used by Adobe **Acrobat** files. Note that pdf files are not the only **portable documents**.

Portable Network Graphics (PNG) A graphics format for compressed, **lossless** bitmapped image files. Introduced to replace **GIF**, partly because of GIF's shortcomings, but also because Unisys is claiming copyright to **LZW compression**, which is the basis of GIF.

Portable Pixmap (PPM) A colour **image file format**. See **graphic file format**.

portal Web site 'gateway' for a generically grouped range of subjects, products or services. Many portals aim to provide 'one-stop shops' for their communities of users.

portrait The orientation of a picture, **screen** or page, such that its height is greater than its width. Most books and journals are portrait. (See also **landscape**, **aspect ratio**.)

POS See **point of sale**.

positive An image on film or paper in which the dark and light values are the same as the original, as distinct from **negative**.

positive intrinsic negative (PIN) A type of detector used in **fibre-optic** data links.

positive-working plates Litho plates which are exposed using positives.

POSIX An acronym loosely based on 'portable operating system interface for computing environments', the 'X' indicating the association with **Unix**. A set of **IEEE** standards that describes how applications can be written so that they can run unchanged on different systems. This was one approach to making interfaces to operating systems vendor-independent. Unix was the basis of POSIX but subsequently other vendors have changed their (proprietary) operating systems to become POSIX-compliant, which means that they provide an **open systems** interface and are

able to communicate with all other POSIX-compliant systems. **Open Systems Interconnect** (**OSI**) is a related approach to solving the same problem.

post To send an **email** message to a **mailing list** or a **newsgroup**. (Contrast with **mail**, which is generally used to mean sending a message to specific recipients.)

post, telephone and telegraph administration (PTT) A provider of a public telecommunications service, e.g. British Telecom in the UK and the Bell operating companies in the US. May also be involved with setting national standards and policy on telecommunications issues.

post-binding Type of binding that uses metal posts that pass through holes punched in the loose leaves.

poster A single sheet in a large size printed on one side only for public display.

posterisation A technique in which the number of colours or **grey levels** in a **bitmap image** is reduced, with the effect that there is no longer a continuous variation in the shades. **Paint** (**image editing**) **programs** often have this as an editing option.

poster paper One-sided glazed paper with rough underside suitable for pasting.

poster type See **woodtype**.

postmaster Both the person who supervises electronic mail at a particular site on the **Internet** and a special **email** address set up to which any messages regarding the email service at that site, e.g. problems or queries, should be sent. This allows messages to be **aliased** to the person who is acting as postmaster (not necessarily the same person all the time).

Post Office Protocol (POP) A protocol designed to allow single-user hosts to access mail from a server, either over a **network** or a **modem** link. There are three versions: POP, POP2 and POP3, and the latter two are not backwards compatible. These versions were developed to make the protocol available to a wider range of hosts. POP3 is often used as an alternative to **SMTP**.

PostScript Adobe System's proprietary page description language. Achieved prominence through its adoption by Apple, and by far the most widely used **PDL**.

PostScript clone A **raster image processor** (hardware or software) that will interpret **PostScript**, but is not using the true Adobe PostScript interpreter. These processors are also described as PostScript compatible. Such interpreters, e.g. **Ghostscript**, may either be available as **public domain** software or – even if they are commercial products, such as **Hyphen** – they may be cheaper (partly because there is no royalty payment to Adobe) or provide features not available in PostScript itself.

PostScript fonts See **outline fonts**, which form part of the **PostScript** language. It was in PostScript that such fonts were first widely used. There are two types of font, **Type 1** and **Type 3**. Type 1 fonts use **hinting** and Adobe's proprietary format, while for Type 3 fonts there is no hinting and the format is publicly available. Type 1 fonts can be interpreted by **Adobe Type Manager** (**ATM**) for display on-screen, while Type 3 cannot. Similar font technologies are **TrueType** and **QuickDraw GX**. A new font specification, **OpenType**, has recently been developed with the aim of removing font compatibility problems. (See also **Supra**.)

PostScript interpreter A piece of software specially written to convert PostScript files to a different code command set supported by a non-PostScript output device.

PostScript Level 2 An improved version of **PostScript** featuring better handling of colour **half-tone** screening and colour matching; compression for large files; and more facilities for handling Japanese Kanji and other Asian-language fonts. Not all PostScript printers will handle Level 2 and many users will not require most of the features. (See also **Supra**.)

PostScript Level 3 The latest version of **PostScript**, intended to provide enhanced image technology, faster page processing, closer integration with the **World Wide Web** and 'PlanetReady' printing to handle local language needs in different parts of the world.

pot The container for molten metal on a type-casting machine.

potboiler Work written to make the author a living, often of questionable merit.

POTS Plain old telephone system. See **public switched telephone network**.

powdering Build-up of paper dust on a blanket.

powderless etching Method of etching letterpress line plates in one step.

Power Macintosh See Apple Computer's **Macintosh**, based on the **PowerPC** chip. A significant difference from earlier Macintoshes is that, although it is designed to be used with the Macintosh operating system, System 7.5, other operating systems can also be used. (See also **PowerOpen Environment**.)

PowerOpen Environment (POE) A definition containing **API** and **ABI** specifications based on the architecture of the **PowerPC** processor. It is similar to **POSIX**, but goes further as it includes **binary** compatibility.

power pack The component which supplies (and controls) electrical current to other computer components.

PowerPC A **RISC** microprocessor jointly designed by Motorola, IBM and Apple Computer. Used in the **Power Macintosh** and various IBM models.

pp Pages.

PPA Periodical Publishers Association.

ppi **Pages per inch**. American method of specifying the thickness of paper. The European measuring system is the **micron** or **volume**.

PPM See **Portable Pixmap**.

ppm Pages per minute (laser printing). Standard rates vary from 8–20 ppm for most of the commonly used laser printers.

PPP See **Point-to-Point Protocol**.

PQS See **Picture Quality Scale**.

PR See **packet radio**.

precision cutting Sheeting paper to very fine tolerances to avoid further guillotining.

precision register quoins **Quoins** on which the degree of adjustment can be set precisely.

preface Formal statement before the text of a book by the author. As distinct from **foreword**.

preferred position Advertisement location which an advertiser would prefer for his copy if it is available.

prefix Word attached to the beginning of another word to adjust or qualify its meaning, e.g. ex-, non-.

preflighting or **preflight checking** The process of checking files using a software program in order to pre-empt problems at production stages further down the line. Typical checks and diagnostics include validating graphics file formats embedded in applications, fonts, page geometry, trapping characteristics, blends.

prekissing Paper and blanket making contact too early, resulting in a double impression.

prelims Abbreviation of preliminary matter. The matter in a book which precedes the text.

Premiere Desktop **video** editing software from Adobe.

premium book Book offered to purchasers of another book or series, or at a specially reduced price to attract people to subscribe to a book club.

prepress The entire range of operations which come before the **press** or printing stages in a publishing project. They include author costs, illustration costs, typesetting, origination and make-up, and typically finish at the stage of final files or films ready for platemaking.

prepress costs All the costs associated with bringing a job ready for press up to but not including printing the first copy. As distinct from **press costs**.

prepress proofs Proofs made by techniques other than printing.

pre-print Previously printed matter which is then re-wound ready for running in with another printed job. Often colour advertising intended for running in with black and white newspaper work.

preprinted Part of a job printed before the main run through the press.

presensitised plate Offset litho plate supplied by the manufacturer with a light-sensitive coating, e.g. an offset litho plate. Often shortened to 'presen plate'.

presentation graphics A program which can be used for slide presentations. Such presentations can now usually incorporate a range of **multimedia** features and can be presented electronically.

presentation layer The second-highest layer (layer 6) in the **ISO seven-layer model**. This layer is concerned with aspects such as text **compression** (**encryption**) and code or format conversion. Provides service to the **application layer** and accesses the features of the **session layer**.

Presentation Manager The **graphical user interface** (**GUI**) in IBM's **OS/2 operating system**.

press 1. Generic term for all periodicals. 2. Printing machine.

press after correction Instruction to proceed to printing after final corrections.

press costs The costs associated with printing and manufacturing a job from plates onwards. As distinct from **prepress costs**.

pressing Flattening folded sections before binding.

presspahn hollow A **hollow** made of a strip of brown reinforced card applied to the inside of the spine of a cased book. Less rigid than a board hollow, more durable than paper.

press proof Proof taken from the press after make-ready but before the full run.

press release News of an event sent to the press for publication.

press section In papermaking, the section of the paper machine where the web of paper is first pressed before it is passed on to the drying cylinders.

pressure-sensitive Adhesive when pressure is applied.

presswork The work or management of a printing press, also called 'machining'.

Prestel **Viewdata** service provided by **BT**, in which information is presented on a television screen but accessed via the telephone network.

Pretty Good Privacy (PGP) A high-security **RSA**-based **public-key encryption** application for

secure **email** communication, providing privacy and authentication. (See also **Privacy Enhanced Mail** (**PEM**).)

preventive maintenance A regular inspection, repair and replacement routine designed to reduce the risk of system failure.

preview screen A desktop publishing **VDU** which allows a piece of composed work to be viewed exactly as it will appear in print. See **soft typesetter**.

PRI See **ISDN primary rate interface**. (See also **basic rate ISDN** (**BRI**).)

primary rate interface (PRI) A type of **ISDN** connection, which in North America and Japan consists of 24×64 **kbps** channels (B – 'bearer' – channels) for speech or data, plus a 16 kbps channel (D – 'delta' – channel) used for signalling and control purposes, based on the **T-1** interface (an integrated total of 1.552 **Mbps**). Elsewhere, PRI usually has 30 B channels and 1 D channel, and is based on the **E-1** interface (an integrated total of nearly two Mbps). PRI is typically used for commercial connections.

primary rate ISDN See **primary rate interface**.

primary subtractive colours Yellow, magenta and cyan which, with black, make up the four **process colours**.

primer Print working which acts as a base or undercoat for a colour which will otherwise lack covering power, e.g. a metallic silver or gold ink.

PRIMIS A service set up by publisher McGraw-Hill as a form of **document delivery**, such that academics could make up customised textbooks from parts of books published by McGraw-Hill and collaborating publishers.

print 1. A photograph. 2. A common operating system command to print a specified file list.

print control character A non-printing character designed to perform an action such as line feed or carriage return.

print drum A rotating drum containing printable characters. See **drum printer**.

printed circuit board A plastic base with a copper coating onto which electronic components are attached. Unwanted areas of copper are removed by acid etching.

print engine In a laser printer, that mechanical part that performs the physical printing function. As distinct from the **RIP**.

printer A peripheral designed to produce a hard copy of text or simple graphics characters. Characters may be printed as fully-formed characters (see **daisywheel**, **drum printer**) or made up from a series of dots (see **dot matrix printer**, **inkjet printer**, **laser printer**).

printer's devil Apprentice in a printing shop.

printer's error See **PE**.

printer's flowers Ornaments in metal type or transfer lettering for use in printing.

printer's imprint Publisher's name and other relevant details usually printed inside a publication.

printer's pie Type that has become jumbled up and meaningless.

Printer Command Language (PCL) A **page description language** developed by Hewlett-Packard for its LaserJet and DeskJet printers. Early versions simply included a string of instructions, indicating what to put where and, e.g., were unable to handle **scalable fonts**, needing **bitmap fonts** for each size specified. The latest version, PCL Level 5, which first appeared in the LaserJet III, has many of the features of **PostScript**. Generally, PCL printers require less memory than PostScript printers and are therefore cheaper.

printer control characters Command characters in a **text** that send instructions to a printer.

printer driver Dedicated **software** that converts and formats the user's commands into a language that is compatible with the printer.

printer-plotter High-resolution printer that is capable of operating as a low-resolution plotter.

printer quality Quality rating of printed text produced by a particular printer.

printer ribbon Roll of inked material that produces print as it passes between printhead and paper.

printing cylinder See **plate cylinder**.

printing down Laying film over a light-sensitive plate or paper to produce an image.

printing history Details of a book's previous printings and editions, usually listed on the bibliographic page after the title page.

printing house A company that produces printed material.

printing ink Ink used in printing that is made from a mix of carbon and oil.

printings Papers suitable for printing.

printing sequence The order in which the four process colours are applied.

printmaking Making fine art reproductions of originals.

printout Copy printed out by a computer printer.

print server A **server** (or computer) that handles the printer access and buffering for a **network**.

print to paper Instruction to the printer to use all available paper for a job, rather than printing to a specific quantity of copies.

print wheel See **daisywheel**.

Privacy Enhanced Mail (PEM) **Internet email** which provides privacy, authentication and message integrity using various combinations

of **DES** and **RSA encryption** methods. (See also **Pretty Good Privacy** (**PGP**), **RIPEM**.)

private (automatic) branch exchange (PABX/PBX) A switching telephone exchange located within an organisation to connect users both internally and to the public telephone network.

private circuit Circuit limited to preselected users.

private key See **public-key encryption**.

private line Another term for a **dedicated circuit** or **line**.

process blue, **red**, **yellow** Used to indicate the cyan, magenta and yellow colours of the **four-colour process** inks.

process camera Camera designed for the various photographic processes involved in printing, as distinct from original photography.

process colour(**s**) The four colours **CMYK**, used in printing and the **colour separation** process. (See also **four-colour process**.)

process colour printing Printing of colour plates using four-colour plates.

process engraving Letterpress engraving.

process inks Cyan, magenta, yellow and black formulated as a set of four to print colour.

process lens Photographic lens designed for graphic arts work.

process plates Half-tone colour plates for four-colour process printing.

process set The four process inks.

process white Special white paint used to cover over unwanted block lines on artwork.

process work Four-colour printing.

Procomm A PC-based communications program used for accessing **bulletin boards**. There are various versions for both DOS and Windows.

Prodigy An online service developed in the US by IBM and Sears (an advertising company). Provides **electronic mail** and information, as well as shopping and travel arrangements. Includes commercials. Also acts as a host for **World Wide Web** pages, which can be accessed (and downloaded) in the usual way.

pro-forma invoice Invoice drawn up to show the value of goods, and needed either for documentation purposes or to obtain pre-payment.

program The complete set of instructions which control a computer in the performance of a task.

program counter The register that contains the address of the next program instruction to be executed.

program library A suite of general purpose computer programs held on backing store.

programmable Any device that can receive, store and act on a computer program.

programmer The person employed to write, develop or maintain computer programs.

programming A sequential list of instructions by which a computer performs its designated tasks. Programs may be written in one of many **high-level languages** or a **low-level language**. High-level languages are often suitable for amateur or hobby use while low-level languages would almost certainly only be used by professional programmers.

progressive proofs or **progs** Proofs of each plate in a colour set showing each colour alone and in combination with the others as a guide to colour matching, at the printing stage. (See also **bastard progressives**.)

progs Progressives, or **progressive proofs**.

Project Gutenberg A collection of electronic texts at the University of Illinois at Urbana-Champaign, US, available for wide distribution over the **Internet**. The first text online was the Declaration of Independence and it is hoped to have 10000 texts by the year 2001.

projection platemaking equipment Equipment such as the Rachwal or DaiNippon SAPP systems which make plates by exposing from 35mm or 70mm roll microfilms mounted in the head of computer-controlled step-and-repeat machines. The microfilm contains the pages of the job shot sequentially; the step-and-project machine is programmed to locate and expose each page in imposition order onto the plate.

PROLOG An acronym for PROgramming in LOGic languages. PROLOG has been developed for use in artificial intelligence applications and has been adopted by the Japanese as the main language for their fifth-generation computers.

PROM Programmable Read Only Memory. Stores programs which cannot be altered by the user. (See also **firmware**.)

PROM burner See **PROM programmer**.

promiscuous mode A communications mode in which all **packets** are accepted, irrespective of their actual destination addresses.

PROM progammer A device designed to write data to a **PROM** chip.

prompt A message, usually displayed but sometimes audible, requesting an action from a computer user.

proof A trial printed sheet or copy, made before the production run, for the purpose of checking.

proof copy Page proofs of a book bound in a paper cover and distributed for publicity purposes.

proof corrections Corrections made to the text, layout or illustrations on **proofs**.

proofing Process of producing **proofs** of a book so that the contents, text, design etc. can be checked for errors.

proofreader's marks Symbols used by a proof-

reader for marking corrections on proofs. See Appendix.

proofreading Post-typesetting stage in the production process where the author and a reader check the proofs for errors, omissions etc.

proofs Pages of typeset text, returned to a publisher for correction by, e.g., author and proofreader.

propagation delay The time taken for a signal to travel from one end of a transmission channel to the other. Within optical fibres, signals travel at the speed of light, while the propagation speed in electrical cables is half to three-quarters of that. (Compare with **latency**.)

proportional fonts See **proportional spacing**.

proportional spacing Spacing letters in text so that each takes up its own width, rather than all taking the same width (see **monospaced** fonts). Thus 'm' and 'w' take up a comparatively wide space and 'i' a narrow one. Virtually all material is now set in proportionally spaced fonts, whether for printing or display on the screen. In one sense, monospaced fonts can now be seen as a transient development, forced on users by the limitations of the mechanical typewriter; handwriting is, after all, proportionally spaced.

proprietary software Manufacturers' off-the-shelf software packages

Prospero A distributed **file** system containing virtual files on a central **host**, each one representing an **Internet** resource. For example, a file may represent a **telnet** session to a particular host or a file which is available using **ftp**, together with the information needed to obtain that file. Prospero can thus be used to integrate **Internet** information services, including **Gopher**, WAIS, Archie, and the **World Wide Web**.

protective ground Electrical connection between two electronic devices designed to prevent damage to either. Protective ground is typically provided in an RS-232-C interface via pin 1. Compare **signal ground**.

protocol In general, an agreed set of rules on how something should be carried out. In communications and networks, these govern areas such as data format, timing, sequencing, access and error control and syntax of messages. Different layers of the **OSI seven-layer model** use different protocols.

protocol converter A program or hardware device to translate between different **protocols** concerned with the same function.

protocol data unit (PDU) A **packet** of data which is passed across a **network** at a specific layer of the **OSI seven-layer model** using a specific **protocol**.

protocol stack A set of **protocols** which work together on a layered model to provide a set of communications functions, so that each **layer** uses the protocols of the layer below it to provide a service to the layer above. The **OSI seven-layer model** provides a standard framework within which such a protocol stack can be defined.

prove To pull a proof.

provincial press Newspapers circulating in regional areas.

proximity search A **searching** technique in which, e.g., one is able to search for the occurrence of a group of characters within, say, 20 words of another group or groups.

proxy Using one **Internet address** name to mean another. This is usually done by a **host** answering **Address Resolution Protocol** (**ARP**) requests intended for another host and rerouting **packets** to the actual destination. A **listserv** is a kind of proxy.

proxy gateway See **proxy server**.

proxy server A server which controls indirect access to an Internet server, so that external systems excluded for security reasons by a **firewall** can communicate (also described as a **proxy gateway**). The term is also used, particularly on the **World Wide Web**, to describe a server that holds a **cache** of files or documents, in order that they can be accessed more quickly or easily. Any documents requested which it does not hold it will obtain from the remote server and save a copy so that when the user next requests that document it will be available more quickly.

PS, ps Both an abbreviation for **PostScript** and the file extension which is often used for PostScript files.

PS/2 IBM's Personal System /2 line of computers.

PSDN See **public switched data network**.

PSE Paper surface efficiency.

PSK See **phase shift keying**.

PSN See **packet switch node**.

PSS See **Packet SwitchStream**.

PSTN See **public switched telephone network**.

psychrometer Instrument used for determining **relative humidity** (**RH**).

PT Precision trimmed (paper).

PTR Acronym for paper tape reader.

PTT See **post, telephone and telegraph administration**.

publication The printing and issuing of a book, newspaper etc. for public readership.

publication window In **DTP**, the basic window which appears when a document is being worked on. It comprises one or two pages, the **pasteboard**, page **icons**, the **pointer**, **scroll bars**, **title bar**, **menu bar** etc.

public carrier A provider of a public telecommunications service. See **PTT**.

public domain (PD) If **intellectual property** (books, computer programs, images etc.) is in the public domain, it is available to anyone without charge. Most commonly, this applies to public domain software, which is usually software developed on behalf of the US government and which by law has to be available in this way. It is important to distinguish such software from **shareware**, which is not free, or at least free only for evaluation.

public key See **public-key encryption**.

public-key cryptography See **public-key encryption**.

public-key encryption (Or public-key cryptography.) An **encryption** scheme in which each user has a pair of keys, called the public key (which can be generally known) and the **private key** (that is, of course, kept secret). A message is encrypted using the public key of the person to whom the message is to be sent; this can then be decrypted only using the recipient's private key. This means that secret information never has to be transmitted over publicly accessible networks or other communications media, as only the public key is ever communicated. Public-key cryptography is used both for encryption and for authentication, often of **digital signatures**. **RSA** is probably the best known and most widely used public-key encryption system.

Public Lending Right PLR: an author's right to receive a fee from a library commensurate with the rate of borrowing of a book written by that author by library members.

public library system System of public libraries open to the public throughout the country.

public switched data network (PSDN) Usually a digital network (and of a higher **bandwidth** than the **PSTN**), particularly suitable for data communications. Generally operated by a **PTT**.

public switched telephone network (PSTN) A public telephone network or the collection of them around the world, operated by **PTT**s. Sometimes called **POTS** in contrast to **PSDN**.

publish To prepare, print and distribute a book, magazine etc.

publisher Company that prepares and publishes books, **software** etc. for general distribution and sale.

publisher's binding A binding style where an edition of a book is cased with a plain cloth binding.

publisher's list List of books that a publisher is currently selling, including new titles and **backlist**.

publisher's list price The price of a book as reported in a **publisher's list**.

publisher's reader Person employed by a publisher to read and report on submitted manuscripts.

publisher's statement Publisher's authorised notice of circulation and distribution statistics.

Publisher Item Identifier (PII) An extension of the **ISBN** and **ISSN** system, introduced by a group of leading US academic (scientific) journal publishers so as to provide a way of identifying individual items, such as articles, within both books and journals. It also provides a unified identification system for books and journals.

publishing The business of preparing, printing and distributing books, magazines etc. and selling them to the public.

puck A pointing device with functions similar to cursor keys or a mouse. It does not generally have the same degree of freedom of movement as a mouse but rather works within a tray-like enclosure.

pull 1. A **proof**. 2. A single print for subsequent photo-litho reproduction, aka a **repro pull**.

pull-away A section which contains a number of blank pages (typically 4pp) either in the middle or at front and back, which are to be removed prior to binding. Also, **pick-away**.

pull down menus Also referred to as **pop-up menus**. Options are revealed only when a menu type is accessed, usually by a pointing and dragging action with a **mouse**. Once the option has been selected the menu disappears leaving the screen free.

pulling Resistance between paper and printing surface.

pull-out Part of a publication which can be removed from the binding and used separately.

pulp The raw suspension of woodfibre, treated either chemically or mechanically, in water. **Chemical pulp** contains many fewer impurities than **mechanical pulp**.

pulp board A homogenous board manufactured to its full thickness on the papermaking machine.

pulping Recycling or destroying books etc. that have been withdrawn from the market.

pulpwood Wood for the manufacture of wood pulp.

pulse code modulation (PCM) A method by which an **analogue** signal is represented as **digital** data. The analogue data is sampled at regular intervals (a fixed frequency), and the sampled values converted into binary codes for transmission using a digital link.

punch binding See **burst binding**.

punched card Card punched with a pattern of holes encoding data for subsequent reading.

punched card reader Device that reads data from a punched card and translates it into a form that can be recognised by a computer.

punched tape See **paper tape**.

punch register system Device which punches registered holes in sets of films or **plates** for positioning purposes. Also, **pin register system**.

pure woodfree See **woodfree**.

push technology The **download** of information by information providers, either over the **Internet** or using **broadcast** techniques, on the basis of information profiles supplied by users, in contrast to the pull technology of the **World Wide Web**, in which information is downloaded by users when they specify a **URL**.

PVA Polyvinyl alcohol, a water-based cold-melt emulsion adhesive which is flexible when dry and is used particularly in glueing the spines of cased books and in perfect binding. (See also **two-shot binding**.)

PVC Polyvinyl chloride. Applied as a coating or impregnated into base paper for durability.

Q

QA See **quality assurance**.

QAM See **quadrature amplitude modulation**.

QC See **quality control**.

Q-coder The coding scheme, patented by IBM, which is used in **JBIG** compression. Bi-level **pixels** are coded as symbols depending on the probability of occurrence of these symbols in different contexts. Has similarities with **Huffman coding**. The less probable a symbol, the more bits will be assigned to it. The Q-coder can also assign one output code bit to more than one input symbol, which the Huffman coder cannot.

quad 1. Paper terminology for a sheet four times the size of the traditional broadside sheet, e.g. Quad Demy, 890× 1130mm. 2. Letterpress spacing material used to fill out lines of type.

quadding Addition of spaces to fill out a line of text.

quad left, **right** or **centre** To set lines flush left, right or centre.

quad press Printing press designed for a maximum sheet approximately 1010×1400mm (40×56″), i.e. a **quad** sheet.

quadrant balance or **scale** Device for measuring grammage of paper.

quadrat A piece of blank metal type for creating space between characters.

quadrature amplitude modulation (QAM) A form of transmission in which **digital** data is encoded in an **analogue** signal by a combination of **amplitude modulation** and **phase modulation**. This is used when the modem bandwidth is 9600 bps or higher.

quadrille Grid paper.

quad royal Sheet of paper measuring 50×40″.

quadtone The use of four (possibly **Pantone**) colours in combination to produce a particular effect in printing. May be used to produce a finer **grey-scale** effect. (See also **duotone**.)

qualified 1. Reader who meets criteria necessary to receive free subscription of periodical. 2. Research subject which meets the criteria being tested by the project.

quality 1. The whole set of features of a product or service which relates to its being able to satisfy the needs of the end-user. 2. In paper, the brand or type of paper.

quality assurance Abbreviated **QA**. Umbrella term for all activities associated with the creation and maintenance of a **quality system** within a company.

quality circles Otherwise called 'quality control circles'. Small groups of company workers called to meet regularly to examine working practices, bring forward suggestions for improvement, and discuss solutions to quality problems.

quality control System for checking quality of products during or after manufacture.

quality system Comprehensive, company-wide set of practices adopted in a firm to monitor the quality of its products and the effectiveness of its internal and external operations.

QuarkImmedia Multimedia authoring and viewing tool based on **QuarkXPress**.

QuarkXPress Probably the leading **DTP** or **page layout program**, at least in the graphic arts industry. Originally written for the **Macintosh**, but now also runs under Microsoft **Windows**.

quarter-bound Binding with spine in one material (e.g. leather) and sides in another (e.g. cloth). Compare **full-bound**, **half-bound**, **three-quarter bound**.

quarter tone Illustration made by retouching a coarse-screen half-tone print to emphasise the shadows by making them solid and the highlights by making them white, following which the illustration is reshot as fine line.

quarto A page one-quarter of the traditional broadside sheet size, e.g. Crown Quarto.

QuickDraw The **object**-based graphics display system used by the Apple **Macintosh**.

QuickDraw controls how text and images are drawn on the screen. (See also **PICT images**.) QuickDraw can also be used to control printers and, although text will be indistinguishable from that on a **PostScript** printer if **Adobe Type Manager** or **TrueType** is used, images may be of lower quality.

QuickDraw GX An **imaging model** that works alongside **QuickDraw** but controls the Mac's video and print output directly. There are three modules: typography, graphics and printing. The former is enhanced by a **font** technology, **TrueType GX**. The graphics module is **object-oriented**, providing full control over graphic objects, including colour, while the printing module ensures that the colours are reproduced accurately.

quick-setting ink Ink that has been specially treated to set rapidly.

QuickTime A general **multimedia**-handling utility developed by Apple, initially for the **Macintosh,** but now also available for **Windows**. QuickTime makes it possible to display 'movies' and animated sequences with synchronised high-quality sound. It operates as a software extension (or **plug-in**), so that multimedia can be embedded in other documents. QuickTime includes its own **video compression** technology.

quire 1. One-twentieth of a ream (25 sheets). 2. A section or signature.

quirewise binding See **saddle-stitching**.

quoin A wedge or expanding device used to lock up letterpress chases.

quotation marks (or **quotes**) Either single or double inverted commas, used to mark the start and finish of dialogue or other quoted passage.

q.v. Abbreviation for the Latin *quod vide*, meaning 'which see', used for indicating a **cross-reference**.

qwerty Standard typewriter keyboard layout, qwerty being the arrangement of keys on the top left-hand row of the keyboard.

R

RACE (Research into Advanced Communication Technologies in Europe.) A European Commission **R&D** programme.

rack board Display board or device designed to be mounted on a rack.

radiation drying The drying ink by **ultraviolet** and **infra-red** radiation.

radio frequency (rf) Frequencies (of electromagnetic radiation) above about 300Hz, at which electromagnetic waves can be transmitted.

rag Material sometimes used in the manufacture of expensive paper.

ragged Text layout that is not justified. Most text on-screen is ragged right, i.e. the left-hand margin is aligned while the right-hand margin is not. Ragged left and ragged centre (ragged on both margins) are also used in books, but only usually as a design feature.

ragged right Text with irregular line lengths, i.e. with an even left margin but an uneven right margin.

rag paper Paper made from **stock** containing a substantial percentage of **rag**.

RAID Redundant arrays of inexpensive/independent disks. An approach to storing large amounts of data in a secure fashion. RAID is increasingly used in **multimedia** installations, running either under **Unix** or on a **network** with the **NetWare** network operating system.

rail Part of a linecasting machine. Terms 'upper rail' and 'lower rail' were sometimes used by extension to denote shift and unshift.

Rainbow Document Type Definition An **SGML Document Type Definition** (**DTD**) that specifies a document in terms of its appearance, in some respects similarly to **HTML**. Descriptions of documents in terms of this DTD can be used as an intermediate stage in converting **word-processor** documents to SGML.

rainbow series A series of technical manuals, each of which has a different coloured cover. Originally used to describe the US government's security series, e.g. the **Orange Book**. The **PostScript** 'Cookbooks' (**Red Book**, **Green Book**, **Blue Book**, **White Book**) have also been described in this way, so what is meant depends on the applications with which the user is familiar.

raised printing See **thermographic printing**.

RAM Abbreviation for random-access memory.

