

Reflection on practice

The Hyde family

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Introduction

This essay describes the development of Hyde, a typeface designed from October 2007 to July 2008 as part of the Master of Arts Typeface Design programme at the University of Reading. This project has two key stages; the development of a typeface for newspapers and a redesign for magazines and books.

The first section explains the rationale behind the original brief and shows how these preconceived ideas changed during the design phase. This provides a context for the final brief, which is outlined at the end of the section.

The second section describes the development of Hyde Roman, followed by an overview of the steps taken to expand the character set. Workflow, which includes spacing, is also discussed.

The third section looks at the extended family and describes the design choices behind the italic and Greek.

Lastly, kerning and open type features are discussed.

1.0 Defining the brief

Before this course I had no experience with typeface design. For this reason I wanted to design for a context with a rigid set of constraints. It was thought such an environment would guide the design and provide an easy way to evaluate its success.

Newspaper typefaces seemed the obvious choice. Since the early twentieth century they have been a pragmatic response to a strict set of criteria (this is typified by Monotype's legibility group and *Times New Roman*). Newspaper typefaces need to withstand poor printing conditions, have a sense of authority and balance readability with economy. In hindsight the strict criteria (or more so how it was interpreted) was not as positive as hoped. This is explained in the following sections.

1.1 Initial brief: A typeface for newspapers in the digital age

The original brief was to create a newspaper typeface that was also appropriate for on-screen use. This seemed worthwhile, as many newspapers now offer their content in print and digital formats. To maintain brand it would be ideal if the same typeface could be used in both circumstances. Furthermore, newspapers and screens share limitations; both environments are low quality (when compared to books) and benefit from economy of line. A robust typeface with a large x-height and open counters would be appropriate for both.

Thai was chosen as the non-Latin complement. This choice affected the design from the beginning; it was thought a Latin with strong verticals, such as a modern, would complement the predominantly vertical feel of Thai. Midway through Thai was dropped, and Greek chosen instead.



Figure 1. *Adobe Thai* (72pt).

In response to the brief early designs were pragmatic and lacked character (although newspaper typefaces have ample room for expression, I felt restricted by the self imposed rules). Revising the brief gave more design freedom and improved the learning experience. Future developments would focus on magazine and book typography.

1.2 Final brief: Magazines, books and newspaper lift-outs

In early May the brief was amended. The typeface would be redesigned with an emphasis on magazines and books. Now, the typeface's key requirement was high readability in extended text (previously the typeface aimed for an acceptable balance between legibility and economy). To maintain some continuity between the old and new brief, the requirement to withstand poor printing conditions remained. This would benefit newspaper lift-outs (which are becoming similar to magazines) and cheap paperbacks.

Magazines and books are generally printed using high quality offset. In offset printing typefaces have a tendency to become lighter. Therefore a robust design with a relatively low contrast would stop the typeface looking grey on the page.

2.0 Development of Hyde Roman

2.1 Responding to the initial brief

Before starting my own design a variety of typefaces were sketched in an attempt to understand the reasons behind their design choices. Particular emphasis was given to typefaces intended for newspapers, but general purpose typefaces were also studied. This exercise showed that newspaper typefaces generally use a sturdy construction, well defined serifs and large x-height to improve legibility and condensed forms for economy.

Eight popular newspaper typefaces were compared for economy¹. This was done by setting a passage of text using equivalent x-heights and proportional leading. Nimrod was found to be the most efficient and subsequently used as a basis for early proportions.

Using the word *adhesion* as a starting point some possible directions were explored. An early experiment looked at developing a slab serif with a strong vertical axis (figure 2). It explored the possibility of contrasting angular counters with smooth outer strokes. This design was short lived and never translated into digital outlines. The slab serifs lacked character and the angular counters felt forced and unnecessary.



Figure 2. An early sketch based on a slab serif (reduced by 75%).

