MATRIX II

A REDESIGN BY ZUZANA LICKO

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BERKELEY, CALIFORNIA, 2007

Shown below, LaserWriter test printout of Matrix, 1987.

Matrix Matrix

The proportions of Matrix were based on the structure of the typeface Emigre (top), a low resolution bitmap font designed by Zuzana Licko in 1984.



Forty five degree serifs require fewer points to define shapes, making economic use of memory space and resulting in fast printing.

MATRIX

A HISTORY

THE REASON MATRIX LOOKS THE WAY IT DOES may seem quaint, if not incomprehensible, to those who were not around in 1985 when the idea for its design was born. The tool used to produce it, the Macintosh computer, had just appeared on the scene and its restrictions were many. Although the base memory on its second model was a whopping 512K, it lacked a hard drive, most data was stored and transferred from one computer to another using floppy disks, and the screen was only slightly bigger than a postcard. It was on this computer that the basic ideas for Matrix were developed.

While the proportions of Matrix were based on one of Zuzana Licko's earlier bitmap fonts, its distinctive geometric character was the result of having to work around the Mac's limitations and coarse resolution laser printers. After designing a number of low resolution bitmap fonts, Matrix was the first PostScript font that Emigre released. PostScript, a programming language developed by Adobe—and made available to the public in 1985—replaced bitmap based fonts and made possible the drawing of glyphs as Bézier curve outlines which could then be rendered at any size or resolution. With the release of Altsys's Fontographer, a PostScript based font editing software, it allowed a more precise drawing of letter forms.

As software rapidly improved, hardware struggled to keep up. Memory space, processing power, rasterizers and output devices were still lacking in sophistication—at least for those computers that people could afford to buy. To address this issue, and in order to save as much memory space as possible, Matrix was based on a few simple ratios, and the points required to define the letter forms were limited to the essentials. This is how Matrix acquired its geometric shapes and its distinctive triangular serifs which require fewer points than traditional square or curved serifs. Also, the 45 degree diagonals were the smoothest diagonal that digital printers could generate. Matrix thus consumed relatively little memory space to store in the printer and facilitated fast printing.

Working within strict parameters was a source of inspiration for Licko. Lacking significant training in calligraphy, her approach to type design was relatively free of the common concerns and traditions of the trade. In an interview in 1986 she said: "My aim is to explore two things. First of all, I like to experiment with what the computer can do with things that were not possible with other technologies. I like to design letter forms that work well with the computer, both for pragmatic reasons and stylistic reasons. My other aim when designing typefaces is to see how much the basic letter shapes can be changed and still be functional, like the lower case g in Matrix."

Licko's most controversial conclusion, and one that is frequently quoted, that "You read best what you read most," came in response to a question about the use of her low resolution typefaces. She was asked if people would ever be comfortable reading low resolution type on the printed page. "Why was letterpress eventually accepted?" she replied. "Not because people were reading the type off the bed of the letterpress. They were still reading it off the printed page. That didn't have anything more to do with casting lead than it does with computer bitmaps today, but that's where it comes from, and that's what we've gotten used to." I

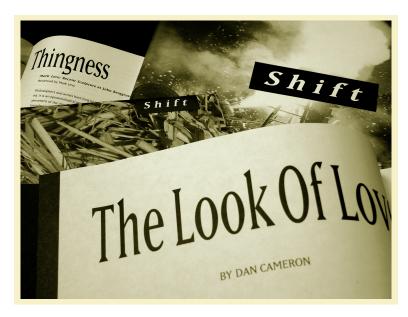
Years later, the noted type designer Matthew Carter summed up Licko's work: "Two ideas seem to me to stand behind the originality of Zuzana's work: that the proper study of typography is type, not calligraphy or history, and that legibility is not an intrinsic quality of type but something acquired through use."²

MATRIX FIRST SAW THE LIGHT OF DAY in late 1986 when a single weight was commercially released and advertised in *Emigre* #6 together with three other PostScript fonts, namely Modula, Zenith and Berkeley. Soon after, two accompanying weights were added to make up a Matrix family of Bold, Regular and Book.

