

FURIOSO

A senior project in the Art major
Glenn Fleishman
Spring 1990

INTRODUCTION

I was talking to University Printer Roland Hoover one day, and he was bemoaning the lack of renditions of blackletter wood and metal type available in Macintosh format. He showed me specimen sheets of Albertus, and said, "Fleishman! Why don't you do this?" I took this to heart, and held on to the specimens.

I was still holding them in my mind's hand when the time came to consider on what to work as a senior project. These specimens offered an interesting challenge. I wanted a grounding in type design, both the composition and drawing, and the practical concerns of transferring hand work to the Macintosh environment. To fulfill both of these goals, it would have been impractical to start from scratch, because I lack the calligraphy or even drawing background to make my own alphabet and, within the scope of one term's work, integrate the manual work with the machine. To get an overview on this process, I decided to begin with Albertus.

This project can be likened to studies of Old Master drawings. In terms of modern type and typography, the Offenbacher Werkstatt designers (Albertus' designer Berthold Wolpe, Rudolf Koch, Fritz Kredel, and others) were influential in producing modern, legible faces that nonetheless retained the quality and feeling of the hand. I hoped to imitate Wolpe's mastery, and in the copying understand and gain from his surety. In transferring the type one step further — from drawings to the hand cutting the punch to the hand moving the mouse — I wanted to see if the arts and crafts feeling could be captured in this medium.

This project does not end with the exhibit or end of term. *Furioso*, as I call the type to distinguish it from Albertus, requires two to three months additional development to make it internally consistent. Although Wolpe intended the upper and lower case to have a

different weight, the degree of difference is too great for comfortable legibility. Several letters require subtle, yet time consuming revision involving output at high resolution at large sizes to refine them. Additional letters must be added as well: there are alternate versions of the J, M, Q, R, T, W, 2, 4, the ampersand, the exclamation point, and the question mark which should be available in a complete rendition. Also, the full character set for a Macintosh font needs to be developed: each appropriate vowel and consonant must be copied and have umlauts (diereses), accents, circumflexes, and other diacritical marks added; the ligatures must be incorporated (e.g., æ, fi); and the mathematical symbols must be designed from scratch (e.g., π, f). The completion of this face could easily take another six months.

The exhibit comprises two large specimen posters intended as modern-day counterparts of the metal type specimens of the past, demonstrating the use and flexibility of the type; samples of Wolpe's typography, graphic art, and type design; contemporary specimen sheets and announcements of the typeface; a summary of the drawings done by hand and on computer; specimens of the type at various sizes; and, finally, design work — some published, others mocked up — done using the type.

To avoid excessive footnotes and citation, authors and articles are noted only when directly quoted. Unless noted otherwise, most historical information and all historical captions are quoted or paraphrased entirely from the Victoria and Albert Museum exhibition catalogue of a retrospective exhibit on Berthold Wolpe, and are not cited individually. Historical information not attributed or from the exhibition catalogue was culled from sources cited in the acknowledgements and bibliography.

WOLPE

A poster designed by Wolpe announcing an exhibit at the Offenbacher Werkstatt. The type is Koch's Klingsporschrift with two lines that seem hand cut and combine features of Neuland and Albertus. Text reads, "The new collection [at] Prince-Regent-Street 3. The Offenbach Workshop. Rudolph Koch, Fritz Kredel, Karl Vollmer, Berthold Wolpe, et alia. [Dates and times.]"

Berthold Wolpe was a student of Rudolf Koch who became his close collaborator in the Offenbacher Werkstatt, along with less than a dozen other designers, including Fritz Kredel, whose collection in the Yale Arts of the Book Room includes numerous works by and on Wolpe and Koch. The workshop's intent was to show the hand at work in graphic design. Koch's aesthetic derives from his first career in a bronze foundry; he later urged Wolpe, who came to type and graphic design earlier, to learn to work precious metals as he had.

Looking at Neuland or Locarno of Koch, or Albertus of Wolpe, the cutting hand is clear to see. The edges are not smoothed down nor are the joins perfect. The beauty and usefulness of the type stems out of this quiriness. Their faces remain legible at virtually any size despite the oddities.

Wolpe began designing in Germany, working at the Offenbacher Werkstatt, teaching in Frankfurt and at the Arts and Crafts School (Hochschule für Gestaltung) in Offenbach. His printed devices and engravings have a simplicity of style that looks back, like Fritz Kredel's woodcuts, to an earlier time, but they are distinctly modern in mood. They are often whimsical in character: the "In Vino Veritas" on the vignette for a wine list; the modern symbols for those connected with the printing trade, including a griffin holding ink balls on the device for printers, and tweezers and a type stick on the one for compositors. At the time, this simple, graphic, direct style was counter to the increasing ornamentation in type and illustration, but was nonetheless admired by contemporary critical journals, such as the Penrose Annual.

Although he had already designed type-faces before going to England (such as Hyperion for the Bauergießerei), it was in 1932 that he began receiving regular commissions from "Times Roman" designer Stanley Morison of

**Die Neue Sammlung
Prinzregentenstraße 3**

**DIE OFFENBACHER
WERKSTATT**

**Rudolf Koch
Fritz Kredel · Karl Vollmer
Berthold Wolpe u. a.**

**13. April - 4. Mai
Sonntags: 9 - 13 Uhr
Dienstag - Samstag
9 - 1630 Eintritt 508**

the Monotype Corporation. Wolpe moved to England in 1935 to escape Nazi persecution, and proceeded to produce Albertus Titling (1934-5), Tempest Titling (for the Fanfare Press; 1935), Albertus Text (the lower case and modifications to the upper case; 1937-8), Sachsenwald (1938), Pegasus (1938-9), Albertus Light (1939), and Albertus Bold (1940).

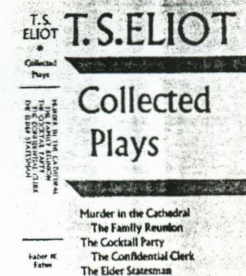
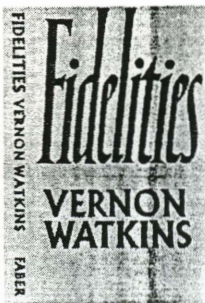
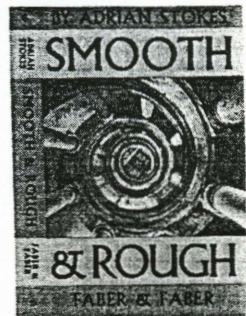
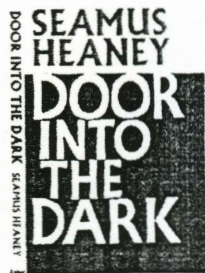
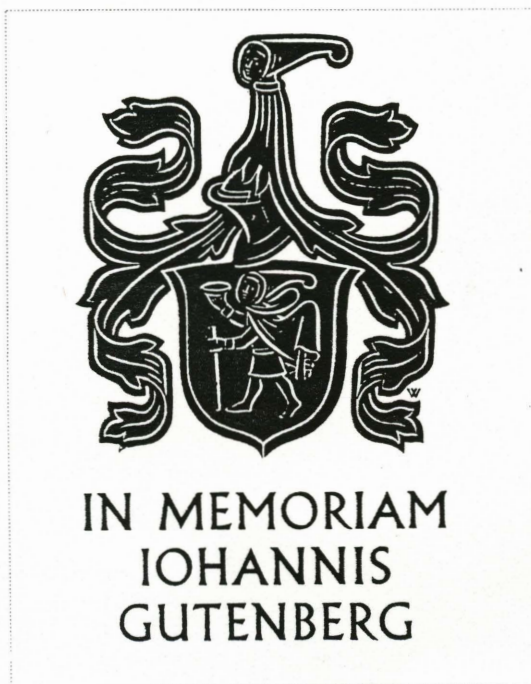
Wolpe explained the development of Albertus and his ideas on designing metal type in an article in *Print in Britain*:

"When I first came to London in the summer of 1932, I met Mr. Stanley Morison. He had seen photographs of some bronze inscriptions of mine which interested him and asked me to design for the Monotype Corporation a printing type of capital letters based on the lettering developed for these bronze inscriptions.

"I had been through a fairly thorough training in a bronze foundry and in addition

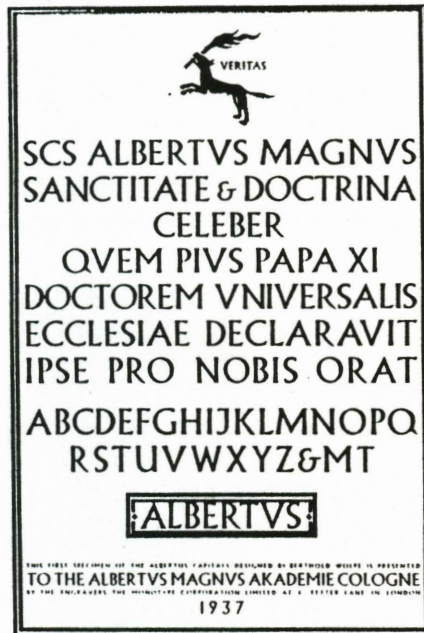


A selection of Wolpe's work. At top, a device designed for Stanley Morison which appeared on a broadsheet announcing Albertus in 1936. *First row:* vignette for a wine list, device for the Wine and Food Society, and a theater vignette. *Second row:* "Devices for Craftsmen"; the printer, the engraver, and the compositor. *Bottom row, left:* the coat of arms of the family of Johannes Gutenberg, which appeared in Signature and the Monotype Recorder in 1940. *Bottom row, right:* four selections from numerous book covers designed by Wolpe over his lifetime. He often incorporated Albertus itself or drawn letterforms resembling it into the covers.





ALBERTUS

Specimen sheets from various sources. *Top left:* Broadsheet presented to the Albertus Magnus Akademie in Cologne by the Monotype Corporation in 1937. *Top right:* from a specimen pamphlet designed by a typesetting and design house in London. *Bottom:* specimen sheets from a typesetting house.



ALBERTUS

AN ENGLISH MONOTYPE
FACE DESIGNED BY 
BERTHOLD WOLPE, BASED
ON A LETTER DESIGN USED
FOR AN INSCRIPTION ON
BRONZE. THIS LETTER IS
IDEAL FOR DESIGNERS IN
NEED OF A LETTER THAT
HAS A MONUMENTAL 
QUALITY IN LARGER SIZES

ALBERTUS NO. 481

36 POINT

ABCDEFGHIJKLMN
OPQRSTUVWXYZ&
ff fi fl ffi 1234567890\$
abcdefghijklmnopqrs
tuvwxyz .,:;'!?
The main purpose of
THE MAIN PURPOS

24 POINT

ABCDEFGHIJKLMN
OPQRSTUVWXYZ&
1234567890\$
.:;'!?
ff fi fl ffi
abcdefghijklmnopqrs
tuvwxyz
The main purpose of letters is th
e practical one of making thoug
THE MAIN PURPOSE OF LETT

18 POINT

ABCDEFGHIJKLMN
OPQRSTUVWXYZ&
abcdefghijklmnopqrs
tuvwxyz ff fi fl ffi
.:;'!?
1234567890\$
The main purpose of letters is the practical
one of making thoughts visible. Ruskin says
that "all letters are frightful things and to
be endured only upon occasion, that is to
say, in places where the sense of the inscrip
tion is of more importance than external or
nament." This is a sweeping statement, fro
THE MAIN PURPOSE OF LETTERS IS THE
PRACTICAL ONE OF MAKING THOUG

14 POINT

ABCDEFGHIJKLMN
OPQRSTUVWXYZ&
abcdefghijklmnopqrs
tuvwxyz 1234567890\$
.:;'!?
ff fi fl ffi
The main purpose of letters is the practical one of maki
ng thoughts visible. Ruskin says that "all letters are frig
htful things and to be endured only upon occasion, that
is to say, in places where the sense of the inscription is of
more importance than external ornament." This is a sw
eeping statement, from which we need not suffer undul
y; yet it is doubtful whether there is art in individual let
THE MAIN PURPOSE OF LETTERS IS THE PRACTIC
AL ONE OF MAKING THOUGHTS VISIBLE. RUSKI

Pages from the Monotype Specimen Book.

had done gold and silversmith work. Apart from this I was a student with Rudolf Koch and later became his assistant. Rudolf Koch, by the way, had a similar training and it was on his advice that I was apprenticed to the foundry. I owe Rudolf Koch, who died in April of 1934, more than I can say.

"On the bronze inscriptions mentioned, the letters were not incised but raised; in other words the background was lowered and the outline only of the letters cut in. Such a metal inscription is cut with a chisel and not drawn with a pen, which gives it sharpness without spikiness, and as the outlines of the letters are cut from outside (and not from the inside outwards), this makes for bold simplicity and reduces the serifs to a bare minimum.

"If you were to ink the inscription you could actually take an impression from it which, of course, would reverse the letters in mirror fashion. This sounds fairly easy to convert into a type, but when it came to preparing the working drawings for the cutting of the type careful adjustments had to be made to allow for a smooth working of all the innumerable combinations necessary in a printing type. The discipline involved in making an inscription is considerably less than that required for designing a printing type. But the experience gained in the one was of great help in the other. For instance, I found it justifiable to keep certain letters narrow, such as E, F, L, T, which are often used, as the visual effect is broadened by their horizontal lines. The advantage is especially obvious when these letters are doubled.