RAM disk Not a disk at all, but a large area of random-access memory (RAM) in a computer which has been allocated to hold some or all of the contents of a floppy or hard disk, enabling far faster read—write operations. At the end of a session the contents of a RAM disk are rewritten back to floppy or hard disk.

random-access memory (RAM) Random access memory, most frequently described as RAM, is the temporary, interactive, area of memory in a computer in which programs work and manipulate the data. Data in RAM is lost when the

computer is switched off unless it is first saved to disk. Compare **ROM**.

random access Method of directly accessing a specific address on a computer file without the need for a sequential process.

range Align (type etc.).

rapid access processing Method of quick film and paper processing using heated chemicals. Rapid access paper is the photographic material used. (See also **stabilisation paper**.)

RARE See **Réseaux Associés pour la Recherche Européenne**.

RARP See **Reverse Address Resolution Protocol**.

RA sizes Sizes of stock sheets of printing paper that are slightly larger than the equivalent A sizes (see *Appendix* for paper sizes.

raster 1. In laser setting, the underlying pattern or 'net' of lines which represents the structure over which a typeset image is formed by the selective exposure of dots in a series of horizontal, line-by-line, sweeps. 2. The horizontal pattern of lines on a video display or television that makes up the picture. Each line is made up of a series of dots or **pixels**. Also used generally (as the equivalent of **bitmap**) to describe a similar pattern, as in **raster graphics** and **raster fonts**.

raster data Data held in raster form. Contrast **vector data**.

raster font See **bitmap font**.

raster graphics The same as **bitmap graphics**, in which an image is made up of an array of **bits** (or **pixels**). (Compare with **vector graphics**.)

raster image processor (RIP) Either a program or a piece of hardware that converts a file held in a **page description language**, usually **PostScript** and possibly containing **vector graphics**, to a **raster** or **bitmap** image for output on a **page printer** or **imagesetter** or on screen. The **RIP** will create a bitmap at the correct resolution for the output device, so that the page description file can be **resolution** independent. **Adobe Type Manager** rasterises PostScript fonts so that they can be displayed or printed on non-PostScript devices.

rasterise Turn into a **raster** (bitmap) version by scanning or digitally processing.

raster scan The technique of plotting an image by the selective exposure of dots, line by line, in a series of horizontal sweeps following a raster pattern or grid.

rate adaptation Can either refer to conversion in a **terminal adaptor** between the data rate at a **V.24** serial interface (with a probable maximum of 28 800 bps) and the 64 kbps of **ISDN**, or mean conversion between the European (64 kbps) and the North American (56 kbps) versions of ISDN. Which is meant will depend on the context.

rate card Leaflet or kit showing costs of advertisement space in a publication.

rattle Noise made by paper when it is handled, which indicates the degree of stiffness.

raw data Data before processing or preparation.

raw stock Base paper before coating.

ray tracing A method of creating realistic images, in which the paths taken by rays of light are traced, from an observer's eye, through a point in the image plane to an object. Each object can then be considered as a collection of differently shaped surfaces, each with properties such as colour, reflectance, transmittance and texture.

r&b or **r&j** See **rounding and backing** and **rounding and jointing**.

rcp Remote copy. A **Unix** utility for copying files over the **Ethernet**. Similar to **ftp**.

R&D Abbreviation for research and development.

read/write head Device in a disk drive that reads data on a disk or transfers additional data to it.

reader 1. Person who checks proofs for accuracy. 2. Device which can 'read' from magnetic media or, in the case of **OCR**, from typescript.

reader's proof First typeset proof used by the printer's reader.

readership Number of readers of a publication, as distinct from the number of copies sold. See **pass-on rate**.

read-only memory (**ROM**) Computer memory supplied as a chip inside the computer and which cannot be altered by the user. ROM typically contains the basic system programs, resident in the computer. Compare **random access memory (RAM)**, which is the dynamic part of the computer's memory.

read–write head The component which reads from and writes to a magnetic disk or tape.

ready state An indication in a **DTE/DCE** interface that the DTE device is ready to receive incoming data and the DCE device is ready to accept a request to send data.

Realaudio A program, implemented as a client-server architecture, for playing **audio** over the **Internet**. Sound is compressed into Realaudio files by an encoder which is part of the Realaudio server. The client, a Web **browser plug-in** or add-on (and the latest browsers have the facility built in), decompresses the stream of data sent from the server, which is then output using the sound facilities of the computer. A 28.8 kbps **modem** is required for music-quality sound.

real time Method of computing in which operations are performed on data simultaneously with input and output.

ream 500 sheets of paper.

ream-wrapped Sheets wrapped in lots of 500.

rebind Binding a set of stored sheets, set aside after the first binding.

recall Calling a computer file from backing store into memory.

recognition memory Read Only Memory (**ROM**) in an optical character reader holding the pattern characteristics of a particular font. See **optical character recognition**.

reconstituted leather Leather made from pulp of different leather scraps.

record A discrete block of computer data, typically consisting of a number of **fields**.

recording unit See **imagesetter**.

record locking Software which prevents more than one network user editing a database record at the same time.

Recover An operating system command used to recover damaged or deleted disk files. When a file is deleted, only its reference in the disk index is removed. Provided the user has not attempted to write new data to the disk, the Recover command may be used to resurrect such files.

recovered fibres Fibres from waste paper as opposed to virgin pulp.

recto A right-hand page.

recycled paper Paper for which the majority furnish is consumer waste paper of one sort or another, either printed or unprinted. Paper made mainly from **mill waste** does not fall under this definition although it is sometimes rather misleadingly termed recycled too.

Red Book See **rainbow series**.

redlining Facility available to use with some wordprocessing packages which shows where alterations have been made to a document.

Red Sage A joint project between the University of California, San Francisco, **AT&T** Bell Laboratories and a number of publishers of biomedical journals. Provides online access to scanned images of biomedical journals via the **RightPages** server software developed by AT&T Bell Laboratories.

reducers Printing ink additives.

redundancy Inclusion of duplicate information. This is often used as a check, particularly in transferring information between systems, so that an additional check digit or bit is included. (See also **validation**.)

reel Roll of paper. Also, **web**.

reel-stand The unit housing a reel of paper at the feed end of a web-offset press. Multi-colour, multi-effect, web-offset machines may have up to three reel-stands feeding paper simultaneously. The printed **webs** are brought together in the folder, and are folded together.

reel-up The reeling section of a paper machine.

re-etch To deepen the image on a plate.

referee Person requested to give a report on another's character, aptitude, suitability etc. for a job.

reference Direction to a page or a publication where information may be found. Often contained in separate list in set style.

reference concrete syntax The syntax, i.e. the delimiters, notation etc., that is defined in the **SGML** standard. In other words, this is the form of coding that the standard recommends, although it can be changed in the **SGML declaration**.

reference mark Star-shaped symbol (*) that indicates that the reader should refer to a footnote.

refiner mechanical pulp (RMP) Pulp made by passing wood chips through a refiner. Midway in quality between **stone groundwood mechanical pulp** (**SGW**) and **thermomechanical pulp** (**TMP**).

refining The second main stage of papermaking after dry pulp has been mixed in a **hydrapulper** at the first stage. The stock from the hydrapulper is further refined in a **cone refiner** and, after cleaning, is ready for pumping to the paper machine. Also known as **beating**.

reflection copy Copy viewed by its reflected light, e.g. a photograph, as distinct from **transmission copy**, which is viewed by transmitted light. Also known as 'reflective copy', and 'reflex copy'.

reformatting Setting new typographical parameters for a previously set piece of copy.

refresh rate Rate at which an apparently continuously displayed image is flashed on a **VDT**, e.g. 60 times a second etc.

refusal When one ink film will not print on another.

regional network See **mid-level network**.

register 1. Positioning of colours accurately to form a composite image. 2. Storage location in computer memory.

register marks Marks in the same relative position on films or plates to enable correct positioning to be achieved.

register pins Pins which locate in holes made by a punch in a **punch register system**.

register punch See **punch register system**.

registration The alignment of the different colours in the printing of coloured material; see

CMYK. Registration marks are printed for alignment purposes outside the area of the finished publication. Most **DTP** and **page layout programs** have inclusion of registration marks as an option on their print menus.

reglet Narrow strip of wood or metal used to make spaces between lines of type.

reimposition Changing the layout of an imposition due to changes in size, number or a different folding machine.

reinforced binding Binding that is strengthened at the joints to allow for hard use or for a particularly heavy book.

rekey To re-enter data by means of a keyboard.

relational database A type of **database** in which entries are structured in defined **fields**, usually of a fixed length. By using tables which relate to one another by having a field in common, most information need only be stored once. Thus, e.g., a **database** may include a table containing spare parts and another containing customer details. Ordering a part will entail referencing both these tables. Relational databases are increasing in their flexibility but are still not appropriate for **applications** including large amounts of unstructured **text**. **Text databases** are more appropriate for this, particularly if they are **SGML** compatible. The most widely used relational databases used on **open systems** include Oracle, Informix and Ingres. (See also **object-oriented database**.)

relative humidity (RH) Amount of water vapour present in the atmosphere expressed as a percentage of saturation. Standard testing conditions for paper are 23°C and 50%RH. Optimum press conditions are 20°C and 55–65%RH. Contrast **absolute humidity**.

relative units Divisions of one em used as a fine measurement for spacing or character-width calculations.

reliable communication Communication in which there is a guarantee (i.e. a check) that messages will reach their destinations both complete and in the correct order. This is done by including a **checksum** or **cyclic redundancy check** as part of each message or **packet**, so that if the check fails, indicating that the message is incomplete or corrupt, the sender is notified. **Transmission Control Protocol** (**TCP**) is the reliable **protocol** used on both the **Ethernet** and the **Internet**.

relief Printing method using a raised image, e.g. letterpress.

remainder 1. (vb) To sell books at a reduced price, usually because the title has not sold successfully. 2. (n) **remainders** are unsold publications, usually books, which are discounted for sale on preferential terms.

remote Located away from main plant or, in the case of technical equipment, having no direct electronic link with the main processing plant.

remote log-in Connecting to and using a remote computer, via a **protocol** over a computer network, as though locally attached.

remote procedure call (RPC) A **protocol** used in **client-server** computing, in which a program (the client) sends a message, together with specific arguments, to a remote system (the server) requesting it to execute a designated procedure, using the arguments supplied, and return the result to the client. Because there are many incompatible RPC **protocols**, **middleware** has been developed to convert the protocols and thus allow more general communication.

removable cartridge disk A disk system in which hard disks, contained within protective cartridges, may be removed from and replaced in suitable disk drives.

Rename A command common to several operating systems, which enables the user to change the name of a file.

render, **rendering** The process of applying colour, shading and shadows to a computer-generated image, on the basis of a mathematical model, to make it appear realistic. **Ray tracing** is a common method. (See also **Gouraud shading**, **Phong shading**.)

renewal Repeat of subscription to a periodical.

repaginate Change the page numbers.

repeat Repeated insertion or showing of an advertisement.

repeater Equipment used to allow transmission over long distances, in which signals are amplified, retimed or reconstructed before retransmission. Also used in **Ethernets** to connect segments. (See also **media converter**.)

replacement fee Fee paid to a picture library to cover the cost of replacing a lost or spoiled picture.

Replay A **video** system used on Acorn computers. Uses **compressed** images with real-time decompression.

replication A function of **Lotus Notes** in which document databases can be distributed across networks. Can use various **protocols** including **X.25** and **TCP/IP**. Replication is also used more generally to mean duplication, e.g. as in 'illegal software replication'.

repository Textbase or database software which allows text to be stored, edited and archived in structured form.

repp Writing paper with a patterned surface.

reprint 1. Subsequent printing of the first edition of a publication. 2. Printing of part of a publication for promotional or editorial use.

repro Prepress camerawork, scanning and film make-up. Also, **origination**.

reproduction See **repro**.

reproduction fee Fee paid for the right to reproduce an illustration.

reproduction proof A proof taken from type for subsequent reproduction.

reprographics or **reprography** General term for **electrostatic printing**, **diazo printing**, or any other form of short-run duplicating and printing.

repro paper Coated paper suitable for use in camera-ready artwork. Also called **baryta paper**.

reproportion Change the relative dimensions of artwork (usually photographically) to create a new shape.

repro pull See **reproduction proof**.

Request For Comments (RFC) The series of numbered **Internet** information documents (begun in 1969), including standards (all Internet standards are recorded in RFCs, but most RFCs are not standards). Unlike the formal development of **ITU-T** and **ANSI** standards, RFCs are developed on the basis of proposals put forward by the Internet research and development community (hence the name).

request to send (RTS) Signal sent in a communications system before a message can be sent. Before transmission can take place **CTS** (**clear to send**) must be received.

required hyphen or **hard hyphen** Hyphen that is always found in a word, even if it is not split by, e.g., a line break. (See also **soft hyphen**.)

resale price maintenance (RPM) Where the price of a book is fixed by the publisher and the retailer is not permitted to sell it at a discount.

rescreen To take a subject which is already screened (e.g. a printed photograph) and shoot it again with a new half-tone screen. It is important in doing this to avoid **moiré** patterning.

Réseaux Associés pour la Recherche Européenne (RARE) An association of national and international European research networks.

Réseaux IP Européens (RIPE) A collaboration between European networks to provide **Internet** services using **TCP/IP**.

resident font Permanent font data in a printer or device that does not have to be downloaded.

residual rights Rights still held by an author after others have been transferred.

resiliency Measure of paper surface condition after printing.

resin Sticky substance, insoluble in water, which is secreted by some plants and conifers and used in papermaking and ink production.

resin-coated paper Abbreviated to 'RC paper'. Photographic paper with good longevity of image used in photosetting.

resist A protective chemical or coating.

resolution Measurement of image fineness stated in lines per inch (**lpi**), **dots per inch** (**dpi**), or **pixels** per inch as created by an output device such as a **scanner**, **imagesetter**, laser typesetter, or **laser printer**. Low-resolution laser printers output typically at 300 dpi, medium-resolution at 400 dpi, high-resolution at 600 dpi. Laser photosetters output typically at around 1200 dpi (medium) up to 2400 dpi (high). Some imagesetters output at lower resolutions vertically rather than horizontally (e.g. 1600H×800V). **VDU** screen resolutions typically vary from 72–100 pixels (dots) per inch.

resolver The **TCP/IP** software that formats requests sent to the **Domain Name Server** for **hostname**-to-**Internet** address conversion. (See also **address resolution**.)

response rate In direct mail, the number of orders generated compared to the number of mailshots sent out, expressed as a percentage.

response time The time taken to display the result of a command on a **VDU**.

restore MS DOS command to restore to a fixed disk a file or group of files that have been stored on back-up disk/s by the MS DOS **back-up** operation.

résumé 1. Summary of a text. 2. US: a person's educational and professional history. UK: *curriculum vitae*.

retarders Printing ink solvents which extend the ink's **open time**.

reticulation Spotting caused by wet ink not drying properly on a previously inked surface.

retouch To paint over **film** or artwork by hand or electronic means in order to improve or repair the image.

retouching Correcting a photographic print or transparency before reproduction. As applied to colour separation films, see **colour etching**.

retree Slightly damaged paper sold at a reduced price and often marked **xx**. (See also **broke**.)

returns Books sent back to the supplier because they have not been sold.

reversal Creation of white text or images on a black background. Sometimes referred to as **WOB** (white on black). See **reversed out**.

reversal film Contact film with the same positive and negative values as the original, i.e. black is reproduced as black. Also, **autopositive film**, **direct-duplicating film**.

Reverse Address Resolution Protocol (RARP) A protocol that provides the reverse function of **ARP**, mapping a hardware address (**MAC address**) to an **Internet address**.

reverse characters Characters that are displayed in a way that contrasts them with others in the same piece of text with the purpose of highlighting or emphasising the content.

reversed out Type printing white out of another colour.

reverse indent See **hanging indent**.

reverse leading Ability of a photosetter to move film or paper 'backwards' to achieve exposure of complicated text or columnar matter.

reverse left to right To turn a picture round so that the right side becomes the left and vice versa.

reverse-reading See **wrong-reading**.

reverse video An ability provided by some systems to reverse the **VDU** image so that data is displayed as black characters on a white (or green or amber) background. Also known as **inverse video**.

reversionary Property, such as a **copyright,** that passes to another on the death of the present owner, particularly when it returns to the original author or their heirs.

reversion of copyright Return of **copyright** to the author when the publisher fails to keep the book in print.

Revisable Form Text (RFT) See **Document Content Architecture/Revisable Form Text**.

revise A revised proof for subsequent reading.

revision control system Programs which store and keep track of successive versions of a document or series of documents as they are amended.

rf See **radio frequency**.

RFC See **Request For Comments**.

RFT See **Revisable Form Text**.

RGB Red, green, blue. The **additive colour** system used in televisions and computer monitors. In a **cathode ray tube (CRT)** display, signals from three different electron guns (each carrying a different colour signal) activate the appropriately coloured phosphor coating on the screen, creating a colour image; **liquid crystal displays (LCD)** work similarly but use a different technology. Compare this with **CMYK**, the **subtractive colour** system used to produce colour data for printing. See **colour space**, **colour gamut**.

RH See **relative humidity**.

ribbon cable Flat plastic-coated cable in which the lines lie parallel to each other.

ribbon folder **Web press** folder which cuts web into ribbons for folding. As distinct from a **former folder**.

rib site An intermediate **Internet** site (analogous to a **backbone site**) offering high-speed link between a backbone site and **leaf sites**.

Rich Text Format (RTF) An ASCII format for wordprocessing and related files, developed by Microsoft for exchange of files between systems. It should be noted that, over the years, Microsoft has modified the format, so that care needs to be taken with its use. It provides a step towards **structured documents** and **SGML** in that styles are explicitly coded and can be separated from their typographic representation. It is sometimes used as an intermediate step in converting **wordprocessor** documents to SGML. (See also **Rainbow Document Type Definition**.)

right-angle folding Folding a sheet with one or more folds at right-angles to each other.

right-angle folds Folds at 90° angles to each other.

RightPages A **server** and **browser** for scanned images, developed by **AT&T** Bell Laboratories and used in the **Red Sage** and **SuperJournal** projects.

right-reading Film which reads 'correctly', i.e. from left to right, when viewed from the emulsion side. As distinct from **wrong-reading**.

rights Legal rights connected to a work: e.g. publication, serialisation, broadcasting, merchandising et el.

right side In papermaking, the **top side** or **felt-side** of the **web**.

rigid disk See **hard disk**.

Rinco process Process which creates gravure positives by photographing a proof of white letters on a black background.

ring binder Loose-leaf binder with stiff covers and ring-shaped clasps that can be opened to go through holes punched in the paper.

ring binding Binding by means of holes in paper which locate on metal rings.

ring network A network topology in which a loop (or closed path) is formed, so that each node is connected to two adjacent nodes (like an electrical ring main). (See also **token ring**.)

RIP 1. Rest In Proportion. An instruction to allow all the other pieces in a **batch** of **artwork** to undergo the same enlargement or reduction as one piece marked. 2. See **raster image processor**, **Routing Information Protocol**.

RIPE See **Réseaux IP Européens**.

RIPEM Riordan's Internet Privacy Enhanced Mail. An implementation of **Privacy Enhanced Mail** (**PEM**).

RISC Reduced instruction set computer. A type of computer processor architecture. The instructions are to the processor from the **operating system** and do not affect **applications**, except in that they are intended to increase processing speed.

river Undesirable formation of word spaces into a vertical 'river' of white in the text.

RJ-11 An American-style telephone connector. May be found on the back of US-manufactured **modems**.

RJ-45 A telephone cable connector for an **ISDN** line.

RLE See **run-length encoding**.

rlogin Remote login. A **Unix** utility which allows a user to log in to a remote computer via the **Internet**. (See also **telnet**.)

RMP See **refiner mechanical pulp**.

ROB Run of book.

rocker sealer Heated element in film-wrapping machine which seals centre join.

Rockwell Protocol Interface (RPI) A **modem** interface in which data **compression** and **error correction** are provided as software, rather than as part of the hardware. Maximum speed is 14 400 bits per second.

roe chlorination number Measurement of how much chlorine can be absorbed by a sample of paper pulp, thereby showing how easily it can be bleached.

roll Reel (US).

roll coating Coating applied to paper by rollers.

rolled Paper glazed by rolling.

roller Round metal bar used to guide the paper through a printing press.

rolling ball See **trackball**.

rolling headers Moving titles or headers of pages that are being displayed electronically as they are received.

roll-out 1. Using a roller to spread ink on paper for sampling purposes. 2. In direct mail, the projection of orders which should come from a full mailing based on the response to a test mailing.

roll wrapping Rolling a magazine to wrap paper around it for mailing (as distinct from folding).

ROM See **read-only memory**.

Roman Plain, upright style of type used in ordinary script.

roman figures Roman numerals such as iii, xviii, xxv etc.

Romanisation **Transliterating** a non-Western script into Roman characters.

Romanise The act of **transliterating.**

roman type 'Upright' letters as distinct from **italic**. Known as **plain** or **normal** in **DTP** systems.

ROMP (regionally organised modem pool) The service providing **virtual points of presence**.

root See **root directory**.

root directory The top directory in an (inverted) **tree-and-branch filing system**. It contains all the other directories. **Unix** and **DOS** use this system.

ROP Abbreviation for 'Run of Paper'. In magazines or newspapers: material printed as part of the main text.

rosin An important component in papermaking **size**.

rot13 (Rotate alphabet 13 places.) A simple **encryption** routine in which each English letter is replaced with the one 13 places forward or back along the alphabet. Used in **Usenet** news reading and posting programs to hide items which may offend. Rot13 is self-inverse, in that the same program can be used to **encrypt** and **decrypt**.

rotary Printing from plates on cylinders.

rotogravure Gravure printing on rotary press.

rough A sketch or layout.

rough proof Proof for identification rather than reading.

rounding and backing Also 'rounding and jointing'. Shaping a book so the back is convex. As distinct from **flat back** binding.

rounding and jointing See **rounding and backing**.

round-trip time (RTT) The time taken to send a packet to a particular **host** and receive it back, giving a measure of the current network delay. Can be obtained with 'ping' (the Portable Network Graphics format).

rout To trim away the blank parts of a plate so they are not printed by accident.

route Either a noun or a verb. As a noun, it is the path taken over a **network** from source to destination. As a verb, it describes the actions taken by a **router** (or in **routing**).

router A device which allows connection between dissimilar networks (such as **Ethernet** and **Token-Ring**), although a common protocol is required. A router will calculate the shortest route for each destination, based on **network layer** information and routing tables. (See also **bridge**, **gateway**, **Exterior Gateway Protocol**, **Interior Gateway Protocol**, **brouter**.)

routine A computer program with a selective task.

routing 1. Cutting away non-printing areas of a plate. 2. The process, carried out by a **router**, of selecting a suitable path through a network. (See also **Exterior Gateway Protocol**, **Interior Gateway Protocol**.)

routing domain A set of **routers** that exchange routing information within an **administrative domain**.

Routing Information Protocol (RIP) A protocol which uses distance vector **routing**, that is, the number of **hops** required to the destination. This does not, however, always give the fastest route because it does not take account of the **bandwidth** of the connections.

royal Standard size of paper 480×636mm (metric system).

royalty Fee paid to an author which is calculated from the number of sales of a book or performances of a work.

RP Reprinting.

RPC See **remote procedure call**.

RPI See **Rockwell Protocol Interface**.

RPM See **resale price maintenance**.

RRP Recommended retail price.

RS-232 A standard type of computer interface used to connect **serial devices**, equivalent to **ITU-T V.24** and **V.28**. It is used for **modems** and other peripheral devices. Also described as a **serial interface**. (Compare with **parallel interface**.) The 'RS' stands for Recognised Standard (of the US Electronic Industries Association – EIA). The interface is also described as RS-232-C, the C indicating that this is the third version of RS-232, which is that commonly used. (See also **data communication equipment**, **data terminal equipment**.) RS-232 specifies the physical connections of the interface, while **RS-423** specifies the electrical signals.

RS-232-C The standard serial communications socket used in data transfer.

RS-422 A data transfer protocol developed by the US Electronic Industries Association (EIA), providing a higher data transfer rate than the **RS-232** protocol, as well as improved immunity to electrical interference. It is part of **RS-449**, which is equivalent to **ITU-T V.35**. RS-422 is used by the Apple **Macintosh**.

RS-422 A more robust version of the **RS-232-C**, specially designed for integrated technology.

RS-423 A specification for the electrical signals on a **serial** (**RS-232** or **RS-422**) **line**. Together with **RS-422**, forms **RS-449**.

RS-449 A physical interface standard specified by the US Electronic Industries Association (EIA), for interconnection of **DTE** and **DCE** using **RS-422**/**RS-423** signals, equivalent to **ITU-T V.35**.

RS-485 An enhanced version of standard **RS-422**, permitting up to 32 stations to be attached to a common **bus**.

RSA encryption A **public-key encryption** and **authentication** system (the acronym is based on the initials of the authors, R Rivest, A Shamir and L Adleman). It is based on the product of two large prime numbers and the difficulty of factoring these. While the system has been broken, the amount of computing power and the time required underlined the security of the approach. (See also **DSS**.)

RTF See **Rich Text Format**.

RTS See **request to send**.

RTT See **round-trip time**.

R type Colour print made from a transparency without any intermediate negative. Contrast **C type**.

rub-down lettering See **transfer type**.

rubilith Red masking film which is opaque to light and used in making photographic masks for drop-outs, reverses, tint-laying etc.

rub-out Computer code which deletes.

rub-proof Ink with good abrasion resistance.

rubric Heading of a book chapter or passage which is printed in red or special lettering.

ruby See **agate**.

rule A line (of specified thickness).

ruler guides In **DTP**, the two electronic rulers used for the accurate alignment of text. See **guide**.

rules Printing lines, measured in points.

ruling Making lines on paper by pen or disk ruling.

run 1. The activation of a computer program. 2. Number of printed copies of a publication.

run-around The flow of text around an irregularly shaped graphic. The ability to do this is a feature of a **page layout** program. Note that it is not generally a feature of electronic documents, such as those coded with **HTML** (because they are dynamic), although page-based electronic documents, such as **Acrobat** files, will include such a feature.

run back To take back text from the beginning of one line to the end of the previous one, or from the top of one page to the bottom of the previous one.

run-length encoding (RLE) A **compression** algorithm which replaces sequences of repeated characters (or groups of characters) with a single character and the length of the run. It is mainly used for storing **bitmaps**, since it encodes the points at which there is a change from black to white, on to off, 0 to 1, and the distance since the last switch (in the opposite direction). **Huffman coding** works in a similar fashion, but is more complex.

runnability Ability of paper to be printed without problems.

running head A title repeated at the top of each page. Also known as 'running headline'.

running order 1. Set of notes indicating the order of events in a production. 2. List of the contents of a printed work to guide the printer in his imposition.

running sheet Printed sheet taken from the start of a print run to check if it is being printed correctly.

running text Columnar main text on a page (as distinct from displayed material).

run-of-book See **run-of-paper**.

run-of-paper Advertisement location allocated at the publisher's choice, anywhere in the publication.

run on 1. To continue printing after the first number of sheets have been printed. 2. To eliminate breaks, i.e. line breaks, from text.

run out Output **film** or **bromide** from a phototypesetting machine.

run round See **run-around**.

run through Ruled lines stretching from one edge of the paper to the other with no breaks.

runtime Cut-down version of a program that is bundled with another application in order to provide specific and limited functions.

RW Ream wrapped.

RWOP Ream wrapped on pallets.

S

S100 A parallel **bus** standard developed for computers employing 8080 microprocessors.

SAA See **Systems Application Architecture**.

saddle Device on which an unbound booklet is placed to be stitched.

saddle-stitcher Machine for sewing thread or stapling wire through a magazine or booklet. (See also **saddle-stitching**.)

saddle-stitching Binding inset books with wire staples through the middle fold of sheets. Also 'saddle wire-stitching'.

saddle thread-sewing See **Singer sewing**.

safelight Darkroom lamp which does not affect photographic materials.

SAID See **Security Association ID**.

same size (s/s) Instruction to keep **artwork** the same size as presented.

samizdat Clandestine copying and distribution of literature by individuals or groups in a country where publishing is strictly censored by the state.

sample In colour scanning, an area of an image undergoing scanning and analysis. Also **dot**, **pixel**.

samples per inch See **dpi**.

sampling A technique used in converting signals from **analogue** to **digital**, in which the values of an analogue signal are measured at fixed time intervals and the measured values converted to digital values. To reproduce the analogue signal a **digital-to-analogue converter** is used. Sampling is used in making digital **audio** recordings.

sand trap Set of bars in a trough used for sieving **pulp** to remove any particles of grit before it goes into the papermaking process.

sans serif (or sanserif) A category of type in which there are no **serifs**. Considered to be less formal than serif type, in printed matter sans serif type is most often used for display purposes: in magazine and bookwork it therefore tends to be used for headings, rarely for continuous text. There is some debate as to whether it is better than serif type for use in **electronic publishing**, i.e. for on-screen material.

SAR See **segmentation and reassembly**.

SATAN See **Security Administrator Tool for Analysing Networks**.

satellite communications The use of geosynchronous satellites to reflect digital communications signals back to earth. Satellites are required because, at the frequencies used, there must be a direct line of sight between the source and the receiver and, for obvious reasons, this is not generally possible at ground level, quite apart from the effects of the earth's curvature.

Satstream A digital satellite communications service operated by British Telecom.

saturation In colour measurement, the measure of how much colour ('colourfulness' is the term used by experts) is present at a particular brightness.

Save The operation of storing data on disk or tape.

sawing Cutting notches in the sewn sections of books for binding cords.

sawn-in-sewing Sewing with cuts in the backs of sections to take cords.