The second attempt was influenced by Nimrod (figure 3). It featured a very large x-height for legibility and condensed forms for economy. Straight lines and robust serifs were intended to reduce the effects of poor printing and work well on screen. Vertical stress was intended to complement the vertical stress of Thai. This idea became a response to the initial brief; its development is outlined below.

Asymmetrical serifs were seen as a way of adding interest to the design; when used correctly these give letters a sense of movement. This is the only aesthetic feature that remains in the final design



Figure 3. An early version of the design (72pt).

¹. Refer to the label marked "footnote 1" in the workfile.

As the design progressed a cut was added to avoid darkening at junctions. It was first added to the curve of *d*, later made its way to the arched letters, namely *h*, *m* and *n* (figure 4) and finally to the bowl of *a* and the end stroke of *c* and *e* (figure 5). As well as being functional this was seen as a way of adding character.

adhesion

Figure 4. *Cuts were introduced to prevent darkening at junctions (72pt).*

adhesion

Figure 5. *The concept of cuts was applied to all curves that did not end with a serif (72pt).*

A humanist axis was gradually introduced in an attempt to add life to the design (Thai had been replaced with Greek). Other key changes were a decrease in x-height (its extremely large size gave an awkward appearance which was distracting to the reader), the widening of forms and an increase in contrast. Flag serifs were added to complement the angular cut of the arches.

adhesion

Figure 6. *A more defined humanist axis was progressively added and the x-height reduced (72pt). Compare the stress and x-height of this to figure 3.*

The cut made forms weak and did not benefit the overall texture. It was replaced with smooth curves (figure 7). Ball terminals were added to *c* and *f* (it was a conscious decision to exclude them from *s* in a hope that variation would add interest. Dwiggins did this with Caledonia).

adhesioncfcf

Figure 7. *Curves were made smooth and arches lifted. For character, ball terminals were added to *c* and *f* (72pt).*

During the design process the typeface had become much lighter and now appeared grey on the page. Tests were done with different levels of contrast and weight to find the correct amount².

contrast
contrast 

Figure 8. Above: A high contrast and light weight made the type look grey on the page (72pt). Below: The weight was increased for a darker text-block (72pt). Right: The o has been overlaid to show the weight before (dark) and the weight after (light).

I was struggling to find an identity for the typeface. It lacked character and was no longer appropriate for newspapers. In hindsight I can see that the changes detailed above were an attempt to change the direction of the design. After redefining the brief there was more freedom to experiment.

2.2 The breakthrough: a new approach

Rather than continue work on the regular the focus was shifted to the bold. This allowed experimentation in an environment free from preconceived ideas. *Cooper Fullface* and *Cooper Black* provided inspiration (figure 9).

Fullface

Cooper Black

Figure 9. Above: *Cooper Fullface* (36pt). Below: *Cooper Black* (48pt).

In earlier attempts the bold was simply a heavier version of the regular (figure 10), but this time it was approached independently and with less inhibition. Using the regular only as a rough guide the outlines of *a*, *b*, *l* and *n* were drawn (figure 11). It seemed natural to taper and flare the strokes and use rounder serifs. Also, flag serifs were made more upright to avoid unwanted heaviness on the ascenders. Pleased with the result the design was extended to the remaining characters.

². This test has been marked in the workfile.

abdelnors

Figure 10. *Early bold attempts were simply heavier versions of the regular (72pt).*

abl nabl n

Figure 11. *Left: The regular weight before the brief was redefined. Right: With the brief amended, the bold was a chance to experiment (the first version of the bold is shown). Both are shown at 72pt.*

The bold's independent design made interpolation with the regular impossible. This was a conscious decision. I didn't want the constraints that came with making a black and interpolating; the aim of the bold was to experiment more freely. For this reason, careful attention was given to finding the right weight.