Licko had noticed that Matrix responded well to scaling, stretching, and obliquing, because its forms were harmonious with the digital grid that it was derived from. She also observed how stretching the font horizontally or vertically actually strengthened the overall unity of the characters since the horizontals and verticals were emphasized, diminishing the differences between the letter forms. Initially she considered this feature to be an advantage for users to explore. Although it was frowned upon by type purists, stretching and squeezing of type had become favorite typographic computer effects and nothing could keep users from doing this. A single font that would hold up well when stretched or obliqued would be advantageous and would require much less space to store than if each permutation existed as a separate font.

But in order to determine the best use of this effect, Licko decided to release three versions of her own preference. In the summer of 1987, a Wide, Narrow and Extra Bold version were added to expand the Matrix family to six fonts. The wide was scaled by 200%, the narrow by 50%.

Matrix was first used, although sparingly, in 1987 in *Emigre* magazine #7 in combination with other Emigre typefaces. A more extensive application occurred that same year, when Emigre was invited to do the exploratory design for a new weekly magazine called *MacWeek* which was to be designed entirely on the Mac. Also, beta versions of Matrix were used throughout *GlasHaus* magazine, a publication associated with the San Francisco based party and performance event of the same name. *MacWeek* became a popular magazine, but Matrix never made it beyond the



The first extensive usage of Matrix occurred in Shift magazine in 1988.

concept stage, while *GlasHaus* was a short lived, three issue venture. But the trial runs gave Licko an opportunity to see the font set in longer texts and in a variety of headline formations. As a result she continued to tweak the fonts.

The best opportunity to test drive the full range of Matrix typefaces in a wide variety of applications and over an extended time offered itself in 1988 when Emigre was invited to design *Shift*, an art magazine published by Artspace Gallery in San Francisco. Here, Matrix found an open minded patron and audience. The art world values concepts and originality, and when Artspace was introduced to the idea behind Matrix, and was informed that *Shift* would be the first publication to use it throughout its issues, they were immediately excited.

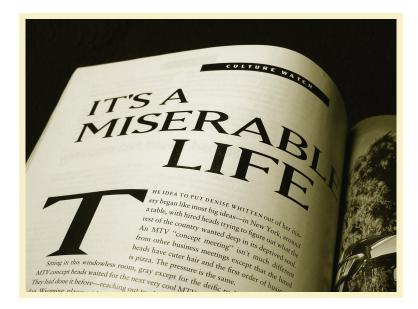
Although Matrix was not designed exclusively for *Shift*, to the outside world it appeared as if *Shift* had its own custom font since few people had seen it used. For a small, independent magazine this was a rarity. Custom fonts were created only for national newspapers and the largest of consumer magazines as the cost of creating new typefaces could be prohibitive. Graphic designers and art directors took note of this and started contacting Emigre regularly to see if new, original fonts were in the works that they could snatch up and use before others did.

MATRIX'S FIRST NATIONAL EXPOSURE came with the *Batman Returns* movie in 1992. Licko remembers it well: "We were in Boston, about to take the subway. And as we sat down on a bench to wait for the train, right across the tracks from us was a billboard with the head of Michael Keaton dressed up as Batman staring directly at us. And placed just above his head, across the entire width of the billboard, was the title *Batman Returns* set in gigantic Matrix Wide capitals. We nearly fainted from excitement. From our small office in Berkeley, these fonts had found their way to Hollywood and into the very capable hands of an ad agency designer who made the font jump off the surface of that billboard. It then started to dawn upon us that these fonts could have tremendous commercial potential."

That feeling was bolstered when shortly after the <code>Batman</code> experience Matrix appeared as the main typeface in a number of national ad campaigns including Cadillac, McDonald's, and UPS, while <code>Esquire</code> magazine used it as a headline font throughout its February 1993 issue. Matrix's classical, geometric look and clean lines worked beautifully in display applications.