SBN See **ISBN**.

sc (or **s/c**) 1. **Small capitals**. 2. **Supercalendered** (paper).

scalable font A **font** that can be used at any size and any resolution, on a screen or in output from a **laser printer** or **imagesetter**. Scalable fonts are **outline** or **vector fonts**.

scaled point size In Windows applications, a point size that approximates a specified point size for use on the screen (when the specified print size might be too small for the screen's resolution, for example).

scale-out System of ordering different numbers of copies for individual stores in a chain.

scaling Calculating or marking the enlargement or reduction of an original for reproduction.

scamp Rough layout. Also, **rough**.

scan Use a **scanner** to digitise images or text.

scan-a-web Method of scanning the image on a moving web by means of a rotating mirror.

scanner Computer-controlled sampling device which reads the relative colour densities of copy and produces colour separations. See **analyse scanner**, **output scanner**, **EPC system**.

scatter proofs Proofs of illustrations where the subjects are arranged in random order. As distinct from **imposed colour proofs**.

schedule 1. Sequence of events and deadlines agreed for production. 2. Schedule of bookings for an advertising campaign.

scheduler An **operating system** utility that initiates processes according to assigned priorities and available system resources.

scholarly books Books devoted to academic subjects.

scholarly publishing The publishing of academic books.

scissors and paste job Part of the design process where parts of **artwork** or film are rearranged and prepared for **paste-up** and **camera-ready copy** before reproduction.

SCL Scanner command language. Computer language governing the format in which images are collected, stored, and output. (See also **TIFF**.)

score To impress paper with a rule to ease folding.

scoring Making indents or grooves in paper or board so that it will bend or fold more easily, used on the covers of paperbound books.

Scotchprint Proprietary translucent proofing material.

SCPC See **single channel per carrier**.

scrapbook An AppleMac accessory in which text and graphics which are used frequently can be stored for access and insertion into documents.

scraperboard Card or board with a blackened surface which can be scraped off with a knife to produce white line drawings which resemble engravings (the colours can be reversed).

scratch pad memory A small area of memory used as a temporary working area.

screen 1. Pattern of lines that creates the dot formation in **half-tones**. As well as the normal crossline screen at 45°, other screens include the vertical screen at 90°, one-way screen, linen screen, textured screen, mezzotint screen etc. 2. See **visual display unit** (**terminal**).

screen angles Varied angles of each screen used in colour half-tones to avoid moiré; patterns. The conventional screen angles are: black 45°; magenta 75°; yellow 90°; cyan 105°.

screen capture, screen dump Copying the image on the computer screen (or part thereof) to a file or a printer. Often used in manuals etc. and books about computer applications to illustrate what the screen looks like.

screen clash Moiré patterning caused by incorrect screen angles, or occurring when previously printed, screened, half-tones are rescreened.

screen editor Software that allows the user to edit a complete page of text displayed on screen.

screened print A print with a half-tone screen, typically a **PMT**.

screen finder A plastic viewer placed over a half-tone to determine the screen ruling.

screen font A font that is designed specifically for viewing on-screen. In principle, with **Adobe Type Manager** and **TrueType**, any font can be used in this way but, in practice, certain fonts (often **bitmap** fonts) are used to present screen information (e.g. menus, file names, screen labels) at a constant size in **GUI**s. However, **electronic publishing** applications, such as the **World Wide Web**, in general use **scalable fonts**.

screen format The screen layout design.

screenless litho Printing by litho with specially coated plates that can hold very fine **continuous-tone** detail.

screen process printing See **silk screen printing**.

screen resolution In the context of computer monitors, the number and layout of pixels that make up the image on the screen. It is expressed as the number of pixels across and down: small portable screens are typically 640×480 (**VGA**), whereas high-end computers have a resolution of 800×600 (**SVGA**).

screen ruling The number of lines or dots per inch on a screen. The conventional screen rulings in common use for bookwork are 100, 120, 133, 150 lines per inch (40, 48, 54, 60 lines per centimetre).

screen saver An application which either blanks the screen of a computer left temporarily unused or replaces whatever was on the screen with a moving image. This both avoids any burn-in effects and protects what was on the screen from casual oversight. **Clicking** a **mouse** button or pressing a key restores the original image. There is a wide variety of screen savers, some of which are games.

screen tint Film with dots in one of a grade of percentages (10%–90%) used for printing a shade of a colour rather than its full strength.

scribed lines Lines scratched on the emulsion of film for subsequent printing.

script 1. A series of commands that can be executed as a single unit. A DOS batch file, e.g., is a kind of script. **Unix** includes whole programming languages of this kind described as 'shellscripts', which can include parameters and variables. Similarly **CGI-scripts** are used to create dynamic **HTML** applications, while **JavaScript** is a version of **Java** that can be used within HTML documents. 2. A typeface which simulates handwriting.

scroll, **scrolling** Upwards, downwards or sideways smooth motion of data across a screen, as if a window were being dragged across the data. In a **GUI** environment, it is usually activated with the **mouse**, although in other environments it may be activated by holding down the 'arrow' keys on the keyboard.

scroll bars In DTP systems, the bars at the right and bottom of the **publication window** which contain boxes and arrows. The boxes and arrows are used to move within the display area of the publication window.

SCSI (pronounced 'scuzzy') Small Computer Standard Interface: An 8-bit **parallel interface** used by the Apple **Macintosh** and the **PC** for connecting peripheral devices, such as disk and **CD-ROM** drives, printers, and tape drives. SCSI can support data transfer rates of up to 4Mbs per second. **SCSI-2** and **SCSI-3** are later versions with wider data buses, supporting higher transfer rates.

SCSI-2 A version of the **SCSI** interface specification, including 'Fast SCSI' mode (up to 10Mbs per second) and 'Wide SCSI' (16 bit, up to 20Mbs per second, or occasionally 32-bit, up to 40Mbs per second).

SCSI-3 An interface standard to provide faster data transfer and increased functionality than **SCSI-2**. Because of the problems of **parallel communication** at higher transfer rates and longer distances, SCSI-3 proposes **serial interfacing** with clock information included in the data stream to avoid signal delay problems and layered protocol definitions similar to those used in networking.

SCSI chain Several **SCSI devices** linked together with SCSI cables. This is necessary because there is usually only one SCSI port on the back of the computer, so devices must be linked one to another in a chain, with the first and last devices terminated.

SCSI device Any device, such as a scanner, **CD-ROM** drive or external hard disk, that is connected to the computer by a **SCSI** port.

scum or **scumming** Build-up of ink on the non-image area of an offset plate.

SDH See **synchronous digital hierarchy**.

SDIF See **Standard Document Interchange Format**.

SDLC See **Synchronous Data Link Control**.

SEA See **self-extracting archive**.

search and replace See **global search and replace**.

search engine Software which makes it possible to search files and/or **databases** for specific terms. The two principal approaches are **Boolean search** and **free-text search**, which usually involves using **indexing**. The more structured the data/files, the more precisely a search can be defined, depending on the functionality of the search engine. Search engines used on the **World Wide Web** include **AltaVista** and **Yahoo**; another popular search engine is **Topic**, which forms part of the **Acrobat** suite.

search fee Fee charged by a picture service to cover the cost of conducting research in its own files on a client's behalf.

searching Trying to locate required character strings or words. Examples are **keyword** searching and **free-text** searching. (See also **proximity search**, **contextual search**.)

search key An item to be compared with specified areas in a database search.

search routine Computer routine for finding specified words or groups of words in text.

SECAM (Sequential Colour and Memory or Système Electronique Couleur avec Mémoire.) A television coding standard used in Europe (mainly France and some Eastern European countries). (See also **PAL**, **NTSC**.)

secondary clear to send A signal in an **RS-232-C** interface when used with modems providing primary and secondary transmission lines, the primary line providing a high data rate with the secondary line providing a lower data rate in the opposite direction. See **clear to send**.

secondary colour The colour made by a mixture of two **primary subtractive colours**, e.g. yellow + red = orange.

secondary fibres See **recovered fibres**.

second cover Inside front cover.

second-generation computers Early computers using transistors in place of vacuum tubes.

second-generation photosetters Photosetters using electromechanical means (negative strips, engraved discs) to expose type fonts.

second-level heading Second in number (and importance) of a series of headings in a book.

seconds See **retree**.

secret-key cryptography Encryption when both sender and recipient usually have the same

key. (See **symmetric-key cryptography**.) The opposite of **public-key cryptography**.

section A folded sheet forming part of a book.

section sewing Conventional sewing, as in most paperback or hardback books. The full specification is 'section-sewn continuous', or **French sewing** or **Smyth sewing** (US).

sector The smallest portion of a magnetic disk that can be addressed by a computer. A subdivision of a track. (See also **disk pack**.)

sector mapping A method of speeding up disk access time. If sector addresses are recorded sequentially the operating system will have to wait for the disk to complete a revolution before the next can be accessed. The spreading of sector addresses around the disk gives the operating system time to process each before the next reaches the read-write head.

secure HTTP (S-HTTP) An extension of **HTTP**, providing independently applicable security services for transaction confidentiality, authenticity/integrity and non-repudiability of origin. The protocol will allow, e.g., credit card transactions over the **Internet**. (See also **HyperText Transmission Protocol (Secure)**.)

secure sockets layer (SSL) A **protocol**, originated by **Netscape Communications Corporation**, in order to provide secure communications on the **Internet**. It is used by **HTTPS** and as a layer below **HTTP**, **SMTP**, **NNTP**, **ftp**, **Gopher** and **telnet**, but above **TCP/IP**.

Security Administrator Tool for Analysing Networks (SATAN) A tool for gathering information about remote systems, especially security aspects, via a **network**. The results can be stored in a database and viewed with an **HTML browser** such as **Netscape**.

Security Association ID (SAID) A 32-bit field which will be added to **packet** headers in the proposed **Internet Protocol** Version 6 in order to provide **encryption** and **authentication**.

security firewall See **firewall**.

security paper Paper incorporating features which make counterfeiting difficult.

see-safe Agreement where the publisher will credit a bookseller for unsold books at the end of a period under certain conditions, e.g. orders for other titles from the publisher's list.

see-through See **show-through**.

SEGA One of the leading manufacturers of video games.

segmentation The division of a **packet** of information into shorter packets for transmission over a communications system.

segmentation and reassembly (SAR) A sublayer of the **ATM** (**asynchronous transfer mode**) adaptation layer which is concerned with segmenting the **application layer** information into ATM cells of the correct length for transmission and reassembling them on receipt.

Seiko RC-4000 An information-storage wristwatch containing a **serial interface**, so as to allow information to be transferred without the need for input using very small keys.

selected file back-up A means of improving storage space on back-up disks or tapes by copying data blocks sequentially. In this way unused or redundant blocks are not copied.

Selectric Composition Golfball typewriter manufactured by IBM.

self-adhesive paper Gummed pressure-sensitive paper.

self-copy paper Carbonless copy paper.

self cover Cover of the same paper as text pages.

self-endpapers or **self-ends Endpapers** that are part of the printed book but affixed separately to the inside of the cover.

self-ends First and last pages of a **book-block** used as **endpapers**.

self-extracting archive (SEA) An **archive** format originally used on the Apple **Macintosh**, in which **double-clicking** on a file **icon** would extract the contents. However, the term is now also applied to executable files which run under **MS-DOS**, frequently used as a way of downloading software over the **Internet**. Running the SEA file once it has been received unpacks and often expands the files contained within it.

self-mailer Printed piece mailed without envelope.

semi-bold Typeface that is not heavily emboldened.

semi-chemical pulp Combination of chemical and mechanical pulp.

semicolon Punctuation mark (;) which can break up a sentence or list, or marks the end of a line in computer programming.

semiconductor Material used in the construction of transistors, diodes and photoelectric cells.

semi-display Advertisements displayed in boxes or laid out as a full or part page within classified advertisement pages.

SENDIT See **Systems Engineering for Network Debugging, Integration and Test**.

sendmail A **Unix email** system.

sensitivity guide Piece of film with graded density used to monitor exposure.

separation See **colour separation**, **origination**.

separation negative See **colour separation negative**.

sepia A brown tint used in photography to give the impression of age.

sequence, sequencer Software used to control the input of music and sounds either from a piano-type keyboard or other instrument connected through a **MIDI** interface or on screen using a computer keyboard. Also the editing of those sounds, and output of the sounds, again via a MIDI interface.

Sequenced Packet Xchange (SPX) A guaranteed delivery protocol used by **NetWare**.

sequential access Reading items in computer memory in sequence rather than by **random access**.

serial Transfer of one bit at a time in sequential order.

serial communication Also 'serial transmission'. Data transfer in which one bit is transferred at a time, in contrast to **parallel communication**, in which a number of bits are transferred concurrently. (See also **serial device**, **serial interface**, **RS-232**.)

serial device A **peripheral** device that is connected to a computer through a **serial interface**. **Modems** are probably the most commonly used serial devices, although a **mouse** and other devices can be connected in this way. Keyboards are also examples of serial devices.

serial interface An **interface** through which data is transmitted one **bit** at a time, unlike a **parallel interface**. Also described as an **RS-232** interface.

serial line Wires, or a telephone line, connecting two **serial ports**. See **RS-232**, **RS-422**.

Serial Line Internet Protocol (SLIP) A version of the **Internet Protocol** (**IP**) which is used over a **serial line**. **Point-to-Point Protocol** (**PPP**) was designed as an improvement upon **SLIP**.

serial port Another term for a **serial interface**, although often used to refer to the physical connection on a computer. See, in contrast, **parallel port**.

serial printer One which prints a single character at a time. Compare **line printer**, **page printer**.

serial to parallel converter A device that converts the sequential input from a **serial transmission** device and passes it on via the required number of parallel lines.

serial transmission Data transmission in which one bit in transferred at a time.

series A complete range of sizes in the same typeface.

serif The terminal stroke at the end of a line making up part of a character. Thus the characters in serif typefaces carry serifs, while characters in **sans serif** (or sanserif) typefaces do not.

seriffed With **serifs**, i.e. finishing strokes at the end of a letter form.

serigraphy See **silk screen printing**.

server A computer which either holds information accessed by other computers over a **network**, e.g. a **file server** or **database server**, or which provides a service, e.g. a **print server**, which carries out the printing processes for all computers on a network, reducing the load on the other machines. The **Internet** is based on a network of servers. Also a program providing a service to a 'client program'. See **client-server**.

server side include A **World Wide Web server** feature, which makes it possible for information to be included in **HTML** documents when they are called up by a browser. This works by replacing HTML tags in one file with the contents of another file, essentially using **macros**.

service provider See **Internet service provider**.

session A period of connection to a **server**, e.g. via the **Internet** or **World Wide Web**.

session layer The third-highest layer (sometimes referred to as layer 3 and sometimes as layer 5) of the **OSI seven-layer model**. It uses the **transport layer** to establish a connection between processes on different hosts and handles the security and creation of a **session**. It is used by the **presentation layer**.

set 1. To typeset, output, or otherwise record an image on paper or film. Frequently used synonyms include plot, record, output. 2. The width of a character.

set off (or **set-off**) 1. (vb) In printing the transference of the ink from a plate to a rubber surface and then from rubber surface onto paper is known as setting off (hence offset lithography). 2. (n) The unwanted transfer of undried ink to another sheet which typically occurs at the delivery end of the printing press. Precautions can include the use of an **anti set-off spray**.

setting rule Brass rule used for measurement in a **composing stick**.

set width See **set**.

seven-layer model See **Open Systems Interconnect**.

sew To fasten the sections of a book with thread.

sexto Obsolete term for one-sixth of a standard size sheet.

Seybold The *Seybold Reports* were originally produced by John Seybold to cover technical developments in the publishing industry. Subsequently, they have developed to cover **desktop publishing** and, in 1996, **Internet** publishing. In addition, a series of conferences is held each year to report on developments.

SFL Sheetfed litho.

SGML See **Standard Generalised Markup Language**.

SGML declaration The first part of an **SGML** document, which defines the syntax used in the document, i.e. the coding structure, delimiters, the character set etc., with changes from the **reference concrete syntax**. Note that, although logically this is the first part of any document, preceding the **Document Type Definition**, the SGML declaration may well be part of the SGML **application** software and therefore not visible to the user.

SGMLS A **public domain SGML parser** developed by James Clarke.

SGW See **stone groundwood mechanical pulp**.

shade The lightness or darkness of a colour, as distinct from its **hue**.

shaded watermark Watermark with opaque rather than transparent appearance.

shadowmask A perforated sheet at the rear of a colour **CRT** screen that is used to separate beams from red, green and blue electron beam guns.

shadows Dark parts in a photograph or half-tone print represented by 70%–100% dot sizes. Contrast **highlights**, **midtones**.

shank The body of a piece of type.

shared file One that can be accessed by two systems and which may be used to provide a means of communication.

shareware Software that may be obtained and tested for free, usually for a limited time period. It is often distributed through **Internet** file transfers or on floppy disk. After the trial period is complete, users are asked to pay a registration fee to the author or distributor of the package. Payment of the fee often brings additional facilities or documentation.

sheepskin White material made from the skin of sheep used in **binding**.

sheet The full-size piece of paper for printing, before folding or cutting.

sheeter Machine which cuts reels to sheets.

sheet fed Printing by separate sheets as distinct from reels.

sheet stock Publisher's printed sections held at the printer for binding up later.

sheetwise Printing one side of a sheet at a time. As distinct from **perfecting**.

sheetwork To print each side of the sheet from a separate forme. Each sheet yields one copy. As distinct from **work and turn**.

shelflife The usable storage life of a material (e.g. a plate).

shield (Or **screen**.) The **grounded** (or earthed) conducting material that surrounds the transmission medium, e.g. the central conductor of a **coaxial cable**. Its purpose is to stop interference from other electromagnetic radiation and noise.

shielded cable A data transmission communications cable that is shielded against external interference by a grounded metallic outer wrapping. See **noise**.

shift A key which, when depressed, gives a different designation to all the other keys, e.g. turns a lower-case letter into an upper-case letter.

shift codes Codes employed to increase the number of addressable characters. By reserving two characters to perform each of shift and unshift functions the number of available characters will be increased.

shilling stroke or **shilling mark Solidus** or oblique stroke.

shiner Light spot in paper.

shingle The allowance made in imposition for **creep**, i.e. the fractional space by which the back margins of the outer pages of a section need to be increased in order to make all the back margins appear to be equal when the section is folded. Hence, shingling, to carry out this operation.

shive Coarse fibre in paper or pulp.

Shockwave Macromedia's delivery platform for creating and packaging multimedia for the **World Wide Web**.

shoot Photograph.

shooting stick Short piece of wood used to tighten space in the lock-up of **formes**.

short column Column that contains fewer lines than other columns in the same book.

short descenders **Descenders** that are shorter in some **typefaces** than in others.

short-grain paper Paper where the grain runs parallel to the shorter side of an oblong sheet.

short-grain press Web fed magazine or paperback printing press which prints all the pages with the short edge of the page in the direction of travel of the printing cylinder, i.e. produces **short-grain** publications. Contrast **long-grain press**.

short ink An ink that does not flow easily. The opposite is a **long ink**.

short message service (SMS) A service which allows messages of up to 160 characters to be received and displayed on a **GSM** telephone, even when the telephone is being used for speech.

short sheet Sheet with too small a width dimension mixed in with sheets of the correct size.

short-term subscription Periodical subscription less than one year in duration.

short ton American ton (2000lbs) equal to 0.893 long (imperial) tons, or 0.9072 metric tonnes.

shoulder The raised shoulder of the book back

which is formed in the **rounding and backing** process. The height of the shoulder should approximate to the thickness of the board to be used for the case.

shoulder head A form of **boxed head** which is ranged left on a line of its own. As distinct from a **side head**.

show-through Lack of opacity in a sheet of paper to the point where the printed image on one side of a page is excessively visible from the reverse side.

shrink wrap Plastic film wrapping.

S-HTTP See **secure HTTP**.

sidebands The upper and lower frequency bands around a **carrier frequency** that are produced when a signal is **modulated**.

side head A form of **boxed head** which is ranged left and from which the text runs on in the same line. As distinct from a **shoulder head**.

side lay The guide on a sheet-fed press which positions the sheet sideways.

side notes Short lines of text set in the margins.

side run An addition to the 'making' on a paper machine which helps to fill up the maximum width (**deckle**).

side-sewing Binding by sewing through the sides of the gathered sections. Also known as **McCain sewing**.

side-stabbing Used loosely to describe side **wire stitching**. But strictly, a form of stitching where the stitch on one side of the book penetrates only two-thirds distance, and a complementary stitch at the other side completes the securing.

sidesticks Strips of wooden furniture used when locking up a letterpress chase.

side wire stitching Binding by stapling through the back margin of the sections.

sig Abbreviation for **signature**.

signal element The smallest unit of a signalling code.

signal ground The communications signal, via pin 7 in an **RS-232-C** interface, that establishes a common voltage reference for data signals.

signal quality detector A data communications signal generated by a synchronous modem and used to indicate the probability of an error in received data.

signal-to-noise ratio (S/N ratio, SNR) The ratio of useful information ('signal') to useless 'noise'. Originally used in electronics and communications and measured in decibels. However, now often used as well to describe communication in a more general sense, particularly on the **Internet** referring to **Usenet** newsgroups, where the term is a measure of the quality of the information **posted**.

signature 1. The letters of the alphabet or numerals printed at the bottom left-hand corner of sections to show the correct sequence of sections. 2. Synonym for **section**. 3. The few lines of information added at the end an **email** message or **news posting**, giving information about the sender. (See also **digital signature**.)

silk screen printing Method which employs a fine mesh to support a stencil through which ink is squeezed.

silurian Paper with a small percentage of long-fibred, dyed threads giving it a characteristic 'hairy' look. Used for covers or **endpapers**.

SIM See **subscriber identity module**.

SIM card serial number (SSN, SIM serial number) The 19-digit number used to identify a **SIM** card.

SimCity A simulation game from Maxis Software, in which the player designs, builds and runs his or her own city. SimCity 2000 is an upgraded version. The game also has applications in system dynamics studies.

Simple Mail Transfer Protocol (SMTP) A **protocol** used to transfer **email** between computers, either over an **Ethernet** or over the **Internet**.

Simple Network Management Protocol (SNMP) A **protocol** used for managing interconnected **IP networks**. It is used on the **Internet**. Version 2 (SNMP v2) is a revision of SNMP with improvements in performance and security.

simplex Data communication in one direction only. Contrast **full duplex**, **half duplex**.

simultaneous transmission The transmission of data in one direction simultaneously with messages transmitted in the other. See **full duplex**.

Singer sewing Saddle thread-sewing through the spine of an inset book.

single-attached An **FDDI** interface where a device is connected to only one of the FDDI **token-passing** rings. This kind of connection is usually used for a **host** computer. See, in contrast, **dual-attached**.

single board computer One in which all components required for memory, logic and input/output operations are contained on a single printed circuit board.

single channel per carrier (SCPC) A multiple access communications technique in which each signal is allocated a specific carrier, instead of a number of signals being **multiplexed** onto a single carrier, as in **FDMA**.

single ended An electrical connection, such as a **coaxial cable**, where one wire carries the signal and another wire or a **shield** is **grounded** (earthed). This is in contrast to a **differential line**.

single image random dot stereogram (SIRDS) A **stereographic** picture (or 'stereogram') made up of differently coloured dots. When the picture is viewed correctly (and acquiring the correct technique may be difficult), it appears to be three-dimensional.

single sheet feed Device attached to a printer which feeds paper in single sheets, contrast **continuous stationery**.

single-sideband transmission (SSB) A transmission in which only one **sideband** is transmitted, while both the frequency of the **carrier signal** and the other sideband are suppressed in order to minimise the bandwidth needed.

single-sided drive A floppy disk drive that is only capable of reading or writing one side of a floppy disk. Compare **double-sided**. See **floppy disk drive**.

sink A depression in the surface of a **printing plate**.

SIRDS See **single image random dot stereogram**.

sisal Plant fibre used for cordage and **kraft** paper.

sitename See **hostname**.

sixteenmo (64mo) A size of book in which each leaf is one-sixteenth of the size of the printing sheet. US: book size which is about 7.5cm high.

size Rosin, starch and other chemicals used in papermaking to control the water and ink absorbency of the paper. Size can be added either at the refiner stage (**engine sizing**) or on the papermaking machine at the **size press** (**surface sizing**).

size-press-coated paper Paper given a very light coating (around 4gsm per side) in the size press unit on the papermaking machine. Also known as **pigmented paper**, **light-coated paper** or **lick-coated paper**.

sizing 1. Treatment of paper with **size**. 2. See **scaling**.

skid A **pallet**.

SkipJack An **encryption** algorithm that encrypts 64-bit blocks of data with an 80-bit key. It was created by the US National Security Agency and is used in the **Clipper** chip.

skips Missing dots in gravure caused by lack of ink transfer.

skiver A book covering made of split sheepskins.

slabbing off Removing several outer layers from a reel of paper typically because they are unsatisfactory for printing through damage, dirt, marking etc.

slab serif Egyptian **typeface** characterised by **serifs** which are thick straight lines.

slant See **solidus**.

slash See **solidus**.

slashed zero A symbol shaped like an 0 with a line through it, used in computing.

slave or **slave unit** A device which uses logic from a separate **CPU**.

slice The outlet from a paper machine's headbox onto the wire.

slide A mounted photographic transparency.

sliding window compression An approach used in **compression** techniques where in effect a window is moved over the data and the program analyses the content and position of strings within that window before sliding the window to the next block of data. How much the window moves depends on the structure of the strings.

slime spot Hole in paper resulting from a bacterial growth which developed during the making.

sling psychrometer Device for measuring relative humidity by whirling in the atmosphere.

SLIP See **Serial Line Internet Protocol**.

slip case Cardboard case for book which displays the **spine**.

slip pages A printer's page proof with headlines and folios omitted.

slip proof Galley proof.

slip sheeting Placing sheets of paper between printed sheets to prevent **set-off**.

slit Divide a web of paper along its length using a disc or wheel. As distinct from **cut**, which is to divide a web across its width using a rotating knife or guillotine blade.

slitter Set of knives for cutting a web of paper or printed sheet.

slitter marks Marks on a printed sheet indicating to the binder where a slit is to be made. Used in **imposition** schemes which require this.

sloped roman An imitation **italic** formed by electronically slanting the roman of a **typeface**.

slot punching Punching rectangular holes in paper.

slotted ALOHA See **ALOHA**.

slotted binding See **notch binding**.

slug Line of metal type cast in one piece.

slur Image distortion caused by drag on the printing machine. Monitored by a slur gauge in most colour bars. Often caused by an excess of ink on a non-absorbent coated paper, or machine-gearing wear.

slushing The disintegration of fibres in a liquid.

slush pulp Liquid **pulp** used in the papermaking process.

small capitals or **small caps** Abbreviated **sc**. Capitals the same size as the **x-height** of the normal lower case, i.e. around 70% of the size of the **full capitals** of the same font.

small pica Obsolete term for 11pt type.

smalls See **small capitals**.

SmallTalk Xerox's proprietary operating system, which formed the basis of the **WIMP** environment.

smartcard A plastic card (similar to a credit card) with an embedded microprocessor and memory for storing information. It can store, e.g., personal data, identification and bank account details, to enable it to be used as a credit or debit card. Other uses include hotel door 'keys', passports and medical records. Electronic money can also be stored on such a card.

smashed bulk The bulk of a **book-block** under compression when casing-in a hard-bound book.

smashing See **nipping**.

SMDS See **Switched Multimegabit Data Service**.

smiley See **emoticon**.

s-mime (Secure MIME.) A specification for secure **email** in **MIME** format. Includes **authentication** (using **digital signatures**) and **privacy** (using **encryption**).

smoothing press Rollers on a paper machine which smooth the web before drying.

smoothing roll coating Application of coating to paper surface by rollers revolving against the web direction.

smoothness Evenness of paper surface.

SMS See **short message service**.

SMTP See **Simple Mail Transfer Protocol**.

Smyth sewing Conventional **section sewing**.

SNA See **System Network Architecture**.

snailmail A pejorative way of describing the traditional postal service as compared with **email**. Originated in the US, but now used internationally.

snap to grids Function on graphics packages and electronic page composition systems which permits elements of a page to be positioned approximately and then automatically 'snapped' exactly into alignment to a grid by a command issued through the mouse by the operator.

snd When used as a file extension or as part of a filename, indicates that the file is a sound file.

sneaker net A perhaps ironic term describing the transfer of data between computers by taking a removable medium, such as floppy disk or magnetic tape, and walking (wearing 'sneakers') from one machine to the other. It is probably worth noting that, in spite of the irony, the bandwidth in real time for such a transfer may be very high, i.e. it can be the quickest method!

sniffer A network monitoring tool used to capture data **packets** and, by decoding them, show the **protocol data**.

SNMP See **Simple Network Management Protocol**.

SNOBOL StriNg-Oriented symBOlic Language, a programming language used in artificial intelligence applications.

snowflaking White dots on a printed piece caused by water droplets or debris.

S/N ratio (or **SNR**) See **signal-to-noise ratio**.

Society for Worldwide Interbank Financial Telecommunications (SWIFT) A **value added network** used by banks throughout the world.

socket The interface between an operating system, such as **Unix** or **Windows**, and **network** communication facilities. It can either be bi-directional (**stream-oriented**) or **datagram** (destination-addressed messages with fixed length). The socket provides a communications end-point (in analogy with an electrical socket) and a file descriptor with which to access that socket. Each socket has an associated socket address that is made up of a **port** number and a network address.

socks A security package that makes it possible for a **host** behind a **firewall** to access resources outside the firewall while maintaining the security requirements. Replacements are provided with features such as **sockets**, so as to allow programs such as **finger**, **ftp**, **telnet**, **Gopher** and **World Wide Web browsers** to be used in the normal way.

soda pulp Pulp produced from hardwood chips cooked in caustic soda. See **sulphate pulp**.

soft carriage return A carriage return that is inserted by the software as a line **wrap**, i.e. not the end of paragraph (**hard carriage return**) that is inserted by the user.

soft copy Non-paper version of text, e.g. on a **VDU**.

soft cover Paper cover as distinct from case boards.

soft dot Half-tone dot with soft (etchable) halation around it.

soft-dot positives Film separations produced off a camera or scanner which have soft edges to the dots which can be retouched by hand.

soft font See **downloadable font**.

soft format A soft-sectored disk format in which the length of the sector may be specified by the system designer.

soft hyphen A hyphen introduced into a word by an **H&J** program, as opposed to a **hard hyphen** grammatically essential to the word.

softmodem The provision of **modem** software in such a way that it is loaded into the computer's memory when a system is booted, so that modem facilities are provided transparently to the user.

soft proof A representation on screen of what will be printed rather than a proof on paper or in any 'hard copy' form.

soft-sectored Pertaining to floppy disks with a single index hole in the disk surface for synchronisation purposes, the start of sectors being identified by signals stored on the disk. Compare **hard-sectored**.

soft typesetter A desktop publishing **VDU**, such as a preview screen, usually non-interactive, showing an exact replica of a piece of work as it will appear in print. See **WYSIWYG**.

software Computer programs.

software flow control An alternative term for **software handshaking**.

software handshaking A technique for regulating the flow of data across an interface using software programs. See **handshaking**, **hardware handshaking**.

software package A set of programs written for a specific purpose, e.g. **wordprocessing**.

software protection Technical and/or legal method adopted to prevent unauthorised usage.

softwood pulp Pulp made from softwood (coniferous) trees, e.g. fir, pine, spruce. As distinct from **hardwood pulp**.

solid 1. Typeset with no **leading** between the lines. 2. Printed area with 100% ink coverage.

solid density patches Patches of **solid** for each of the **process inks** in a colour bar testing strip. They reveal print density for each of the four colours across the sheet.

solid state Electronic components which use solid materials for current manipulation, e.g. transistors.

solidus Oblique slash, printing as /.

solus advertisement Advertisement placed away from others advertising a similar product.

solvent Ink dissolver.

