<table>
<thead>
<tr>
<th><strong>Title</strong></th>
<th>Type composition and method.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Author(s)</strong></td>
<td>Rahmat Ramly.</td>
</tr>
<tr>
<td><strong>Date</strong></td>
<td>1991</td>
</tr>
<tr>
<td><strong>URL</strong></td>
<td><a href="http://hdl.handle.net/10220/2702">http://hdl.handle.net/10220/2702</a></td>
</tr>
<tr>
<td><strong>Rights</strong></td>
<td></td>
</tr>
</tbody>
</table>
Type Composition And Method

By

Rahmat bin Ramly
Type Composition and Method
by Rahmat bin Ramly
Definition of Type Composition

The process of arranging type images in a pleasing and attractive form while delivering the essence of the message.
Terminiologies

**Typeface** - the different forms and style of type.

**Family of type** - the different names given to the different form and style of type.

**Fonts** - a complete set of type consisting of upper and lower cases alphabets, numerals, ligatures and symbols.

**Points** - measures the size of types

**Leading** - spacings between lines of types

**Measures** - lengths of types measured in picas (1" = 6 picas; 1 pica = 12 points)

---

**ATTENTION:** The Singapore Copyright Act applies to the use of this document. Nanyang Technological University Library
language of type

The x-height of a lowercase (or small) letter is the vertical dimension of the letter between the so-called mean line and the baseline.

Ascenders are the parts of lowercase letters that stick up above the mean line, and descend­ers are the parts of letters that hang below the baseline.

There are two basic kinds of letterforms: serif and sans serif. Serifs are the little feet at the ends of strokes of letters. Serifs create a consistent horizontal direction at the ends of strokes.

Sans is the French word for without. Sans serif type is therefore type without serifs. Notice that sans serif type does not tend to show the same contrast of thick and thin strokes found in serif type.
Cheltenham Light
Cheltenham Light Italic
Cheltenham Book
Cheltenham Book Italic
Cheltenham Bold
Cheltenham Bold Italic
Cheltenham Ultra
Cheltenham Ultra Italic
Cheltenham Light Condensed
Cheltenham Light Condensed Italic
Cheltenham Book Condensed
Cheltenham Book Condensed Italic
Cheltenham Bold Condensed
Cheltenham Bold Condensed Italic
Cheltenham Ultra Condensed
Cheltenham Ultra Condensed Italic

The complete font of ITC Cheltenham family

abcdefghijklmnopqrstuvwxyz
ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
ABCDEFGHIJKLMNOPQRSTUVWXYZ
caps
small caps
numerals
ligatures
fractions
punctuation marks
Dingbats and symbols

A font contains all the characters of a particular

typeface, which can include all uppercase (capital

or caps) and lowercase letters and small caps. A

font also includes ligatures (joined letters), fig-

ures, fractions, punctuation marks, and symbols.

There can be from 26 to possibly 450 characters in

a complete font.

A type family is made up of a series of fonts,

generally including regular, light, bold, extra bold,

italic, condensed, and expanded faces. A type

family can include additional variations such as

outline and contour faces.
There are 12 points to a pica and almost 6 picas to an inch (72 points to an inch).

Because there are 12 points to a pica, the 12 scale on a Haber rule doubles as the pica scale.

What, art thou drawn among these heartless hinds?

This line of type is set \times 26$ picas.

**Points and Picas**

All type measurements are described in units called *picas* and *points* (abbreviated pi and pts.). We say that 6 picas equal one inch. There are 12 points to one pica. Being the smallest unit of measurement, points are usually used to describe the height of type. Being the larger unit of measurement, picas are used to describe line lengths. A line measuring 30 picas is written \( \times 30 \) and is read "by 30."

A Haber rule is a tool used to measure type. It contains scales that indicate various increments of space, and later you will learn how to use it.

An item worth noting: While it's okay to say that 6 picas equal an inch, they don't really. Actually, 6 picas measure only $0.9961$ inch, a discrepancy that becomes evident on dimensions over 10 inches.
Line spacing refers to the amount of space inserted between lines of type. It is also called leading (pronounced "ledding") because when metal type was commonly used spaces between lines were created by inserting pieces of lead between rows of type.