With less than seven weeks until submission the regular felt bland and predictable. Realising the bold had potential the regular was redesigned using it as a basis. Reducing the bold's weight and a great deal of fine tuning resulted in a regular with more character (figure 12). The regular, now superior, went on to influence the bold.

adhesionb

Figure 12. *The new regular was created by reducing the bold (72pt).*

ablno

Figure 13. *This shows the relationship between the bold (light) and regular (dark). A large counter space is maintained by the wider forms of the bold. Both are shown at 72pt.*

After fine tuning the regular it was obvious the bold needed more work. A higher contrast and smaller serifs were added. This had two effects: firstly it created more legible forms at small sizes by increasing the counter space, and secondly it gave the bold an open feel that matched the regular.

adhesionb

Figure 14. *The final bold (72pt).*

The redesigned version of Hyde owes many of its characteristics to contemporary newspaper typefaces. It adopted their pragmatism with its tall x-height, large counters and robust construction. But unlike newspaper typefaces it has an open rhythm and wide forms, making it suitable for extended reading.

regular font
regular font
regular font

Figure 15. *The key stages of development. Top: A version with cuts and angular serifs. Middle: An intermediate solution that lacked character. Bottom: The final design.*

2.3 The typeface in context

By mid-November tests were being carried out on low grade paper to simulate the effect of newsprint and give an indication of how the typeface would look in real world conditions. These continued, culminating with a test printed in Spark, the University newspaper. From these, accurate judgements regarding texture and

details could be made.

A mock-up of the Guardian front page allowed the typeface to be seen in context. Early tests used Bitsream Charter for the numbers. When the brief was amended this test was no longer relevant. Subsequently a recipe lift-out from the Observer was reproduced and more book like tests developed.

These tests can be seen in the *testing in context* section of the workfile.

2.4 Workflow

Spacing

It soon became apparent that good spacing was necessary during the development phase. It helped identify problems with weight and form and allowed accurate judgements regarding texture.

To space the lowercase the *n* and *o* were used as a starting point. Once an even rhythm was established between these two letters the remaining lowercase could be spaced (figure 16).

The only exception were the diagonal letters, i.e. *v*, *w* and *y*. These were given positive side bearings equal to half of the serif height (it is common for these to have negative side bearings). The diagonal letters were then kerned with each letter using class based kerning (figure 17). Kerning is discussed in section 4.1. Using this method avoids letter collisions in applications that do not support kerning.

The capitals were spaced with the lowercase using the method described above. The capitals were then kerned to ensure they spaced correctly with each other. The *hobonop* method was used to double check spacing³.

nnnnnn	nlnnlnl	nDnnDnDDn
oooooo	oloolollo	oDooDoDDo
nonnonoon	nllooln	nDooDn
onoononno		

Figure 16. Left: The *n* and *o* are spaced until a good rhythm is achieved. Middle: The remaining lowercase letters are spaced using the *n* and *o* as reference. Right: Capitals were spaced using the same method.

nvoovnnvoovn

Figure 17. Left: No kerning on *v*. Right: Kerning has been applied to *v*.

In normal text settings small capitals only occur with other small capitals. For this reason, small capitals were spaced relative to each other rather than with the lowercase. Instead of using *n* and *o* as a starting point *H* and *O* were used.

³. Refer to the workfile.

A number of test documents were made to help space the lowercase, uppercase, small capitals, numbers and non-alphabetic. These can be seen in the spacing section of the workfile. Some of these documents were planned while others evolved during spacing, these are marked appropriately.

To streamline spacing commonly used strings were saved in text files (figure 18). These were copied and pasted into the metrics window when required. This was especially useful when spacing glyphs not accessible through the keyboard such as small capitals. Strings used in the regular were saved for use in the bold and italic. Again, refer to the spacing section of the work file.

```
/zero.oldstyle/zero.oldstyle/zero.oldstyle/one.oldstyle/zero.oldstyle/  
two.oldstyle/zero.oldstyle/three.oldstyle/zero.oldstyle/four.oldstyle/  
zero.oldstyle/five.oldstyle/zero.oldstyle/six.oldstyle/zero.oldstyle/seven.  
oldstyle/zero.oldstyle/eight.oldstyle/zero.oldstyle/nine.oldstyle/zero.  
oldstyle
```



Figure 18. Above: A string used to space oldstyle numbers. Below: The output shown in the metrics window of FontLab.

