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BASE900

The lineage of Base 900 is an example of how technological restraints can serve as a source for design inspiration and exploration. The design morphed from a bitmap, to a restricted outline, to a full, high resolution typeface. The resulting Base 900 fonts still convey a modular, geometric style, reminiscent of the early computer technology era, but with an updated, more refined look made possible by a high resolution grid.

01

02

03

INTRODUCTION: When Base 9 was designed in 1994, the goal was to create a comprehensive family of screen fonts with companion printer fonts, somewhat similar in purpose to Matthew Carter's well known typeface Verdana.

In the design process of these typefaces, the screen fonts largely dictated the look of the printer fonts, rather than the other way around, because outline fonts are more flexible and are easier to adapt. For example, the proportions of the screen font determined the exact character widths within which the outline characters were adjusted to fit. Usually this process is reversed – character widths are normally adjusted to fit around the outline characters. Therefore, certain compromises had to be made.

Whereas the Base 9 screen font was designed on a grid of nine pixels high, and had its roots in the Lo-Res 9 Narrow bitmap font, the Base 900 family is a high fidelity adaptation of the Base 9 printer font design. This lineage is an example of how technological restraints can serve as a source for design inspiration and exploration. In this case, the design morphed from a bitmap, to a restricted outline, to a full, high resolution typeface. The resulting Base 900 fonts still convey a modular, geometric style, reminiscent of the early computer technology era, but with an updated, more refined look made possible by a high resolution grid – which offers unlimited design possibilities.
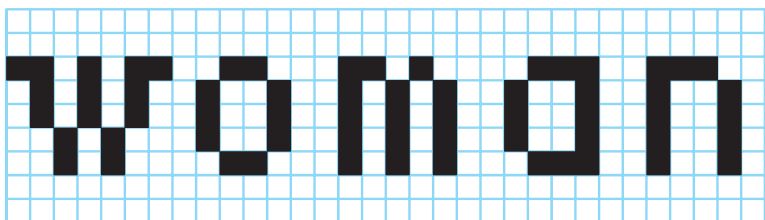
Fig. 1.A

Fig. 1.B

The Base 9 screen font (later renamed Lo-Res 9 Narrow), and the Base 9 printer font were originally designed as companion fonts for use on screen and in print.

Light

Regular

Medium

Bold

Heavy

The reconstructed Base 900 font family.

THE DESIGN PROCESS: One of the challenges when drawing Base 900 was finding the right balance between normalizing the design of Base 9 while maintaining its original character. The redesign still had to look like Base. To retain its character, the most distinguishing element that was carried over from Base 9 is the triangular spur detail which originated in the Lo-Res 9 Bold bitmap. To give definition to the cusps in the bitmap font, a pixel was removed to open up the area where the rounded stroke meets the stem. This open square area evolved into the trademark triangular wedge shape in the Base 9 printer font.
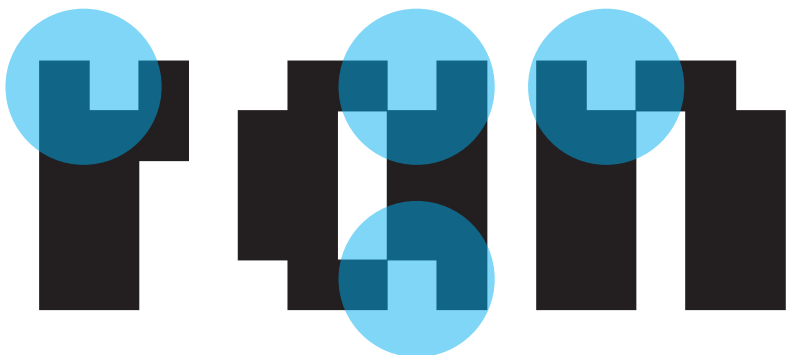
Fig. 2.A

Fig. 2.B

The triangular spur element, derived from the cusps in the Base 9 bitmap font, are the most recognizable feature of the Base printer fonts and was retained throughout the transition to Base 900.