"A lot of nonsense has been talked about the fact that a printing type has to be designed in a much larger size. In my opinion it should be designed as near as possible to its actual size and then the necessary optical adjustments have to be made for the various other sizes which make up the family. In the

"MONOTYPE" SERIES No. 481
ALBERTUS

Design: Maxime

481-70 For use on the Paper Galleys Line 572

Dickens had what is called style in a DEGREE THAT IS

481-72 For use on the Paper Galleys Line 577

There are still a few indications OF CHANGES

481-73 For use on the Paper Galleys Line 582

Fashions change, and each succeeding generation has its own tastes. That is to say, of the infinite variety of combinations which the artist can make of nature's aspects, some give pleasure to one set of people at one time, some to another set of people AT ANOTHER TIME. THE MODERN ENGLISH GARDEN IS

481-74 For use on the Paper Galleys Line 587

Having arrived at our principle, we proceed to explain in what manner it can be acted upon. What is the first thing to do in order that we MAY BECOME FULLY AWARE OF ALL THE

481-75 For use on the Paper Galleys Line 592

His family has farmed the land for over three hundred years, AND ALTHOUGH HE STILL

481-76 For use on the Paper Galleys Line 597

By that time the great GREEN SLOPE THAT

ABCDEFGHIJKLMN OPQRSTUVWXYZÆ&

abcdefghijklmnpqrstuvwxyæœ

1234567890

.,:;!@'([*+}\$-£

ffrrrrrrrr

M W &

Monotype & Galleys, No. 207 102 24121

LONDON: THE MONOTYPE CORPORATION, LTD. PARIS: SOCIÉTÉ ANONYME MONOTYPE BERLIN: OFFIZIUM FÜR DRUCK-UND SCHRIFTWESSEN MONOTYPEN G. M. B. H. Printed in Great Britain

Right: samples of Hyperion (for the Bauer Type Foundry; 1932), Tempest Titling (for the Fanfare Press), Pegasus, and Sachsenwald. Below: specimen sheet of Albertus Bold Titling.

case of Albertus there was very little difference between the 72 pt. and the bronze inscriptions which set the style.

"The first size was cut in 1934 and shown for the first time as a new titling on the cover of the Monotype Recorder Book Number in the summer of 1935."

HYPERION

**TEMPEST
TITLING**

PEGASUS

ABCDEFGHIJKLMNOPQRSTUVWXYZ&ÆŒ
12345 abcdefghijklmnopqrstuvwxyz 67890

Sachsenwald and Sachsenwald Light

ABCDEFGHIJKLMNOPQRSTUVWXYZ&ÆŒ
abcdefghijklmnopqrstuvwxyz

ABCDEFGHIJKLMNOPQRSTUVWXYZ&123
abcdefghijklmnopqrstuvwxyz

ALBERTUS BOLD TITLING NO. 538

48 POINT

**ABCDEFGHIJKLMNO
PQRSTUVWXYZ&
-:;“!?” 1234567890\$
THE MAIN PURPOSE O
F LETTERS IS THE PRAC
TICAL ONE OF MAKIN**

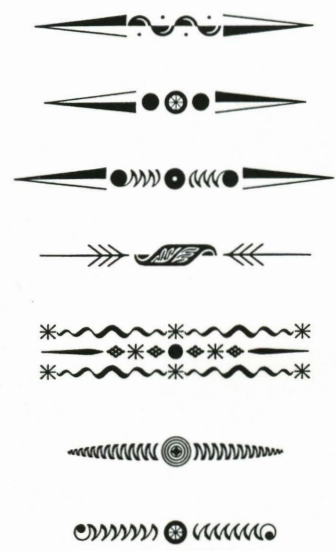
36 POINT

**ABCDEFGHIJKLMNO
PQRSTUVWXYZ&
-:;“!?” 1234567890\$
THE MAIN PURPOSE OF LETTE
RS IS THE PRACTICAL ONE OF**



Above and right top: Fanfare ornaments, cut by Monotype exclusively for the Fanfare Press. Left top: chapter introduction from the Victoria and Albert Museum exhibition catalogue of a retrospective show on Wolpe. The text and heads are in Pegasus, which had been available only in a single cut of 16 point previous to the exhibit in 1980. Left bottom: a page from the bible featuring only Wolpe's types: Albertus, Westerham Press Decorata, and Pegasus. Right bottom: "Aus den gebeten Israels" (From the Prayers of Israel). Set in 1948.

Type-design:
Albertus, Hyperion, Tempest,
Fanfare Ornaments, Pegasus,
Sachsenwald, Decorata,
and LTB Italic



ALBERTUS

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THE FIRST BOOK OF MOSES
CALLED
GENESIS

CHAPTER I

IN the beginning God created the heaven and the earth. 2 And the earth was without form, and void; and darkness was upon the face of the deep. And the Spirit of God moved upon the face of the waters. 3 And God said, Let there be light: and there was light. 4 And God saw the light, that it was good: and God divided the light from the darkness. 5 And God called the light Day, and the darkness he called Night. And the evening and the morning were the first day. 6 And God said, Let there be a firmament in the midst of the waters, and let it divide the waters from the waters. 7 And God made the firmament, and divided the waters which were under the firmament from the waters which were above the firmament: and it was so. 8 And God called the firmament Heaven. And the evening and the morning were the second day. 9 And God said, Let the waters under the heaven be gathered together unto one place, and let the dry land appear: and it was so. 10 And God called the dry land Earth; and the gathering together of the waters called he Seas: and God saw that it was good. 11 And God said, Let the earth bring forth grass, the herb yielding seed, and the fruit tree yielding fruit after his kind, whose seed is in itself, upon the earth: and it was so. 12 And the earth brought forth grass, and herb yielding seed after his kind, and the tree yielding fruit, whose seed was in itself, after his kind:

ICH ANGELOBE DICH MIR AUF IMMER, ICH
angelobe Dich mir durch Gerechtigkeit und durch Recht
und durch Liebe und durch Erbarmen. Und ich angelobe
Dich mir durch Treue und Du wirst IHN erkennen.

O HERA DER WELT, DER KONIG SCHON WAR,
eh Irgend ein Geschöpf erschaffen ward! Als durch seinen
Willen das All entstanden war da wurde König er genannt.
Und wenn in künftiger Zeit das All vergeht, auch dann wird
er noch König sein, er allein als der Erhabene. Er war, er
Ist, und er wird sein in Herrlichkeit. Er ist einzig, und kein
Zweiter ist, der ihm zu vergleichen oder ihm zuzugesellen
wäre. Ohne Anfang ist er und ohne Ende, sein ist die Macht
und Herrschaft. Er ist mein Gott und mein lebendiger Erlöser,
mein Hort und mein Teil in der Zeit der Not. Er ist meine
Fahne und meine Zuflucht, mein Keld, so oft ich zu ihm
rufe. In seine Hand befehle ich meinen Geist, ob ich schlafe
oder wache. Und mit dem Geist auch meinen Leib, ER ist
mit mir, ich fürchte nichts.

MEIN GOTT, DIE SEELE, DIE DU MIR GEGEBEN
hast, ist rein. Du hast sie geschaffen, Du hast sie gebildet,
Du hast sie mir eingehaucht, Du behütet sie in mir, Du
wirst sie einst von mir nehmen und sie mir wieder zurück-

ABCDEFGHIJKLMNOPQRSTUVWXYZ
 abcdefghijklmnopqrstuvwxyz &
 !?1234567890.,;:'"“”“()

Top: specimen of Adobe System's Friz Quadrata. Right: a logo designed with Friz Quadrata, and then the same logo with Albertus. Below: a typical ad composed with Friz Quadrata.

KNIGHT·RIDDER

KNIGHT-RIDDER

Friz Quadrata, designed by Ernst Friz, was released by the International Typeface Corporation in 1965. He drew only the weight shown here; the release text mentions that he "allowed" the italic and other weights to be drawn by ITC.

The influence of Albertus is apparent in many of the letters, especially the C, E, F, G, L, Z, b, d, p, q, and 7. Friz Quadrata sits less solidly than Albertus; for example, it lacks the square baseline joints between and terminating the diagonal strokes (cf. K, M, N, R, V, W, k, v, and w) which provide a strong visual relationship between diagonal and vertical strokes.

Friz Quadrata lends logos a distinctive look (as in "Shoe-Town" and "Knight-Ridder"), but when compared to Albertus/Furioso it looks frail and overornamented.

BEAUTIFUL
 BRAND NAMES
 AT BEAUTIFUL
 GRAND
 OPENING
 PRICES.

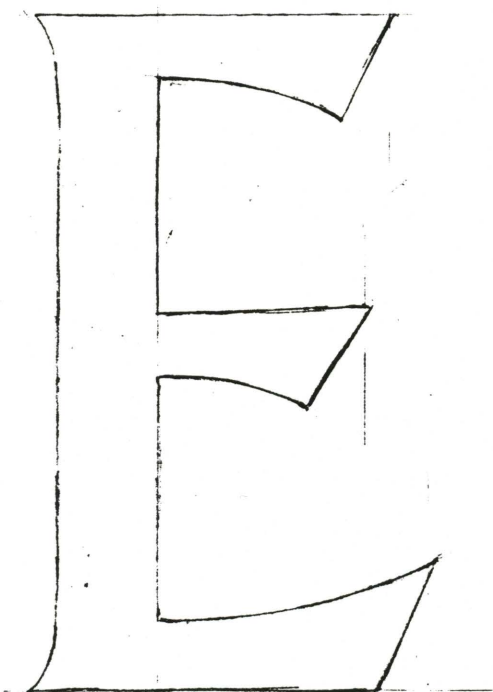
20% OFF
 ENTIRE STOCK.

GRAND OPENING SALE ENDS MARCH 28.

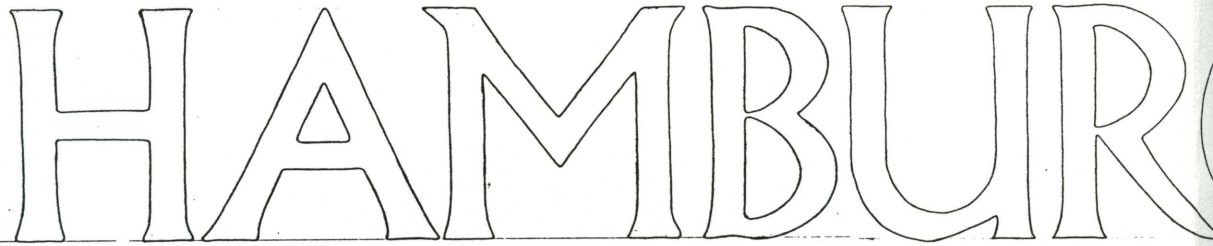
SHOE-TOWN
 BEAUTIFUL BRAND NAMES. BEAUTIFUL PRICES.

Other Participating Stores: Bensford • Bristol • Danbury • Fairfield • Hamden • Orange • Shelton • Stamford • Westport

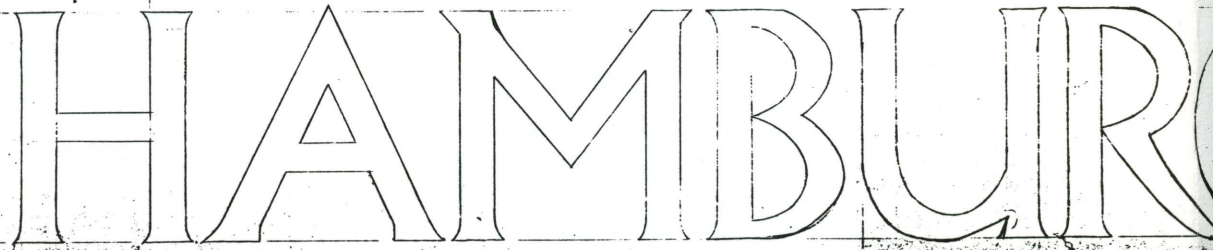




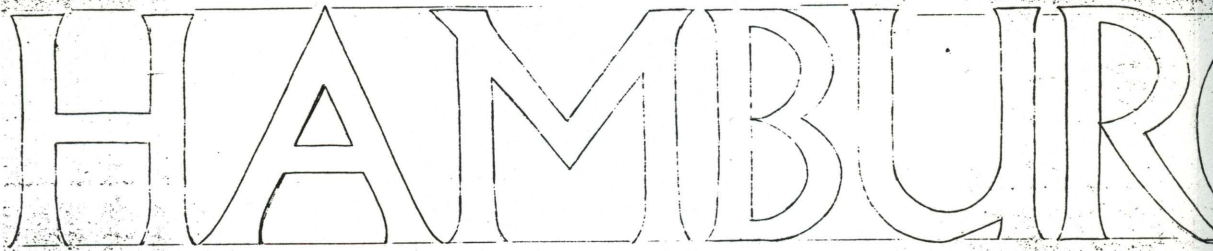
This project began by taking specimen sheets showing 36 point Albertus Titling and Text and enlarging them to about four inches in height to serve as templates to draw from. The first six weeks were spent drawing the letters in various ways: the refined drawings at right, which were worked and reworked in pencil over the course of a week; two larger drawings in plaka, which were used as studies; and sketches, including a large sheet on the B.