SONET See **Synchronous Optical NETwork**.

SONET ring An architecture used for **SONET** in metropolitan areas, which makes it possible for the network to continue functioning if a network component fails.

Sony A Japanese electronics company, which originated the Walkman and subsequently the Data Discman. Also had great influence, with **Philips**, on the development and standardisation of the **CD**, and manufactures the popular **Gameboy** console.

sort 1. A single character of type. 2. To order data into a given sequence, e.g. alphabetical.

sort key Part of a data record used to determine the position into which the whole record will be sorted. See **sort**.

sound See **audio**.

SoundBlaster The most widely used make of **sound card** for the PC. Has become the *de facto* standard. **VOiCe** is a related **audio format**.

sound board See **sound card**.

sound card A plug-in board (also called a **sound board**), usually for a PC, which provides output of high-quality stereo sound, controlled by **application** software. An essential if **multimedia** is to be used and standard on most new PCs. The *de facto* standard is the **SoundBlaster** card.

sound resource A file which, when accessed with appropriate software in the presence of a **sound card**, will produce audio signals.

source code or **source language** The programming language in which a user's program is written, usually a **high-level language**.

source program Program written in a language which requires subsequent translating into an **object program** which the computer can understand. Usually, a source program is written in a **high-level language** and translated by a **compile**r into an object program in **machine code**. Alternatively the source program may be written in a **low-level languag**e and translated by an **assembl**er into an object program in machine code.

source quench A control message within the **Internet Protocol** (**IP**) that requests a **host** to transmit more slowly over a particular connection in order to avoid congestion.

source route An **email address**, determined at the source of a message, which specifies as a series of **hostnames** the route a message should take. A **bang path** is the most usual kind. However, it is now more usual for the route to be determined at each stage.

space An impulse (or lack of impulse) which indicates a binary zero. Compare **mark**.

spacebands Spacing pieces used by linecasting machines.

spaces (or **spacers**) Pieces of metal type used to space out letters or words.

space segment Part of a satellite communications system, including the satellite and the space transmission links.

spacing Spaces between characters or lines of type.

spamming Sending messages to a large number of **newsgroups** irrespective of relevance to the subject of those newsgroups. The intention is often to advertise, but the intent may also be malicious or just mischievous. Spamming usually gives rise to **flames**, which increases the **traffic** even more.

S paper See **stabilisation paper**.

SPDL See **Standard Page Description Language**.

speaker model In voice recognition technology, the characteristics of an individual user's speech patterns.

spec Specification.

special character Character which is not present in the usual range available in a font.

special colour A printing ink colour mixed specially for a job rather than made up out of the process colour set.

special furnish Papers made from a special mixture of pulps for a specific purpose.

speciality papers Papers for special industrial or commercial use, often with unusual properties.

special sort Unusual character necessary in a job.

specimen Sample page set to show the typography.

speckle See **skips**.

spectro-photometer Instrument that measures paper colour from its reflected light.

spectrum Complete range of colours from long wavelengths (red) to short wavelengths (blue).

speech recognition (Or **voice recognition**, **voice input**.) A technique in which spoken words are interpreted by a computer system. Most systems must be 'trained' by the user giving the interpretation of a series of representative words, and may need training for each individual using the system. Usually it is necessary for words to be spoken in a rather unnatural, detached manner although recent software has been developed to recognise more natural patterns of speech, as well as to analyse strings of words and interpret the context, distinguishing, e.g., between 'no' and 'know'. Speech recognition is particularly useful in ideographic languages such as Chinese.

speech synthesis Or **voice output**. The generation from a textual or phonetic description of a waveform which sounds like human speech. The generation of numbers, e.g. associated with an on-screen calculator, is quite common. Speech synthesis is also used in **voicemail** systems.

spellcheck Function that checks the spelling in a text against a dictionary held in the computer.

spelling check program Or 'spellchecker' or 'spelling checker'. A computer program which checks the accuracy of each word of input against the spellings of a dictionary held in memory and displays discrepancies on the screen.

sph Sheets per hour. The standard measurement of sheetfed printing speed.

spider A **program** that automatically explores the **World Wide Web**. It finds one document and then retrieves the documents referenced in it. May be used to find specific information or to create an index. Also called a **crawler** or Web crawler. Can also be regarded as an **intelligent agent**.

spike To reject a news story (formerly the rejected copy would have been filed on a spike).

spiking Irregular surges in power on an electrical power line causing interference with sensitive electronic equipment.

spine The back edge of a book.

spine brass See **brass**.

spine lettering The words on a **spine** of a book, often blocked in gold or silver.

spinner A revolving display rack for books.

spinoff A useful by-product resulting from the manufacture and development of another invention.

spiral binding **Binding** using a continuous spiral of wire or plastic threaded through punched holes in the back margin.

spirit duplication Duplication by moistening a carbon dye on a master to transfer it to sheets.

splice Crosswise joint in a web of paper, secured with adhesive. (See also **flying paster**.)

split boards Cover boards in two layers between which are glued the edges of the endpapers and section tapes in hand-bound books.

split fountain or **split duct working** Colour printing technique which divides the ink duct to achieve different colours across different parts of the same roller.

split fraction Fraction written as numbers one above the other, separated by a dash.

split run Print run of a publication divided in two (or more) stages to accommodate changes in text, changes of binding style etc.

splitting Tearing of paper suface areas on the press.

spoilage Waste incurred during the printing or binding processes.

spoofing A technique used to reduce **wide area network** overhead. **Packets** sent for management purposes are answered by **bridges** or **routers**, rather than by the remote **LAN**, fooling (spoofing) the local device into thinking that a remote LAN is still connected, whether it is or not, thus reducing the traffic on the **WAN**, because no packet is ever sent out. Current LAN protocols are not able to handle spoofing well but, because **bandwidths** are generally greater than on WANs, the facility is not so necessary.

spooling Refers to the simultaneous printing of a text whilst the user is engaged on some other activity, such as editing another text. The term comes from the acronym SPOOL, standing for simultaneous peripheral output online.

spot Painting out unwanted light-spots on a negative with a purple water-soluble ink called opaque.

spot colour Colour that is usually specified in a document as a particular, often **Pantone**, colour, say for text or graphical features. This is in contrast to **process colour**.

spotted negatives Negatives which have been painted to delete any unwanted light-spots.

spotting Retouching or covering up marks on **artwork** or film in preparation for printing.

spot varnish Varnish applied to selected parts of a printed sheet. Often used to enhance the sheen of photographs.

spray Chemical used to spray printed sheets to prevent set-off. Also, **anti set-off spray**.

spraying Ejection of ink off the rollers, usually because it is too thin.

spread Pair of facing pages.

spread coating Method of paper coating using a controlled flow of coating material onto the paper surface.

spreading Ink creep on printed areas.

spreadsheet A **software package** designed to perform financial calculations. Users are presented with a grid of alphabetically identified columns and numbered rows. Each intersection forms a cell which may contain text, numerics or algebraic formulae. As the contents of one numeric cell are altered, the contents of referenced formulae cells are updated automatically.

spread spectrum Another term for **code division multiple access**.

spring back A rounded springy back for stationery books made of strawboard or millboard.

sprinkled edges Edges of a **book-block** sprinkled with blobs of ink.

sprite A small **bitmap** image, which can be defined, by progam, in terms of its shape, colours and other graphic characteristics. Sprites are then manipulated, singly or together, as part of screen displays or games.

sprocket holes Feed holes in paper tape.

SPX See **Sequenced Packet Xchange**.

SQL (Often pronounced as 'sequel'.) See **Structured Query Language**.

square back **Flat back** binding.

square back or **square spine** Binding style that leaves the back of the book flat rather than curved.

squared-up half-tone A photograph with right-angle corners, rectangular or square.

squares The parts of a case which overlap the edges of the leaves on a case-bound book.

square serif Typeface with serifs heavier than the strokes.

squash Ink that has overrun the intended image area.

SRA sizes Sizes of stock sheets of printing paper for printing bled work, larger than the equivalent **A** sizes. See Appendix for paper sizes.

s/s Abbreviation for **same size** in reproduction specifications.

SSB See **single-sideband transmission**.

SSL See **secure sockets layer**.

SSN See **SIM card serial number**.

stabbing See **side-stabbing** and **side wire stitching**.

stabilisation paper or **S paper** Photographic paper used for photosetting output. Has short image-retention span once processed and cannot be used when subsequent corrections will be stripped in at a later stage. Contrast **resin-coated paper**.

stack 1. The calendering unit on a paper machine. 2. Pile of sheets, printed or unprinted. 3. See **layer**.

stacked press Sheetfed press in which the printing units are stacked one above the other (the same model as blanket-to-blanket web presses).

Stacker A hard-disk **compression** utility, now owned by Microsoft.

staging Method of correcting photo-engravings by **stopping out** and re-etching.

stamping See **blocking**.

stamping die Steel or brass plate used for blocking. See **brass**.

stamping foil See **foil**.

stand-alone A self-contained hardware system which needs no other machine assistance to function.

standard artwork Artwork drawn for common use and made available in printed form for further reproduction. Often sold as books or as a subscription service. (See also **clip art**.)

standard document A wordprocessing file containing a document that can be merged with variable information to produce a letter. See **mail merge**.

Standard Document Interchange Format (SDIF) ISO 9069, a standard for exchanging **SGML** documents.

Standard Generalised Markup Language (SGML) A generic markup language defined by **ISO 8879**:1986 for representing documents in terms of their hierarchical structures. SGML is a language and not a coding system so that for each application a **Document Type Definition** (**DTD**) is defined in which the hierarchy of the class of documents is described in terms of the coding to be used. A DTD, as well as describing the hierarchical structure, can also include references to

external entities such as graphics, video, audio and computer programs. So SGML can be used as the basis for multimedia applications, the code being interpreted by SGML-compliant viewers such as **Dynatext** or **Panorama**. **HTML** is based on an SGML DTD and World Wide Web browsers are currently only able to interpret the HTML DTD. SGML describes structure and not appearance but increasingly this is seen as a limitation, and support for typographical formatting is being developed. **Cascading Style Sheets** (**CSS**) provide appearance-related functionality not specified in the HTML DTD. An SGML document actually consists of three parts: the SGML declaration; the DTD; and finally the document instance (what the reader thinks of as the document), but in most applications it is only the document instance that is seen by the user.

Standard Page Description Language (SPDL) The **ISO** standard (ISO 10180) for **page description languages**, based very closely on **PostScript**.

standard testing conditions Officially specifed conditions under which paper is tested: 50% relative humidity and 23°C.

standing film Film stored after printing or proofing pending subsequent re-use.

standoff In DTP systems, the distance between a graphic and its boundary. Text which is flowed around a graphic will not encroach into the standoff area. (See also **graphic boundary**.)

star network One in which each device is connected to a central controller. As terminal to terminal communication is not possible, the entire network will become inoperable if the central computer fails. Compare **ring network**.

starred roll Paper roll with buckled inner layers caused by loose winding and forming a 'star' pattern when viewed from end-on.

start bit The **bit** which signals the start of a block of **data** in **asynchronous** communications. (See also **stop bit**.)

start of text A data communications control character that terminates a message heading indicating that the text of the message follows.

start-stop transmission An alternative name for **asynchronous** transmission. Data blocks are preceded by a **start bit** and followed by a **stop bit** (or bits).

start-tag The tag which indicates the start of an **element** in **SGML** or **HTML**.

stat See **photostat**.

stateless server A **server** in which each request is treated independently, without reference to any previous request. There is no need for storage to be allocated to keep information about any request and, if a transaction fails, it is up to the client to repeat the request. However, this will usually mean that more information has to be included in each request and this has two effects: increasing the amount of information in the request and requiring the server to interpret it each time it is received, both slowing down end-to-end response. The **World Wide Web** server is stateless, in contrast to an **ftp** server, which exchanges information with the client before the file is transmitted.

state of the art Pertaining to what can be achieved without further research or development.

static IP address An **IP address** that is permanently allocated to a user. (Compare with **dynamic IP address**.)

static neutraliser An attachment on a litho press which removes static electricity from the paper.

station 1. Unit of a binding or wrapping machine. 2. **Data terminal equipment** on a datalink or **network**.

stationery binding Binding which allows books to remain flat when open (to facilitate writing in).

STD 1 The **Internet Architecture Board** official list of **Internet** standards, each of which is given an STD number, so that, e.g., STD 2 is the document listing the current Internet **assigned numbers**, STD 9 is the STD defining **File Transfer Protocol** (**ftp**), and STD 15 the STD defining the **Simple Network Management Protocol**.

steel engraving Intaglio plate often used to reproduce fine designs on stationery (e.g. bank notes, share certificates etc.).

stem Upright stroke of a letter or figure.

step-and-repeat machine A device which exposes the same image repeatedly according to preprogrammed instructions.

step index Index letters in the foredge margins of a book revealed by cutting the margins away progressively to expose the letters sequentially positioned from top to bottom throughout the text. Also known as **cut-through index**.

stepped index A type of optical fibre in which the core has a different refractive index to that of the cladding, with a sharp change in refractive index at the boundary between them. It is usually used for transmission at high speed over long distances.

stereographic Viewing two-dimensional objects (pictures, drawings) so that they appear to be three-dimensional.

stereotype Duplicate printing plate cast in a mould taken from the original. Abbreviated to 'stereo'.

stet Proofreader's instruction meaning ignore marked correction, i.e. let it stand as it was.

stick See **composing stick**.

sticker Publicity material gummed for sticking on other literature or display surfaces.

stick-up initial or **raised initial** Initial letter set in larger type than the rest of the text; the letter sits on the **baseline** and is taller than the **ascender line**.

stiffener Strip of card stuck to the inside of a cloth **spine** to make it stronger.

stiffness Rigidity of a sheet of paper.

stillage **Pallet**.

stipple Dots used to give a background effect of colour tint.

stitch To stitch with thread or staple with wire as a binding function.

stitching Joining pages together with wire or thread.

STM Scientific, technical and medical publishing.

stochastic screening A type of **frequency modulation screening** in which the microdots produced are of variable sizes. Sometimes called **irrational screening**.

stock 1. Liquid pulp prior to papermaking. 2. (Loosely) the chosen paper to be printed.

stone The surface (now metal) on which pages of metal type are assembled and planed down (levelled). Hence, 'stoneman'.

stone groundwood mechanical pulp (SGW) Basic mechanical pulp, obtained by grinding debarked logs against a milling stone under heat and pressure. (See also **refiner mechanical pulp** (**RMP**), **thermomechanical pulp**, (**TMP**), **chemi-thermomechanical pulp** (**CTMP**).)

stone out To remove small areas of a litho plate with an abrasive stone.

stop The ending of a rule where it crosses another line.

stop bit The **bit** (or bits) which signals the end of a block of **data** in **asynchronous** communications. (See also **start bit**.)

stop code A **wordprocessing** control code, inserted within the body of a document, designed to stop printed output for the insertion of variable information.

stopping out Protecting selected **half-tone** areas during etching so that they are not further reduced.

stop press Small section, usually on the front or back page of a newspaper, reserved for late news items.

storage Floppy disk, hard disk, or magnetic tape used to store digital information in a permanent form.

store-and-forward A method of transmitting messages over a **network**, in which a complete message is received before it is passed on to the next node, and within which a message may be stored at an intermediate mode until conditions are more appropriate for transfer. **UUCP** is an example of such a method.

story In **DTP** terminology, all the text from a single wordprocessed document or all that text in a **page make-up program** which finishes by being **threaded**.

storyboard Illustrated board showing proposed camera shots or illustration sketches with script and technical annotation.

straight matter Straightforward text setting.

strawboard Originally, board made from straw fibres. Now used loosely to mean case boards of any description.

stream feeder Fast feeder on printing machine or folder which overlaps sheets as it arranges them for the grippers.

streaming Playing **audio** or **video** in real time as it is downloaded (usually over the **World Wide Web**), rather than storing the file and playing it when download is complete. There are **plug-ins** to **Netscape Navigator** that decompress and play the data as it is transferred, although in newer versions of this and other browsers, streaming audio and video will be part of the functionality of the browser. For streaming to operate effectively, it is necessary to have a connection with a high **bandwidth**, as well as a computer that has enough power to carry out **decompression** in real time.

stream-oriented See **connection-oriented**.

stress Angle of shading in typeface character design. May be oblique or vertical.

stress marks Small marks or accents indicating an emphasis on a syllable or word, as used in **phonetics**.

strike See **stop**.

strike-on composition Typewriter-typesetting, e.g. IBM Composer. See **golfball typewriter**.

strike-through Too heavy a printing impression which leads to the printed image bleeding through to the underside of the sheet.

string A sequence of alphabetic or numeric codes in a computer program or in phototypsetting.

stringer Correspondent, not on the regular staff of a newspaper, who will cover stories in a particular area of the country.

string variable Programming variables that may contain alphanumeric data.

strip and rebind Remove the case of a case-bound book and rebind as a paperback with a limp cover.

strip gumming Applying water-soluble adhesive to paper strips.

stripper film Very thin film used for hand corrections.

stripping Film handling, correction and assembly (US).

stripping guide Layout for film assembly.

stripping-in Inserting or assembling film in pieces using tape or adhesive.

strip test Use of special paper to test the **pH** of an offset fountain solution.

structured document A document that is coded in such a way as to indicate its structure, rather than its formatting, so that, e.g., there will usually be no concept of page, although sections and perhaps chapters may be coded since they are structural elements. While a **wordprocessor** document can be a structured document, use of a **parser**, together with a standard such as **SGML**, will guarantee that the structure of the document is as defined in the **DTD**. Structured documents are important in the context of **electronic publishing** because parsing provides a 'proofreading' facility, conventional checking of material often being impractical because of either the size or complexity (or both) of the files in a **multimedia** application.

structured programming A method of program design and structure intended to aid the debugging process.

Structured Query Language (SQL) (Often pronounced 'sequel'.) A language designed for searching for information within **relational databases**, usually within a **client-server** architecture, and retrieving the information in a structured form. SQL commands can also be used to add to or change the information in a database. SQL has a structure which is similar to natural language (English), which is intended to make it easy for non-specialists to use; however, the syntax must be adhered to, so it is not easy for a novice to use. Alternatively, it can be embedded in other languages. SQL is both an **ISO** and an **ANSI** standard, although it is under revision.

stub Network which carries **packets** between a **backbone** and local **hosts**.

stub binding System of **binding** where the **spine** is formed by sewing the folded sections to stubs of paper which are then glued together.

stub network A **network** which carries **packets** between a **backbone** and local **hosts**.

studio system or **studio front-end system** Pre-DTP typesetting front-end system similar to **DTP** in its concept with **WYSIWYG** correcting facilities, a **WIMP** operating environment, and text-and-tone output capabilities.

stuffed Compressed with the compression utility **StuffIt**, although the term is also used to describe a file compressed by other means. (See also **zip**.)

stuffer Publicity material sent out in the mail with other literature.

StuffIt A **file compression** utility for the **Macintosh**, developed by Aladdin Systems Inc. Also used for **archiving**. See **stuffed**.

stump The first part of a hyphenated word at the end of a line. Some typesetting systems permit the definition of a 'minimum stump', i.e. the minimum number of letters which it is acceptable to leave before a hyphen.

stump line The last line of a page ending with a hyphen. Considered very undesirable.

stx Start of text. A control character within a **packet** or message designating the end of the **header** and the start of the text of the message.

style Typographically, whether text is bold, italic, reversed or underlined. The term is also used to describe a set of formatting characteristics, such as typeface, typesize, interline spacing (leading), indents, **hyphenation** and **justification** parameters and even language, that can be applied to a paragraph and saved under a defined name. Almost all **wordprocessors** and **desktop publishing** systems (**page layout programs**) allow the use of styles. These can be combined into **style sheets** or **templates**. The principle is now being extended to **HTML** authoring tools.

style of the house Typographic and linguistic rules of a publishing house. Also **house style**.

style sheet A combination of **styles** or formatting (also called a **template**) which is appropriate for a particular type of document. Thus, there will be different style sheets for letters, invoices, reports etc. The principle is now also applied in **HTML** under the name **Cascading Style Sheets**.

stylus 1. Instrument with a hard point for engraving on metals. 2. Special pen used for graphics.

sub 1. Sub editor, journalist who edits copy. 2. Subscription to a magazine or journal.

sub-band encoding An audio compression technique in which the signal is split into frequency bands. Parts of the signal which are not detectable by the ear are then removed and the signal encoded using variable **bit** rates, so that more bits per sample are used in the middle frequency range. Sub-band encoding is used in **MPEG-1**.

sub-edit To prepare, modify and correct a manuscript for publication. This will include checking the grammar; placing of illustrations, references, footnotes etc.; headers; pagination and more.

sub-editor Member of staff of a publishing house who **sub-edits** a **manuscript** prior to printing.

sub heading Secondary level of heading on a printed piece.

sub master Diazo film copy used for plate-making.

subnet Part of a **network** that shares a **network address** with other portions of the network and can be identified by a **subnet address** or **number**. A subnet has the same relationship to a network as a network does to an **internet**.

subnet address The **subnet** portion of an **IP address**. See **address mask**.

subnet mask See **address mask**.

subnet number See **subnet address**.

sub routine Set of instructions in a computer program which perform a constantly repeated operation such as a mathematical function.

subscriber identity module (SIM) A **smartcard** which a user needs in order to use the **GSM** digital network.

subscript Inferior character. Small character printed below the baseline as part of a mathematical equation.

subsidiary text Extracts, footnotes, and other secondary text in a book. Typically set smaller than the body text.

substance Paper weight measured in grams per square metre. See Appendix.

substitutional compression An alternative description of **Lempel-Ziv compression**, in that an occurrence of a particular phrase or group of bytes in a block of data is substituted by a reference to a previous occurrence of that phrase.

substrate 1. Base paper before coating. 2. Carrier for another material or coating, e.g. film. 3. Surface being printed on.

subtitle Secondary or additional title.

subtractive colour The colour seen when white light is reflected from a coloured object. Subtractive colour is used in printing (see **CMYK**). Screen displays use **additive colour**.

subtractive primaries Yellow, magenta and cyan, the **process colours**.

suction feeder Machine feeder which uses air blowers and suckers to separate and lift sheets.

suffix Syllable or letters attached to the end of a word to form a derivative of that word, e.g. -ation, -itis.

sulphate pulp Also known as **kraft** pulp. Pulp made from wood fibres cooked in an alkaline mixture containing caustic soda (sodium hydroxide), sodium sulphide and sodium sulphate. Particularly suited to hardwoods, but increasingly used for softwoods too.

sulphite pulp Pulp made from wood fibres cooked in an acidic mixture containing calcium bisulphite and sulphur dioxide in water. Particularly suited to softwoods.

sunk cord sewing System of **binding** where the cords lie in grooves cut in the backs of the **signatures**.

SuperATM A version of **Adobe Type Manager** in which **Multiple Mastering** technology is enabled. (See also **pdf**, **Acrobat**.)

supercalender A calendering stack with alternate hard steel rollers and soft rollers which imparts a high gloss finish to paper as it 'slips' between them. Usually off-machine.

supercalendered mechanical See **WSOP**.

supercalendered paper Paper with a highly glazed finish, achieved by passing it through a heavy cylinders.

supercalendering Producing a highly glazed finish to paper by roller pressing it in a **supercalender**.

supercomputer A very powerful mainframe computer used where extremely high speeds and storage are required.

superhighway See **information superhighway**.

superior Small character set above the line especially used in mathematical statements or to indicate footnotes.

SuperJANET A broadband expansion of **JANET**, started in 1989.

SuperJournal project One of the demonstrator projects, run in 1993, to give an indication of the potential of the **SuperJANET** network. Provided one of the first examples of **electronic journals**, including full-colour illustrations, running over a network.

superscript Small **character** printed above the normal **base line** for larger characters.

supershift Function on a typesetting keyboard which makes makes it possible to use another **font**.

super source quench A special packet within the **Internet Protocol** (**IP**) which is designed to stop an **Internet** host transmitting. It is rather like a **source quench**, except that it is a redirect control packet, which looks as though it comes from a local router, instructing the host to send all packets to its own **local loopback address.** Thus, no packets will be transmitted. A **breath-of-life packet** can be used to restart transmission.

Super Video Graphics Array (SVGA) HIgh resolution monitor for displaying graphics.

super VGA See **VGA**.

support In computing software terminology, 'supporting' a function means providing the

facility to run that function. For example, a printer which 'supports' PostScript is one that is provided with the programs to accept and run PostScript code.

supported sleeve Cylindrical, wire-mesh sleeve which can be fitted over the body of a **dandy roll** and removed when not required.

Supra An extension of Adobe **PostScript** to provide the functionality required for high-resolution **imagesetters**.

surface picking See **picking**.

surface plate Conventional presensitised litho plate in which the image stands slightly proud of the surface. Compare **deep-etch plate**, **bimetal plate**, **trimetal plate**.

surface sizing **Sizing** of paper carried out on the sizing press of the papermaking machine.

surface strength Resistance of paper surface to picking or lifting.

surfing (Or 'surfing the Internet', 'surfing the Web'.) Use of **World Wide Web browsers** to move around **URL**s, following cross-references. The analogy with surfing arose because of the apparent ease of moving around the Web.

surprint Exposure of a second image on an already exposed image.

SVGA Super video graphics array. See under **display adapter**.

swash letter An ornamental character, usually an italic cap.

swatch Colour specimen printed on paper or a set of such specimens.

swelled rules Rules which are wider at the centre than at the ends.

SWIFT See **Society for Worldwide Interbank Financial Telecommunications**.

Switched Multimegabit Data Service (SMDS) A **connectionless** transport protocol developed by Bellcore and based on **DQDB** (**Distributed Queue Dual Bus**) for use in **metropolitan area networks** in the US. **CBDS** (**connectionless broadband data service**), developed in Europe, is almost identical. The data format has the same length and structure as that used for **asynchronous transfer mode** (**ATM**), providing an easy upgrade path to ATM.

sword hygroscope Probe used to determine the moisture content of a stack of paper.

swung dash 1. Printing symbol (~) used in dictionary definitions to show that a headword is being repeated. 2. A carriage return sign used in some computer programs.

symbol 1. A waveform produced by a **modulator** or **modem** that may be uniquely identified by a **demodulator** or a second modem. As a symbol may be generated from several bits, the symbol rate (or **baud rate**) may not be the same as the **bit rate** for a transmission. 2 Used in typesetting and **desktop publishing** to describe a non-alphabetical or mathematical character, which usually does not form part of the **ASCII** character set.

symmetric-key cryptography A **cryptography** system where both parties have the same **encryption key**, as in **secret-key cryptography**. The opposite of **public-key cryptography**.

sync bit A **bit** used for data communications synchronisation.

synchronous In data transmission, signals coordinated by regular timing pulses. Blocks of data are transmitted at a measured rate dictated by timing devices at both ends of the interface. Compare **asynchronous**.

Synchronous Data Link Control (SDLC) An IBM protocol similar to **ISO HDLC** (**high-level data link control**).

synchronous digital hierarchy (SDH) International digital telecommunications hierarchy with standard data rates based on multiples of the bit rate 51.84 Mbps.

Systems Engineering for Network Debugging, Integration and Test (SENDIT) A two-year project funded by the European Commission and intended to produce software tools for distributed applications running on networks of microcomputers.

synchronous key encryption Data **encryption** using two interlocking keys, which is the basis of **public-key encryption**. It is not possible to determine one key from the other. (See also **Pretty Good Privacy** (**PGP**).)

synchronous modem One with an internal clock which produces streams of data at a fixed transmission rate. See **synchronous transmission**.

Synchronous Optical NETwork (SONET) The North American version of **SDH** (**synchronous digital hierarchy**).

synchronous transmission Data transmission in which each bit is transmitted at a given rate. Synchronous transmission is capable of higher speeds than **asynchronous** transmission but requires that both transmitter and receiver remain in exact synchronisation. While each block is preceded by special synchronisation bits, no **start** and **stop bits** are used.

synopsis Summary or outline of a book.

syntax The rules of grammar regulating the use of a language.

synthesizer An electronic device that makes musical notes or other sounds. It may be a chip on the **sound card** that can create sound in response to digitised instructions. With a **MIDI**

interface, a computer can control one or more synthesizers.

synthetic papers Synthetic materials, typically plastic, which have many of the properties of paper and can be printed. Usually expensive.

SyQuest disk The brand name for a removable hard disk drive and cartridge hard disk with a high storage capacity. The term is often also used to describe removable disks from other manufacturers. These devices first became popular when it was necessary to transfer large colour **PostScript** or **bitmap** files for printing.

SYSGEN An operating system command used to transfer system files to a specified disk drive.

System 7 The 1991 version of the **Macintosh operating system**, which provided much greater functionality than the previous operating system, including **multi-tasking**.

system functions Functions relating to the movement of data within a system and controlled from the keyboard, e.g. writing to memory, or transmission between peripherals.

system generation An operating system utility that allows a user to customise an operating system and related applications programs to suit hardware requirements.

System Network Architecture (SNA) A proprietary communication architecture, or protocol, developed by IBM for their mainframes and initially based upon **SDLC.** SNA was incorporated in many IBM hardware and software implementations. It performs a similar task to the **TCP/IP** and **OSI** protocols.

Systems Application Architecture (SAA) An IBM architecture for **client-server** computing.

System X A modular, computer-controlled, digital switching system used in telephone systems.

T

T-1 A **digital leased-line** communications service available in the US, used for **ISDN** at 1.544 Mbps. Equivalent to the European **E-1** service.