AFDKO

The Adobe font development kit eliminated the need to manually merge contours before generating OpenType fonts. It also made the debugging of OpenType features possible.

2.5 Expanding the character set

Capitals and small capitals

Once the lowercase had an established direction work began on the small capitals (figure 19). Small capitals are slightly higher than the lowercase, which allows them to work well in text. The limited vertical space meant correct vertical proportions were especially important, e.g. the placement of crossbars. Once complete the small capitals were enlarged and made into the capital forms. This process was done twice; once before the redesign and once after.

During the design of capitals and small capitals it was useful to do quick “throw-away” tests. These consisted of paragraphs set completely in capitals (or small capitals) and printed slightly larger than text size. From these, optical weights could be fine tuned. In a sentence structure it is much harder to compare capitals directly.

ABHOxABHO

Figure 19. Small capitals and capitals (72pt). The capitals and small capitals follow the same aesthetic approach as the lowercase. Their proportions are based on classical forms.

Numbers

Two forms of numbers were designed; oldstyle and lining. The oldstyle numbers work well with the lowercase and appear harmonious when used in a paragraph of text. The lining figures are intended to be used with capitals or for tabular data. Both number styles have been given proportional and tabular spacing.

To meet user expectation tabular lining numbers are the default (this is the default for typefaces such as *Minion*, *Arno* and *Times New Roman*).

Developing test documents specifically for numbers was extremely helpful for fine tuning their spacing and weight. The tests showed numbers in text settings⁵, e.g. bibliography, and in long numerical strings⁶. When necessary pi was used to create strings of numbers that appeared to be random.

0 1 2 3 4 5 6 7 8 9
0 1 2 3 4 5 6 7 8 9

Figure 20. Above: Tabular lining. Below: Proportional oldstyle.

When faced with a design problem it was useful to switch between lining and oldstyle numbers. Seeing the problem in a different context usually provided a solution. This solution could then be applied to the other number style, sometimes with minor alterations.

^{5 & 6.} Refer to the workfile.

Diacritics

To improve language support diacritics were added to the character set. Care was taken to harmonise the diacritics with the letter forms. For example, each dot of the dieresis originally had the same size and vertical position as the dot of the i. Its size was later reduced to overcome the added optical weight produced when two dots are placed beside each other. Also, a relatively steep grave and acute take full advantage of the limited ascender space and shallow uppercase diacritics have been used to reduce vertical space. The diacritics were optically aligned by their vertical centre and positioned using the two third rule.

É å é ì ö û ñ
◦ ^ ~ ˇ • • / \

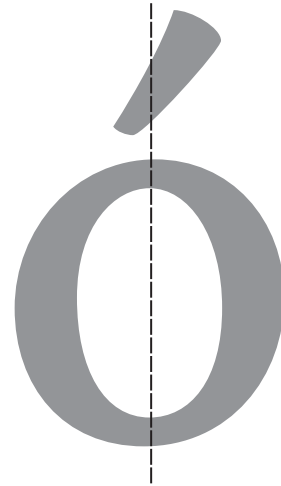


Figure 21. Left: A selection of accented characters (72pt).
Right: Diacritics were aligned using the two-third method.

Non-alphabetic

Unlike many commercial typefaces, the non-alphabetic characters were given the same attention as the letters and numerals. It didn't seem appropriate to treat them as generic forms.

abc ♀ [+ > < ±]

Figure 22. A selection of non-alphabetic characters (72pt).

3.0 The extended family

Although the bold weight is part of the extended family its development is too connected with the regular to be discussed in this section. Refer to section 2.2.

3.1 Italic

Since italic's are rarely used by newspapers it was seen as an opportunity to break from the Roman's rigid constraints.

A design with strong character was envisaged. In hindsight, it is clear this put too much pressure on the italic to succeed, and is part of the reason for so many attempts. This said, the learning experiences gained from these trials were invaluable to the final design.