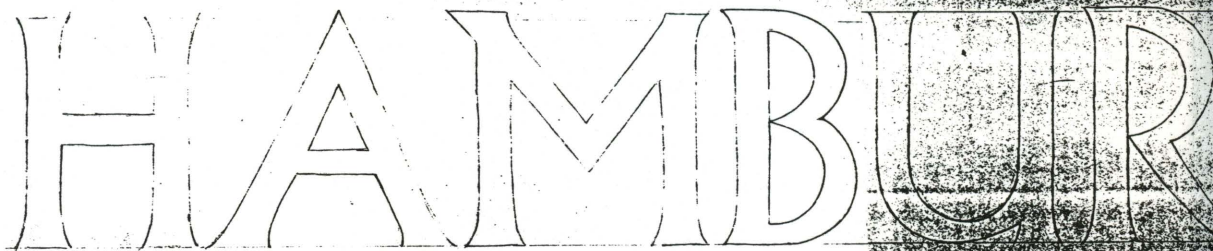
HAMBUIR



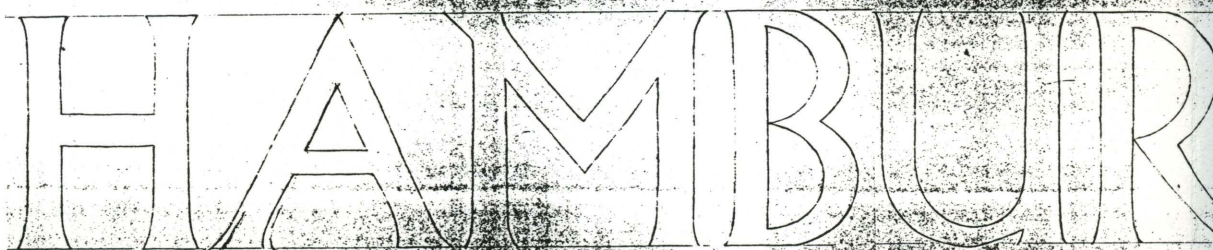
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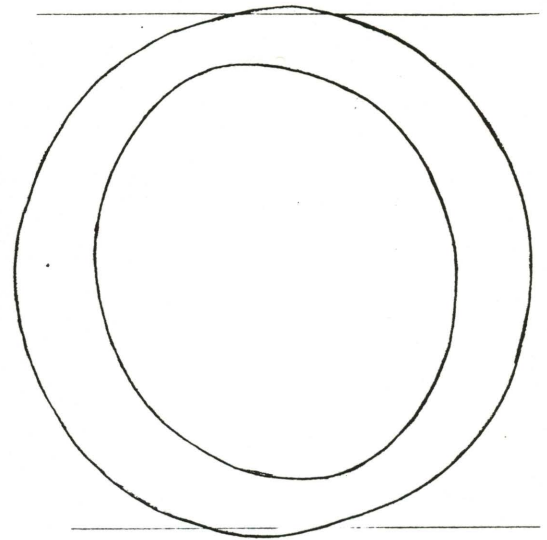
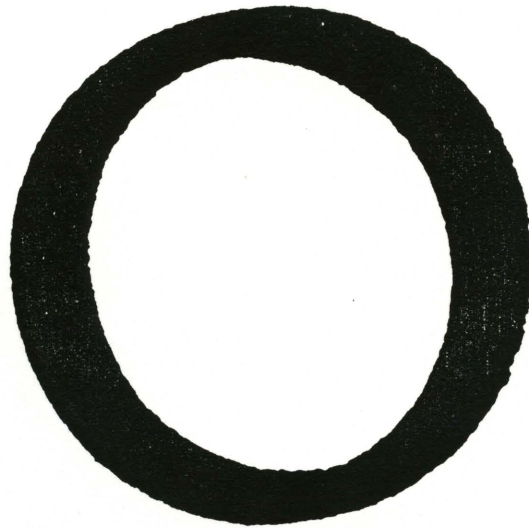
GEVONTS

GEVONTS

GEVONTS

GEVONTS

GEVONTS



Four renditions of the Albertus O. From left to right: a reduction of the original photography the O was traced from; the drawing of the O in the first week; the sixth week of drawing the O; a low resolution output of the O's outline.

"God is in the details."

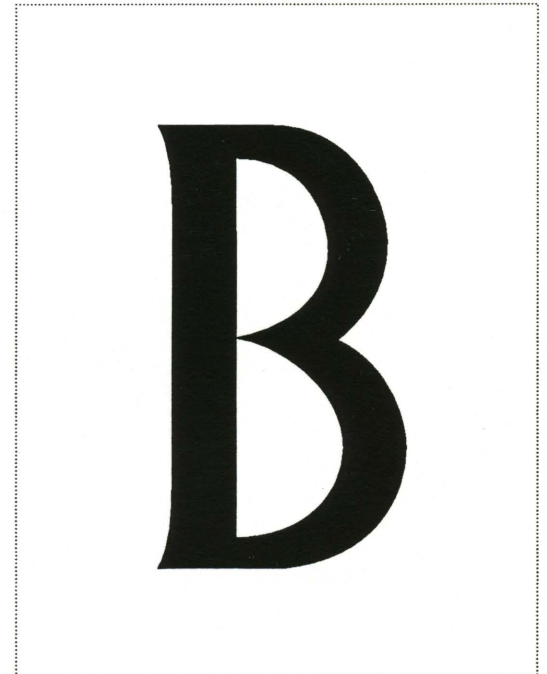
A famous aphorism, and thoroughly applicable to type design. One might rephrase it, "Type is in the details." I found that through repeated drawings by hand, and then repeating this process using a mouse, that the best things about Albertus lay in those parts which were the most difficult to reproduce and determine.

The O is a perfect example. The axis of symmetry of the face is about 15%, but instead of having a mostly symmetrical makeup, such as in the O of Baskerville or other transitional faces, the Albertus O is measurably uneven. As the strokes of the curves narrow at the axis, the outer sides of the strokes flatten in different ways on top and bottom, while the interior curves come to almost points. The effect is of two separate, slightly different curves being joined. This was one of the most difficult letters to reproduce, because of the necessity of having curves that bow outward like the ends of an almond, but still retain a flow from one into another.

The B was the most difficult of the alphabet. The counterforms have a strange property of starting their curves almost flat, but with a subtle climb; they are almost symmetrical vertically, but have many difficult differences.

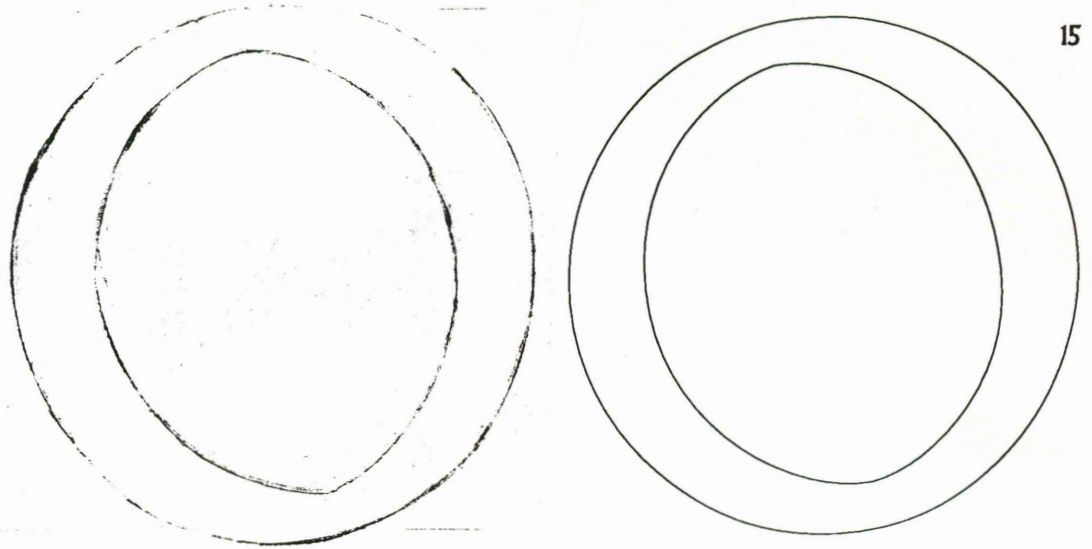
I had to make choices about these and other letters to make this a usable Macintosh typeface. In some places, curves are regularized. I decided early on to make the seemingly straight lines, which are actually curved by fractions of a degree, actually straight. One reason for this is output: when the face goes from its vector-representation in PostScript to an actual output device, slight curves make the type blocky at even moderate point sizes. This problem is apparent mostly on laser-printer (300 dot per inch output) but can be seen even on imagesetters (1200 dpi and up).