The usage of Matrix in professional hands and its exposure in national ad campaigns was selling the typeface without much effort. As a result, Matrix's popular-

Exposure in national magazines such as Esquire gave rise to Matrix's popularity in the 1990s.





Detail from a poster announcing the movie China Lake.
The logo, a customized version of Matrix Book, became the model for Matrix Tall.

ity grew rapidly. Orders for the font came in with regularity and before too long Matrix was showing up in the most unexpected places.

In late 1992 Matrix Script and Inline were produced. No longer content with the cheap effect of obliquing the regular Matrix, the demand for a more traditionally designed italic version had grown and Licko set out to take on the challenge. Her interest to use the restrictions of the computer and create geometric type made for a useful design philosophy, but it also conveniently covered up Licko's limited ability at the time to draw the subtle curves needed to create traditional typefaces. With memory space no longer an issue, and with better tools at her disposal, Matrix Script exhibited some of Licko's maturing drawing techniques. Although slightly less geometric looking than the Roman, it maintained a constructed look yet felt more freely drawn at the same time.

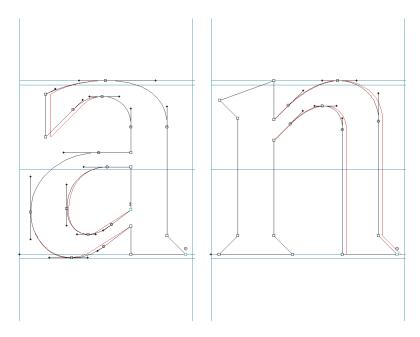
The Inline version, applied to the Extra Bold and Script Bold faces, came about to quench the insatiable thirst of many designers for novelty fonts. Zuzana applied wedge-like highlights creating a stylized three dimensional effect reminiscent of the relief found in stone carved Roman lettering. The effect worked particularly well in the capital letters.

Finally, in 1992, Small Caps were added to the Book, Regular and Bold weights, and a "Tall" version was drawn, extending the Matrix family to thirteen members. Matrix Tall was derived from a custom version of Matrix created for the movie *China Lake* for which the legs of the capital H and stem of the K were extended. The effect, which accentuated Matrix's spikiness, was quite striking, and Licko applied the idea to the rest of the character set to create a distinctive display font.

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99

The original lower case g with its flat hook-like tail (left) had many detractors. A curved version was designed in 2005 (middle), and an alternate "single story" g (right) was added to the OpenType version.



Subtle adjustments were made to nearly all characters in the new version of Matrix. The black outline represents the new Matrix II. The old Matrix is behind in red outline. WHILE MATRIX CONTINUED TO GROW IN POPULARITY, a recurring criticism of the design was the shape of the lower case g. Some designers complained they liked the typeface but would pass on using it simply because they disliked the lower case g. Its flat, hook-like tail was seen as a distraction, it stood out too much in text. In 2005, on Typophile, a blog for type aficionados, a number of type designers went as far as actually designing alternative solutions as part of a feature called "Freestyle Remix Challenge." But Licko had beat them to it as the continuing complaints from customers had led her to rework the shape by rounding the tail, thereby further enclosing the bottom counter.

Having tinkered with the typeface on numerous occasions, after 20 years Licko still saw some missed opportunities and subtle deficiencies. One effect of having released a typeface that became ubiquitous was that you're bound to see instances where particular characters or kerning pairs didn't look optimal. But making significant changes to an existing typeface can create complexities. For instance, customers who purchase newly upgraded versions of a typeface may be surprised to see different line breaks when opening files that were created with an older version. So any changes to Matrix up to that point had to take this into account and be subtle.

When the OpenType format was introduced in 2002, an opportunity presented itself to rework and improve Matrix more drastically. OpenType enhances the typographic and language support capabilities of fonts. It is cross platform, which means the same typeface file can be used on both Mac and PC, and the character set is no longer restricted to 256 glyphs as was the case with classic Type I fonts. The OpenType format also incorporates typographic features such as small caps, ligatures, fractions, old style numerals, and lining numerals within one font file thereby simplifying font management and usage.

After first retooling a number of other Emigre fonts to OpenType, Matrix's turn arrived in the early Spring of 2007. Licko set out to completely rework the family which turned into a four month reconstruction project. To clearly set this version apart from the original Matrix, and to avoid conflict with previous versions, its name was amended to Matrix II.

Many of the changes to Matrix may not be immediately apparent. The contrast between thick and thin strokes was decreased in some instances, and overshoots were corrected. The width of various characters was adjusted and regularized. The cross stroke on the f was simplified on most weights. The design of the lower case g was revisited and an alternate single story version was designed and added to the OpenType version. Of course these changes necessitated new kerning pairs which were added as well.

(Text in the above paragraph is set with the alternate g.)



The original Matrix Wide (left) was created by simply stretching the characters horizontally by 200%. This effect elongated the serifs. To remain truthful to the original concept behind Matrix, the forty five degree serifs were reintroduced in the new version of Matrix Wide.

 $\begin{array}{c} \textit{EKORZ&ffgosyz69} \\ \textit{EKORZ&fgosyz69} \\ \textit{EKORZ&fgosyz69} \end{array}$

Matrix Script (top) features many idiosyncratic details which work well in certain display situations but have a jarring effect when used to provide subtle emphasis in text. Matrix Italic (above) solves this problem by regularizing the letter forms.

By combining Matrix Extra Bold Inline (top) with Matrix Highlight (middle), three dimensional effects can be achieved by using various color schemes.

The most dramatic changes were made to the Narrow and Wide versions. No longer content with the result of simply having stretched the base font, both the Wide and Narrow were significantly adjusted. The serifs, which had lost their distinctive 45 degree angle when stretched, were restored in the Wide version. Contrast, curves, and overshoots were slightly adjusted. And two intermediate width versions, a Semi Wide and Semi Narrow, were added.

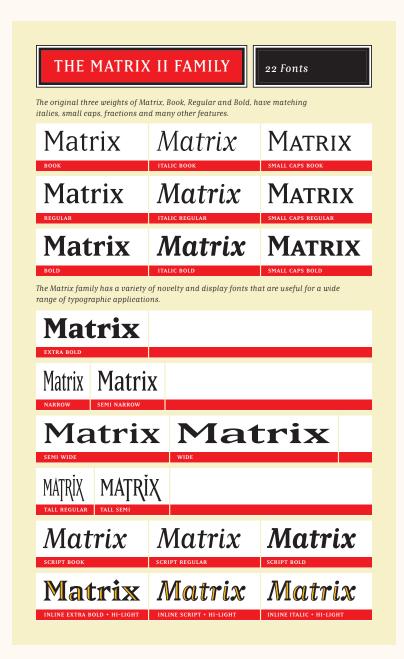
A more traditional Italic was designed. Largely based on Matrix Script, the new Italic reduced and omitted some of the flamboyant display features of the Script so that it would blend better with the Roman when used in text. The capital E, K, R, Z and lower case f, g, s, y and z were simplified. Also, the off center counter in both the upper and lower case o was replaced with a traditional symmetric design.

Finally, a Highlight version was created for use with Matrix Inline. The Highlight fonts allow the inline areas to be "colored in" with a different color or shade by placing a separate text block of the Highlight font behind the corresponding Inline font. With these final additions, Matrix was now a family of 22 typefaces.

After four months of tedious work, Licko is satisfied with the result and relieved to have had the opportunity to revisit and improve Matrix. But she also realizes that a project like Matrix is never completely finished. It's the fungible nature of the medium and the continually changing hardware and software at our disposal that constantly challenges the designer to make improvements and adjustments to her typeface designs. This new release, however, should carry Matrix well into the future.