T-3 A **digital carrier** facility used to transmit a DS-3 (see **data service levels**) signal at 44.736 Mbps. (See also **ISDN**.) It is equivalent to the European **E-3** service.

TA See **terminal adaptor**.

tab In typesetting or wordprocessing, to determine the points where the text is to align vertically.

tabbing Movement of the cursor in a wordprocessing program enabling it to jump from one column to the next, useful in tabulations.

tab index Index letters printed on tabs which are stuck to the far edge margin of a book.

table Data stored in a form, often an array, that is suitable for reference.

table of contents generation The computer-aided compilation of a table of contents by taking specified headings from text, sorting and displaying them.

tablet See **graphics tablet**.

tabloid Newspaper size approximating to A3.

tabular As arranged in a table or list.

tabular material Typeset tables or columns of figures.

tabulate To set out text in preset columns with the cursor moving to each one automatically as the text is keyed.

TAC See **terminal access controller**.

tack The viscosity and stickiness of ink.

tacketing Method of strengthening stationery binding using 'slips' or bands of leather.

tag A generic markup tag is one which identifies a particular atttribute: an 'A' heading, e.g., in the markup of text. Tags are converted to typesetting by allocating typographical specifications to them and translating them inside the front-end of the typesetting system.

tagged image file format (TIFF) A **graphic file format** used for **bitmap** images. TIFF files can be black and white, **grey scale** or in colour.

tailband Cotton or silk cord attached to the foot of the spine of a book. (See also **headband**.)

tail-end hook See **back-edge curl**.

tail-piece Typographical device at the end of a chapter or book.

tails Bottom margins of pages.

take An amount of copy for typesetting allocated to one operator. Part of a newspaper story which has been divided up for speed of setting.

Taligent An **object-oriented operating system** being developed jointly by IBM and Apple. Formerly called **Pink**.

talk Communication over a **network** or the **Internet** in real time. See **Internet Relay Chat**.

Tandem A **network** configuration in which **point-to-point** circuits are linked together.

tandem working Using more than one printing machine in-line.

tape See **punched tape**.

tape editing Correcting information stored on tape, usually resulting in a second, edited tape.

tape merging The combining of data from a master tape and a correction tape to produce a third, error-free tape.

tape streamer A magnetic tape transport designed to perform back-up operations.

tape transport The device which moves tape past the reading heads.

TAPI See **Telephone Application Program Interface**.

taping Pasting strips of material to binding sections to add strength.

TAPPI See **Technical Association of the Pulp and Paper Industry**.

tare Weight of an empty container or unloaded vehicle.

targa A **graphic file format** used for **bitmap images**, often used as the format for output from **ray-tracing** programs.

taster Small sample of a book, typically a chapter, sent out by a publisher for promotion purposes.

TCF Totally chlorine free, relating to pulp and paper manufacture. See also **ECF**.

TCL See **Tool Command Language**.

TCP See **Transmission Control Protocol**.

TCP/IP See **Transmission Control Protocol/ Internet Protocol**.

TDM See **time-division multiplexing**.

tdma See **time-division multiple access**.

tearsheet Page from printed periodical used as proof or evidence of publication, especially of advertisement.

tear test 1. Test which determines grain direction in paper by the ease of tearing. 2. Test to determine strength.

technical/office protocol (TOP) An **applications-layer application** for office automation over **networks** developed by Boeing on the basis of the **OSI** model based on **Ethernet**. (See also **MAP**.)

Technical Association of the Pulp and Paper Industry (TAPPI) American professional organisation.

technical press Periodicals concerned with technical subjects and circulating among specialists in those subjects.

TEI See **terminal endpoint identifier**, **Text Encoding Initiative**.

Telecom Gold A nationwide electronic mail service operated by British Telecom.

telecommunications Communication via telephone systems. Telecommunications today range from simple voice communication over the telephone to complex systems involving computers, **fax** machines, **modems** and related equipment.

telecommuting (Or **teleworking**.) Working at home and communicating with colleagues and others over **telecommunications** systems instead of physically commuting to work (see also **computer supported cooperative work**). Usually implies being employed by a company, rather than working freelance, although the distinction is not clear.

teleconferencing Either **audioconferencing** or **videoconferencing**.

telegraphy Transmission of data, predating **telephony**, using bipolar dc current signalling. Output was on teleprinters.

telematics The combined use of **telecommunications** and computing. The word comes from the French 'télématique', which means relating to telecommunications. The term is widely used in the European Union.

teleordering Computerised book ordering system in which the bookseller's orders are put through to the central computer at the end of the day, and relayed to the publisher's distribution service the following day.

Telephone Application Program Interface (TAPI) A **Windows 95** application program interface that enables hardware-independent access to telephone-based communication. (See also **CTI**.)

telephony See **telecommunications**. Involving voice transmission, as opposed to **telegraphy**.

telepresence The experience which the user of **multimedia** applications, such as virtual reality, undergoes so, although not physically in the virtual world, the user feels psychologically that he or she is, e.g., travelling at very high speed.

teleprinter Remote printer used in the early days of **telex** and **telegraphy**.

teleprocessing Using **telecommunications** to carry out data processing on a remote basis.

telepublishing Another term for **electronic publishing**.

telescoped roll Reel of paper with progressively misaligned edge.

Telescript An **object-oriented** programming language, developed by US company General Magic and designed specifically for handling communications. The intention is to make communications programming simpler and provide cross-platform, network-independent messaging, in much the same way as **PostScript** did for formatted files.

teletex An international text exchange service, 40 times faster than **telex**.

Teletext Broadcast system displaying text and schematic images on a TV screen. Organised in pages, which can be called up by the user keying numbers from a displayed index.

teletype A peripheral equipped with a keyboard, printer and paper tape punch and reader.

teletypesetter Linecasting system driven by six-channel paper tape generated on separate keyboards.

teletypesetting (TTS) Typesetting operated by punched paper tape, often over a telegraphic system. Formerly popular system for newspapers.

teletypewriter Keyboard and printer attached to a computer system that can input data direct or make punched paper tape.

television receive only (TVRO) A satellite dish and receiver combination to receive television from a satellite. The more powerful the satellite, the smaller (and therefore cheaper) the dish needs to be. Similarly, for more powerful signals, the receiver needs to have less complex (and thus again cheaper) decoding circuitry.

teleworking See **telecommuting**.

telex (Teletypewriter exchange service.) An **analogue** service based on teleprinters. Now virtually superseded by **teletex**, **fax** and, most recently, **email**.

telnet The standard **Internet** protocol that allows users of one **host** to log into a **remote** host so that they are seen as normal terminal users of that host. Essentially provides the same facilities as directly dialling in to a remote host, but over the Internet, and thus avoiding telephone charges – or at least reducing them to the cost of a local call to the nearest **point of presence**. (See also **tn3270**.)

template 1. An underlying page design or grid into which text and graphics are placed. 2. A standard document that can be used as the basis of a class of documents, so that, e.g., in a **wordprocessor**, a template for a letter can include the letter heading, including graphics, and any other standard information, such as the date, which can be generated automatically from the system date. Templates are now widely used in many applications and in most cases any document can be saved as a template. A similar term is **style sheet**.

tensile strength Capability of paper to withstand stretching and pulling.

TERM A program that runs under **Unix** and allows users dial-up access to the **Internet** without using **SLIP** or **PPP**.

terminal A device, usually a keyboard and screen, that is connected to a computer or **network**, on which data may be input or displayed, but has no processing power of its own. Also described as **DTE**.

terminal access controller (TAC) A device that connects **terminals** to the **Internet**, usually via **modems**.

terminal adaptor (TA) Equipment used to connect terminal equipment with **RS-232** ports to **ISDN basic rate interface**. TAs replace the **modems** used on **analogue** lines and, as far as the user is concerned, effectively perform the same task, connecting to a telephone line.

terminal emulation Connecting a computer to another computer using a **terminal emulator**.

terminal emulator A **program** that makes it possible for a computer (often a **PC**) to act as a **terminal** to another system, often a mainframe or **Unix**. The commonest type of terminal emulated is the **VT 100**. Note that it is not important how the physical connection is made and this can be via **telnet**, by dial-up or even as a direct or **network** connection.

terminal endpoint identifier (TEI) (Or terminal equipment identifier.) The identifier used for specific items of communications equipment, e.g. telephone, fax machine, modem, in an **ISDN** installation.

terminal equipment identifier See **terminal endpoint identifier**.

terminal server A device that allows many **terminals** (**serial lines**) to be connected to a **local area network** (**LAN**) through a single network connection.

termination Adding a **terminator** to a series of **SCSI** devices.

terminator 1. See **Ethernet**. 2. The device which must be added at the beginning and end of a **SCSI** chain.

TEX (Pronounced 'tek' – Greek tau, epsilon, chi.) A **public domain** document **formatting** and **typesetting** language developed by Donald Knuth, originally for setting Volume IV of his *The Art of Computer Programming*, as he had become dissatisfied with the quality of the setting in Volumes I to III. The language uses **macros** and has a number of different implementations, such as **LATEX**, which incorporates macros that describe **document styles** and has become a **standard** for setting technical material. This is partly because it provides facilities for setting equations and mathematical material, but also because the mathematical syntax is described in the language of the mathematician or computer scientist (rather than that of the compositor – hence the reluctance of conventional typesetters to use it). In addition, TEX **input** is entirely in **ASCII**, so that is easy to transmit by **email**. It is also used as a screen formatter for equations by such **browsers** as Dynatext and also by organisations such as the American Mathematical Society for distributing academic journals electronically. Note, however, that TEX is not **WYSIWYG**,

although in some implementations screen preview of pages is possible. (See also **Metafont**.)

text The body typesetting in a book as distinct from headings and display type.

text area Area occupied by text on a page, normally governed by a grid.

text block In **DTP**, an area on a page into which the user has placed text.

text database A **database** for handling large amounts of, often unstructured, text. They were originally designed to handle newspaper archives and utilise **tags**, together with specially designed software for indexing, searching and extraction. Recently, some have been made available in **SGML**-compatible versions. Well known examples include BRS Search, Status and Basis Plus.

text editing Any rearrangement or change performed upon textual material, such as correcting, adding and deleting.

text editor An editing program used, most frequently by programmers, to edit **text** or **ASCII** files. Unlike **wordprocessors**, text editors provide no control over formatting except indirectly when, e.g., **TEX** files are edited and these include ASCII-coded formatting information that is subsequently interpreted by the TEX program.

Text Encoding Initiative (TEI) An initiative designed to make possible the exchange of electronic texts for academic research purposes, rather than for publishing. **SGML** coding is used and a TEI **DTD** has been published. In spite of its academic emphasis, there is much in the TEI work which is relevant to **electronic publishing** in general.

text pages The principal matter in a book as distinct from the **frontmatter** and **endmatte**r.

text paper 1. Fine quality paper for printed publicity work. 2. The body paper of a magazine or book as distinct from the cover stock.

text processing Wordprocessing using a computer to key in, edit and output text as documents, letters, labels etc.

text retrieval The process of finding words or phrases in running text by computer matching. Also called **word search** or **free-text search**.

text type Body type of the main text in a book. Loosely, a composition size of type of 14pt or less, as opposed to a **display type**.

Textura **Black letter** or **gothic type**.

texture A descriptor for the graphic properties of a surface in terms of smoothness/coarseness and regularity. Approaches used to define texture are statistical, structural and spectral. Statistical and spectral techniques are based on the distribution of **grey levels** over the surface (described in the two different ways), while in the structural approach textures are considered as composed of simple texture elements ('texels'; see for comparison **pixels**).

textured screen Half-tone screen that yields a textured pattern on the half-tone created.

tftp See **Trivial File Transfer Protocol**.

thermal imaging Exposure technique associated with **CTP** plates which uses heat to expose the image.

thermal paper Special paper that produces a black coating when hot, allowing characters to be printed by fine, heated pins.

thermal printer A non-impact printer. Heat is applied to a ribbon carrying waxed ink which is transferred to the paper in the form of dots.

thermal transfer Method of printing where the ink is transferred to the paper by heat.

thermographic copier Copying machine that uses heat to take an image from the carbon in the original and transfer it to **heat-sensitive** paper.

thermographic printing Relief effect created by heating special powder or ink on a sheet to give 'raised' typesetting.

thermomechanical pulp Abbreviated to **TMP**. Superior, stronger **mechanical pulp** produced from steam-heated wood chips.

thermoplastic Description of a substance that becomes pliable when heated and hardens on cooling.

thermoplastic binding See **adhesive binding**.

thermosetting Using material that will set permanently when heated but can be moulded whilst warm.

thesaurus A feature of some **wordprocessing** packages. Synonyms for words can be accessed online by highlighting a word and activating the dictionary program behind it.

thick Ethernet A colloquial name for the original **yellow cable Ethernet** standard, **10Base5**.

thick space Letterpress spacing piece equal to one third of an em.

thimble A printing element similar to a **daisy-wheel** but formed into a thimble-like shape.

thin Ethernet See **cheapernet**.

thinners Solvents added to ink to reduce tack.

thinnet See **cheapernet**.

thin space Letterpress spacing piece equal to one-fifth of an em.

third cover Inside back cover of a magazine, usually reserved for advertisements.

third-generation computers Computers in which integrated circuits – silicon chips – first replaced transistors.

third-generation photosetters Photosetters using **cathode ray tubes** to generate the typographical images.

thirty The symbol -30- is used on some newspapers to indicate the end of a story in copy.

thread See **topic thread**.

threaded In DTP systems, text is threaded when its several parts or **text block**s are linked together by the user into a continuous **story**. Threaded text behaves as a single element of continuous text which the program identifies as such and keeps together in correct sequence no matter how much the page layout may be changed, or how many corrections are inserted or deleted.

threadless binding See **adhesive binding**.

thread sealing Binding method using meltable threads as 'stitches' to secure individual sections before trimming and forwarding.

thread sewing Conventional sewing. Also known as **French sewing** or **section sewing**.

thread stitching Securing inset books by stitching through the spine with threads.

three-colour process Process work using the yellow, magenta and cyan without black.

three-knife trimmer Cutting machine with three knives which trim books and magazines along three edges.

three-quarter binding Method in which the majority of the case of a book is covered in leather or cloth and the remainder in a different material.

throwaway Free newspaper comprised largely of advertisments.

throw-out A page which folds out of a book or magazine to a size larger than the book trim. Also **fold-out**, **gatefold**.

thumb hole Lettered grooves cut into the **fore-edge** of a book, such as a dictionary, to enable easy access to sections of an index, also known as a **thumb index**.

thumb index Index where the alphabetical divisions are cut into the edge of the book trim.

thumbnail sketch Small rough drawing.

ticket board Pasteboard.

tick marks 1. Alternative term for **crop marks** or **cut marks**. 2. Marks on rulers which define the increments being measured.

tied letters See **ligature**.

TIFF Tagged image file format. A standard format for the storage of **bitmap graphics** and scanned images.

TIFFIT (TIFF/IT) Proposed format for imposed pages captured as part of a **digital workflow system**.

tight Laid out on a page so that there is little white space.

tightback binding Binding in which the backs of the sections are stuck to the spine of the book, reinforcing its strength. Also known as **fast-back binding**.

tight edges Referring to a stack of paper in which the edges of the sheets are stretched tight and the centre of the sheets are baggy. Caused by the stack having a higher moisture level than the surrounding atmosphere. Compare **wavy edges**.

tilde A pronunciation mark placed over a letter, e.g. in Spanish over an ñ to change the sound to ny.

tile In the **DTP** make-up of publications with a page size larger than A4, a portion of the page that is printed on a single sheet of paper. To make the complete page, the various tiles are assembled and pasted together.

tile, **tiling** The arrangement of **windows** in a **graphical user interface** (**GUI**) so they abut rather than overlap (or **cascade**).

tiling fill or **tiled fill** To fill a border with a decoration created from the repetition of a single pattern (tile).

time-division multiple access (tdma) See **time-division multiplexing**.

time-division multiplexing (tdm) (Or time-division multiple access.) A type of multiplexing in which data from several users is transmitted onto a single channel in series, each user having its own time slot. Used in both satellite communication and long-distance telephone systems.

time-out The use of a timer to limit the period of a program's operation. Often used in communications, so that if there is no transmission over a communications link during a specified time, then the link is broken.

time-sharing Concurrent processing of several jobs or programs on a computer.

time-slicing The technique used by computers to switch between concurrent **applications** and programs. Effectively a time slot is allocated to each process and the computer switches between them. On a powerful computer, the user appears to have access all the time. **Time-division multiplexing** uses a similar approach. (See also **multi-tasking**.)

Times New Roman Probably the most widely used **typeface**, designed by Stanley Morison for *The Times* newspaper in 1932.

time to live (TTL) A field in the header of the **Internet** protocol that indicates how many more **hops** a **packet** may make before it is discarded or returned to the sender.

tint A solid colour reduced in shade by screening. Specified as a percentage of the solid colour, and in a particular **screen ruling**.

tint generator Program on an **epc** system which generates tints inside a designated area.

tinting Mechanical tint or stipple which is preprinted and can be used by a designer.

tint laying Using films to create a **tint**.

tip in (or **tip-in**) 1. (vb) To fix a single leaf inside a section. 2. (n) A tip-in is an extra leaf, pasted into a bound book.

tip on To fix a single leaf, or endpaper, to the outside of a section.

tissue A fine, thin paper used for a variety of purposes where a delicate, lightweight paper is required.

titanium dioxide Mineral used in papermaking to add brightness and opacity.

title bar In **DTP**, the line immediately below the **menu bar** in the **publication window** which contains the name of the open publication.

title page Page of a book carrying the title, author's name and publisher's name. Always a **recto**.

titling Type font only available in full-faced caps.

TMP See **thermomechanical pulp**.

tn3270 A **program** used to connect a local computer to a remote IBM mainframe **host** which, because it uses a proprietary **operating system**, does not understand **telnet**. The program emulates an IBM 3270-type terminal.

toggle Any electronic device having two states. In wordprocessing, any command which, in identical form, is used to both switch a function on and off (e.g. underlining).

token bus A topology used in **local area networks** (**LAN**s). In order that there are no 'collisions' or priority conflicts on the network, a special control frame (the token) must be received by a station before it is allowed to transmit on the **bus**. Once that station has transmitted its messages, it passes the token to the next station on the bus, which is then allowed to transmit. Most commonly used as specified by the **IEEE 802.4** token bus standard.

token passing A procedure used in **token bus** and **token ring networks**.

token ring A topology used in **local area networks** (**LAN**s). Stations are connected in a closed ring and a special control frame (the token) is passed around the ring. In order that there are no 'collisions' or priority conflicts on the network, a token must be received by a station before it is allowed to transmit on the ring. Once that station has transmitted its messages, it passes the token to the next station on the ring, which is then allowed to transmit. Most commonly used as specified by the **IEEE 802.5** token ring standard. **Token-Ring** (with capital letters and a hyphen) is an IBM implementation of the protocol.

Token-Ring The IBM implementation of the **token ring** network topology.

TokenTalk Software that makes it possible for Apple **Macintoshes** to connect to a **Token-Ring** network.

tombstone Basic advertisement for professional services which conforms to the limitations imposed by law or by professional associations.

ton Measure of weight. One ton = 1016 kilos.

tone Colour variation or shade of grey, as distinct from line which is solid black only.

toner Chemical used to create image in photocopying processes.

tonne Metric tonne, equivalent to 0.984 long (imperial) tons, or 1.102 short (US) tons.

toolbar An area of a **window**, usually at the top or bottom, carrying **buttons** for commonly used commands.

Tool Command Language (TCL) A programming language, similar to **PERL**, that is used in developing **World Wide Web** tools and applications.

tooling Impressing a design onto the leather cover of a book using a hand punch.

tooth Rough surface, as applied to a paper.

toothy Having a rough surface.

TOP See **technical/office protocol**.

top edge See **fore-edge**.

topic thread A series of postings, e.g. to **Usenet** or **CompuServe**, on a single topic, or more correctly connected by reference header information. If a user follows a **thread**, he or she will access a series of Usenet postings connected in this way. Most newsreaders give the option of following threads automatically.

Topic (Verity Topic) A **search engine** both used as part of large **Web** sites and quite widely integrated into other applications, such as **Acrobat**.

top of form A character printer feature that advances paper by one page.

topology The mathematical study of interconnections. A **network topology** shows the stations or **hosts** on the network and how they are connected. Within a communications protocol, the **network layer** must be aware of the network topology in order to be able to **route packets** correctly.

TOPS See **transcendental operating system**.

top side The side of a web facing upwards during making, i.e. opposite to the wire side. Also called the **felt-side** and the **right side**. Tends to be smoother than the wire-side.

torn-tape system Paper tape typesetting system involving manual removal and feeding of tape from one machine to another.

touch screen An input mechanism in which a user can communicate with the computer by touching a particular location on the screen with a finger. Touch screens are most widely used in applications where the users are unfamiliar with computers, e.g. public information systems. Generally, other pointing devices, such as the **mouse** or **joystick**, are more common. The point at which the screen is touched is detected either using a sensitive membrane or as a result of light beams being interrupted.

touch-tone The method employed in telephony throughout the US to communicate the keys pressed when dialling. See **dual tone multi frequency** (**DTMF**).

to view Referring to the number of pages appearing on one side of a **plate** or sheet, e.g. 32-to-view = 32pp each side of the sheet = 64pp unit.

tpi See **tracks per inch**.

tracing paper Transparent paper manufactured for tracing.

tracing programs See **autotracing**.

track 1. In printing, the line or strip around the circumference of the printing plate governed by one inking key. All items positioned in this track will be subject to the same density of inking on the press run. 2. In computing, one of the concentric rings of a disk along which data is stored.

trackball or **tracker ball** An input device that performs the same function as a **mouse**, but remains stationary, the rotation within its mounting controlling the cursor position. Trackballs are generally used in portable or laptop computers and form an integral part of the keyboard in most cases.

tracking 1. When illustrations are in **track** on the press, they are subject to the same density of ink. The tracking of subjects means their positions relative to each other along the same track. 2. See **track kerning**.

track kerning Global reduction in letterspacing to achieve a tighter visual effect. The same as **character compensation**.

tracks per inch A measure of density of tracks on a magnetic disk.

tractor feed A printer drive mechanism comprising a chain or belt equipped with teeth which engage with the sprocket holes of **continuous stationery**.

trade houses Companies in the printing industry whose main work is for other printers. Often specialists in a specific operation, e.g. laminating.

trademark Unique printing mark identifying a company.

trade press Periodicals targeted to specific trades or businesses.

trade publishing The publishing of general-interest books which are sold through the retail bookshop trade.

trade tolerance Allowance for under or over delivery quantities deemed acceptable commercially. Applies particularly to paper, with reference to the Paper Trade Customs.

trade typesetting A trade typesetter is one whose livelihood is typesetting. As distinct from in-house typesetting, or typesetting as a facility offered as part of a total print-bind service.

traffic In general, transmissions over the **Internet**, but usually used to indicate the number of transmissions at any one time.

trailing blade coater Device for scraping excess coating off paper.

transceiver A communications device that is capable of both transmission and reception. More specifically, the physical device that connects a **host** interface, e.g. an **Ethernet** controller, to a **local area network** (**LAN**). (See also **CSMA/CD**.)

transcendental operating system (TOPS) A **local area network** (**LAN**) that provides **peer-to-peer** file transfer and is used to connect PCs and **Macintoshes** in such a way that files appear on a user's system in a form compatible with that system.

transducer A device that converts sound, temperature, pressure, light or other physical signal to or from an electronic signal.

transfer type Pressure-sensitive type on carrier sheets. Can be rubbed off to create type in position on the page. Also known as 'transfer lettering'.

transient Short-duration **noise** or the perturbation of a signal or power supply for a short period.

transistor A component made up of layers of different semiconducting materials which, when a current is fed to one of its three terminals, controls the flow of current between the other two conductors.

Transitional Type style such as Baskerville which evolved between Old Style and **Modern**.

transition coding An alternative term for **non-return to zero inverted**.

transit network A **network** that carries **traffic** between other networks; it may also carry traffic for its own **hosts**. Almost by definition it must be connected to at least two other networks. (See also **backbone**, **stub**.)

translation table See **look-up table**.

translator A **compiler**, **interpreter** or **assembler** conversion program that translates a **high-**

level language or **low-level language** (source code) into **machine code** (object code).

transliterate Transcribe into characters of a different language.

translucent Semi-transparent, allowing light to pass through.

transmission codes Standard code sets used in computers to represent alphanumeric characters and numbers. Examples include **ASCII** and **EBCDIC**.

Transmission Control Protocol/Internet Protocol (TCP/IP) (**Transmission Control Protocol** over **Internet Protocol**.) The **transport layer** protocol generally used on **Unix** systems and on the **Internet**, as well as on many **Ethernet** systems. It was developed mainly by the US Department of Defense and includes both **network layer** and **transport layer** protocols. The term is often used to include **telnet**, **ftp** and **UDP**. Note that TCP/IP is a *de facto* standard and not directly compatible with the **OSI** (**Open Systems Interconnect**) model (although discussions are frequently held to try to integrate the two approaches).

transmission copy Copy which is viewed by transmitted light, e.g. a transparency. As distinct from **reflection copy** which is viewed by reflected light.

transparency 1. Full-colour photographic positive on transparent film for viewing by transmitted light. Suitable as copy for separation. 2. See **data transparency**.

transparency viewer Box arrangement with special light source to enable the viewing of transparencies under consistent conditions.

transparent In computing, a process is transparent to the user if he is unaware of it going on. Used particularly of computer processing which is taking place as an operator is doing something else.

transparent inks Inks such as process inks which permit other colours to show through when overprinted and so produce subsequent mixed colours.

transponder A device, mainly used in telecommunications, that receives a signal, amplifies it and then retransmits it, possibly at a different frequency. Transponders are widely used in satellite communications.

Transport Control Protocol/Internet Protocol See **Transmission Control Protocol/Internet Protocol**.

transport layer The middle (fourth) layer in the **ISO seven-layer model**. Also called the host-host layer, it uses the **network layer** to provide reliable end-to-end message transport including message sequencing, **flow control** and **multiplexing**, so that messages sent from one **host** to another arrive both uncorrupted and in the right order. The most widely used implementation is **Transmission Control Protocol**.

transpose Abbreviated trs. Exchange the position of words, letters or lines, especially on a proof. Hence **transposition**.

transposition Altering the order of a group of characters.

transputer Computer consisting of a single chip.

trap, **trapping** The overlap between two colours used in printing to ensure that there is no white appearing between them as a result of paper movement or poor registration. Gives a slightly less clear impression than **kiss-fit**, but allows for variation in printing conditions. Trapping characteristics are often monitored by a test strip in the colour bars printed on a four-colour job.

trap-door function A mathematical or programming function that is easy to compute, but whose inverse is very difficult to compute. Widely used in **cryptography**, particularly in **public-key** cryptography.

tree A **topology** based on the branches of a tree converging at a trunk or **root**. The concept is used, inverted, in **tree-and-branch filing systems**. Tree topologies are also widely used in **broadband** networks so that there is only one route between any two stations.

tree-and-branch filing system A filing system in which all files are stored within directories, in analogy with an inverted **tree** structure or like folders in a filing cabinet. Each directory may in turn be stored within another directory. The **root directory** contains all the other directories and corresponds to the filing cabinet.

trichromatic Using three process colours (magenta, yellow, cyan) to print in full colour.

trim Cut edges off sheets to square up or reduce size. Hence trimmed size is the size after trimming.

trimask Special photographic mask made of three-layer film and used in camera separation processes to colour correct separations as they are made.

trimetal plate Lithographic plate for very long-run work where three layers of metal are used in manufacturing the plate.

trim marks Alternative term for **crop marks** or **tick marks**.

trim to bleed Trim so that printed solids reach the edge of the trimmed sheet.

Trinitron A cathode ray tube manufactured by **Sony** that produces an especially bright, sharp picture without distortion.

triple DES A form of **encryption** which uses the **DES** cipher three times.

triple lining Extra lining used to make very strong **binding** for a book's **spine**.

Triple-X (XXX) An abbreviation for the combination of **X.3**, **X.28** and **X.29** protocol standards documents defining the operation of a **PAD**, particularly in **X.25** networks.

triplex board Board made up of three layers of thinner paper or of one central layer lined on both sides with paper.

tritone The use of three (possibly **Pantone**) colours in combination to produce a particular effect in printing. May be used (with cyan, yellow and magenta hues) to produce a finer **greyscale** effect. (See also **duotone**.)

trivial file transfer protocol (tftp) A simple **file transfer protocol** that is used for **downloading** bootcode (code which will restart the **operating system**) to diskless workstations.

troubleshoot To find and rectify a fault in hardware or software.

trs See **transpose**.

true colour Otherwise called **24-bit colour**. Refers to the colour generated by monitors capable of displaying the full 16.7 million colours available from 24-bit **RGB** (8-bit red plus 8-bit green plus 8-bit blue). As distinct from **8-bit colour** which is that generated by monitors capable of displaying only 256 colours of shades of grey.

true dictionary See **dictionary**.

TrueImage A **page description language** and **imaging model** developed by Microsoft for printers, similar to **PostScript**. (See also **TrueType**.)

true italic Designed italic face in a font

true small caps Small caps designed as such, rather than created as a smaller size of main-text capitals (in which case the strokes frequently look too thin).

TrueType A **font** system developed as a rival to **PostScript** and subsequently supplied as part of Microsoft Windows 3.1. TrueType fonts are **scalable** (or **outline**) **fonts** and incorporate **hinting**. TrueType is also used to refer to the software that converts the TrueType font for rendering on-screen or on a printer. (See also **Type-1 fonts**, **Type-3 fonts** and **Adobe Type Manager**.) A new font specification, **OpenType**, has recently been developed with the aim of removing font-compatibility problems.

TrueType GX A version of **TrueType fonts** that is used in **QuickDraw GX**.

Trumpet A **news-reader** for Microsoft **Windows**, using the **Winsock** library.

trunk A high-capacity communications circuit that carries many channels. See **tree**.

trunk network The main part of the telephone network that passes through the country. The majority in the UK is now digital and uses **fibre-optic cable** rather than traditional **copper cable** but **local loops** to business and home users are still largely analogue.

TS Abbreviation for **typescript**.

T series The series of **ITU** recommendations governing **teletex**.