Leading is measured from baseline to baseline, or b/b, and is indicated in points. For example, 10 point Cheltenham with 2 points of space between lines is written as 10/12 Cheltenham.

Four points of space would be written as 10/14 Cheltenham. These instructions are read as "10 on 12" and "10 on 14" Cheltenham. When no leading is inserted, we say "10 point Cheltenham solid," which is written as 10/10 Cheltenham.
I must dance barefoot on her wedding day, and, for your love of her, lead apes in hell.

I must dance barefoot on her wedding day, and, for your love of her, lead apes in hell.

I must dance barefoot on her wedding day, and, for your love of her, lead apes in hell.

I must dance barefoot on her wedding day, and, for your love of her, lead apes in hell.

I must dance barefoot on her wedding day, and, for your love of her, lead apes in hell.

Most of the examples above are 10 point type. Can you identify the two 9 point samples? It is the apparent size of a typeface that is important, and this is based to a great extent on the size of the x-height.

According to traditional practice, type size is identified in points. Ideally, the point size of a typeface should be determined by measuring the vertical distance from the tops of the ascenders to the bottoms of the descenders, and many contemporary typesetting systems are standardizing this practice. But this dimension may not always be an accurate indication, so don’t rely on it. Your best guide is seeing a type sample.

Even if the distance between ascenders and descenders is the same among typefaces, their x-heights will cause one face to appear larger or smaller than another. A 10 point typeface with a large x-height looks bigger than a 10 point typeface with a small x-height.

Traditionally, display type refers to type 18 points and larger, while smaller type is called text type.
Various means of type composition

HOT TYPE COMPOSITION

* Also called three dimensional type composition
* Craft oriented, used only in small jobbing printing or high quality and craft conscious book printing.
* Relief printing type characters are casted from molten alloy consisting of a mixture of tin, lead and antimony.

COLD TYPE COMPOSITION

* Also called two dimensional type composition.
* Suitable for mass-production and non-relief printing process such as lithography and gravure.
* Composition is produced on paper or on film.
Cold Type Composition

Impact or strike-on composition

Image is transferred mechanically by physically punching the character/s onto one-time plastic/ carbon ribbon to paper or direct-image offset plates or master.

eg. Underwood, Cannon, Olevetti, IBM, Varityper
Photosetting

Images of type characters are produced in desired sequence on phototypesetting paper or on film by light projection.

Product

Paper  -  Resin Coated sensitized paper  -  for text
        -  Stabilization Paper  -  for text and tone

Film  -  Negatives
       -  Positives
Fig. 5-73. Simplified schematic showing how phototype is produced on a phototypesetting machine.

Fig. 5-112. A typical basic installation of a separate-entry second-generation phototypesetter. One or more keyboard machines produce punched or magnetic tape, which is fed to the phototypesetter for typesetting. A stand-alone processor develops the phototype composition.
Phototext typesetting

* Can set entire pages or galley lines fully hyphenated and justified

* Point sizes ranging from the smallest to 96 pts.

Can be categorized into 5 categories according to stages of development

* First Generation - entirely mechanical in operation and basically consisting of hot metal machines converted into photo units by replacing the mould with film master and the fluid alloy with a photo exposure device.

* Second Generation - an electro-mechanical machine consisting of a computer which interprets phototypesetting command signal and automatically directs the mechanical character exposure system. Characters are generated by projection of xenon light through a film negative onto film or paper. Hyphenation and justification done with the assistance of microcomputer.

  a) Direct entry machine

  b) Separate entry machine

* Third Generation - machine using cathode-ray tube technology; Fully electronic and computerised in operation; All composition automatic, hyphenated and justified;

Character images are displayed on the screen of a CRT then projected onto film or paper, speed 4000 or more characters per second.

Type is stored in a master type font and digitally encoded on a magnetic disc or drum.
Fig. 5-124. Schematic representation showing how the third-generation phototypesetter generates dot-mosaic type characters from digital storage, to CRT display, and onto the phototypesetting paper or film.

The imaging system of the Monotype Lasercomp, a fourth-generation laser imagesetter.
Fourth Generation—equated with laser photosetting:

- Fully electronic and computerised.
- No photographic fonts are used.
- Fonts are digitally coded and stored in magnetic disc.
- Uses precision optical laser.
- Generate characters directly onto paper or film.
- Hyphenation and justification is computerised and automatic.