- 1. Emigre #15, 1986. Published by Emigre, Berkeley, CA.
- 2. Graphic Design USA 18, 1998. Published by the American Institute of Graphic Arts, New York, NY.

MAIN TEXT SET IN MATRIX REGULAR 8/12 PT.





14 MATRIX II MATRIX II MATRIX II 15

MATRIX II

Semi Wide and Semi Narrow

ABCDEFGHIJK LMNOPQRSTU VWXYZabcde fghijklmnopq rstuvwxyz 0123456789

ABCDEFGHIJKLMNOP QRSTUVWXYZabcdefg hijklmnopqrstuvwxyz 0123456789

张宏宏张张张张张张张张张张张张张张张张张

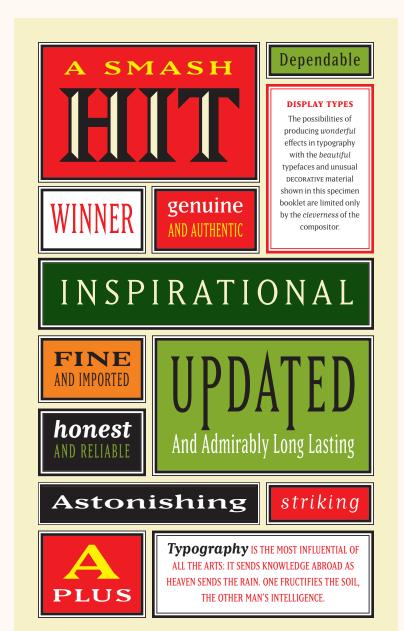
MATRIX II

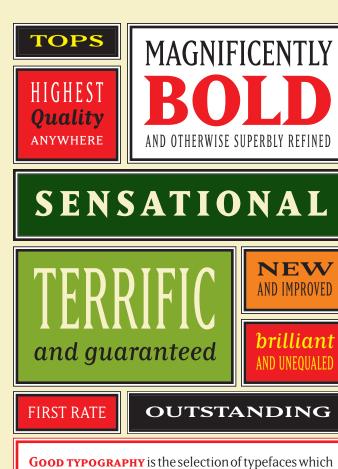
Inline Extra Bold, Italic, and Tall

ABCDEFGHIJKLM
NOPQRSTUVWXYZ
abcdefghijklm
nopqrstuvwxyz
0123456789

ABCDEFGabcdefg

ABCDEFGHIJKLMNOPQRSTUVWXYZ abcdefghijklmnopqrstuvwxyz 0123456789





GOOD TYPOGRAPHY is the selection of typefaces which are feelingly *expressive* of both caption and copy; the choice of borders in which lurk a SEEMLY MOTIVE and a silent meaning; ornaments, if necessary, which fit the theme just as *felicitously* as a scrolled scabbard fits its bright blade; and the INTELLIGENT distribution of ample white space.

GOOD TYPOGRAPHY is the selection of typefaces which are *feelingly* **expressive** of both caption and copy; the choice of borders in which lurk a *seemly motive* and a silent meaning; ornaments, if necessary, which fit the theme just as *felicitously* as a scrolled scabbard fits its bright blade; and the INTELLIGENT distribution of ample white space.

THE SELECTION OF TYPE DESIGNS is a subject which should be given careful thought as the beauty of types is closely *influenced* by the same *principles* that dominate the compositions in which they are used.

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Typography is the most influential of all the arts: it sends *knowledge* abroad as heaven sends the rain. One FRUCTIFIES the **soil**, the other man's intelligence.

BEAUTIFUL TYPOGRAPHY invariably has an individuality of its own that completely overshadows the merest suggestion of mediocrity.

TEXTS SET IN MATRIX II BOOK WITH ACCOMPANYING ITALICS, SMALL CAPS,
AND AN OCCASIONAL BOLD
IN RESPECTIVE POINT SIZES 8.5. 10. 12.5. AND 15.