TTL See **time to live**. It is also used in electronics to mean transistor-transistor logic.

TTS See **teletypesetting**.

TTS code Six-level code used by teletypesetters.

tty See **teletype**.

TUBA An **Internet addressing** proposed scheme which will allow longer address names, and therefore more addresses, to be used. This is necessary because the Internet is growing so fast that the existing supply of **IP** numbers will be exhausted before long.

tub sizing To **size** or glaze paper by dipping it in a vat of gelatinous solution.

TULIP (The University LIcensing Program) A program set up by the publisher Elsevier at a number of US universities, providing electronic access to journals in materials science and engineering.

tumbler work See **work and tumble**.

tuning Within **font** technology, means to improve the appearance of a font on-screen and in printed documents.

turnaround document A document produced by a computer that is subsequently used as input after additional data has been added. Such documents are usually a type of form or card, which is printed in a typeface readable by **OCR**, with a standard grid suitable for **OMR**. Once the form or card, e.g. a survey form or some kind of meter reading, has been completed, then a universal document reader, capable of handling both OCR and OMR, is used to input the data.

turnaround time The time taken to reverse the direction of transmission in a **half-duplex** communication.

turned 1. A table or illustration turned sideways on a page so as to fit better. Such tables or illustrations should always be turned so that the foot of them is on the right-hand side of the page when the book is in normal, upright, position. 2. News setting carried over onto another page.

turned in Cover material turned over the edges of the board.

turner bar Bar on a web offset press which redirects the web through a right-angle degree.

turnkey system A system which is complete and designed for a specific use. With hardware this implies that the supplier has full responsibility for installation, with software the implication is that the user may initiate the package without necessarily understanding or even being aware of the operating system.

TVRO See **television receive only**.

tweening An interpolation technique used in **animation**, in which a program generates extra frames between the **key frames** created by the user. This gives smoother animation without the user having to draw every frame. Tweening uses mathematical formulae to generate the coordinates of important elements at a series of discrete times. (See also **morphing**.)

twice-up Instruction to prepare artwork at 200% of finished size.

twin-axial cable A shielded **coaxial cable** with two conductors within the outer **shield**.

twin-wire Smooth board or paper made from two separate webs which are brought together at the press section of the twin-wire paper machine. Contrast the **duoformer** principle with which it is sometimes confused.

twin-wire fourdrinier Papermaking machine. Two wire meshes make two layers of paper which are joined back-to-back while still wet and this creates sheets that are smooth on both sides.

twisted pair A cable in which pairs of conductors are twisted together in order that **crosstalk** from nearby wiring and other noise is randomised. (See also **unshielded twisted pair**.)

two's complement A method of representing a negative value in binary arithmetic, the negative being obtained by complementing the digits and adding one to the result.

two-binary, one-quaternary (2B1Q) The encoding for **basic rate ISDN**.

two-colour press Two-unit machine which can print two colours on a sheet in a single pass.

two-letter index Index based on divisions of two letters in each section.

two-line drop capital Initial capital letter taking up the depth of two lines of type, sometimes used decoratively at the beginning of a section or chapter.

two-revolution press Letterpress machine where the impression cylinder revolves twice for each sheet: once to make the impression, and then to rise clear of the type for delivery of the sheet.

two-revolution printing Letterpress printing process where the **cylinder** does two revolutions per impression.

two set Printing two copies of a book simultaneously with the pages joined head-to-head.

two-sheet detector A device for stopping the press if more than one sheet is fed.

two-shot binding Adhesive binding in which the first application is of **PVA** adhesive, the second of hot-melt adhesive. Compare **one-shot binding**.

two-sidedness Undesirable differing finish of the **felt-side** and the **wire side** of a sheet.

two-wire circuit A circuit used to connect a telephone subscriber to the local exchange, usually consisting of a **twisted pair**.

tying-up Using cord to secure type for storage.

tympan Appliance for raising the printing paper to the correct height in a hand-operated press.

Type An operating system command used to display the contents of a text file.

type 1. Single metal letter or character. 2. Metal **slugs** with raised letters or symbols used for creating a line of print.

Type 1 font A **PostScript outline font** having the highest typographic quality, mainly because Type 1 fonts incorporate **hinting**. For some years, as Adobe kept the Type 1 specification a secret, other font developers could generally only develop **Type 3 fonts**. Now, however, the specification is publicly available and therefore almost all fonts created are Type 1. As well as the outline specification, Type 1 fonts also include a screen, **bitmapped** font, although the development of **Adobe Type Manager** now means that the outlines can be directly rendered for viewing on-screen. (See also **TrueType** fonts.) A new font specification, **OpenType**, has recently been developed with the aim of removing font-compatibility problems.

Type 2 font Type 2 font technology was developed by Adobe Systems, but subsequently abandoned before release. Thus there are no Type 2 fonts.

Type 3 font A **PostScript font** developed, probably by a type vendor other than Adobe, before Adobe made the **Type 1** specification publicly available; almost all these have now been converted to Type 1. Although Type 3 fonts can be more ornate, incorporating grey shades, variable stroke widths or graduated fills, they have a number of disadvantages. These are principally that they cannot incorporate **hinting** (and thus do not print well at smaller sizes), they have larger file sizes and they cannot be rendered by **Adobe Type Manager**.

type area Area occupied by text on a page.

typecasting Setting type in metal by a machine such as Linotype.

type character A single figure or letter, traditionally known as a **sort**.

typeface A set of characters of a particular design. Text fonts will almost always include the **ASCII** character set, but symbol fonts may include a wide range of characters. Today the term 'face' tends to be used interchangeably with **font**, although historically they both had different meanings, there being several typefaces, e.g. bold, italic etc., within a font. (See also **Unicode**.)

type family Roman, italic, bold and all other versions of one typeface.

typefoundry Factory where metal type is cast.

type gauge A rule calibrated in picas for measuring type.

type height Distance from the foot of type to printing surface: 23.317mm in the UK and US.

type-high Bearer or **block** which is as high as type.

typematter Copy that has been **typeset**.

type metal The alloy for cast type, comprising lead, tin and antimony.

type page The area of a page which is printed, bordered by blank margins.

type rule Special ruler for measuring in **ems** and **points**, used by printers and typesetters for calculating the width of a line or the depth of a page.

type scale See **type gauge**.

typescript Typed copy.

type series All the sizes available in one typeface.

typeset To set text in type in preparation for printing.

typesetter Person, company or machine that typesets.

typesetter command language The computer language which controls the operations of a typesetting machine.

typesetting Action of setting text in type.

typewriter Machine where each letter or character has a separate key which when pressed will strike an inked ribbon, thereby printing its impression on paper positioned the other side of the ribbon.

typewriter composition See **strike-on composition**.

typewriter font A term for a **font** which derives from those used on typewriters. Such fonts are usually **monospaced** and are often used for representing extracts from computer programs, in which there is an advantage (in terms of clarity of interpretation) in each character having the same width.

typo Typographical error made by the typesetter.

typographer Designer of printed material.

typographic error Abbreviated to typo. See **literal**.

typography Text lay-out design.

U

UART See **universal asynchronous receiver/transmitter**.

uc See **upper case**.

UCC See **Universal Copyright Convention**.

UCR See **undercolour removal**.

UDF See **user-defined format**.

UDK See **user-defined key**.

UDP See **User Datagram Protocol**.

UHF See **ultra high frequency**.

UK Education and Research Network Association (UKERNA) The body responsible for **JANET** and **SuperJANET**. Formerly the **Joint Network Team**.

UKERNA See **UK Education and Research Network Association**.

U/l (or **u/lc** or **ulc**) Abbreviation for 'upper and lower case'. Instruction to follow copy for caps and lower case.

ultra high frequency (UHF) The band in the electromagnetic spectrum between about 300MHz and 3GHz used for television transmission and voice communication.

ultraviolet-erasable PROM A **PROM** that may be erased by exposure to ultraviolet light.

ultraviolet light (UV) Light created by electromagnetic radiation.

Ultrix Digital Equipment Corporation's proprietary version of **Unix**.

umlaut Accent, consisting of two dots, written over some German vowels to alter the pronunciation.

unbacked Printed one side only.

unbundling Referring to the sale of software, training and services by a computer manufacturer independent of the sale of hardware.

uncoated paper Paper with no coating, therefore not suitable for high-quality illustrated work.

uncut pages Bound but untrimmed pages of a book that are still attached by folds at the **fore-edge** and **head**.

underblanket Packing sheet under the **blanket** of an **offset press**.

undercolour removal Abbreviated to **UCR**. Technique which reduces unwanted colour in areas of overlaps. Results in better trapping and lower ink cost.

undercut The amount of space left for plate packing on press cylinders.

underexposure Inadequate exposure to light causing a mostly dense image. Contrast **overexposure**.

underlay The packing under a letterpress block which brings the height up to impression level.

underline 1. Caption (US). 2. A wordprocessing facility to automatically underline text.

underrun Paper delivery or printing quantities which fall short of the order.

underside Bottom side of a web of paper. Also known as the 'wire side' or **wrong side**. The other side is the **top side**, **felt-side**, or **right side**.

unearned advance Money paid to an author before royalties have been earned from sales but which will be deducted from that anticipated income.

Unicode A 16-bit character-encoding system that is intended to include all characters in all languages (including Chinese and similar languages). It forms part of **ISO 10646** and is backwards-compatible with **ASCII** (7-bit encoding). Instead of the 128 characters which can be encoded with ASCII, 65 000 can be encoded with Unicode. **QuickDraw GX** is one of the first applications to take advantage of the standard, but it is gradually expected to become the standard approach, so that the current incompatibilities between coding schemes for non-ASCII characters become a thing of the past.

uniform resource characteristic (URC) (Formerly called uniform resource citation.) A method of encoding **Internet r**esources, including types of **URI**. The method is based on **SGML** and includes approaches to searching that bear some similarity to **SQL.**

uniform resource citation Former name for **uniform resource characteristic**.

uniform resource identifier (URI) (Formerly called **universal resource identifier**). A general way of addressing resources on the **Web**, including **uniform resource locators** (**URL**s) and **uniform resource numbers** (**URN**s). (See also **URC**.)

uniform resource locator (URL) (Formerly called **universal resource locator**.) A way of specifying an **Internet** resource, such as a **file**, a **World Wide Web site** or a **newsgroup**. **URL**s are used in **HTML** documents to specify the target of a **hyperlink**. An example URL is http://www.telegraph.co.uk/. The part before the first colon specifies the **protocol** to be used, which may be **ftp**, **telnet**, **Gopher** etc., rather than **HTTP** (http being perhaps the most common). The part of the URL after the colon is interpreted differently depending on the **protocol**. Normally, a **hostname** (or a **port**) will follow the double slash. Other information can follow the single slash and this may be a **directory** and file structure or, e.g., a query.

uniform resource name (URN) (Formerly called **universal resource number**.) A proposed way of describing **Internet** resources that is based on content, rather than the location (see **uniform resource locator** (**URL**)). The URN concept is being developed because the URLs change (for various reasons, e.g. because documents are moved around within directory structures or the **host** changes). The syntax will be similar to that of URLs, and URNs will require a registry, so that the actual location of a document can be accessed directly. Initially called **uniform resource number**.

uniform resource number Former name for **uniform resource name**.

union paper Special wrapping-paper comprising two webs joined by tar coating.

unit 1. Smallest subdivision into which the **em** character width measurement of a **font** is divided. Used as the counting basis for all character widths in a font. Actual size varies with the manufacturer's system. 2. One set of printing cylinders with associated machinery. A four-colour press will have four units, each printing one colour.

unit value The number of units in a character width. See **unit**.

Univers Widely used **sans serif** typeface designed by Adrian Frutiger.

universal asynchronous receiver/transmitter (UART) An integrated circuit used within a computer system to handle **serial communication**. Essentially the UART converts the internal **parallel** signals, used on the computer's internal **bus**, to a serial data stream, sent to a serial port. (See also **USRT**.)

Universal Copyright Convention (UCC) International agreement on **copyright** set up by the United Nations in Geneva in 1952.

universal resource identifier Former name for **uniform resource identifier**.

universal resource locator Former name for **uniform resource locator**.

universal synchronous/asynchronous receiver/transmitter (USART) An integrated circuit used in a computer to convert **parallel** data to a **serial** form for **synchronous** or **asynchronous** transmission. (See also **UART**, **USRT**.)

universal synchronous receiver/transmitter (USRT) A device designed to control the timing of synchronous data transfer, and serial to parallel conversion. Compare **UART**.

university press A university printing press that prints university documents. 2. Publishing house owned by a university.

Unix or **UNIX** A multi-user operating system

allowing several operators to use the same computer simultaneously.

Unix to Unix Communication Protocol (UUCP) See **Unix to Unix Copy Program**

Unix to Unix Copy Program (UUCP) A protocol used for communication between **Unix** systems, now also developed for other **operating systems**, but increasingly replaced by protocols such as **SMTP** (**Simple Mail Transfer Protocol**) and **NNTP** (**Network News Transfer Protocol**). UUCP is also used to describe the international network of hosts which communicate using the UUCP protocol, and is also known as **Unix to Unix Communication Protocol**. See **UUCPNET**.

unjustified Typesetting with even word spacing, therefore having a ragged right edge.

unlined chipboard Case board made from mixed waste furnish and consisting of a number of plies of thin board pasted together. (See also **Dutch grey board**, **millboard**.)

unsewn binding See **perfect binding**.

unsharp masking (USM) Feature offered on most scanners which by deliberately lowering the background resolution in pre-defined local areas increases the sharpness of detail in these areas.

unshielded twisted pair (UTP) A form of cabling used for **local area networks** (**LAN**s), rather than **coaxial cable**. Also used for telephone connection in the US. (See also **twisted pair**; the lack of a **shield** is possible because of the effects of twisting.)

unshift Keyboard designation for lower case.

unstuff To decompress a file that has been **stuffed**.

untrimmed Pages in a book which have not been trimmed.

untrimmed size Dimensions of a sheet or printed piece before trimming.

unzip To decompress a file that has been **zipped**. (See also **PKUNZIP**.)

up 1. Running (in the case of equipment). 2. Several at once: two-up means two copies the same out of one sheet.

UPC Universal product code. US: system of barcoding packaging and book covers.

update Edit a file by adding current data.

uplink The link (or sometimes the earth station) which conveys signals to a **geosynchronous satellite**. The opposite of **downlink**.

upload To transfer files over a communications link or a **network**, usually from a smaller system to a larger **host**. This may, e.g., be a **bulletin board**. The opposite of **download**, although see comment under download concerning the interchangeability of the two terms.

upper case Capital letters.

upper-case letters Capitalised letters, such as the first letter of this sentence. The term is derived from the days of metal type, when the capitals were kept in the top (upper) typecase and the small letters in the bottom (or lower) case.

upper memory In MS-DOS, the next 384K after the 640K of conventional memory which is usually reserved for running system hardware.

upright Designation for binding along the longest dimension. Also, **portrait**.

upward compatibility The ability of one computer to run programs written for a later model, but not vice versa.

URC See **uniform resource characteristic**.

URI See **uniform resource identifier**.

URL See **uniform resource locator**.

URN See **uniform resource name**.

USART See **universal synchronous/asynchronous receiver/transmitter**.

Usenet (Pronounced 'use-net'; a contraction of 'Users' Network'.) A distributed **bulletin board** system, based on **Unix** systems, which contains a very large number of **newsgroups** on virtually every subject there is. (See also **Network News Transfer Protocol** (**NNTP**).)

Usenet news See **Usenet**.

user area That part of computer memory allocated to user programs, the remainder being reserved for buffers and operating systems.

User Datagram Protocol (UDP) An **Internet** protocol similar to **TCP** and layered on top of **IP**, used for sending **packets** of information between applications. However, UDP is **connectionless** and does not guarantee delivery. Thus, error processing and retransmission must be handled by the application.

user-defined format An instruction assigned to an input key to perform a particular command or string of commands over and above any normal function. Keys programmable by the user in this way are known as **UDK**s (user-defined keys), user programmable keys, or **macros**.

user-defined key Keyboard character which can be programmed by the user to perform a specific function.

user-friendly A term, perhaps obvious in meaning but difficult to define, used to describe systems, software and **user interfaces** which are easy to interact with, needing little or no prior training or documentation for the user.

user interface 1. See **environment**. 2. The way in which a user interacts with a program or system. **Graphical user interfaces** (**GUI**s) are increasingly becoming the norm, although **command interfaces** are still used. Both of

these may also include **menu**-driven interfaces. (See also **HCI**.)

USM See **unsharp masking**.

USRT See **universal synchronous receiver transmitter**.

USSCII US Standard Code for Information Interchange, synonymous with **ASCII**. The only difference lies with the character associated with code 123 (hash in USSCII, pound symbol in ASCII).

utilities Software programs designed as tools to assist in the development of systems, the recovery of data etc.

UTP See **unshielded twisted pair**.

UUCP See **Unix to Unix Copy Program**.

UUCPNET The international **store-and-forward network** made up of all the interconnected **Unix** machines in the world, together with some machines running **UUCP**-type software on other **operating systems**. If a machine is on UUCPNET, it can be reached by giving the **bang path**.

uudecode A program (originally written for **Unix** to be used with **UUCP** but now widely used on other systems) to convert **ASCII** text produced by **uuencode** back to a **binary** file.

uuencode A program (originally written for **Unix** to be used with **UUCP**, but now widely used on other systems) to convert **binary** files into a special **ASCII** format that can then be transmitted by **email** (which is only able to handle ASCII characters). The file is converted back using **uudecode**. (See also **SMTP**, **MIME**.)

UUPC UUCP for **MS-DOS** and Microsoft Windows.

UV light See **ultraviolet light**.

UV varnish Ultraviolet varnish. Sometimes installed in-line with a printing machine, a uv varnish unit deposits a high-gloss varnish dried by exposure to **UV light**.

V

V.21 The **ITU-T protocol** for a basic 300 bps **modem**.

V.22 The **ITU-T modem protocol** allowing data rates of 1200 bps.

V.22 bis The **ITU-T modem protocol** allowing data rates of 2400 bps. 'Bis' means the second version, rather than twice the speed.

V.23 The **ITU-T modem protocol** allowing **half-duplex** (unidirectional) data transmission at 1200 bps. This was used for **Prestel**.

V.24 The **ITU-T** standard defining **serial** interchange circuits between **DTE** and **DCE** (and not related to **modems**, except that the frequencies recommended were chosen so as not to interfere with the control tones used in telephone systems). Together with **V.28**, this is equivalent to **RS-232-C**.

V.25 The **ITU-T** standard concerned with **auto-answer modems**.

V.28 The **ITU-T** standard that defines the electrical signal characteristics of **serial** interchange circuits. Together with **V.24**, this is equivalent to **RS-232-C**.

V.32 The **ITU-T modem protocol** allowing data rates of 4800 or 9600 bps.

V.32 bis The **ITU-T modem protocol** allowing data rates of up to 14.4 kbps. 'Bis' means the second version, rather than twice the speed.

V.32 terbo This is not an **ITU-T protocol**, but a proposal from a group of **modem** manufacturers for a 19.2 kbps modem. It has been overtaken by the development of **V.34** modems. Originally called 'V.32ter' (i.e. the third version of **V.32**), but renamed (and mis-spelt) because of a misunderstanding.

V.34 The **ITU-T modem protocol** allowing data rates of up to 28.8 kbps and also allowing the sending of **fax**. **K56 flex**, however, can give up to 56 kbps on the **download** side. (See also **V.FC**, **V.fast**.)

V.35 The **ITU-T** standard for data transmission at 48 kbps over **serial** connections. It is the equivalent of **RS-422**/**RS-449**.

V.42 The **ITU-T** standard **protocol** for **error correction** between **modems**. See **MNP**.

V.42 bis The **ITU-T** standard for **data compression** for **modems**. An extension of **V.42**. Compression ratios of up to 4:1 can be obtained. 'Bis' means the second version, rather than twice the speed.

vactor (Virtual actor.) A character in **animations**, controlled by a human actor, who provides the voice and uses a **data glove** to provide movement.

vacuum frame Contact printing frame using vacuum pumps to hold copy in position.

vacuum tube See **first-generation computers**.

VALID Acronym for VALue IDentification language, a high-level programming language.

validation Checking data to ensure that it is valid, which may mean that it is complete, accurate or reasonable. Validation may be carried out in a number of ways, including comparison with a mask, calculation of a **checksum** or **parity** checking.

value added network (van) A network which offers users more than just data transmission. This can include anything from a simple email storage service up to a range of commercial services.

van See **value added network**.

Vancouver system System for displaying bibliographical references much used in **STM** publishing. Bibliographical references in the text are limited to a number, and all the references are listed at the end of the relevant section in the numerical order in which they have appeared. Contrast **Harvard system**.

Van Dyke American term for a **brownline** or **brownprint**: type of dyeline proof.

vanity publisher Publisher who publishes books on payment of a fee by the author but does not distribute or market them.

variable A name given to a memory location which is used to hold the current value of variable data.

variable space Space between words used to justify a line. Contrast **fixed space**.

varnish Thin, transparent coating applied to printed work for gloss or protection.

vat machine Machine used in the paper industry for making board.

vat papers Handmade papers formed on a wire in a vat.

VDI See **Virtual Device Interface**.

VDT See **video display terminal**.

VDU See **visual display unit**.

VDU/VDT See **visual display unit/terminal**.

vector A line and its direction. Vector instructions given to a computer enable the computer to calculate and plot the outlines of graphics and type characters. A programmed instruction then fills in the outline. Contrast **bitmap**.

vector data Data held in **vector** (outline) form.

vector font Another name for an **outline font**.

vector graphic A graphic created using vector data (geometric shapes). See **draw-type graphic**.

vehicle Liquid component of ink which serves to carry the **pigment** and bonds it to the **substrate**.

vellum 1. Prepared inner side of calf-skin, used in **binding**. 2. Imitation of this type of surface on paper.

velox print Term for **screened print**.

Vendor Independent Messaging (VIM) An **email** system for **local area networks** (**LAN**s), developed by a group of companies headed by Lotus as a competitor to Microsoft's **MAPI**.

Venix Version of the Unix operating system developed by Venturcom.

Ventura A **desktop publishing** program, originally developed at **Xerox PARC**, but now owned by Corel. Ventura was the first DTP program to use **styles** or **tags** in any systematic way, preceding in practice the wide implementation, if not the development, of **SGML**.

ver An operating system command that displays the version of the operating system in use.

verification Data validation achieved by keying the information twice and then performing a character-by-character check.

verify An operating system utility that confirms that data written to disk has been correctly recorded.

Verity Topic See **Topic.**

Veronica A keyword search service that allows the user to search all **gopher** sites for **menu** items (files and directories).

version number Identification of a particular 'edition' of software.

verso Left-hand page with even number.

vertical jobbing press Small **letterpress** machine that operates with flat **formes** moving vertically and not horizontally.

vertical justification Spacing a column or page of type to fit a predetermined depth. Automatic process on some typesetting systems. (See also **feathering**.)

vertical screen Screen in which the cross lines are at 90° and upright rather than at 45° as in the conventional **cross line screen**.

vertical scrolling The ability to move text displayed on a screen up or down a line at a time to reveal other parts of the text.

Vertigo A media player technology developed by Adobe, to work with **Bravo** and **Java**.

very high frequency (VHF) The band in the electromagnetic spectrum between about 30 and 300MHz, that is used for television transmission, FM radio broadcasting and voice communication. Contrast **ultra high frequency** (**UHF**).

very small aperture terminal (VSAT) A kind of **groundstation** used for communications with communications satellites.

VESA local bus A **local bus** defined by the Video Electronics Standards Association (VESA – a US industry body) for use originally in PCs. Rivalled by **PCI**.

VF See **voice frequency**.

V.fast (or **V.FC**) A 28.8 kbps **modem protocol** developed by modem manufacturing companies Hayes and Rockwell before **V.34** had been approved. While V.FC is not compatible with V.34, V.34 modems manufactured by Hayes and Rockwell will also support V.FC.

VGA Video graphics array. High-resolution graphics adapter standard adopted for IBM PS/2. Offers 256 colours on colour monitors, or

64 shades of grey on monochrome monitors. See **EGA**, **SVGA**.

VHF See **very high frequency**.

video Moving images, conventionally considered in terms of television images and usually in a recorded form, but now extended to include moving-image files of all types and live images capable of being stored on computer systems and transmitted over networks. Common formats include **QuickTime**, **MPEG** and **avi**. The term is also used to describe an individual video tape or film. (See also **video on demand**, **full-motion video**.)

video accelerator A **video board** designed to speed up what happens on the computer **screen**. Depending on the application, it may either improve motion on the screen or cause the screen to remap faster.

video adapter Another term for a **video board**.

video board (Or **video adapter**, **video card**.) The circuit board which controls the **screen** display on a computer. The term predates the use of **video** to describe moving pictures (as seen on a video recorder). Examples in the PC world are **VGA** (video graphics array) and **CGA** (colour graphics adapter), which provide different levels of functionality. Modern, high-specification machines may use proprietary video boards to provide additional functionality, such as power saving.

video capture board (or **card)** A circuit board that acts as an **analogue-to-digital converter**, so that analogue signals (usually video or single frames) can be saved to file.

video card Another term for a **video board**.

video CD Compact discs that comply with the **White Book** standard. They require a drive which is eXtended Architecture (XA) compatible. See **compact disc eXtended Architecture**.

video clip Short length of video included in computer application.

video compression The **compression** of sequences of images. Algorithms for video compression take advantage of there usually being only small changes from one frame to the next, so that the first frame is recorded using similar techniques to those for still images (see **JPEG** e.g.) and then only the differences between frames are recorded. See **MPEG**, **H.261**.

videoconferencing A meeting between two or more groups of people in different places, who can both see and hear one another using **video** and **audio** links. **Video compression** is often used but, because of **bandwidth** limitations, images are quite often disjointed and may sometimes break up. (See also **virtual meeting**.)

video disk A 12-inch digital disk which looks rather like a long-playing (vinyl) record and can store full-motion video, audio and data. Video disks have been used both for entertainment (e.g. complete operas) and for interactive learning applications, but are being superseded by various types of **CD**. They are likely to be made completely obsolete by **DVD**.

video display A text or graphics display device which may be a cathode ray tube, LED or gas plasma display.

video display terminal (VDT) A type of terminal that consists of a keyboard and a screen. (See also **visual display unit**.)

video graphics array See **VGA**.

video on demand (VoD) A projected system in which viewers can request a particular video (film), either over **cable** or over **ISDN**, at any time and it will be downloaded for (one-time) viewing.

video phone A telephone by which users can communicate both visually and audially.

video RAM See **video random access memory**.

video random access memory (VRAM) Fast memory chips used for storing the image(s) to be displayed on a computer **screen**.

video terminal Computer display terminal.

videotex A communication system that uses television sets or low-cost terminals to provide information from a central **database**. There are two types: **Teletext**, which is one-way and essentially non-interactive, and **viewdata**, which is **interactive** via a telephone line. While teletext is fairly successful in the UK, **Prestel**, the BT viewdata service, is used only in specialist applications e.g. by travel agents. In France, however, the **Minitel** system is widely used. It is probably fair to say that the **World Wide Web** provides most of the functionality of videotex, but with a much better user interface. Note that, confusingly, teletext is a form of videotex, but **teletex** is something different.

viewdata A form of **videotex** used for displaying information interactively on a television or computer screen. Within the UK, **Prestel** is the best-known implementation, while in France, **Minitel** is widely used.

viewer An application that allows a particular format of file to be viewed, e.g. a **JPEG** viewer. Also another term for a **World Wide Web browser**.

vignette Half-tone with background fading out.

VIM See **Vendor Independent Messaging**.

virgin fibre Fibre used for the first time to make paper (i.e. not re-cycled).

virtual channel An individual connection within a **virtual path**.

virtual circuit A connection in a network that appears to the user to be an end-to-end circuit or physical connection, while it is actually a dynamically variable network connection.

virtual corporation A corporation or company that has no physical existence, usually being a collaboration between people or companies that are geographically separated and conduct their business using electronic communications, such as **email**, **videoconferencing** etc.

Virtual Device Interface An ANSI graphics standard defining an interface between device-independent and device-dependent graphics code.

virtual disk See **RAM disk**.

virtual document A document which is generated in response to a request, e.g. by a **CGI-script**, but otherwise does not exist.

virtual LAN A **local area network** (**LAN**) which appears to be a single LAN but is actually connected via a dynamically variable connection.

virtual meeting A service in which users can observe and, if they wish, take part in multi-party **videoconferencing**.

virtual network See **virtual LAN**.

virtual path The location of a file or directory on a particular **host**, as seen by a remote user accessing it via, e.g., the **World Wide Web**. Within the **URL**, the virtual path appears as '. . . /~name/. . .', where '~name' is replaced with the real path, which is configured by the local administrator. The effect of this is to restrict access from external users to specific parts of the local network, as well as providing for private **home pages**.

virtual point of presence (VPoP) (Or **virtual PoP**.) A telephone number which is accessed by an **Internet user**, from which the call is relayed, via a **ROMP**, to a bank of **modems** at the access provider's actual **point of presence**. This service is usually operated as a separate service by someone other than the service provider. In this way users have to pay only for local calls.

virtual PoP See **virtual point of presence**.

virtual reality Form of computer simulation which uses three dimensional graphics and video, together with tactile physical devices to give the user the impression that his environment is physically changing.

Virtual Reality Markup Language See **Virtual Reality Modelling Language**.

Virtual Reality Modelling Language (VRML) A specification for the design and implementation of a platform-independent language for **virtual reality** scene description so that three-dimensional environments (or **cyberspace**) can be implemented over the **World Wide Web**. Also called **Virtual Reality Markup Language**, because of its relationship with **SGML**.

virtual telecommunications access method (VTAM) A data communications access method that is used with IBM's **System Network Architecture** (**SNA**).

virus A program, usually written anonymously with malicious or mischievous intent, which attaches itself to executable program files so that when these are transferred from computer to computer (on disk or via the **Internet**), it spreads (like a biological virus). A virus is usually triggered by a particular stimulus, which may be running the program to which it is attached or just the system date reaching, e.g., 'Friday the 13th'. A **worm** is a specific kind of virus. (See also **Internet worm**.)

viscoelastic Flexible enough to return to original size after stretching.

viscosity Resistance to flow; tackiness.