Heavy

Bold

Light

Bold

Medium

Light

dinosaur
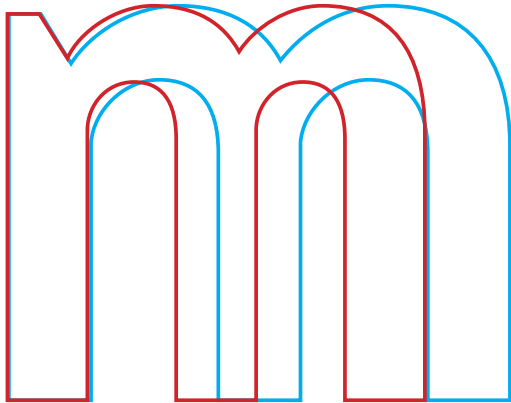anno
annuities
mentor
wane
minimally

The extra narrow m is another example of a unique design element that resulted from the bitmap. When redrawing the typeface, the initial impulse was to draw a corrected m with a more common, wider proportion. But when implementing this more regular looking m, the typeface seemed to lose some of its character. So we opted to make the normalized m an alternate character, which is available in the OpenType version, along with alternates for the A I J W and w.

Base 900 text with default characters

Fig. 3.A

The narrow m in the original design of Base 9 came from a conscious effort to keep the character from being too wide in the screen font. This became another recognizable feature of the Base fonts that was maintained in the redrawn Base 900 version.

Base 900 text with alternate m (Applying OpenType Stylistic Set 4)

Fig. 3.B

Base 900 default vs. alternate characters

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Base 900 also retains the original non-descending J and serifed I to preserve the character of the Base 9 design. The alternate descending J offers symmetric spacing within all caps settings, and the alternate I without serifs offers a more discreet look, which may be preferable in certain situations.

Fig. 4.A

I J ADJUSTING | I J ADJUSTING

The alternate A employs the more traditional triangular apex, whereas the original round top straight sided design came from the bitmap where it was more legible, and avoided many spacing problems, which avoided many kerning pairs.

Fig. 4.B

A ADJACENT | A ADJACENT

The original single story a with its triangular spur endings on top and bottom was also up for redesign consideration. A two story a was tried out in order to more clearly differentiate between the a and o to increase legibility. A three story g was also drawn for similar reasons. But these ideas were quickly dropped as it became immediately obvious that the results changed the overall look and feel of the design too much, situating it in the overcrowded stylistic neighborhood of too many sans serif fonts that aspire to look "neutral." Subverting legibility in favor of a more unique visual quality would make some type purists cringe. But others, who feel that type should impart more than just legibility, will enjoy the undeniable singularity of Base 900.

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Base 900 default vs. alternate characters

Default
A I J m Ww

Alternates
A I J m Ww

Stylistic Sets
1   2   3   4   5

Each group of alternate characters can be implemented separately through the Stylistic Sets OpenType feature.

Default
357   1234567890

Alternates
357   1234567890

Stylistic Set
6

AZIJN   AZIJN

The alternate characters in Base 900 can be used for stylistic purposes, or in languages with unusual letter combinations. In Dutch, for instance, the I J combination is quite common. In such instances, the alternate characters in Base 900 can come in handy.

11

In the case of the w, 3, 5 and 7 we took an opposite approach and replaced the original Base 9 printer font design with more normalized versions. In the case of the w, since the overlap in the center strokes created a slightly jarring effect in smaller sizes, we actually traded uniqueness for legibility.
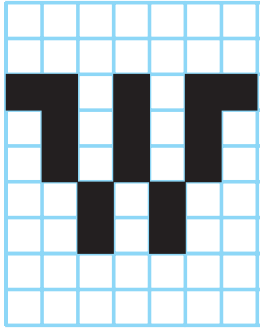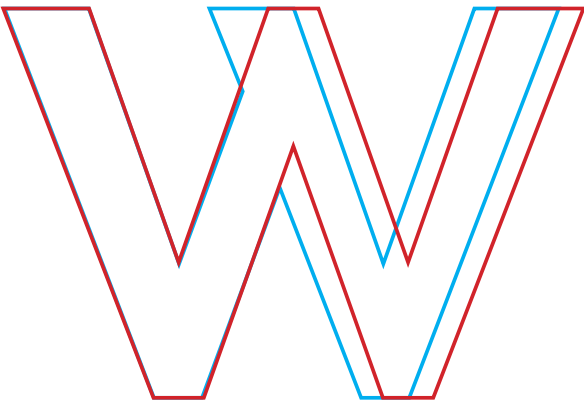
Fig. 5.A