The italic raised a number of questions. The most significant was how different should it be from the Roman? Should characteristics such as texture and weight match or contrast with the Roman? Also what slant should the italic have and how cursive should it be? The response to these questions is outlined below.

Possible solutions

The first attempt was heavily based on calligraphy (figure 23). This gave it a cursive quality and a modest slant based on my handwriting angle. It also resulted in the design having very sharp apexes and strong diagonals. Through curiosity the design was developed, which involved increasing the contrast, widening forms and progressively softening the angularity. It quickly became clear that the texture was too different from the roman and the concept too far removed for this design to be suitable. Also, the design was in conflict with itself; the tear drop counters and disjointed construction of *a* and *d* did not sit comfortably with the triangular shaped counters and single stroke construction of *m* and *n*. However, its development, which only lasted nine days, was a valuable learning experience.



adhilmn
adhilmnos

Figure 23. An early experiment based on calligraphic forms (48pt).

The second experiment was an adaptation of the first. Counters were made rounder and larger so that they were more suited to the Roman. Also, the slant was reduced; the first experiment demonstrated that a strong slant isn't necessary when the letter construction follows a different model.

This time a more consistent design approach was present with each letter being based on a single stroke. However, this was not enough to create a coherent design. It was clear the counters of *a* and *d* were too round and open compared to *h*, *m* and *n*. Condensing the round forms and softening the apexes of *h*, *m* and *n* helped, but it was not enough. Although unsuccessful, this experiment showed how significant the arched letters are to defining the italic's texture.



Figure 24. An adaptation of the first experiment (48pt).

Unlike the experiments, the first serious attempt didn't use a single stroke construction (figure 25). This approach was more complementary to the Roman, which was clearly constructed from angular and disjointed strokes (the Roman later changed becoming more fluid after the brief was updated).



Figure 25. The first serious attempt. Above: The first digital outlines. Middle: An intermediate version featuring more angular serifs. Bottom: A version with flat horizontal serifs on out-strokes and flag serifs on in-strokes. All are shown at 48pt.

The italic's open construction and flat arches gave it an even texture but it lacked character and appeared grey on the page. In an attempt to overcome this the weight was increased and more angular counters added for character (figure 26). The slant was also reduced.

*abcdefghijklmnop
rstuvw*

Figure 26. *Angularity was added to counters for personality (48pt).*

As discussed earlier the development of the bold had a profound effect on the regular. It was also responsible for changing the direction of the italic, although much less successfully.

The concept of tapering and expanding was applied to the existing italic. While this produced pleasing forms the idea was inherently flawed. Long strokes wasted where short strokes flared. Curves on *a*, *c* and *e* had different optical weights to those on *b* and *d* because their vertical stroke narrowed in the middle (which happened to be parallel to the bowl). Letters such as *j* and *f* appeared top or bottom heavy depending on where they flared. Rather than add interest this approach produced a collection of forms that worked against each other to the detriment of a consistent texture.

*abcdefghijklmnop
opqrstuvwxyz*

Figure 27. *The concept of tapering and expanding was applied (48pt). This was unsuccessful.*

Final choice

The final italic design is a cursive interpretation of the Roman (figure 28 & 29). It was produced by slanting key forms of the Roman, namely *d*, *h*, *s*, *i* and *n*. A slant of seven degrees was the most sympathetic. From this a cursive version was created using quick sketches as reference. A slight tapering and modified serif from the Roman were added to *b*, *d*, *h*, *l* and *k* to further strengthen the relationship between the styles.

d h s i n

d h s i n

Figure 28. *There is a strong relationship between the regular and italic forms.*

It was important that the italic had an even texture that complemented the Roman and also added interest to the text-block. The realisation that the italic is intended for emphasis, rather than long passages of text, opened room for playfulness in the design.

abcdefghijklmnop

opqrstuvwxyz

Figure 29. *The final italic (48pt).*

The Capitals are more conservative, but still play with the idea of cursive strokes (figure 30). Although they do not follow the predominantly single stroke construction of the lowercase, they are representative of written forms.