In the process of drawing the type, I dis-



covered inconsistencies in the lower case, especially in the d, e, g, and y. The g and y's descenders had strange cuts, instead of the curves found elsewhere in the case. Looking at the earliest specimens, I see this was a feature of the face. It was pointed out to me by a colleague and friend of Wolpe's that the type would have been looked at and critiqued thoroughly by Stanley Morison, so the inconsistency was intentional. However, I felt it interfered with the rhythm of the type, and reworked those portions of the letters. The d and e each had one extremely thin strokes, and the d contained a strange join where the bottom of the bowl met the stem. The strokes were made slightly thicker, and the odd join was brought in line with the rest of the case's joins for the same reason as the changes with the g and y.

I felt strange making modifications to the type. If this project is the equivalent of Old



Master studies, then I was attempting to improve on Vermeer. But this is not a perfect copy, nor could it be. It would be possible to take a perfect specimen sheet of Albertus, scan it in on a Scitex or other very-high resolution scanner, and use automatic routines and little touch-up to draw the outlines of the type. This would result in accurate translations. My project was to work through the problems of type design, however, not to imitate an automatic mechanical process. I had to accept, on the one hand, Wolpe's aesthetic insofar as the overall purpose and feeling of the type was concerned; on the other hand, in order to

evaluate my own success in redrawing each letter, I was relying on a personal aesthetic. Therefore, I concluded that it is not inaccurate to rework aspects of the type that are inconsistent or unsuccessful.

I have an enormous respect for Wolpe and type designers in general after undertaking this project. I understood before the amount of work it required to make a face useful, pleasing, and consistent, but it was not experiential knowledge. This type will be the first of many I work on; I may attempt future reproductions, but more likely, the next face I do will be from scratch.



Figure 1. General character editing shown with the PostScript lines for ü.

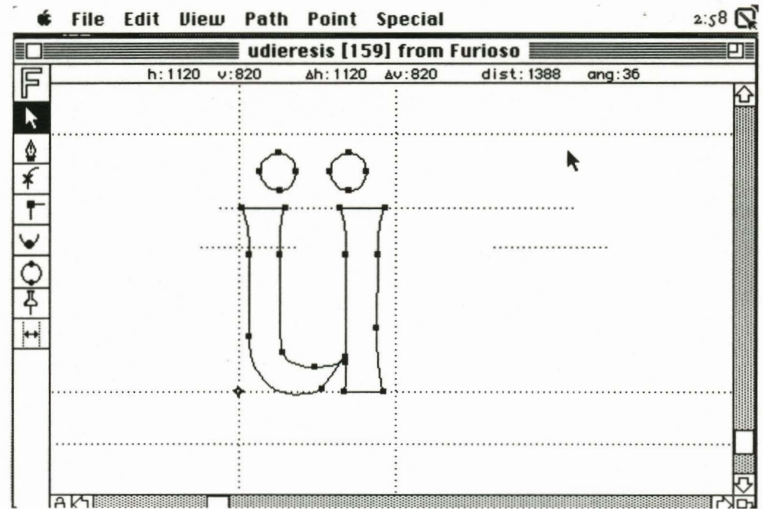


Figure 2. Entire alphabet display.

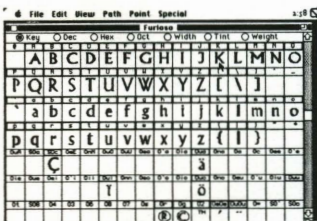


Figure 3. Font attribute display.

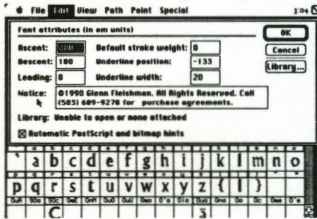


Figure 4. Metrics display.



Figure 5. 800% display of G stem.

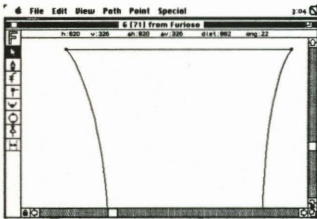
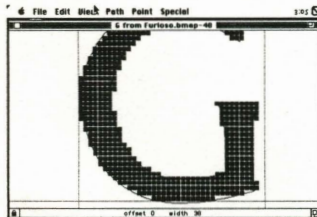


Figure 6. Bitmap editing window.



Fontographer functions in an analogous manner to drawing by hand. Everything is vector-oriented, so size is completely relative. The smoothness of curves is dependent solely on the resolution of the output device, not on the original drawing in the machine.

I began by scanning in the best of the pencil drawings of the thirteen capital letters at 200 dpi. I then scanned in a high quality specimen sheet of Albertus Titling and Text (48 point) at 300 dpi, due to its smaller size. These drawings were highlighted and copied to the Scrapbook one by one.

The template on Fontographer was created by measuring the baseline to capital height and to descender, and calculating this in proportional units. The scanned-in letters, figures, and punctuation were copied again one by one from the Scrapbook into the background of each individual character. The scans were scaled and rotated to their proper positions.

Using various drawing tools and views from 50% to 800%, the characters were refined. I constantly output a selection of sizes (an automatic feature; see Fig. 7 caption) as feedback to fix errors.

I spent approximately five hours a day for two straight weeks generating the penultimate draft of Furioso; I could easily have continued this process for two months and still have more refinements to add. After consulting with my senior project advisor Min Wang and others, I made a number of revisions and generated the final draft.

Fig. 1. The basic character grid with PostScript curves and lines. Points are represented as curves, corners, and tangents. Curves are represented by a type of spline called a Bezier curve. The Bezier curve is easily calculated, and therefore ideal for the number of calculations which must be performed to output each character. Corners are formed by two straight lines, and tangents by a straight line becoming a curve. Corners have no Bezier control handles, while tangents have only one.

Fig. 2. The display of the full alphabet. The display gives the key-access sequence for each character (i.e., pressing option or shift when necessary) and displays small bitmaps of all completed characters.

