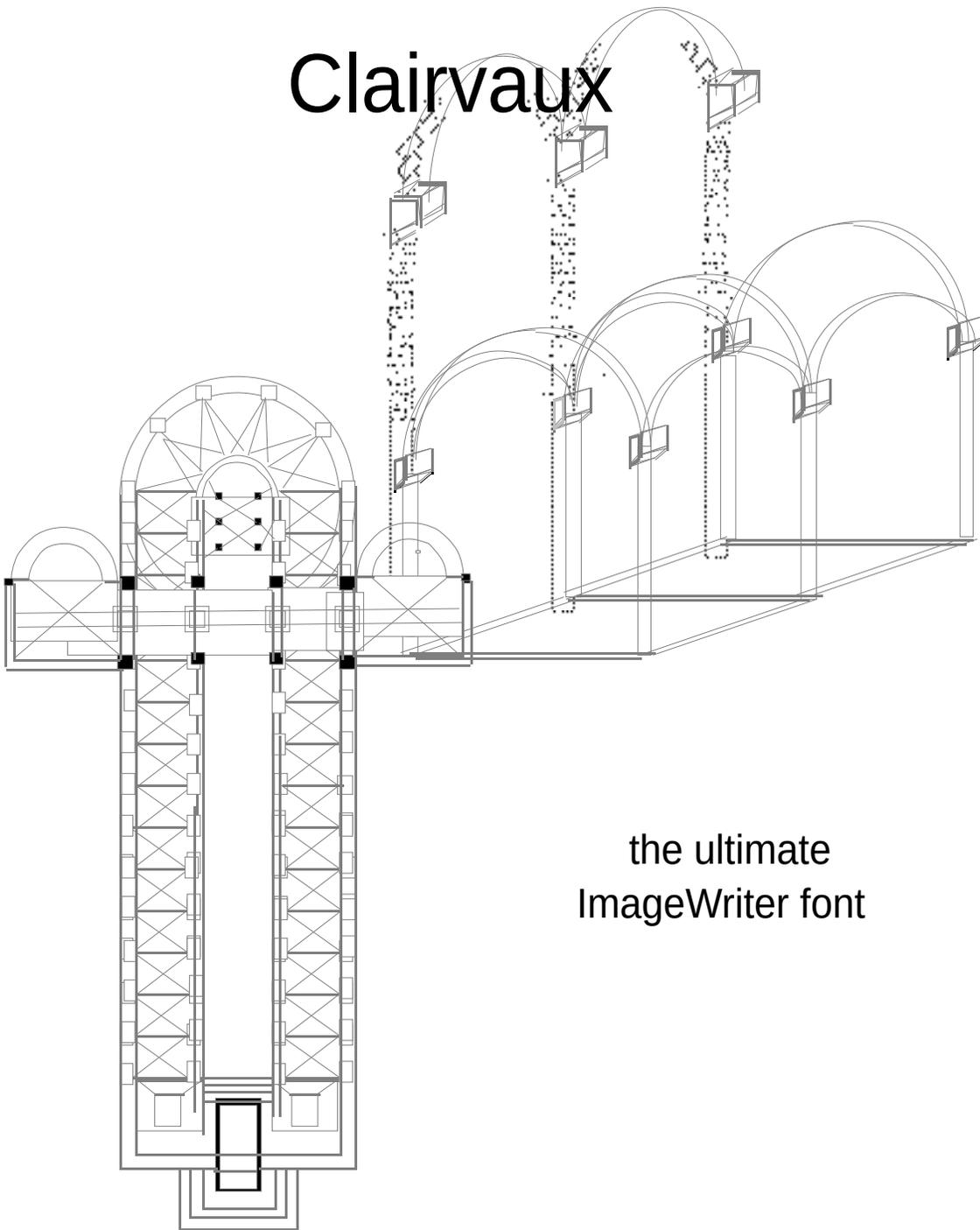


# Clairvaux



the ultimate  
ImageWriter font

Font and documentation  
© J.W. Leedom, 1988

# Clairvaux III

The ULTIMATE ImageWriter Font

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**CLAIRVAUX**<sub>i</sub> is distributed on the honor system as shareware. Please try the font for two weeks; if you continue using it after that, send \$10.00 to:

J.W. Leedom  
P.O. Box 9714  
Hollins College  
Roanoke, VA 24020

If you wish to receive the most recent version of the font, send a blank, formatted disk in a self addressed, stamped envelope along with the registration fee. Printed copies of the documentation are also available if you send an 8 1/2 ≈ 11 envelope. This font may be distributed at large as long as: 1) The documentation is included with the font; 2) The font set is distributed complete in all sizes; and 3) Exclusive copyright remains with J.W. Leedom. Breach of these conditions will be considered a violation of the author's copyright.

Clairvaux is available on disk for \$12.50. If you wish to purchase Clairvaux's sans-serif cousin, York, you may register both fonts for \$17.50, or \$20.00 if I provide the disk.

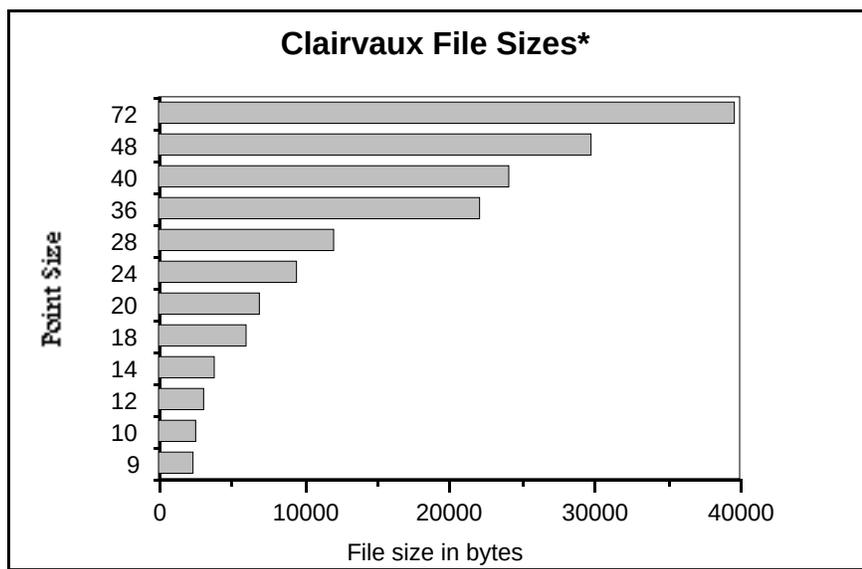
Clairvaux consists of two fonts, Clairvaux and Clairvaux Caps, in ten type sizes, 9- to 48-point, making it the most complete Macintosh bit-mapped font currently available.

Clairvaux is a new typeface blending elements from *Palatino* and *Post Medieval Light*. The 12-point style, because it is the most commonly used, was created first; others sizes in the font were scaled from the finished 12-point archetype to ensure consistency of shape, style, and size. Letters are proportionally-spaced and variable-width; numerals are set as a monofont to ease the alignment of tables. Clairvaux includes a number of special characters and symbols: the character set includes 213 different figures. Clairvaux uses new style numerals, straight serifs, light leading, and clear, distinctive letters. It is designed to be both stylish and legible, to look uncluttered on both screen and page, and to provide an appearance that is pleasing without being obtrusive.

Clairvaux Caps is a special purpose font for creating large initial letters. It consists only of capital letters in six sizes.

Font/DA Mover can be used to install Clairvaux in any Macintosh system folder or application file. If the Font/DA mover will not install Clairvaux, there is a conflict between Clairvaux's font number (187 for Clairvaux; 188 for Clairvaux Caps) and another installed font. Clairvaux does not conflict with fonts from Apple (such as New York or Times) but may with other commercially available fonts. Remove the other fonts in the file, install Clairvaux, then reinstall as many other fonts as you like.

File sizes are given in the following chart:



\*Font sizes given in Font/DA mover may be different. File sizes shown here are correct.

In the Macintosh printing routines, the “highest” or “best” quality print is scaled down from a double-sized version of the font used, so both the display font (such as 12-point) and its double (24-point in this example) should be installed. On hard disks, where space is not at a premium, the whole of Clairvaux and the Clairvaux Caps can be used. This will provide the greatest flexibility. On floppy-disk based systems, where large system files interfere with data storage, it is important to select type sizes carefully. A minimal installation might be Clairvaux 12 and 24, and Clairvaux Caps 24 and 48—the total file size would only be 22k, and it would provide a great variety of high-quality printing options. Adding Clairvaux 9 and 18 adds less than 10k to the file but gives many more possibilities both on the screen and on the paper.

The older, 64k Macintosh ROMs will not support fonts larger than 32k. To avoid running afoul of this limit and to maintain compatibility with 128k and 512k machines, Clairvaux 48- and 72-point use truncated character sets.

Clairvaux includes many special characters. Lower-case diacriticals are generated by the relevant accent key and appear over the next vowel key pressed. For example, the e-acute is formed by pressing option-e (to create the acute accent), then e. Missing characters are set at 0 width, so the cursor does not move. Mathematical symbols, ÷, ≈, -, ±, ≤, ≥, ≠ are also available on the font, as are special programmers characters, ° and □.

The non-breaking option-space is a single point wide in 9—14-point, two points wide in 18—28-point, and four points wide in 36 and 48-point. This allows precise alignment of characters. (It is especially useful for correctly spacing italic text.)

Fractions from /, to ·È can be generated: the top half of the fraction is a single point wide; the bottom half completes the fraction and fills out the width of the character. Fractions print well in best quality; they show on the screen less well, especially in the smaller point sizes. The top half of a fraction is made with Option-Shift-1 through Option-Shift-9 (which produce / € < > fi fl ‡ ° ·); the bottom half is made with Option-Shift-W through Option-Shift-I (which produce ,, %o Â T Á È È).

Clairvaux Caps is a special font in 18—36-point sizes; it includes the doubles of these fonts to allow printing in “best” or “highest” quality. Clairvaux Caps contains only capital letters. Its purpose is to allow the use of large letters without upsetting line spacing in the rest of the paragraph. A single large initial (the first capital in a paragraph) makes it simple to delineate sections and subsections without recourse to more intrusive typestyles like boldface or italic. Clairvaux Caps offers a better alternative. The letters are in the same style as the body type, but because the descenders are limited, they do not affect normal line spacing. (This also means that the “J” in Clairvaux Caps is truncated just below the line.) Clairvaux Caps in 24-point (for sections) and 18-point (for subsections) are designed to complement Clairvaux 12. Clairvaux Caps in 14-point is designed to mesh with Clairvaux 9- and 10-point sizes.



Laser fonts can be enlarged and reduced almost infinitely simply by altering the units of size. Several fonts are built in the LaserWriter and LaserWriter+, and many more are commercially available from Apple, Adobe, and other vendors.

LaserWriter Screen fonts. Because the Macintosh does not display PostScript objects (and Apple shows no inclination to support "Display Post Script"), special versions of LaserWriter fonts are produced just for screen display. These approximate the look of laser fonts, but more important, they correspond exactly to the spacing of LaserWriter fonts, allowing for precise alignment and layout on screen. Screen fonts are available only in certain limited sizes, and they appear compressed and difficult to read.

Bit-mapped fonts. To display a font on the screen, the Macintosh requires a set of instructions telling it what pixels (the dots on the screen) to turn on (black) and off (white) to create individual letters. This set of instructions is the bit-map, which is used for displaying the font on the screen and for printing on the ImageWriter. The Macintosh is capable of scaling any font to any size allowed by the program but the results are usually disappointing unless a specific bit-map for that font size is included in the font file. LaserWriter screen fonts are a species of bit-map font.

Most bit-mapped fonts come only in a limited range of sizes, usually 12 and 24: 12-point for good appearance on the screen, 24-point for good appearance when printing. Most of these fonts are decorative or comical, good for a special effect but not ordinarily suitable for full-time use. (Some are very useful: *International* contains nearly every diacritical mark imaginable; *Scriptura Beneventana* is a beautiful and clever recreation of a medieval bookhand; and there are many others.) Apple itself supplied several fonts like this, such as Cairo, a picture font, and Chicago, a display font. Two Apple fonts, Geneva and New York, because of their range of sizes (from 9- to 24-point) and large character sets, became the standard fonts for the ImageWriter.