HELPING

Figure 30. *The italic capitals were designed as cursive forms, e.g. E is built from four distinct strokes, with the serifs being formed by the in-strokes (72pt).*

It depends; are they playful?

Figure 31. Contextual forms of *j* and *f* prevent character collisions.

3.2 Greek

Before designing the Greek I tried to develop a basic understanding of written forms. Writing with an agnostic tool removed the question of stroke stress and allowed the forms to be seen in their most basic way. Before making the switch to Greek a similar approach was taken with Thai.

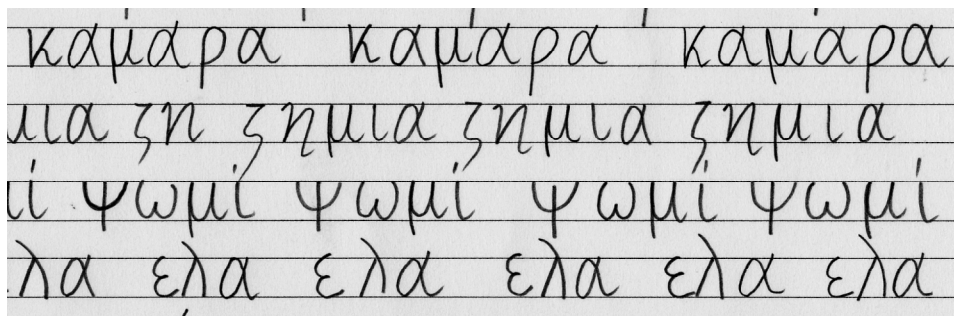


Figure 32. Greek writing practice (actual size).

It was important to understand common approaches to Greek type. Research indicated that there are two main categories. Those that are true to Greek forms and treat them independent of Latin forms, and those that treat them as derivative forms, e.g. using modified forms on *n* and *u* for the eta and mu respectively.

Before starting a serious design I experimented by sketching a Didot style Greek (figure 33). This let me see how far an idea could be pushed in a particular style, while still remaining true to form.

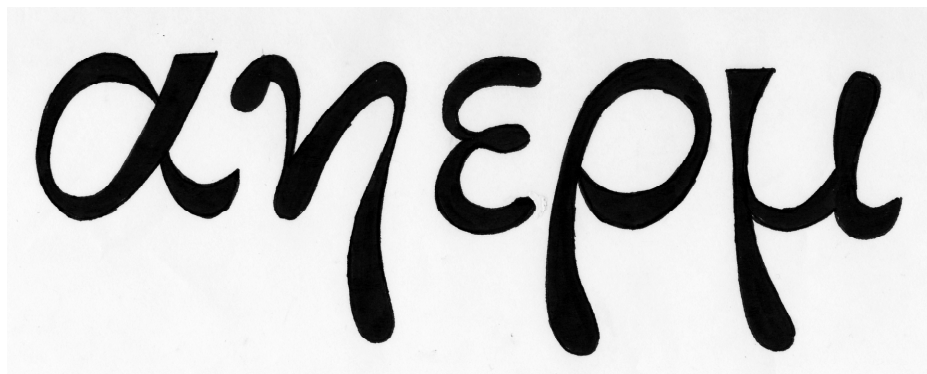
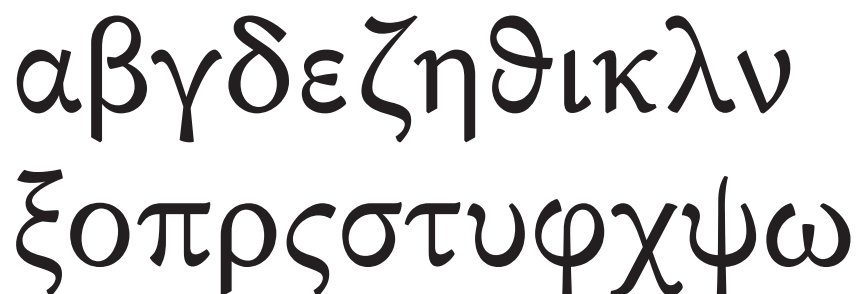


Figure 33. An experimental sketch (75%).