GOOD TYPOGRAPHY is the selection of typefaces which are *feelingly* expressive of both caption and copy; the choice of borders in which lurk a *seemly motive* and a silent meaning; ornaments, if necessary, which fit the theme as *felicitously* as a scrolled scabbard fits its bright blade; and the INTELLIGENT distribution of **ample white space.**

THE SELECTION OF TYPE DESIGNS is a subject which should be given **careful** thought as the beauty of types is closely influenced by the same principles that *dominate* the compositions in which they are

Typography is the most influential of all the arts: it sends KNOWLEDGE abroad as heaven sends the rain. One *fructifies* the soil, the other man's intelligence.

BEAUTIFUL TYPOGRAPHY invariably has an individuality all of its own that completely *overshadows* the **merest** suggestion of mediocrity.

TEXTS SET IN MATRIX II REGULAR WITH ACCOMPANYING ITALICS, SMALL CAPS,
AND AN OCCASIONAL EXTRA BOLD

IN RESPECTIVE POINT SIZES 8.5, 10, 12.5, AND 15.

TYPOGRAPHY

IS THE MOST

INFLUENTIAL

OF ALL THE ARTS

IT SENDS knowledge ABROAD

AS HEAVEN SENDS

THE RAIN

ONE FRUCTIFIES THE SOIL

THE OTHER

man's intelligence

TEXT SET IN MATRIX II BOOK, REGULAR, BOLD, AND EXTRA BOLD WITH ACCOMPANYING ITALICS AND SMALL CAPS.

Beautiful Typography

INVARIABLY

HAS AN

INDIVIDUALITY

all its own

that completely

OVERSHADOWS

THE MEREST

SUGGESTION

ΩF

mediocrity

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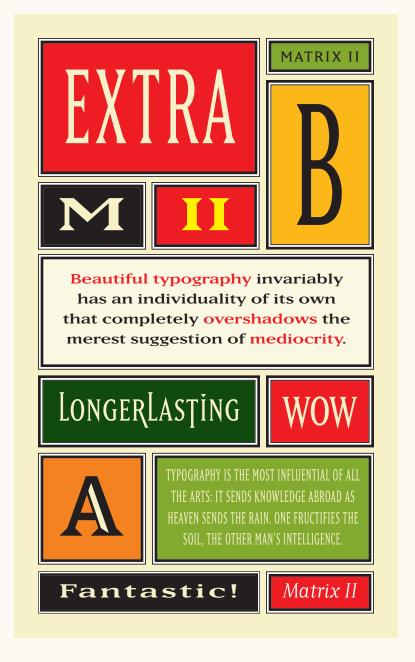
TEXT SET IN MATRIX II BOOK, REGULAR, BOLD, AND EXTRA BOLD WITH
ACCOMPANYING ITALICS AND SMALL CAPS.

HAS AN INDIVIDUALITY OF ITS OWN THAT
COMPLETELY OVERSHADOWS THE MEREST
SUGGESTION OF MEDIOCRITY.



Typography is the most influential of all the arts: it sends knowledge abroad as heaven sends the rain.

One fructifies the soil, the other man's intelligence.



CLASSIC FORMAT (TYPE 1)

Font Packages and Prices

Aa Aa Aa

Matrix II Book, Regular, Bold, plus lining numerals

Aa Aa Aa

Matrix II Italic Book, Regular, Bold, plus lining numerals

\$65 AA AA AA

Matrix II Small Caps Book, Regular, Bold, plus fractions

Aa Aa Aa Aa

Matrix II Extra Bold, Narrow, Semi Narrow, Semi Wide, Wide, plus lining numerals

\$39 Aa Aa

Matrix II Tall Regular, Semi

Aa Aa Aa

Matrix II Script Book, Regular, Bold, plus lining numerals

Aa Aa Aa

Matrix II Inline Extra Bold, Script, Italic, plus lining numerals and Highlite

MATRIX II

ALL 22 FONTS \$350 (SAVE \$199)

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CLASSIC FORMAT (TYPE 1)