But developers sought better fonts. The first of these, released in 1984, was the Boston font. Boston and its progeny, Boston II, sought to be more useful than any other font. This set the trend for the "superfonts." Superfonts come in more sizes with more characters than ordinary fonts. All are distributed as shareware (though Microsoft recently included Boston II with its release of Word 3.0.) There are currently six superfonts: Boston II, Palencia, Alderny, Beverly Hills, York, and Clairvaux. All differ in style: Boston II is a single-width font even in its largest sizes; Palencia is a big font with accented serifs, Alderny is its sans-serif relative; Beverly Hills is a re-worked and expanded New York; York is a compact, sans-serif Clairvaux; Clairvaux is a dense and angled font. There are other real differences between these superfonts, but all seek to improve legibility and versatility. They are the very best available.

**F**onts have many duties to perform, and the success of a font is determined by how well it can balance its tasks. A font must be legible on screen; it must be legible when printed; it must communicate information about each letter without drawing attention to itself. It is easy to create fonts that are legible or stylish; the trick is to do both.

The single greatest determinant of legibility is the contrast between letter and page. This can be adjusted only through the brightness control on the Macintosh, though there is far more flexibility when printing because of the precise control over character, ink, and paper. Legibility on the screen is best obtained by using simple shapes: single-width letters and small, straight serifs (such as those found in the Geneva or Boston II fonts). Legibility on paper has a different set of guidelines. Variable-stroke letters print better, and the shape of the serifs matters little. (Clairvaux uses straight serifs; Beverly Hills uses “hanging” serifs.) Macintosh fonts are compromises between these two sets of requirements.

Type size is ordinarily determined by the audience. Beginning readers prefer large type, as much as 24-point; children do best with 14- to 18-point type; but skilled readers will find such large sizes distracting, and do better with 9- to 12-point type. College students find 9-point type just as legible as 12-point type, older readers prefer 10- or 12-point type.

The Macintosh imposes fewer restrictions on font creation than almost any other computer, since it allows custom bit-maps rather than relying on a built-in character generator. Still, there is one formidable limitation: it is not possible to use “fractional” pixels. Bit-mapped fonts are made up of tiny squares. Obviously, then, curved lines can only be approximated, and any variation from true perpendicular or true diagonal will be jagged and uneven. As a consequence, smaller fonts lack detail and distinction—there are only so many ways to make an “m” in 9-point type. Clairvaux was designed around the 12-point size: this is the central size in the font, and other typesizes were scaled from it. 12-point Clairvaux is compact on the screen, taking up just 5% more room than 10-point New York, but providing unparalleled legibility. This was attained by keeping the font clear and open: bowls (spaces enclosed in letters like “b,” and “q”) are large, and the x-height (body height of lower-case letters) is moderate: both combine to produce good breaks between words and lines without wasting space.

Leading can also make type easier to read by making it easier to focus on a single line of text. But too much leading is as bad as too little. With too little, lines are very close to one another, giving the impression of an undifferentiated mass of text. These fonts are especially hard to read on the screen (though they will print rather better than they look). Too much leading is equally distracting: too much white space between lines confuses the relationships between sentences and paragraphs and between text and margins. In the worst cases, the margins flow into the text itself.

Similarly, careful word spacing is vital to clean text. If words are spaced too closely, they become hard to differentiate, and readers will strain at the writing. Words spaced too far apart create “rivers,” patterns of white space in the text that draw the eye up and down the page rather than across it. The following sentences illustrate the problem:

If words are spaced too closely, they become hard to differentiate, and readers will strain at the writing.

Words spaced too far apart create “rivers,” patterns of white space in the text that draw the eye up and down the page rather than across it.

Clairvaux is designed with careful attention to spacing. Following accepted typographical practices, it is a “tight” font, but maintaining clear divisions between words and lines.