It was important that the Greek remained true to its origins, rather than being derived from the Roman. Instead of using serif or stroke construction to link the two, it was decided that a complementary texture should be aimed for. To achieve this the Greek was constructed with a similar mind-set to the Roman, namely open and round counters.

A big question before starting the design was the axis. Should the stress be the same as the Roman, or perhaps horizontal? Attempts were made with a horizontal stress, but this proved impractical on letters such as eta. Subsequently, the stress is not confined to a particular axis, and instead varies based on letter.

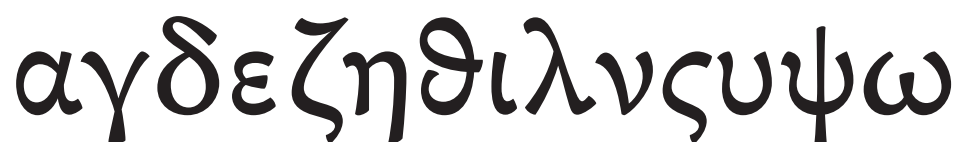
The epsilon provided the basis for the design. It deconstructs the stroke into its key sections while retaining a cursive feel. The design was created with a pen in hand; forms would be written numerous times on paper and then translated into digital outlines.



α β γ δ ε ζ η θ ι κ λ ν
ξ ο π ρ ς σ τ υ φ χ ψ ω

Figure 34. *The Greek (48pt).*

After changing the Roman it was necessary to increase the Greek's weight to match. The axis of the gamma, upsilon, psi and omega were also changed, which seemed more appropriate with the increased weight.



α γ δ ε ζ η θ ι λ ν ς σ ψ ω

Figure 35. *An updated version of the Greek (48pt).*

Although unfinished, the experience gained from the Greek had a positive affect on the Roman.

4.0 Finishing touches

4.1 Kerning

For even spacing certain glyph combinations needed to be kerned. Before kerning began, glyphs with similar shapes on their left or right were grouped into kerning classes, e.g. *c*, *d*, *e* and *o* were grouped because they share a similar shape on the left. Kerning the key glyph applies the kerning value to other glyphs in the class.

Kerning was done to the following combinations: lowercase with lowercase, lowercase with uppercase, uppercase with uppercase and small capital with small capital. It was also necessary to kern punctuation, especially with diagonal letters such as *v* and letters with negative side bearings such as *f*.

4.2 OpenType

OpenType features were implemented during the design phase. This allowed features such as small capitals and fractions to be easily tested. A list of OpenType features is given below.

Ligatures	fb ffb ff fh ffh fi ffi fj ffj fk ffk fl ffl
Small capitals	AGAINST all odds AGAINST ALL ODDS
Case sensitive forms	«OILS» «OILS»
Superiors and inferiors	H ₂ O H ₂ O n(32) n ⁽³²⁾ a ₂ +b ₂ =c ₂ a ² +b ² =c ²
Fractions	1/2 ½ 3/4 ¾ 7/8 ⅞
Figures*:	
Proportional lining	Only 740 remained! Only 740 remained!
Oldstyle	In 1923 the average... In 1923 the average...
Tabular oldstyle	£30.24 £30.24 ¥240,192 ¥240,192

** Tabular lining is the default number style*

Figure 36. OpenType features.

Conclusion

The Hyde family is not complete. It still requires more finetuning and testing To meet user expectation glyphs will need to be created in the bold and italic styles, e.g. small capitals. Further weights are also necessary for magazine use.

However, Hyde is still a success. Its development has taught me the fundamentals of typeface design and production. The process was not easy; there were many moments of doubt along the way. But, on reflection it is clear that the development of Hyde has been a positive experience.