Visicalc A proprietary spreadsheet package.

vision system A computer system for interpreting signals from a video camera. Used in robot systems to increase their functionality.

visitor location register (VLR) A database of information in the **MSC** containing information about visiting (roaming) mobile telephones from other networks.

visual A layout or rough of artwork. Also, **mock-up**.

visual display unit (VDU) The unit of a computer system containing a **screen**; usually part of a **video display terminal**.

visual display unit/terminal (VDU/VDT) A **cathode ray tube** screen and keyboard for input and correction of copy to a computer or photosetter.

visualisation Producing a visual or graphical representation of numerical data. Representations can be anything from a simple graph to a complex three-dimensional surface with colours representing different kinds of data. Visualisation is used increasingly in **executive information systems** so as to provide managers with an easily and quickly understood interpretation of trends and related data.

viz Abbreviation for the Latin word *videlicet* meaning 'in other words'.

VLR See **visitor location register**.

VLSI Very Large Scale Integration. The next generation of chip on from the **LSI** chip. The VLSI chip contains many more gates and offers expanded capabilities.

voc The file extension for the **VOiCe** audio format.

VoD See **video on demand**.

Vodaphone One of the principal providers of mobile communications networks in the UK.

VOiCe An **audio** file format developed for the **SoundBlaster** card. The file extension is '.voc'.

voice action In speech recognition technology, an operation much the equivalent of a keystroke or mouse-click that can be invoked by a voice command.

voice activation (Or speech recognition, voice recognition, voice input.) Giving commands to a computer by speaking rather than by using the keyboard or **mouse**. Although frequently featured in science fiction, it is now a reality.

voice band See **voice frequency**.

voice data entry See **speech recognition**.

voice file In speech recognition technology, the file that contains the user's voice model.

voice frequency (VF) Analogue signals that are within the frequency range used to transmit speech (between 200Hz and 3.5kHz), i.e. the range of the human voice.

voice input An alternative name for **speech recognition** or **voice activation**.

voicemail An electronic mailbox system in which spoken messages from telephone callers are recorded. Outgoing messages are often generated electronically using **speech synthesis**.

voice modem A **modem** that can handle voice (and usually **fax**) communications as well as data communications. (See also **fax modem**.)

voice output Another name for **speech synthesis**.

voice recognition An alternative name for **speech recognition**, **voice activation** or **voice input**.

voice synthesis See **speech synthesis**.

void hickey A **hickey** appearing as a white spot on the printed image.

volatile storage Storage media in which data is lost if the power supply is removed. Compare non-volatile storage. See **RAM**.

volume 1. Bound book. 2. Thickness of paper expressed as a volume number (e.g. vol 18) equal to the thickness in millimetres of 100 sheets of that paper at 100gsm.

volumetric A volumetric paper is one which is made to a guaranteed bulk. Typically an Antique wove.

voucher proof Proof sent by the printer for information only, not for **proofreading**.

vouchers Free copies of a periodical given to advertisers in that issue.

voxel In analogy with **pixel**, the smallest identifiable part of a three-dimensional space, identified by the cartesian coordinates of either its centre or one of its corners. The term is used in three-dimensional modelling.

VPoP See **virtual point of presence**.

VR See **virtual reality**.

VRAM See **video random access memory**.

VRML See **Virtual Reality Modelling Language**.

VSAT See **very small aperture terminal**.

V series The **ITU-T** series of recommendations for data transmission over telephone. They are usually used in connection with **modems**, for which they define operating speeds (**bandwidths** in **bps**) and other features, such as error correction. The commonly used recommendations are listed as separate entries. Note that **ISDN** is covered by the **I series**. (See also **H series**, **T series**, **X series**.)

VT 100 A **DEC video terminal** produced in the 1980s. However, the command set which was associated with it has become a *de facto* standard in communications, so that almost every communications program offers VT 100 compatibility or emulation.

VTAM See **virtual telecommunications access method**.

W

W3 An abbreviation used for the **World Wide Web**. Also a World Wide Web **browser** designed to work with the **Unix** editor Emacs.

W3C See **World Wide Web Consortium**.

W3 Consortium See **World Wide Web Consortium**.

waffling Deformation of a sheet caused by excessive ink tack.

WAIS See **wide area information server**.

WAN See **wide area network**.

warm colours Red and yellow shades.

warp The long threads in a woven cloth which represent the machine direction. The cross-threads are the **weft** or **woof**.

wash drawing Black and white illustration with tones created by grey or black ink or paint washes.

washing The unintended dissolving by water of pigment in ink during litho printing.

wash-up The cleaning of the printing units of a press prior to a change of ink or shut-down of the machine.

waste furnish Board or paper furnish consisting of waste paper – packaging, cardboard, newsprint, magazine papers etc.

water finish High finish to paper achieved by damping the web as it passes through the calender stack.

water immersion size test Test using water immersion to establish the effectiveness of sizing in a paper as a water repellent.

waterleaf Moisture-absorbent paper such as blotting paper or filter paper.

waterless litho Offset litho process using special plates which do not require damping.

watermark Design impressed into a paper web during manufacture by the **dandy roll**.

water-soluble inks Inks used in screen printing and gravure.

water vapour transmission rate Test to determine the waterproof qualities of packaging paper.

WAV See **Windows Waveform**.

wavelength division multiplexing A **multiplexing** technique used in **fibre-optic** communications. An optical multiplexer is used to combine light of different wavelengths into a single wavelength for transmission. A demultiplexer is used to separate the signals.

wavy edges Referring to a stack of paper in which the edges of the sheets are baggy and the centre of the sheets are stretched tight. Caused by the stack having a higher moisture level than the surrounding atmosphere. Compare **tight edges**.

wax engraving Engraving produced by using wax as a mould for an **electro**. Used particularly for rule work.

wax test Test of **picking** of paper surface using graded wax sticks.

waygoose or **wayzgoose** Annual party, dinner or outing for printing-house employees.

WEB A self-documenting programming language developed by Donald **Knuth** and used in writing **TEX**.

Web See **World Wide Web**.

web A continuous length of paper (i.e. a roll or reel) as distinct from sheets.

Web address Another name for a **URL**.

Web browser See **browser**.

Webcosm A development of **Microcosm** for **World Wide Web** documents so that users are able to set up **linkbases** which, for each specific text string, contain a link to one or more **URL**s. This can then be overlaid on a **Web page** to add user-controlled links. Different linkbases can be overlaid on the same page to reflect the different interests and levels of experience of the user(s).

Webcrawler See **spider**.

web-fed Presses printing on webs of paper rather than sheets.

Web master The person responsible for maintaining and administering a **Web site**.

web offset Reel-fed **offset litho**. May be **heatset** or **coldset**. A variety of possible configurations are possible ranging from one mono unit with a single reel-stand up to multi-unit colour presses with up to three reel-stands.

Web page A **World Wide Web** page, i.e. an **HTML** document.

web press See **web-fed**.

Web server A program that serves file and data to **Web browsers**. See **client-server**.

Web site The related set of **Web pages** operated by a single organisation or individual, usually identified by a single **IP** number.

web-sized mechanical sc paper See **WSOP**.

web-sized offset printing paper See **WSOP**.

web tension Adjustable degree of lateral pull on a web of paper in a web press.

wedge serif **Serif** which is an additional straight line rather than curved stroke (contrast **bracketed serif**).

weft The cross-threads in a woven material. Contrast **warp**.

weight 1. In typography, the degree of boldness of a typeface style (e.g. light, medium etc.). 2. In paper specification, the **substance**.

welcome page Another term for a **World Wide Web home page**.

wet-end The **Fourdrinier** wire section and the pressing section of a paper machine.

wet-on-wet Superimposition of colours on a multi-unit press (i.e. before each colour has dried).

wet printing See **wet-on-wet**.

wet proof See **machine proof**.

wet stock Pump in its liquid form or during formation on the wire.

wet strength Tensile strength of saturated paper.

wet strength paper Paper that remains strong even when wet because of **resin** added to the **pulp**.

wetting agent An additive which decreases the surface tension of water.

wf Wrong font. Proofreader's mark indicating an incorrect typefont has been used in setting.

WF See **woodfree paper**.

What you see is what you get See **WYSIWYG**.

wheel printer A printer with printable characters held on metal wheels.

whip stitching Sewing technique used to join sheets at the edges.

whirler Machine which applies photosensitive coating to printing plates.

whiteback Cloth which is dyed on its surface only, with the reverse side remaining white. Contrast **dyed-through** cloth.

whiteboard See **electronic whiteboard**, **audiographic teleconferencing**.

White Book The fourth book in Adobe's **PostScript** series, giving the specification for **Type 1 fonts**. The earlier volumes are Red Book, Green Book and Blue Book. Also a **CD-ROM** standard, which in 1994 replaced the Green Book and covers what are described as **video CD**s.

white line Line of space in phototypesetting.

white mail In direct mail, those orders for a publication which arrive for reasons which cannot be directly traced.

white out See **reversed out**.

white pages A directory service in which individuals can be found by name (like the telephone directory). The **Internet** supports several such **databases**. (See also **finger**, **knowbot**, **Netfind**, **whois**, **X.500**.)

white space The blank part of a printed page.

whitewater See **backwater**.

whiting A widely used **extender** for ink.

whois An **Internet** directory service for looking up names of people on a remote **host**. The service originated at the **DDN NIC**, but other hosts use different approaches, such as **finger**. (See also **white pages**.)

whole-bound Full-bound case of a hard-bound book covered in the same material all over.

wide area information server (WAIS) A distributed information retrieval system available over the **Internet**, which can retrieve text or **multimedia** documents. Input is in natural language and uses indexed searching so as to provide fast retrieval. It also includes a 'relevance feedback' mechanism so that the results obtained in each search have an effect on subsequent searches. WAIS uses **Z39.50** protocols.

wide area network (WAN) A **network** that covers areas larger than those serviced by a **local area network** (**LAN**). This usually means that **serial communications** are used, either via telephone lines (usually a **leased line**) or by satellite. An example is **SuperJANET**. (See also **metropolitan area network**.) The **Internet** can either be regarded as *the* WAN or as a network of WANs.

wideband A communications bandwidth higher than **voice band**, but how much higher is undefined. (See also **broadband**.) A wideband amplifier is one which will handle a wide range of frequencies.

Wide SCSI A variant of the **SCSI-2** interface that uses a 16-bit bus (and is therefore not compatible with SCSI-1).

widow The last line of a paragraph, printed at the top of a page. Considered undesirable typographically.

windows Window-shaped openings displayed by many current types of software in order to present data and menus to the user. Also the generic name of Microsoft series of desktop software.

width card Information contained on a card which programs a photosetter for the set widths of a particular typefont.

wild card An operating system facility in which a symbol may be used to express variable information or a set of files. For example, DIR FILE??.BAK would produce a directory listing of all backup files called FILE01, FILE02 etc. while COPY *.DOC would copy all document files.

WIMP Window, **icons**, **menus** and **pointing devices** (or sometimes **pull-down menus**). A way of describing the **graphical user interface** (**GUI**), originally invented at **Xerox PARC** for the **Xerox Star** and first widely used on the Apple **Macintosh**, but now almost universally used, e.g. in Microsoft **Windows** and **X windows**. The term was originally developed by hackers, essentially as a term of contempt for those who needed an easy, **user-friendly interface**.

Winchester disk Hard disk with extensive backing store capacity. See **hard disk**.

Window 1. Clear panel left in litho film for halftones to be stripped in. 2. Portion of a **VDU** screen dedicated to a particular file/document. Several windows can be open on-screen at one time, allowing the user to jump from one to another rapidly. Ideal operating conditions for on-screen cut and paste.

windowing Creating an on-screen window for showing information on the screen.

window manager The software which controls **windows**, i.e. their positioning, sizing etc.

Windows 95 The successor to Microsoft **Windows** 3.1. A 32-bit **graphical user interface** (**GUI**) and an **operating system** in its own right.

Windows 97 An updated version of **Windows 95**.

Windows BitMap A **bitmap graphics** format for Microsoft **Windows** applications. Any Windows application that can handle bitmaps can read such a file. The file extension is '.bmp'.

Windows character set The character set used to display Windows and Windows applications – the 256 characters of the **ANSI character set**.

windowshade handles In **DTP**, the horizontal lines containing loops which appear at the top and bottom of any selected **text block**.

Windows Metafile Format An **object-oriented graphics** format for Microsoft **Windows** applications. Any Windows application that can handle object-oriented graphics can read such a file. The file extension is '.wmf'.

Windows NT ('NT' stands for 'New Technology'.) A 32-bit **operating system** developed by Microsoft, after its split with IBM, on the basis of previous development work on **OS/2**. NT is a complete multi-user, **multi-tasking operating system**, which was aimed at the corporate network market and seen as a competitor to **Unix**. The **user interface** started very similar to that of Windows 3.1, and the latest version is closely related to **Windows 95**. It is not limited to running on the **Intel** chip range and some large installations have used the DEC alpha chip.

Windows sockets (Winsock) A **socket** system developed for **Windows** systems, providing both a standard **API** and a standard **ABI**.

Windows Waveform (WAV) A sound format developed by **Microsoft** and used principally in Microsoft **Windows**. The file extension is '.wav'.

wing effect The result of out-of-square guillotining of a book: when the book is opened the edges look like a pair of butterfly wings rather than being parallel along the tops and bottoms.

Winsock See **Windows sockets**.

WinZip An implementation of **PKZIP** for Microsoft **Windows**. (See also **zip**.)

wipe-on-plate Litho plate to which the light-sensitive coating is applied by hand.

wire The moving fine mesh belt on which liquid stock is formed into a web of paper by draining away the water. The 'wire side' is the side of the web which rests on the wire (also known as the **underside** or **wrong side**). Wire mark is the impression left by the wire on the web.

wire-binding or **wire-0 binding** Binding method comprising a continuous double loop of wire running through slots in the margin of a book.

Wired A US magazine concerned with the 'digital revolution' (see **Negroponte**). There is also, not surprisingly, a **World Wide Web** version (http://www.wired.com).

wireless Usually used to describe **networks** that are connected, not by wires, cables or optical fibres, but by radio communication (in much the same way as radio broadcasting was once commonly described as the 'wireless').

wire-side Side of paper facing the **wire** on the paper machine during making.

wire stitching See **saddle-stitching**.

with the grain In the direction of the length of the original web. Paper folds more easily with the grain. Contrast **against the grain**.

wizard Help feature which guides the user through the steps of a process.

WMF See **Windows Metafile Format**.

WOB White on black (i.e. **reversed-out**).

wood-containing Referring to papers which are **part-mechanical** in furnish.

woodcut Hand engraving cut into a block of wood for print-making.

wood engraving Illustration printed from a block of wood sawn against the grain, where the design is cut into the end grain of the wood, with the result that is clearer and more hard-wearing than if a **woodcut** had been used.

woodfree paper Full woodfree paper contains no **mechanical pulp** at all. This is sometimes known as 'pure woodfree'. It is generally accepted, however, that woodfree paper may include up to 10% mechanical or other fibre and still fall within the definition of 'woodfree'.

woodfree pulp Pulp which is processed chemically and which contains no mechanical groundwood.

wood pulp Raw material made from wood fibre mixed with water, used to make paper.

woodtype Typographical characters (usually in sizes over 72pt) made from wood. Often called **poster type**.

woof The cross threads in a woven material. Also, **weft**. Compare **warp**.

word As a computer term, a set of **bits** recognised by the computer as the smallest logical unit of information for processing.

word break Division of a word at a line ending.

word-by-word aplhabetisation See **alphabetisation.**

wordprocessing The act of composing, inputting and editing text through the medium of a dedicated wordprocessor or specific wordprocessing software.

wordprocessor An editing and formatting program with which documents, including graphics, can be input, edited, formatted and printed. (Contrast with **text editor**.) Most wordprocessors now run as **graphical user interface** (**GUI**) applications, and the distinction between high-end wordprocessors and low-end **page make-up** programs is very hazy. The two most common wordprocessors are Microsoft Word and WordPerfect.

word search Finding words or phrases in text by computer matching.

wordspace The variable space between words which may be increased or decreased to justify a line.

WordStar A proprietary wordprocessing package.

word wrap The automatic wrapping of text onto the next line when a line end is encountered.

work and back See **sheetwork**.

work and tumble Printing the reverse side of a sheet by turning it over on its long axis from

gripper to back and using the same plate. Each sheet, cut in half, yields two copies.

work and turn Printing the first side of a sheet, turning the stack across its short axis, and then printing the reverse side of the sheet using the same plate and the same gripper edge. Each sheet, cut in half, yields two copies.

work and twist Imposition which enables paper to be turned over and twisted through 90° to print the other side. This changes the edge which is fed to the grippers.

workbook Book with blank spaces provided for a student's answers.

workflow The control of documents moving around an organisation.

workgroup computing Groups of people working together over a network to coordinate and organise their activities. See **groupware**.

workings Number of passes through a printing machine to make up a complete job, e.g. four workings on a single-colour press to produce a four-colour print or one working on a four-colour press.

workspace The space available on a computer for work that will not need to be saved.

workstation A terminal, usually with its own processing power, e.g. running **X windows** and connected to a **Unix** system. The term is also used more generally to mean any **intelligent terminal** connected to a network. More popularly, the term is used to mean a special desk on which a computer is used.

work-up The unintentional lifting to impression level of spacing materials in a letterpress forme.

World Wide Web (WWW, W3) A **hypertext**-based system for accessing information over the **Internet**. WWW was originally developed at **CERN** by a team led by Tim **Berners-Lee**, in order to provide easy access to high-energy physics information. Files are coded using **HTML** and users view the information with a browser, such as **Netscape Navigator** or **Internet Explorer**. First publicly released in late 1991, since when it has become one of the most important methods of information transfer in the world, with a growth rate that has turned the Internet from a tool used by academics and researchers to a medium of popular communication. (See also **Docuverse**, **URL**, **HTTP**.)

World Wide Web Consortium (W3 Consortium, W3C) An organisation based at the Massachusetts Institute of Technology (MIT) originally created to develop common standards for the evolution of the **World Wide Web**. The director of the Consortium is Tim **Berners-Lee** and there are more than 120 organisations involved. The consortium, jointly with **INRIA**, reached an agreement in March 1996 with leading vendors to develop interoperability standards for **HTML** features such as **multimedia** objects, style sheets, forms, scripting, tables, high-quality printing, and improved access for the visually impaired.

World Wide Web Worm (WWWW) An automatic indexing tool for the **World Wide Web**.

WORM Acronym for **Write Once Read Many times**, an optical disc on which data can be recorded but not erased by the user.

worm A piece of programming code that propagates itself over a network, replicating itself as it goes. A kind of computer virus.

wormhole routing A form of message passing in which parts of the message are transmitted independently, unlike **store-and-forward** routing, where the whole message must be received by a node before the message can be forwarded to the next node. It reduces the **latency** and the storage requirements at each node.

wove Paper produced using a plain, woven **dandy roll** and therefore without laid lines, as distinct from **laid paper**.

woven material Genuine cloth, used for case covering. The two main qualities of woven cloth used for coverings are 'single-warp' and 'double-warp' buckram. In the case of single-warp buckram, the standard specification is '40/40', i.e. 40 strands of thread per linear inch in each direction.

wp See **wordprocessor**.

wpm Words per minute.

WPS Windows printing system: software developed by Microsoft which optimises printing in a Windows environment.

wrap 1. Plate section placed around the outside of a folded text section in a book and bound in. Contrast **insert**. 2. See **word wrap**.

wraparound A wordprocessing facility that moves a word to a preceding or following line to avoid word breaks or to allow for deletion or insertion.

wraparound plate Thin letterpress printing plate which is clamped around the plate cylinder.

wrapper See **dust jacket**.

wrapping Attaching a paper cover by gluing at the spine. See **drawn-on cover**.

wrapround A section wrapped round a **signature** rather than contained within it.

wrinkles 1. Creases in printed paper caused by uneven moisture absorption. 2. Uneven surface of ink during drying.

write To record or output electronic data.

write enable A means of allowing data to be written to magnetic disk or tape. With floppy disks this is achieved typically by the removal of an adhesive tab from the disk's write-protect notch, while with magnetic tape the same objective is achieved by repositioning a sliding tab on a cartridge or cassette enclosure or by the replacement of a file protect ring on a reel of magnetic tape. Compare **write protect**.

Write Once Read Many times (WORM) An **optical disc**, similar to **CD-ROM**. WORM discs are generally used for archiving and in **document image processing** systems. (See also **COLD**.)

write protect A means of preventing data being written to magnetic disk or tape. With floppy disks this is achieved by placing an adhesive tab over the disk's write-protect notch, while with magnetic tape it is achieved by repositioning a sliding tab on a cartridge or cassette enclosure or by the removal of a file protect ring from a reel of magnetic tape. Compare **write enable**.

writings Papers sized for writing without ink spread.

wrong font See **wf**.

wrong grain See **cross grain**.

wrong-reading Film which reads incorrectly, i.e. reversed from left to right, when viewed from the emulsion side. Also called **reverse-reading**.

wrong side See **underside**, **wire side**.

WSOP Web-sized offset printing paper. A high-finish **sc mechanical paper** mainly used for magazines, but appropriate for some grades of bookwork.

WWW See **World Wide Web**.

WWWW See **World Wide Web Worm**.

WYSIWYG What you see is what you get. Acronym used to describe a visual display showing an exact replica of its output.

X

X.3 The **ITU-T** standard that specifies the basic functions and user-selectable capabilities of a **packet assembler/disassembler** (**PAD**). Together with **X.28** and **X.29**, X.3 specifies the functions, interfaces and control procedures for a PAD that give start-stop-mode terminals access to a **packet-switched** public data network.

X.25 The **ITU-T** recommendation that specifies the interface between **data terminal equipment** (**DTE**) and **data communications equipment** (**DCE**) in a **packet-switching network**. X.25 defines the standard **network layer**, **datalink layer** and **physical layers**, and is used in packet-switching networks all over the world.

X.28 The **ITU-T** standard specifying how to control a **PAD** from **DTE** on a public network. (See also **X.3**.)

X.29 The **ITU-T** standard, specifying procedures for the exchange of control information and user data between remote **packet**-mode **DTE** and a **PAD**. (See also **X.3**.)

X.75 The **ITU-T** standard that specifies the **protocols** for communication between two **packet-switched** data networks in different countries.

X.400 series The **ITU-T** standard for electronic mail (**email**) systems. Such services have been implemented by **PTT**s in a number of countries and are normally connected to the **Internet**. X.400 addresses are rather different from **IP** addresses and tend to be very long. One problem with X.400 for large organisations is that the directory is normally public, which may not always be desirable.

X.500 The set of **ITU-T** standards that are concerned with electronic directory services such as **knowbot**, **white pages** and **whois**.

XA See **CD-ROM XA**.

Xanadu The first proposal, by Ted **Nelson**, for a **hypertext** system. It was in this context that the term 'hypertext' was first proposed.

X bitmap The format for **bitmaps** in the **X windows** system.

xbm See **X bitmap**.

X client An application process in an **X windows** system, which calls upon an **X server** to gain access to a window.

Xeikon One of the leading **digital presses**.

Xenix A version of the Unix operating system developed by Microsoft.

xenon flash Intense momentary light source used in photosetting.

xerographic See **xerography**.

xerography Electrostatic copying process in which toner adheres to charged paper to produce an image.

Xerox Trade mark for a type of photocopier.

Xerox PARC Xerox research centre in Palo Alto, California

Xerox Star The computer which had the first **graphical user interface** (**GUI**), developed at **Xerox PARC** but never really exploited. Most of the know-how which went into the Star was exploited in the Apple **Macintosh**.

XGA Extended graphics array developed by **IBM**. It is the standard for the colour video graphics adaptor for PCs, having a **resolution** of 1024×768 **pixels** with 256 colours on an interlaced display.

x-height The height of the **lower-case** letter 'x' in a particular **typeface** or **font**; 'x' is used because it the only letter that effectively has a clearly defined flat top. The x-height determines the apparent size of the font, while the relationship between the x-height and the **cap height** (the height of the capital letters) is a characteristic of a typeface and can affect its readability.

x-line Alignment along the tops of lower-case letters. Also, **mean line**.

XML See **eXtensible Markup Language**.

Xmodem An **asynchronous file-transfer** system **protocol** used over **modems**, which works by transferring blocks of data and then waiting for acknowledgement. This makes the transfer slow but accurate. **Ymodem** and **Zmodem** are enhanced versions of Xmodem which work at higher transmission rates. Another widely used **File Transfer Protocol** is **Kermit**. Over the **Internet**, **ftp** is the most commonly used protocol.

Xmodem-1K A version of **Xmodem** that uses 1kbyte **packets**.

x-on/x-off The flow control procedure generally used in communications. An x-on character starts data flow and an x-off character stops it. Note that 'x-on' is equivalent to keying 'control-q' while 'x-off' is equivalent to 'control-s'.

XON-XOFF A data communications protocol which typically requires a full duplex link. When the receiving device is unable to accept further data it sends an ASCII XOFF character.

X protocol A standard **protocol** used by **clients** (applications) and **servers** in the **X windows** system for exchanging requests for window operations.

XRN A newsreader program running under **X windows**. See **Usenet news**.

X series The series of **ITU-T** recommendations governing data transmission over public data networks. The most widely applied are listed individually. Note that this series does not include the **X.400** or **X.500** series.

X server Software which produces an **X windows** display. Can run on an **X terminal**, a **Macintosh** or a PC running **Windows**.

X terminal An **intelligent terminal** or **workstation** which operates as an **X server** on a **network**, usually **Ethernet**.

X window bitmap graphic A **bitmap graphic file format** for **X windows**. The file extension is '.xbm'.

X windows A windowing system based on **TCP/IP** networking and originally developed at MIT, widely used on **Unix** systems. May run on a dedicated **X terminal** or some other system, e.g. a **Macintosh** or a PC under **Windows**, running an **X server**. The process uses a **client-server X protocol**. The **X client**, an application program, issues a request to the X-server, which generates the **bitmapped** display. **Motif**, now the standard **graphical user interface** (**GUI**) for **Unix** systems, is based on X windows. Note that in this case it is the screen/keyboard which is acting as the server (of the display), while the X clients run on the main file server system. This can lead to some confusion.

xx Mark indicating **retree**.

xxx Mark indicating **broke**.

XXX See **Triple-X**.

x-y co-ordinates Horizontal (x) and vertical (y) alignments used by computers for siting pixels in screen displays or output.

Y

Yahoo A hierarchical index of the **World Wide Web**. Allows searches in specific subject areas. Other widely used search utilities are **AltaVista** and **Lycos**, but there are a large number of search engines available.

yankee dryer Steam-heated paper-drying cylinder generating a glazed finish to the paper so treated.

yankee machine A papermaking machine that contains a glazing cylinder.

yapp cover Binding material edges which overlap the case boards to provide a 'fringed' effect. Often used on bibles.

Yellow Book A **CD-ROM** format, compliant with **ISO 9660**. Disks in this format can be played on most drives and are suitable for most **multimedia applications** for PCs.

yellow cable The cabling defined in the original **thick Ethernet** specification.

Ymodem An **asynchronous file transfer protocol**, which is an enhancement of **Xmodem**. It provides a greater block size and allows batches of files to be transferred, while Xmodem allows only transfer of single files. (See **communications**.) **Ymodem-g** is a non-stop version, i.e. not batch, which is much faster but

if there is an error, the transfer will abort. (See also **Zmodem**.)

Ymodem-g See **Ymodem**, **Zmodem**.

Ytalk A multi-user **Chat** program, running under **X windows**, that supports multiple connections.

Z

Z39.50 An **ANSI** standard for information retrieval. It is a **network protocol**, working on a **client-server** basis, giving a set of rules governing the formats and also providing a query syntax. It is intended to be **user-friendly**, so that the user does not need to be aware of the communication between the computers, in much the same way as with tools such as **WAIS**, but it has the advantage that it is session-oriented so that criteria and the results of previous searches can be reused. There is now, however, a **gateway** to the **World Wide Web**. Z39.50 is mainly used by librarians and information scientists.

Zapf dingbats A typeface designed by Hermann Zapf, which includes common **dingbats**. It is usually provided as one of the standard fonts with a **PostScript laser printer**.

ZDNet (Formerly called **Ziffnet**.) An electronic information service provided by Ziff-Davis, the publisher of computer magazines, giving access to electronic versions of these magazines, as well as much other information. There is a complementary **CompuServe** version, which also provides a software archive.

Ziffnet (Formerly the name of **ZDNet**.) An information service associated with the *Wall Street Journal*.

zinc engraving Relief engraving made on zinc and often used for short-run blocking in preference to a chemac. Also called **zinco**.

zinco or **zincograph** **Letterpress** line block made of zinc.

zip A file format widely used for **data compression**, e.g. in transferring programs and other large files on floppy disk or over the **Internet**. The files used to compress and decompress are **PKZIP** and **PKUNZIP**. There is also now a **Windows** version, **WinZip**. Note that PKZIP is **shareware** and not **public domain** software, although the supplier, PKWare, provides runtime licences for PKUNZIP.

Zip-a-tone Proprietary name for patterned line or dot effects applied as rub-down film onto **artwork**. (See also **Letraset**, **transfer type**.)

zip drive A type of super-floppy drive with much higher capacity and operating at a much higher speed.

Zmac The former name of the **World Wide Web** site of the Ziff-Davis **Macintosh** magazines. Now part of **ZDNet**.

Zmodem A **File Transfer Protocol** that is a development of **Xmodem** and **Ymodem**, but which includes error checking and crash recovery, so that if a transfer is interrupted, it can be continued later, rather than completely repeated. The transfer rate is similar to that of **Ymodem-g** as it runs continuously, rather than in batch mode.

zoom In analogy with a photographic lens, to make what appears in a screen **window** (in a **graphical user interface**) larger (zoom in) so that a smaller area is seen, or smaller (zoom out), so that a larger area is seen. Depending on the **application**, either the magnification may be selected from a menu or, for zooming in, the **cursor** changes (usually to a magnifying glass) and the area to be zoomed in on is **marquee** selected. If zooming in is performed by the latter method, zooming out is usually achieved by **clicking** an **icon** which has the effect of undoing the last zoom in (marquee selection itself cannot be used because the desired area of viewing is larger than what can currently be seen on the screen).