Fig. 5.B

W W
woman woman

To match the width of the Base 9 printer font w to the screen font, the center strokes had to be overlapped. For Base 900 the form was simplified.

Fig. 5.C

12

TJANTING
SOJOURN

1,395,456,780

1,395,456,780

AWARD

AWARD AWARD

5037

5037

13

Other improvements in the Base 900 family include a more subtle use of curves in the outlines. Type creation tools have greatly improved since 1994, as have my abilities as a designer of typefaces. Also, the original Base 9 contained many shapes based on simple geometric circles and ovals in keeping with the bitmap grid. Very few if any optical corrections were made to curves and lead in strokes. Even the thickness of horizontal and vertical stems, which also corresponded closely to the bitmap were kept uncorrected. This resulted in some uncomfortable visual effects whereby horizontal strokes looked thicker than vertical strokes. In Base 900, all these details have been upgraded with the necessary optical corrections.

Fig. 6.A
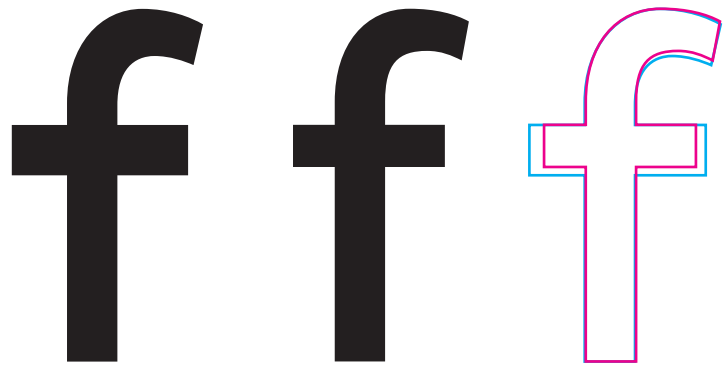
Original Base 9 printer font on left; corrected Base 900 in middle; overlapping forms showing subtle differences between the two versions.

Fig. 6.B
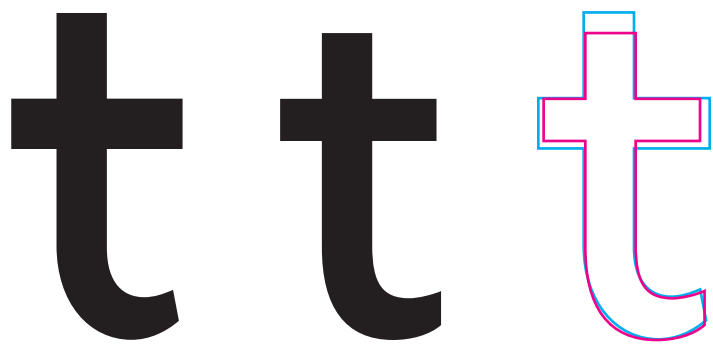
WEIGHT DISTRIBUTION: Due to the coarse resolution of the screen, the Base 9 bitmap and printer fonts were designed in only two weights: Regular and Bold. Because the weight could be increased only in whole pixel increments, the single pixel stem served for the regular weight, and the two pixel stem served for the bold weight. Without these restrictions, Base 900 introduces three additional weights: a lighter weight than the Regular; an intermediate Medium weight between the Regular and the Bold; and a Heavy weight.