**B**y providing unparalleled control over most aspects of your documents, the Macintosh places relatively great burdens on the writer—much more than conventional computers. Macintosh documents can look awful, cluttered and poorly designed; but they can also look very polished, if you take care in their presentation. Above all, remember that the printed page is only a vehicle for the information it contains. If your page draws attention to itself, away from the words and pictures it contains, you are undercutting your purpose. The ideal is a page on which the reader never notices paper or ink or type.

The single greatest determinant of attractive documents is paper. No font will look good printed on low-grade computer paper. The ink is absorbed unevenly, the perforations are unsightly, and the paper is dull and grey rather than bright white. “Disaperf” or “Laser-cut” papers are some improvement, though a stack of torn sheets shows the ragged vestiges of perforations. Better still is a paper with a cotton content, or lacking that, some texture. The best is single-sheet bond paper with a high cloth fiber content. If you have a sheet feeder, printing on high-quality paper is simple (though fairly costly: good stock paper is about \$12.50 per ream of 500 sheets). If you have to feed the paper by hand it may not seem worth it, but if you want the very best quality output from your Macintosh, you will do it. (Try it once to compare with your normal printing; the difference is always noticeable, sometimes startlingly so.) Bond paper can be made smooth, white and opaque—a perfect surface for printing.

Never use brightly colored paper: the effect is almost always amateurish. (If you insist on making posters and signs on royal blue and flame orange paper, a Magic Marker will do a better job than an ImageWriter.) If you wish to use colored paper, stick with pastels, and preferably a shade of ivory or tan. Grey or pale blue paper usually looks dirty.

Textures can be effective if the printer can navigate the surface well. Cheap papers, such as those designed for photocopiers and computers, are usually milled so thoroughly that the the surface is blandly flat. Bond paper always has some texture to it. "Laid" papers are designed to resemble hand-made papers; they bear an imprinted texture that looks like it has been embossed with a linen cloth.

A clear printed image requires a clean, fresh ribbon. A ribbon re-inker, available from several sources for about \$50.00, will ensure that your ribbons always leave a clear, dark impression, and will pay for itself very quickly. There are other options for extending the life of ImageWriter ribbons, described in detail in the August 1987 issue of *MacUser*.

Unless you are facing special circumstances, stick with black ink. Dark brown and dark blue can be very pleasing, but ordinarily they call too much attention to themselves.

Remember that the contrast between letters and paper will be even more important to legibility than the font used. (One effect of the ImageWriter's "Best" or "Highest" quality multi-pass printing is to create blacker letters: in addition to using a more complete letterform, it creates a better inked surface.) Try to get the blackest ink on the whitest paper.

Keep a double-sized copy of your font in the system. The ImageWriter has twice the resolution of the Macintosh screen. To take advantage of this, the Macintosh takes the double-sized font and reduces it by half, producing a significantly better letterform when printing.

Do not mix too many sizes or too many styles. If you stick to the same font (i.e., only one type style per document), select a body-type size (usually 10 or 12 point) as a base. Any subordinated material (such as notes or comments) should be one size smaller; subheads should be one size larger; headings can be two sizes larger. You can also differentiate headings and subheadings with combinations of boldface or underlined type and different levels of indentation, such as bold centered for headings and bold flush-left for subheadings. Underlines or italics should be reserved for titles that appear in the body or the notes: both are very intrusive typetypes, and they should not be used more than necessary.

Clairvaux Caps is a special font for creating section and subsections with the typographer's trick of making the first letter, known as the initial, larger than the rest of the text. Clairvaux Caps contains only capital letters in three point sizes, 14, 18, and 24, with the double-size of each font available for high quality printing. Large initials make section breaks clear to the eye with a single letter; indented or boldfaced headlines require a whole line of type to make the same point. Sections and subsections can also be marked with variations in line-spacing, using, for example, three blank lines to indicate small breaks and four or five to show major breaks. The combination of intelligent line spacing and Clairvaux Caps should eliminate the need for special typetypes in headlines.