Fig. 3. Font attributes dialogue box. Ascent, descent, copyright notice and other technical details are set here.

Fig. 4. Both the width of each character and kerning are set from the Metrics display. Moving the line to the right of each character changes the characters width; holding option and moving the line changes its distance from the next character to the right.

Fig. 5. Fontographer will display up to 800% views of each character. This is the stem of the G at 800%.

Fig. 6. The program also produces bitmap fonts for screen display. They are created by specifying under a menu the point sizes desired. They may be edited in an environment shown in this figure.

Fig. 7. For testing the font, various output options are possible. Individual characters filling whole sheets or at various sizes may be printed; or text or PostScript files can be output. Additionally, the kerning tables set up under Font Metrics can be generated to fine tune.

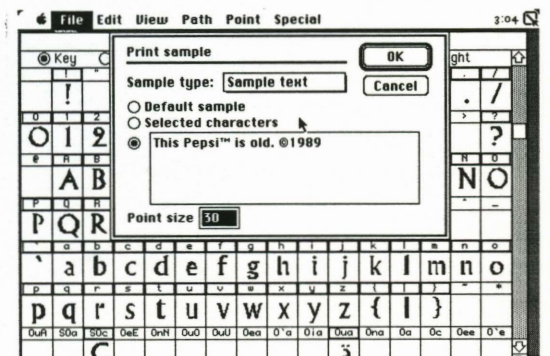


Figure 7. Print dialogue box.

SPECIMENS

12 point

EACH STUDENT IN YALE COLLEGE IS REQUIRED AS A CONDITION OF ENROLLMENT TO COMPLY WITH THE UNDERGRADUATE

14 point

REGULATIONS. THE UNIVERSITY EXPECTS STUDENTS TO BE FAMILIAR WITH THE UNDERGRADUATE REGULATIONS,

18 point

AND TO KEEP A COPY OF IT FOR REFERENCE DURING THE COURSE OF THE ACADEMIC

24 point

YEAR. AN ASSERTION OF IGNORANCE OF ANY OF THE RULES

30 point

PUBLISHED HEREIN WILL

36 point

NOT BE ACCEPTED AS

42 point

AN EXCUSE FOR

48 point

ANY VIOLATION

52 point

OF THEM. NO

60 point

STUDENT OR

66 point

STUDENTS

72 point

SHOULD...

12 point

2. Noise. Excessive noise is a particularly serious offense against other members of the community. Students must use amplifiers, hi-fi sets, musical

14 point

instruments, radios, TV sets, and the like, with consideration of other residents of the entry, of the College or dormitory, and of

18 point

the community. At no time may such instruments be played inconsiderately. Almost always they

24 point

ought to be played with doors and windows shut in order not to disturb

30 point

others. Millions of years of

36 point

evolution have not

42 point

equipped the human

48 point

ear to withstand

52 point

the excessive

60 point

amplification

66 point

of sound that

72 point

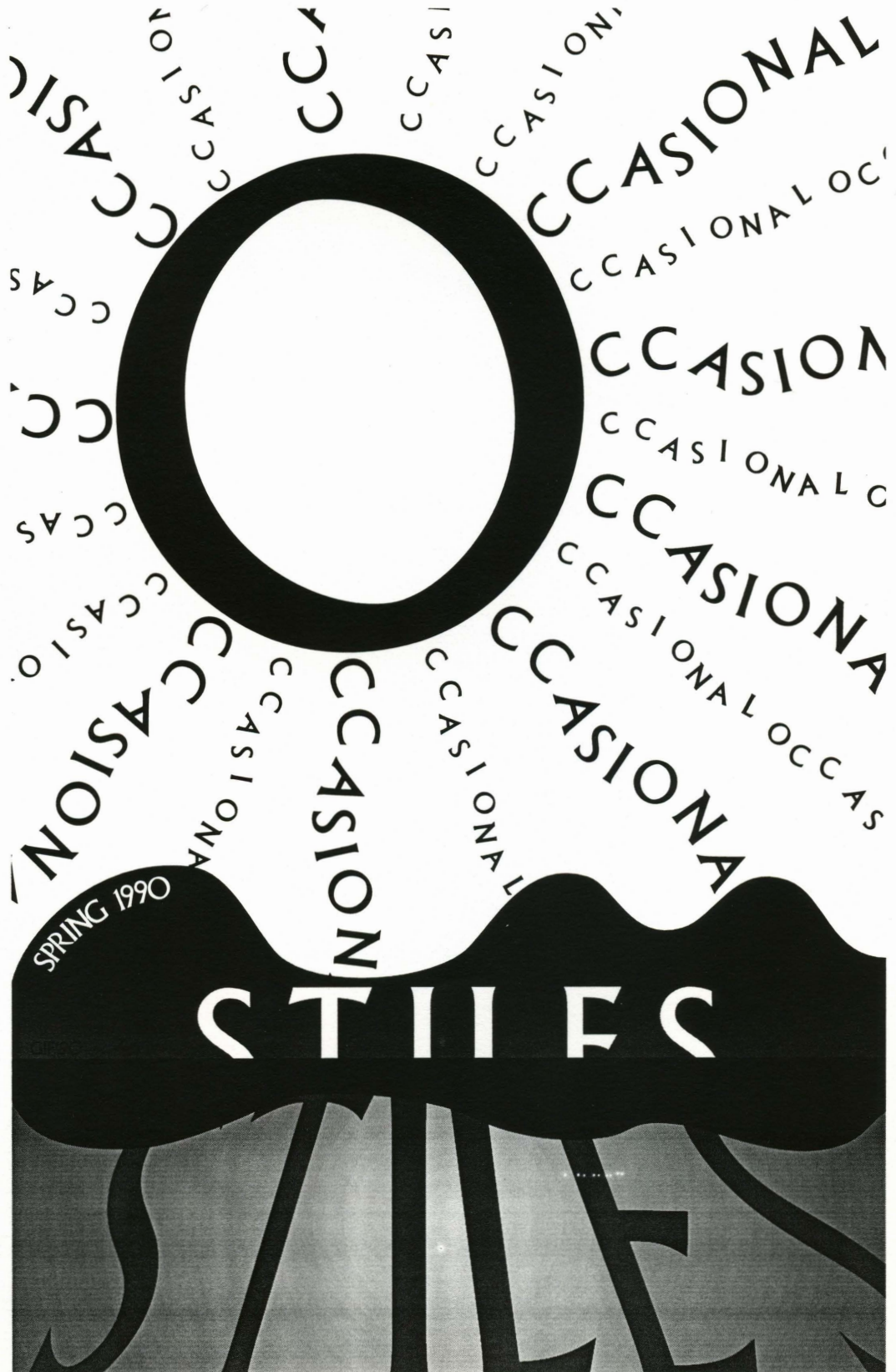
is possible...

USES

This page: cover designed for the Ezra Stiles College literary magazine *Occasional Stiles*. Because it was intended for a very small audience (less than 400), there was no danger of it being unidentifiable, even with the distorted type.