Fig. 7.A

Fig. 7.B

Regular   Bold   Light   Medium   heavy

Similarly, the widths of the individual characters in Base 9 could vary only by whole increments of a pixel limiting the subtle width variations necessary to accommodate all characters. This meant that many characters shared the same size space, leaving some with unusually narrow or wide proportions.
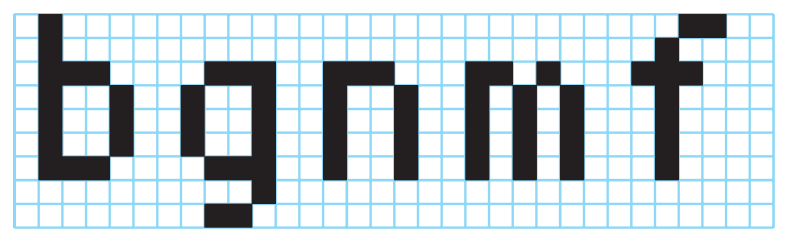
Fig. 8.A

Fig. 8.B

14

15

SPACING: The design of the original Base 9 was a unique challenge, and while it generated some very surprising letter shapes that we would not have arrived at otherwise, the compromises ultimately generated shortcomings in the design of the printer fonts, particularly in the spacing. Over time, with the improvements of screen resolutions and hinting, these short-comings in Base 9 seemed no longer justifiable, which lead us to surrender the purity of the concept in favor of a font which utilized the precision and sophistication of current technology generating greater legibility and applicability.

Fig. 9.A

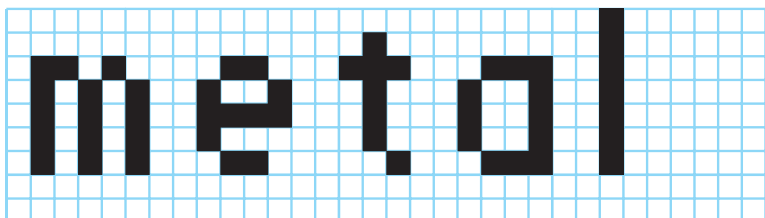Original Base 9 printer font default spacing.

metal

Fig. 9.B

metal

The limitations of a coarse and rigid grid used for the Base 9 screen font generated a number of unresolvable spacing problems. Since the concept called for matching screen and printer fonts, these compromised spacing issues were also featured in the printer font.

Base 900 adjusted default spacing

Fig. 9.C

metal

With Base 900 we abandoned the idea of a matching screen font and its restricted grid which allowed for greater control over spacing and kerning.

Spacing of Base 9 vs. Base 900

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CONCLUSION: It's interesting to consider that some of the idiosyncrasies in Base 900 which derived directly from the bitmap, are used here for purely stylistic purposes. Design details that began as "form follows function" in the highly restrictive bitmap environment have now become purely formal to give a unique identity in the unrestricted high resolution environment.

When designing the Lo-Res 9 bitmap, the technology severely limited the shapes of the letter forms. When toggling pixels on a grid that allows exactly 9 pixels to define the letters from the top of the ascender to the bottom of the descender, it's obvious that the design options for each letterform quickly run out. On the other hand, the high resolution design environment, in which Base 900 was created, offers complete design freedom. In such an environment it becomes necessary for the designer to impose restrictions and rules to give the design a rationale.

Revisiting these old ideas for inspiration to create new designs begs the question whether to omit the earlier versions and consider the new version an improvement, or to introduce the new design as an addition alongside the old design. In the past we have redrawn typefaces to fix small problems to replace the old ones. In the case of Base 900, however, due to the significant changes, specifically in spacing and kerning, this would be impractical. Opening old files using the original Base 9 fonts and replacing them with Base 900 would completely rewrap the text. That alone was reason enough not to replace Base 9. Plus the look and feel of the new Base 900 fonts, while undeniably similar to its source, have a character all their own.