**W**hy Clairvaux? Because I was dissatisfied with available fonts. New York, which I used almost exclusively until creating Clairvaux, always seemed lifeless, lacking the typographic sparkle needed for good printing. Boston II, a pioneering effort, does not print well: the single-width characters are ungainly in larger sizes, and the slashed “e” is inconsistent and distracting. Beverly Hills has some of the drawbacks of New York, though it does possess a significantly better character set. Palencia is lovely but too big: the same amount of text requires 15% more space in Palencia than in Clairvaux, and the margins threaten to bleed into the text. I have tried to make Clairvaux a superior font: consistent, stylish, and compact.

**M**acintosh owners have a bounty of shareware available to them: fonts, DAs, complete applications. Unfortunately, as a group we have not been very good at sending in our registration fees. An article in *MacWorld* urged people to register their shareware while joking that even the author put off doing so—bad taste at best, validation of misbehavior at worst. Why should you pay for shareware? There are many reasons, ranging from good manners to the long-term health of the Macintosh community. But I would focus on just one: if you don’t pay for shareware, you forfeit the right to complain about shoddy software. You have shown a willingness to rip-off a software maker; you have to accept the turnabout, a software maker who rips you off. Shareware fees are a small price to pay for a clean conscience. I would like to introduce another reason: honor. In accepting shareware, you are testing your own character. I hope you pass.

**T**he current release of Clairvaux incorporates changes and suggestions proposed by users. Some irregularities of spacing have been fixed, especially in the numerals. The vertical spacing of some mathematical characters has been changed to allow them to work better with text instead of being purely optimized for numbers. Kerning in Clairvaux Caps is changed to allow the paragraph initials to blend more smoothly into the text. Fractions, widely requested, have been added. And the documentation has been revised to eliminate certain infelicities that crept into the original version.

**I** will be happy to answer any questions you may have about Clairvaux, its uses, or its creation. You can contact me at the address given above, or as JWLEEDOM on GENie. (You need not be a registered owner to write.) If you have suggestions for its improvement, please let me know. The current release of Clairvaux already incorporates the remarks and comments I have received from others; I am anxious to make sure Clairvaux remains the premier font for the Macintosh.

## Glossary

**C**lairvaux is a village in the Department of the Aube in northwestern France. Its fame stems from the great monastery of Clairvaux founded in the early twelfth century. The name means “clear view” or “beautiful valley, ” and is pronounced kler-vo’.

**F**ont: In the Macintosh world, a font is any character set in a given style; “complete fonts” come in a variety of sizes. In typography, a font includes both the typestyle and typesizes, as well as variations of the basic letterforms: bold, italic, light, condensed, and others. The Macintosh can automatically create these variant letterforms for each font.

**L**leading: White space added between lines. In typography, leading is specified as a font of X-size on a line of Y-size: a common book face might present Times Roman 10 on 12, or 10/12. The 2-points of white space represent “leading.” Macintosh fonts can either have leading built-in, with space allotted to characters but not used, or added on.

**P**oint: The unit of measure of typesize. Until the nineteenth century each size of type had its own name. The smallest was an “agate” line, a term still in use—the smallest font a newspaper uses, such as that used for want-ads, is generally referred to as “agate type.” The system of describing fonts in point sizes began with Charles Fournier in France in 1887. The Fournier system is based on points of 1/72 inch and picas of 1/12 inch, with typestyles classified by the letter “M,” because in ordinary fonts the “M” is a square letter, as wide as it is high. In 12-point type, the M was 12/72" or 1 pica wide; in 9 point the M is 9/72" wide, 2/3 pica.

**S**erif: Decorative marks at the ends of letters. Fonts are classified as “serif” (such as Clairvaux) or “sans-serif” fonts (such as Helvetica). It used to be argued that serifs improved legibility, but repeated experiments by researchers have failed to confirm this. Familiarity with the font is much more important than the presence or absence of serifs. Clairvaux uses straight serifs to delineate letterforms and to help create ligatures the eye can follow easily.

**A**cknowledgements: Clairvaux was created with Fontastic+ from Altsys, a wonderful program from a most helpful company. The cover illustration was made in MacDraw, tidied up in Superpaint, and pasted in. The illustration shows the nave arch of the church of Cluny, and the floor and the plan of the cathedral of Jumiéges in Normandy. Documents were created in MS Word, and exported into various formats.