Facing page: a single page from the Ezra Stiles College Senior yearbook *Moose Calls*. As in this book, the body copy is Adobe Stone Sans. All headings are in Furioso.

Page 26: A reduced version of one of the large specimen posters accompanying the senior project exhibit.



INTRAMURALS: THE QUEST FOR TYNG

History

The Intramural office was stunned by my simple request: "When," I innocently asked, "was the last time Stiles won a Tyng cup?"

"Two years ago" was the sarcastic reply.

"No," I stumbled, "when was the last time we won it before we got good at sports, you know, prehistoric stuff."

"Well, I'll look." Two minutes later and after a lot of paper rustling she came back. "I'm sure it must be here somewhere, I'm looking at the record from 1939 on." More paper shuffling. Then, "Oh, 63."

"63?"

"Yea, 'Ezra Stiles, 1963', that's what it says."

63?? 1963??? When the Beatles were 19, Kennedy was still alive, and the Berlin wall was just being finished?

That 1963?? Yale wasn't even Co-ed! "Wow," I said, "what happened after that?"

"Nothing" she replied.

"Nothing?" I stammered,

"Yea that's it until you did it two years ago."

Well, we must have been alive during that time. I tried again to reaffirm that Stiles did have a history, "Did we have any runs at it? Where there any spectacular finishes?"

"Nope" came the damning words, "It looks like you were out of it."

A terrible vision came across my mind, "Are you saying that for 25 years Stiles was as bad as Trumbull?"

"Well, you had some championships, but that about it."

Things looked bleak for the cover article all about Stiles intramurals. If the only action was during the four years that we've all lived here, did I want to

bore everybody telling them all about it? There had to be some light in the dark ages of Stiles Intramurals. Poking further around the haunts of the Intramural office I discovered some clues. An old Polaroid of Skip Ott, the trainer, a Stiles Captain whose team won a Hockey championship surfaces. Skip can't remember how old it is, but he looks almost young. Then the story of Pete Crow, the Crow's namesake, turned up. The Stiles Intramural Crow was the newsletter that got bumped when the *Herald* started doing weekly articles. It seems that one night in January the providence of the Lord, or the fact that Pete had forgone his usual Coors before the game, allowed him to reach a loose puck, not trip on the blue line, and make the shot that turned Stiles around. Two years later, our Freshman year, Hockey had a winning season, and Stiles moved to third place in the Tyng standings. Under the guide of three dedicated Secretaries and backed by our Master, who in his second year began to assert the full power of the office, Stiles rocketed to a 200 point victory in '88.

So here we are in 1990 again doing well in Tyng. For whatever reason, the last four years have been the best in Stiles' history. We've got Stilesians of all kinds out there looking for a good time and fighting for the pride of their college all through the year. While the first time we won Tyng may have been caused by freak fumes in the not quite dry plaster of Stiles, or perhaps some reappportioning blunder, the teams featured in here are representative of the Stiles community itself. Its spirit and energy have taken us to victory, but more importantly they have brought us good times that we will remember fondly, and that future Stilesians came look back on as the glory years.

— compiled by Matt Turner

SYNOPSIS IN 24 POINT

ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz&
1234567890 .,:!?"'""[]{-

18 POINT

DEXTERITY IN THE VOCATION OF TYPESETTING SHOULD
BE ACQUIRED BY ALL JUDICIOUS AND ZEALOUS WORKERS

Wherever the sizes of types must fixed quickly for a job, tables which give
the average number of lowercase letters to a line will prove extremely useful

30 POINT

WE HAVE EQUALIZED OUR JOBS FOR WORK
EXCEPTING THOSE WHICH ARE OVER THERE

Much too often people having read books just lay them aside
without ever realizing the excellent quality of their production

48 POINT

TWO OF THE DOCUMENTS JUDGED
HAVE RECEIVED NUMEROUS PRIZES

The bank recognizes these claims as quite valid
and just, so we are expecting prompt payment

72 POINT

THE RAIN IN SPAIN SHOULD
FALL MAINLY ON THE PLAIN

The views expressed to us in no way
represent any of their true intentions

848 POINT

FURIOSO

SPECIMEN OF FURIOSO PRODUCED IN SPRING 1910

SOURCES

I cannot thank my senior project advisor Min Wang enough for his support and critique throughout this project. Without him, this project would have been impossible. I would like to thank John Gambell for serving as my general advisor over the last year, and specifically for — rightly! — calling me to task when I plead time constraints and production problems as an excuse for falling short. The reminiscences of Greer Allen and his critique of a much shortened version of this essay were instrumental in the writing of the portion of the text on Wolpe's work and collaboration with Koch. This project would have never started without specimen sheets supplied by Roland Hoover and his encouragement in undertaking this project, and the type is obliquely named in his honor ("[Orlando] Furioso" or "The Song of Roland"). I would like to thank Gay Walker and the Arts of the Book Room staff for their abundant help, and for allowing me to browse through the magnificent Fritz Kredel Collection in search of bits of Wolpe; Frank Tierney and John Moran of the Yale University Printing Service for generously aiding me in the production of image-setter output; Charles Altschul for his advice on Fontographer; Jackie McGuire and Brian in the Graphic Design/Photography office for helping me track down some of the above-mentioned people; *The Yale Herald* for graciously allowing use of their office and equipment towards this project; Jamison Williams and *Moose Calls*, David DeRose and the Theater Studies Program, Baker Mallory and *Occasional Stiles*, Ernie Barbarash and Christy Smith and the *Tartuffe* gang, Paula Yoo, and David Feiner and The Branford Dramat for being client/guinea pigs, and allowing me to experiment with practical uses Furioso of on their behalf; Chris Holbo, for being the first designer besides myself to use Furioso; Alvin Eisenman for his input and exact knowl-

edge of where to find specifically useful printed pieces; my parents and grandparents for their support, and to whom I have totally failed to adequately convey any idea of what this senior project has been all about; and Sarah R. Cohen, Lewis Jones, Rick Loftus, John "Furioso" Martin, Melissa Pozsgay, and Ethan Robey for their critique and support throughout.

Printed Sources

Books

A retrospective survey: Berthold Wolpe. London: Victoria & Albert Museum: Faber & Faber, 1980).

Journals

The Monotype Recorder, London.

The Penrose Annual, New York: Hastings House.

"Rudolf Koch, Designer of Letters" by Dr. Julius Rodenberg. Vol. 37, 1935.

"German Typography Today" by Gustav Stresen. Vol. 39, 1937.

"Necessities and Novelties" by Robert Harling. Vol. 39, 1937.

"Victorian Revival" by Robert Harling. Vol. 41, 1939.

Signature, London.

"A New Titling" (Anonymous). No. 3, July 1936.

"Berthold Wolpe" by Nicolette Gray. No. 15, Dec. 1940.

Illustrations

Culled from sources above and typesetting house specimen sheets and pamphlets.