Zuzana Licko

Base 900

Regular

ABCDEFGH
IJKLMNOPQR
STUVWXYZ
abcdefgh
ijklmnopqr
stuvwxyz
0123456789
!?&%$([])...

18

19

Base 900: Five weights

Fig. 10.A

Going off the grid

Going off the grid

Going off the grid

Going off the grid

Going off the grid

Base 900: Italics

Fig. 10.B

Going off the grid

Going off the grid

Going off the grid

Going off the grid

Going off the grid

Base 900: Small Caps

Fig. 10.C

GOING OFF THE GRID

GOING OFF THE GRID

GOING OFF THE GRID

GOING OFF THE GRID

GOING OFF THE GRID

Base 900: Alternate Characters

Fig. 10.D

The Woman Is Mowing
The Woman Is Mowing

The Woman Is Mowing
The Woman Is Mowing

The Woman Is Mowing
The Woman Is Mowing

20

21

Base 900 | 6/10 pt.

Light

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Medium

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Bold

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Heavy

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Base 900 | 7/11 pt.

Light

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22

23

Base 900 | 8/12 pt.

Light

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24

Base 900 | 10/14 pt.

Light

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25

Light

Silicon Valley Job Fair

Bold Small Caps

ARCHITECTURE

Regular

Computer Generated Illustration

Medium

MOHAWK

Medium

minimum wage

26

27

Heavy

norman

Bold

communication

Heavy Italic

styrofoam

Light

reservation confirmation message

Heavy Small Caps

CHAMPIONSHIP

28

29

Base 900 OpenType Features

Upper Case	ABCDEFGHIJKLMNOPQRSTUVWXYZ
Lower Case	abcdefghijklmnopqrstuvwxyz
Small Caps	ABCDEFGHIJKLMNOPQRSTUVWXYZ
Old Style	0123456789
Lining	0123456789
Tabular Old Style	0 1 2 3 4 5 6 7 8 9
Tabular Lining	0123456789
Fractions	½ ¼ ¾ ⅓ ⅔ ⅛ ⅜ ⅝ ⅞
Superior & Inf.	1234567890 1234567890
Numerator & Den.	1234567890/1234567890
Alternates	AA mm WW ww II JJ 33 55 77

For a more complete listing of characters, please visit our website at www.emigre.com

Base 900 Price List

OPENTYPE FORMAT

Base 900 Light & Medium
Package includes four fonts plus small caps:
Light, Light Italic, Medium and Medium Italic **$170**

Featuring Small Caps, Alternates, Proportional Old Style Numbers, Proportional Lining Numbers, Tabular Old Style Numbers, Tabular Lining Numbers, Superior and inferior Numbers, Numerator and Denominator.

Base 900 Regular & Bold
Package includes four fonts plus small caps:
Regular, Regular Italic, Bold and Bold Italic **$170**

Featuring Small Caps, Alternates, Proportional Old Style Numbers, Proportional Lining Numbers, Tabular Old Style Numbers, Tabular Lining Numbers, Superior and inferior Numbers, Numerator and Denominator.

Base 900 Heavy
Package includes two fonts plus small caps:
Heavy and Heavy Italic **$85**

Featuring Small Caps, Alternates, Proportional Old Style Numbers, Proportional Lining Numbers, Tabular Old Style Numbers, Tabular Lining Numbers, Superior and inferior Numbers, Numerator and Denominator.

Base 900 Volume
Package includes all ten Base 900 fonts plus small caps:
Light, Light Italic, Regular, Regular Italic, Medium, Medium Italic, Bold, Bold Italic, Heavy and Heavy Italic **$299**

Featuring Small Caps, Alternates, Proportional Old Style Numbers, Proportional Lining Numbers, Tabular Old Style Numbers, Tabular Lining Numbers, Superior and inferior Numbers, Numerator and Denominator.

CLASSIC FORMAT

Base 900
Postscript Type 1 or TrueType single fonts starting at **$39**

30

31

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Base 900 : TYPE SPECIMEN