Appendices

The metric and imperial systems of measurement

Metric prefixes

Prefix	*Abbreviation*	*Multiplication factor*
pico	p	0.000000000001
nano	n	0.000000001
micro	µ	0.000001
milli	m	0.001
centi	c	0.01
deci	d	0.1
deka (or deca)	da	10
hecto	h	100
kilo	k	1000
myria	my	10000
mega	M	1000000
giga	G	1000000000
tera	T	1000000000000

Metric weights and measures

Length	10 ångström	=	1 nanometre
	1000 nanometres	=	1 micrometre
	1000 micrometres	=	1 millimetre
	10 millimetres	=	1 centimetre
	10 centimetres	=	1 decimetre
	10 decimetres	=	1 metre
	10 metres	=	1 dekametre
	10 dekametres	=	1 hectometre
	10 hectometres	=	1 kilometre
	1000 kilometres	=	1 megametre
Weight	1000 milligrams	=	1 gram
	10 grams	=	1 dekagram
	10 dekagrams	=	1 hectogram
	10 hectograms	=	1 kilogram
	100 kilograms	=	1 quintal
	10 quintals	=	1 tonne
Area	100 sq millimetres	=	1 sq centimetre
	100 sq centimetres	=	1 sq decimetre
	100 sq decimetres	=	1 sq metre
	100 sq metres	=	1 are
	100 ares	=	1 hectare
	100 hectares	=	1 sq kilometre

Capacity	10 millilitres	=	1 centilitre
	10 centilitres	=	1 decilitre
	10 decilitres	=	1 litre
	10 litres	=	1 dekalitre
	10 dekalitres	=	1 hectolitre
	10 hectolitres	=	1 kilolitre
Volume	1000 cu millimetres	=	1 cu centimetre
	1000 cu centimetres	=	1 cu decimetre
	1000 cu decimetres	=	1 cu metre
	1000 cu metres	=	1 cu dekametre
	1000 cu dekametres	=	1 cu hectometre

Imperial weights and measures

Length	12 inches	=	1 foot
	3 feet	=	1 yard
	22 yards	=	1 chain
	10 chains	=	1 furlong
	220 yards	=	1 furlong
	8 furlongs	=	1 mile
	1760 yards	=	1 mile
	5280 feet	=	1 mile
Weight	16 ounces	=	1 pound
	14 pounds	=	1 stone
	2 stones	=	1 quarter
	28 pounds	=	1 quarter
	4 quarters	=	1 hundredweight
	8 stones	=	1 hundredweight
	20 hundredweights	=	1 ton
	2240 pounds	=	1 ton
Area	144 sq inches	=	1 sq foot
	4840 sq yards	=	1 acre
	640 acres	=	1 sq mile
Capacity	8 fluid drachms	=	1 fluid ounce
	5 fluid ounces	=	1 gill
	4 gills	=	1 pint
	2 pints	=	1 quart
	4 quarts	=	1 gallon
	2 gallons	=	1 peck
	4 pecks	=	1 bushel
	8 bushels	=	1 quarter
	36 gallons	=	1 bulk barrel
Volume	1728 cu inches	=	1 cu foot
	27 cu feet	=	1 cu yard
	5.8 cu feet	=	1 bulk barrel
	100 cu feet	=	1 register ton (*Shipping*)

Conversion of Imperial weights and measures to metric

	Imperial	*Multiplication factor*	*Metric*
Length	inches	2.54000	centimetres
	feet	0.3048	metres
	yards	0.9144	metres
	miles	1.609344	kilometres
Weight	ounces	28.3495	grams
	pounds	0.45359	kilograms
	short tons (2000 lbs)	0.907185	tonnes
	long tons (2240 lbs)	1.01605	tonnes
Area	sq inches	6.4516	sq centimetres
	sq feet	0.092903	sq metres
	sq yards	0.836127	sq metres
	sq miles	2.58999	sq kilometres
	acres	0.404686	hectares
Capacity	cu inches	16.387064	cu centimetres
and volume	pints	0.5683	litres
	gallons	4.546	litres
Velocity	miles per hour	1.609344	kilometres per hour
	feet per second	0.3048	metres per second
Temperature	degrees Fahrenheit	(–32) 3 $^{5}/_{9}$	degrees Celsius

Conversion metric weights and measures to Imperial

	Metric	*Multiplication factor*	*Imperial*
Length	centimetres	0.3937	inches
	metres	3.2808	feet
	metres	1.0936143	yards
	kilometres	0.62137	miles
Weight	grams	0.03527	ounces
	kilograms	2.20462	pounds
	tonnes	1.10231	short tons 2000 lbs
	tonnes	0.984207	long tons 2240 lbs
Area	sq centimetres	0.155	sq inches
	sq metres	10.7639	sq feet
	sq metres	1.9599	sq yards
	sq kilometres	0.3861	sq miles
	hectares	2.47101	acres
Capacity	cu centimetres	0.06102	cu inches
and volume	litres	1.7598	pints
	litres	0.2200	gallons
Velocity	kilometres p. hour	0.62137	miles per hour
	metres per second	3.2808	feet per second
Temperature	degrees Celsius	3 $^{5}/_{9}$ (+32)	degrees Fahrenheit

Metric units and symbols relating to paper production

	Unit of measure	*Abbreviation/Ssmbol*
Area	square metre	m^2
Dimensions	millimetre	mm
	centimetre	cm (1cm=10mm)
	metre	m (1m=100cm=1000mm)
Grammage	grams per square metre	g/m^2 or gsm
Mass	gram	g
	kilogram	kg (1kg=1000g)
	tonne	t (1t=1000kg=1000000g)
Thickness	micrometre, micron	µm
	millimetre	mm (1mm=1000µm)
Bursting strength	kilopascal	kPa
Internal tearing strength	millinewton	mN
Temperature	degrees Celsius	˚C
Relative humidity	percentage	%
Sheet count	standard ream	500 sheets
Machine direction	indicated by symbol (m)	
	e.g. 640 3 900(m)	long grain sheet
	640(m) 3 900	short grain sheet

Typographical measurements and screen rulings

Points and Picas (Anglo-American standard)/ Didots and Ciceros (European standard)

	Inches	*Millimetres*
Anglo-American point	.013837	0.351
Pica	.166044	4.218
Didot point	.0148	0.376
Cicero	.1776	4.511

Conversion factor Picas to Ciceros

1.069596 (1.0696)

Conversion factor Ciceros to Picas

0.9349324 (0.9349)

Conversion table: points to inches and millimetres

	Anglo-American		*Didot*	
Point size	*Inches*	*Millimetres*	*Inches*	*Millimetres*
1	.013837	.351	.0148	.376
3	.041511	1.054	.0444	1.128
6	.083022	2.109	.0888	2.256
7	.096859	2.460	.1036	2.631
8	.110696	2.812	.1184	3.007
9	.124533	3.163	.1332	3.383
10	.138370	3.515	.1480	3.759
11	.152207	3.866	.1628	4.135
12	.166044	4.218	.1776	4.511
14	.193718	4.920	.2072	5.263
18	.249066	6.326	.2664	6.767
24	.332088	8.435	.3552	9.022

Letterpress type – height to paper

0.7870	20.000mm	Denmark
0.9180	23.317mm	UK, Australia, Canada, India, Mexico, New Zealand, South Africa, South America, USA
0.9280	23.567mm	France, Germany, Switzerland
0.9320	23.670mm	Austria, Belgium, Hungary
0.9770	24.820mm	Holland
0.9880	25.100mm	USSR

Old Anglo-American names for type bodies and their approximate point sizes

Name	*Point size*	*Name*	*Point size*
Minikin	3.5	Two-line brevier	16
Brilliant	4	Great primer	18
Diamond	4.5	Paragon	20
Pearl	5	Two-line small pica	22
Agate (or Ruby)	5.5	Two-line pica	24
Nonpareil	6	Two-line English	28
Emerald	7	Four-line brevier	32
Brevier	8	Two-line great primer	36
Bourgeois	9	Two-line paragon	40
Long primer	10	Two-line double pica	44
Small pica	11	Canon (or four-line pica)	48
Pica	12	Five-line pica	60
English	14	Six-line pica	72

Screen rulings

Lines per inch	*Nearest standard equivalent lines per cm*	*Paper surface*
65	26	newsprint
85	34	newsprint
100	40	MF
120	48	MF/matt coated
133	54	MF/matt coated/art
150	60	matt coated/art
175	70	art
200	80	art

Paper and book sizes

SRA paper sizes – for bleed and trim work

Sheet size	*Millimetres*	*Inches*	*A4 pages to view*	*A4 pages from sheet*
SRA0	900 × 1280	35⅜ × 50⅜	16	32
SRA1	640 × 900	25¼ × 35⅜	8	16
SRA2	450 × 640	17¾ × 25¼	4	8

RA paper sizes – for normal trim work

Sheet size	*Millimetres*	*Inches*	*A4 pages to view*	*A4 pages from sheet*
RA0	860 × 1220	33⅞ × 48	16	32
RA1	610 × 860	24 × 33⅞	8	16
RA2	430 × 610	16⅞ × 24	4	8

A series sheet sizes

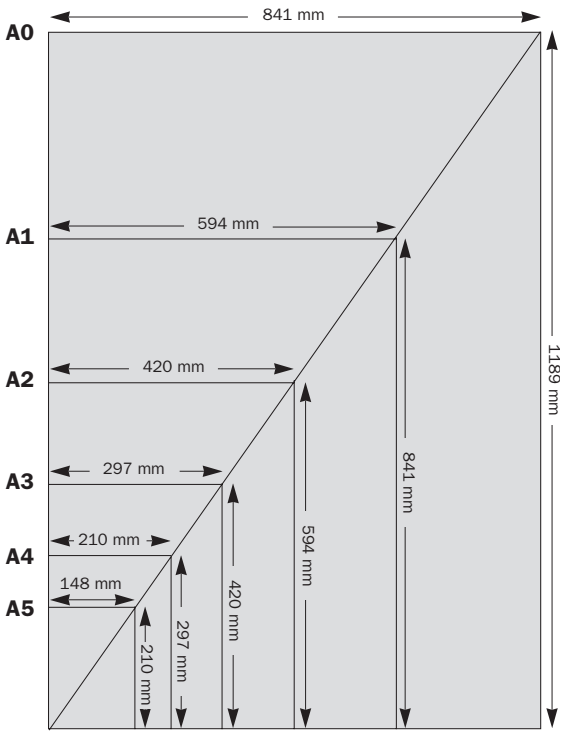
Sheet size	*Millimetres*	*Inches*
4A	1682 × 2378	66¼ × 93⅝
2A	1189 × 1682	46¾ × 66¼
A0	841 × 1189	33⅛ × 46¾
A1	594 × 841	23⅜ × 33⅛
A2	420 × 594	16½ × 23⅜
A3	297 × 420	11¾ × 16½
A4	210 × 297	8¼ × 11¾
A5	148 × 210	5⅞ × 8¼
A6	105 × 148	4⅛ × 5⅞
A7	74 × 105	2⅞ × 4⅛
A8	52 × 74	2 × 2⅞
A9	37 × 52	1½ × 2
A10	26 × 37	1 × 1½

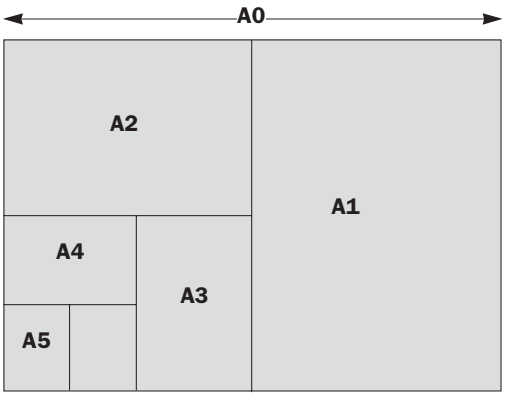
B series for posters

Sheet size	*Millimetres*	*Inches*
4B	2000 × 2828	78¾ × 111⅜
2B	1414 × 2000	55⅝ × 78¾
B0	1000 × 1414	39⅜ × 55⅝
B1	707 × 1000	27⅞ × 39⅜
B2	500 × 707	19⅝ × 27⅞
B3	353 × 500	13⅞ × 19⅝
B4	250 × 353	9⅞ × 13⅞
B5	176 × 250	7 × 9⅞

A series size relationships

The digram on the left below shows the progressive reductions down from A0 to A5: each size is half the previous one. In the diagram on the right it is clear that each size has its sides in the same ratio of 1:√2.





C series for envelopes

Sheet size	*Millimetres*	*Inches*	*Common use*
4A	1682 × 2378	66¼ × 93⅝	
C0	917 × 1297	36⅛ × 51	
C1	648 × 917	25½ × 36⅛	
C2	458 × 648	18 × 25½	
C3	324 × 458	12¾ × 18	
C4	229 × 324	9 × 12¾	takes A4 sheet flat
C5	162 × 229	6⅜ × 9	takes A5 sheet flat
C6	114 × 162	4½ × 6⅜	takes A5 folded once
C7/6	81 × 162	3¼ × 6⅜	takes A5 folded twice
C7	81 × 114	3¼ × 4½	
DL	110 × 220	4⅜ × 8⅝	takes A4 folded twice

Metric book and sheet sizes (quad sheets)

Name	*Trimmed page (mm)*	*Untrimmed page (mm)*	*Quad sheet (mm)*	*Pages to view*	*Pages irom sheet*
Crown 8vo	186 × 123	192 × 126	768(m) × 1008	32	64
Metric Crown 4to	246 × 189	252 × 192	768 × 1008(m)	16	32
Metric Large Crown 8vo	198 × 129	204 × 132	816(m) × 1056	32	64
Metric Demy 8vo	216 × 138	222 × 141	888(m) × 1128	32	64
Metric Demy 4to	276 × 219	282 × 222	888 × 1128(m)	16	32
Metric Royal 8vo	234 × 156	240 × 159	960(m) × 1272	32	64
Metric Royal 4to	312 × 237	318 × 240	960 × 1272(m)	16	32

Imperial book and sheet sizes (quad sheets)

	Trimmed page		*Quad sheet*		*Pages from sheet*
Name	*(mm)*	*(inches)*	*(mm)*	*(inches)*	
Crown 8vo	184 × 124	7¼ × 4⅞	762(m) × 1016	30 × 40	64
Crown 4to	248 × 187	9¾ × 7⅜	762 × 1016(m)	30 × 40	32
Large Crown 8vo	197 × 130	7¾ × 5⅛	813(m) × 1067	32 × 42	64
Demy 8vo	216 × 140	8½ × 5½	889(m) × 1143	32 × 42	64
Demy 4to	279 × 219	11 × 8⅝	889 × 1143(m)	35 × 45	32
Royal 8vo	248 × 156	9¾ × 6⅛	1016(m) × 1272	40 × 50	64
Royal 4to	311 × 251	12¼ × 9⅞	1016 × 1272(m)	40 × 50	32

Other Imperial book and sheet sizes

	Trimmed octavo		*Trimmed quarto*		*Quad sheet size*	
	mm	*inches*	*mm*	*inches*	*mm*	*inches*
Foolscap	165 × 105	6½ × 4⅛	210 × 168	8¼ × 6⅝	686 × 864	27 × 34
Largepost	203 × 130	8 × 5⅛	260 × 206	10¼ × 8⅛	838 × 1067	33 × 42
Medium	222 × 143	8¾ × 5⅝	286 × 225	11¼ × 8⅞	914 × 1168	36 × 46
Imperial	273 × 187	10¾ × 7⅜	375 × 276	14¾ × 10⅞	1118 × 1524	44 × 60

Recommendations for printer's board and covers

BS4000 recommends the following for printer's board and cover paper:

Sheet size	*Printer's board untrimmed stock sizes (mm)*	*Cover paper untrimmed stock sizes (mm)*
SRA2	450 × 640	485 × 640
Royal	520 × 640	520 × 780
Postal	570 × 730	640 × 970
SRA1	640 × 900	

American measurement

The American system of paper measurement and calculation retains much in common with Britain's old Imperial system. Thus standard units of measurement for weight are: pounds, hundredweights (100 lbs) and tons (2000 lbs). Paper size is measured in inches and quantity in reams (500 sheets) or sheets. Specific grades of paper are cut to its *basic size*. Substance is identified by *basis weight*. Basis weight = weight (lbs) of a ream of paper cut to its basic size.

Conversion factors for American basis weights and grammage

Basic size (inches)	*to convert from g/m² to lb/ream multiply g/m² by*	*to convert from lb/ream to g/m² mutiply lb/ream by*
17× 22	0.266	3.76
20× 26 (cover boards)	0.370	2.70
20× 30	0.427	2.34
22× 38	0.438	2.28
22½ × 28½	0.456	2.19
25½ × 30½	0.553	1.81
23× 35	0.573	1.75
24× 36 (newsprint)	0.614	1.63
25× 38 (book papers)	0.675	1.48

American book sizes

Note that the American usage is to express the width dimension of the book first. The sizes quoted are not absolute and may vary slightly.

Name	*Size (inches)*	*Name*	*Size (inches)*
Medium 32mo	3 × 4¾	Medium 12mo	5⅛ × 7⅔
Medium 24mo	3⅝ × 5½	Demy 8vo	5½ × 8
Medium 18mo	4 × 6⅔	Small 4to	7 × 8½
Cap 8vo	7 × 7¼	Broad 4to (up to 13 ×10)	7 × 8½
12mo	4½ × 7½	Medium 8vo	6 × 9½
Medium 16mo	4½ × 6¾	Royal 8vo	6½ × 10
Crown 8vo	5 × 7½	Super Royal 8vo	7 × 10½
Post 8vo	5½ × 7½	Imperial 8vo	8¼ × 11½

Weight (lb) per 1000 sheets of standard American sheet sizes and weights of book papers

Sheet size (inches)	Basis weight (lb) 25 × 38″ ream) *Equivalent g/m²)*									
	30 *44*	35 *52*	40 *59*	45 *67*	50 *74*	60 *89*	70 *104*	80 *118*	100 *148*	120 *178*
17½ × 22½	25	29	33	37	41	50	58	66	83	99
19 × 25	30	35	40	45	50	60	70	80	100	120
23 × 29	42	49	56	63	70	84	98	112	140	169
23 × 35	51	59	68	76	84	102	118	136	169	203
24 × 36	54	64	72	82	90	110	128	146	182	208
25 × 38	60	70	80	90	100	120	140	160	200	240
28 × 44	78	90	104	116	130	156	182	208	260	312
32 × 44	88	104	118	134	148	178	208	238	296	356
35 × 45	100	116	132	150	166	198	232	266	332	398
38 × 50	120	140	160	180	200	240	280	320	400	480
42 × 58	154	179	205	230	256	308	358	410	512	614

Weight (lb) per 1000 sheets of standard American sheet sizes and weights of cover boards

Sheet size (inches)	Basis weight (lb) 25 3 380 ream) *(Equivalent g/m²)*					
	50 *135*	60 *162*	65 *175*	80 *216*	100 *270*	130 *351*
20 × 26	100	120	130	160	200	260
23 × 35	155	186	201	248	310	402
26 × 40	200	240	260	320	400	520
35 × 46	310	392	402	496	620	804

Accents, alphabets and mathematical symbols

Accents of major European and Scandinavian languages

Albanian	â ç ë
Czech	á č ď é ě í ň ó ř š ť ú ů ý ž
Danish	å æ ø
Dutch	æ é è ê ë ó ò ô ij
Esperanto	ĉ ĝ ĵ ŝ ŭ (ĥ)
Finnish	ä å ö
Flemish	ë ó ij
French	à â ç é è ë î ï ô œ ù û ü
German	ä ö ü ß
Hungarian	á é í ó ö ő ú ü ű
Icelandic	á æ ð é í ó ö œ þ ú ý
Italian	à é è í ì î ó ò ú ù
Norwegian	å æ ø
Polish	ą ć ę ł ń ó ś ź ż
Portuguese	á à â ã ç é è ê í ì ó ò ô õ ú ù
Rumanian	à â ă è ì î ş ţ ù
Serbo-Croatian	č ć đ š ž
Spanish	á é í ñ ó ú ü
Swedish	å ä ö
Turkish	â ç ğ ı î ö ş ü û İ
Welsh	ä â ë ê ï î ö ô ŵ ÿ ŷ

Old English special characters

Þ þ	Thorn
Ð ð	Eth
Ȝ ȝ	Yogh

Cyrillic alphabet

Аа	Az	**Ии**	Ishe	**Рр**	Rzy	**Шш**	Sha
Бб	Buki	**Йй**	Ishe s Kratkoi	**Сс**	Slovo	**Щщ**	Shcha
Вв	Vyedi	**Кк**	Kako	**Тт**	Tvyerdo	**Ъъ**	Tvyerdi Znak
Гг	Glagol	**Лл**	Lyudi	**Уу**	U	**Ыы**	Yeri
Дд	Dobro	**Мм**	Myslete	**Фф**	Fiert	**Ьь**	Myakhi Znak
Ее	Yest	**Нн**	Nash	**Хх**	Kher	**Ээ**	E
Жж	Zhivete	**Оо**	On	**Цц**	Zy	**Юю**	Yu
Зз	Zemlya	**Пп**	Pakoi	**Чч**	Cha	**Яя**	Ya

Greek alphabet

Αα	Alpha	Ηη	Eta	Νν	Nu	Ττ	Tau
Ββ	Beta	Θθ	Theta	Ξξ	Xi or Si	Υυ	Upsilon
Γγ	Gamma	Ιι	Iota	Οο	Omicron	Φφ	Phi
Δδ	Delta	Κκ	Kappa	Ππ	Pi	Χχ	Chi
Εε	Epsilon	Λλ	Lambda	Ρρ	Rho	Ψψ	Psi
Ζζ	Zeta	Μμ	Mu	Σσς	Sigma	Ωω	Omega

Fraktur alphabet

𝔄 𝔞	Aa	𝔊 𝔤	Gg	𝔒 𝔬	Oo	𝔘 𝔲	Uu
𝔄 𝔞̈	Ää	𝔊 𝔥	Hh	𝔒 𝔬̈	Öö	𝔘 𝔲̈	Üü
𝔅 𝔟	Bb	𝔍 i or j	Ii, Jj	𝔓 𝔭	Pp	𝔙 𝔳	Vv
ℭ 𝔠	Cc	𝔎 𝔨	Kk	𝔔 𝔮	Qq	𝔚 𝔴	Ww
𝔇 𝔡	Dd	𝔏 𝔩	Ll	𝔑 𝔯	Rr	𝔛 𝔵	Xx
𝔈 𝔢	Ee	𝔐 𝔪	Mm	𝔖 𝔰	Ss	𝔜 𝔶	Yy
𝔉 𝔣	Ff	𝔑 𝔫	Nn	𝔗 𝔱	Tt	ℨ 𝔷	Zz

Teaching alphabet

This alphabet is used in teaching children to read. It is based upon the principle of 'one sound, one letter'. The alphabet is shown here with the equivalent sounds of the letters. The capital letter forms are identical with the lower case.

æ	ale	e	egg	m	man	p	pig	u	up
ɑ	father	f	fit	n	net	r	run	v	van
a	at	g	gun	ŋ	sing	s	sad	w	wet
au	author	h	hat	œ	toe	ʃh	ship	wh	why
b	but	ie	tie	o	on	ʒ	vision	y	yell
c	cat	i	ink	ω	book	t	tap	z	is
ʧh	chat	j	joy	ωω	food	ʧh	thin	z	fez
d	dog	k	kit	ou	out	ʃh	then		
ee	eel	l	lip	oi	oil	ue	due		

Phonetic alphabet

Consonants		Vowels		Consonants		Vowels	
Letter	*As in . . .*	*Letter*	*As in . . .*	*Letter*	*As in . . .*	*Letter*	*As in . . .*
p	*p*ad	iː	s*ee*	s	*s*it	eɪ	d*ay*
b	*b*ig	ɪ	*i*t	z	*z*ero	əʊ	g*o*
t	*t*oo	e	g*e*t	ʃ	*sh*ip	aɪ	fl*y*
d	*d*og	æ	c*a*t	ʒ	measure	aʊ	h*ow*
k	*k*eep	ɑː	f*a*ther	h	*h*ot	ɔɪ	b*oy*
g	*g*o	ɒ	h*o*t	m	*m*an	ɪə	h*ere*
tʃ	*ch*in	ɔː	s*aw*	n	*n*o	eə	th*ere*
dʒ	*j*am	ʊ	p*u*t	ŋ	lo*ng*	ʊə	p*oor*
f	*f*ish	uː	t*oo*	l	*l*eg		
v	*v*ase	ʌ	*u*p	r	*r*ed		
θ	*th*in	ɜː	b*ir*d	j	*y*es		
ð	*th*en	ə	driv*er*	w	*w*in		

Mathematical symbols

(Parenthesis

[Bracket

{ Brace

⟨ Angle bracket or 'Bra'

⟩ Angle bracket, colloquially 'Ker'

⟦ Open bracket

! Factorial sign

· Decimal point

′ Prime

″ Double prime

‴ Triple prime

⁗ Quadruple prime

° Degree

∵ Because or since

∴ Therefore, hence

∶ Sign of proportion

∷ Sign of proportion

≶ Less than or greater than

≷ Greater than or less than

≦ Less than or equal to

⩽ Less than or equal to

≰ Not less than nor equal to

≱ Not greater than nor equal to

/ Divided by, solidus

| Modulus used thus $|x|$

∥ Parallel to

≡ Congruent to

Equal or parallel

≬ Between

∞ Infinity

∝ Varies as, proportional to

√ Radical sign

+ Plus

− Minus

× Multiply

÷ Divide

± Plus or minus

= Equal to

≠ Is not equal to

≈ Approximately equal to

≚ Equiangular (geometry)

→ Approaches/tends to the limit

↔ Mutually implies

⊃ Implies

⊂ Is implied by

⊆ Contained as sub-set within

≒ Approximately equal to

≏ Approximately equal to

≃ Approximately equal to

∼ Difference between

≁ Is not asymptotic to

≳ Is approximately asymptotic to

< Less than

> Greater than

≮ Not less than

≯ Not greater than

≳ Equivalent to or greater than

≲ Equivalent to or less than

⋘ Much less than

⋙ Much greater than

⋘̸ Not much less than

⋙̸ Not much greater than

⊇ Contains as sub-set

∃ There exists

Γ Gamma function

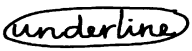
∂ Partial differentiation

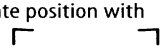
F Digamma function

∫ Integral

∮ Contour integral

Proof correction marks

Marginal mark	Meaning	Corresponding mark in text
	Correction is concluded	None
New matter followed by	Insert in text the matter indicated in the margin	
	Delete	Strike through characters to be deleted
	Delete and close up	Strike through characters to be deleted and use mark
	Leave as printed	. . . . under characters to remain
	Change to italic	——— under characters to be altered
	Change to even small capitals	═══ under characters to be altered
	Change to capital letters	≡≡≡ under characters to be altered
	Change to bold type	~~~ under characters to be altered
	Change to lower case	Encircle characters to be altered
	Change to roman type	Encircle characters to be altered
	Wrong fount. Replace by letter of correct fount	Encircle character to be altered
	Invert type	Encircle character to be altered
	Change damaged character(s)	Encircle character(s) to be altered
 under character (e.g.) 	Substitute or insert character(s) under which this mark is placed, in 'superior' position	 through character or  where required
 over character (e.g.) 	Substitute or insert character(s) over which this mark is placed, in 'inferior' position	 through character or  where required
	Underline word or words	——— under words affected

Marginal mark	Meaning	Corresponding mark in text
 enclosing ligature or diphthong required	Use ligature (e.g. ffi) or diphthong (e.g. œ)	 enclosing letters to be altered
write out separate letters followed by 	Substitute separate letters for ligature or diphthong	 through ligature or diphthong to be altered
	insert hyphen	 through character or  where required
	insert en dash	 through character or  where required
	insert ellipsis	
	insert or substitute oblique	
	Close up – delete space between characters	 linking characters
	Insert space*	
	Insert space* between lines or paragraphs*	 between lines to be spaced
	Delete space between lines or paragraphs	 connecting lines to be closed up
	Reduce space between lines*	 between lines affected
	Make space appear equal between words	between words
	Reduce space between words*	between words
	Add space between letters*	• • • • between tops of letters requiring space
	Transpose characters or words	 between characters or words, numbered when necessary
	Transpose lines	
	Place in centre of line	Indicate position with 
	Indent one em	
	Indent two ems	
	Move matter to right	at left side of group to be moved
	Move matter to left	at right side of group to be moved

Marginal mark	Meaning	Corresponding mark in text
move	Move matter to position indicated	[ ] at limits of required position
mark extends into margin	Take over character(s) or line to next line, column or page	
mark extends into margin	Take back character(s) or line to previous line, column or page	
	Raise words or lines*	over text to be moved under text to be moved
	Lower word or words	over text to be moved under text to be moved
	Correct the vertical alignment	
	Straighten lines	through lines to be straightened
	Push down space	Encircle space affected
	Begin a new paragraph	before first word of new paragraph
	No fresh paragraph here	between paragraphs
spell out	Spell out the abbreviation of figure in full	Encircle words or figures to be altered
out: see copy	Insert omitted portion of copy NOTE. The relevant section of the copy should be returned with the proof, the omitted portion being clearly indicated	
	Substitute or insert comma	or through character where required
	Substitute or insert semi-colon	or through character where required
	Substitute or insert full stop	or through character where required
	Substitute or insert apostrophe	or through character where required
	Substitute or insert colon	or through character where required

Proof correction marks for scientific setting

Alteration required	Marginal mark	Corresponding mark in text
Use Greek letter	Letter required followed by 	Through letter
Use German (Fraktur letter)	Letter required followed by 	Through letter
Use roman	Letter required followed by 	Through letter
Use script	Letter required followed by 	Through letter
Use superior to superior (e.g. '2' in y^{a^2})	 Showing letter required	Through letter
Use inferior to inferior (e.g. '2' in y_{a_2})	 Showing letter required	Through letter
Use superior to inferior (e.g. '2' in y_{a^2})	 letter required	Through letter
Use inferior to inferior (e.g. '2' in y^{a}_{2})	 letter required	Through letter
Use figure	 1/2/etc.	Through letter
Use fraction made up two lines deep		Circle around fraction
Use text size fraction	 (according to point size)	Circle around fraction
Use decimal point		Where required
Space to be hair space or 2 units or either a thick space or 5 units as indcated		Where required