Character Set

ABCDEFGHIJKLM NOPQRSTUVWXYZ abcdefghijklm nopqrstuvwxyz 0123456789 &\$¢£¥€%‰ ÀÁÂÄÄÅÇÈÉÊÏÍÏÎÑ ÒÓÔÖØÙÚÛÜŸ àáâäãåçèéêëiìíîïñ òóôöoøùúûüÿ ¶§†‡fÆŒæœfiflß

OPENTYPE

Font Packages and Prices

🛼 Aa Aa **Aa**

Matrix II Book, Regular, Bold, plus features

Aa Aa Aa

Matrix II Italic Book, Regular, Bold, plus features

Aa Aa Aa Aa Aa

Matrix II Extra Bold, Narrow, Semi Narrow, Semi Wide, Wide

\$45 Aa Aa

Matrix II Tall Regular, Tall Semi

Aa Aa Aa

Matrix II Script Book, Regular, Bold

Aa Aa Aa

Matrix II Inline Extra Bold, Script, Italic, plus Highlight



MATRIX II

ALL 19 FONTS \$399 (SAVE \$241)

OPENTYPE FORMAT

The OpenType format incorporates typographic features such as small caps, ligatures, old style numerals and lining numerals, all within one font file (see opposite page), thereby simplifying font management and usage. OpenType font files are also cross-platform compatible; they work on both Macintosh and Windows platforms.

Do note that accessing OpenType typographic features requires an application which supports OpenType such as Adobe InDesign CS2 or Adobe Photoshop 6.

Registered customers may upgrade classic format fonts to the OpenType format for 50% of the OpenType price. To order an upgrade, please go to: www.emigre.com/UpgradeForm.php

OPENTYPE

Character Set

Default

ABCDEFGH...abcdefgh...©®?!&@\$0123456789

All Caps (all styles)

ABCDEFGH...ABCDEFGH...©®?!&@\$0123456789

Small Caps (Book, Regular, and Bold only)

ABCDEFGH...@@?!&@\$0123456789

All Small Caps (Book, Regular, and Bold only)

ABCDEFGH...ABCDEFGH...©®?!&@\$0123456789

Alternates "Titling Alternates" and "Stylistic Alternates"

gg&&&&NNnn&&**© 0**

Ordinal (Book, Regular, and Bold only)

abcdefghijklmnopqrstuvwxyz 1st 2nd 3rd 4th

Proportional Old Style Numbers (all except Tall)

0123456789

Proportional Lining Numbers (all styles)

0123456789

Tabular Old Style Numbers (all except Tall)

0123456789

Tabular Lining Numbers (all except Tall)

0123456789

Superior Numbers & Scientific Inferior Numbers (Book, Regular, and Bold only)

 $^{0123456789}_{0123456789} 2^2 H_2O h^2 = a^2 + b^2$

Numerator & Denominator (Book, Regular, and Bold only)

 0123456789 0123456789 Footnote 36

Fractions and Arbitrary Fractions (Book, Regular, and Bold only)

1/2 1/3 2/3 1/4 3/4 1/8 3/8 5/8 7/8 1/16 3/16 1/32 1/64 1/100

Ornaments (all styles)

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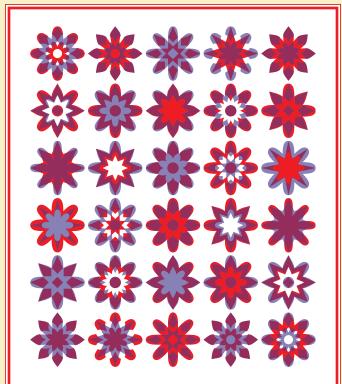
Mail to:

Emigre

1700 Shattuck Ave., #307

Berkeley, CA 94709

USA



Each Matrix II font includes a set of 50 ornaments. Wonderful decorative effects can be created by combining these ornaments. Each multi-colored ornament in the series shown above was created by overlaying two different ornaments using the transparency feature in InDesign CS2.

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