Fifth Generation—equated with using fiber optics technology (still debatable).
## Configuration of a modern Phototypesetting Process

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>INPUT</td>
</tr>
<tr>
<td>2.</td>
<td>COMPUTING</td>
</tr>
<tr>
<td>3.</td>
<td>EDITING/CORRECTION/MAKE-UP</td>
</tr>
<tr>
<td>4.</td>
<td>OUTPUT</td>
</tr>
</tbody>
</table>

(1) - (3) - These are the front-end areas.

(4) - Back-end or output.
Methods of Inputting

- Direct Keypointing
- Paper tape
- Magnetic tape
- Floppy disc
- OCR Scanning
- Telecommunications
- Word Processing Interface
- Voice-input (at an experimental stage)
Computing

Sorting

Processing

Formatting

Hyphenation and Justification

Spelling Check
Editing/Correcting/Make-up

Intelligent VDU

Text Recall - for correction, adding, and page make up.
Types of Configuration

1) Stand Alone

2) Dispersed
   - Offline inputs
   - Online inputs

3) Newspaper system
   - Extension of (2)
   - Bigger system
   - Incorporating communication, page makeup, line printer and digitizing
CONFIGURATIONS

These are the principal system configurations used. Overlaps between them are of course possible.

a. STAND-ALONE SYSTEMS

KEYBOARD

<table>
<thead>
<tr>
<th>COMPUTER</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHOTOSETTING UNIT</td>
</tr>
</tbody>
</table>

b. DISPERSED SYSTEMS

1. Off-line input

KEYBOARD 1

<table>
<thead>
<tr>
<th>paper tape/mag tape/ floppy disc</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMPUTER</td>
</tr>
<tr>
<td>PHOTOSETTER</td>
</tr>
</tbody>
</table>

KEYBOARD 2

<table>
<thead>
<tr>
<th>paper tape/mag tape/ floppy disc</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMPUTER</td>
</tr>
<tr>
<td>PHOTOSETTER</td>
</tr>
</tbody>
</table>

KEYBOARD 3

<table>
<thead>
<tr>
<th>paper tape/mag tape/ floppy disc</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMPUTER</td>
</tr>
<tr>
<td>PHOTOSETTER</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>EDITING/ CORRECTION TERMINAL(S)</th>
</tr>
</thead>
</table>

2. On-line input

KEYBOARD/Terminal 1

<table>
<thead>
<tr>
<th>COMPUTER</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHOTOSETTER</td>
</tr>
</tbody>
</table>

KEYBOARD/Terminal 2

<table>
<thead>
<tr>
<th>COMPUTER</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHOTOSETTER</td>
</tr>
</tbody>
</table>

KEYBOARD/Terminal 3

<table>
<thead>
<tr>
<th>COMPUTER</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHOTOSETTER</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TELECOMMUNICATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>copy from remote locations</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LINE PRINTERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>for proof correction</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MAKE-UP TERMINALS/ GRAPHICS TERMINALS</th>
</tr>
</thead>
<tbody>
<tr>
<td>for display</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DIGITISER</th>
</tr>
</thead>
<tbody>
<tr>
<td>for half-tones</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PHOTOSETTER</th>
</tr>
</thead>
<tbody>
<tr>
<td>for final output</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>COMPUTER</th>
</tr>
</thead>
<tbody>
<tr>
<td>with disc storage</td>
</tr>
</tbody>
</table>
Fig. 5-113. A fully electronic (computerized) phototypesetting layout from entry of copy to phototype output as would be used, for example, in a newspaper office. This layout is typical for separate-entry second-generation, third-generation, and fourth-generation phototypesetters.
A typical DTP system with graphics facilities is shown below diagrammatically.
The most popular DTP page make-up packages are PageMaker, Ventura and Quark Xpress. Broadly, PageMaker is recognised as more suitable for individual page design, Ventura for long documents and Quark Xpress for applications requiring more sophisticated typographical controls.

In all three cases, however, (and in many other DTP packages) the range of facilities is impressive, and many effects can be achieved with greater ease than in conventional typesetting systems. Weights of rules are easily created and modified:

Boxes can be drawn with ease:

As can circles:

Tints of varying percentages can be created:

Type can be reversed out or overprinted: