

T H E S I S.

A LOOK AT LETTERS.

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Chapter 1.

Introduction.

Every day, all over the world, people manipulate a small number of dots, strokes and squiggles arranging them in a variety of sequences and groups, confident that by so doing they can transmit a thought to another person in another place, at another time, accepting the proviso that the recipient must be capable of deciphering and understanding the squiggles made. Oddly enough this confidence is fully justified for since the invention of the printing press and the growth of literacy after Luther's period, Society has required its schools to hammer into the heads of children the basic patterns to which these squiggles must conform, together with the sounds they represent. To transmit these thoughts I am using twenty-six squiggles; or to give them their proper name - letters. Together they make up a group called an 'Alphabet' in this case the English alphabet. Each of these letters conforms to a basic pattern, and anyone who is conversant with this pattern will be able to decipher the squiggles I make. Were I, however, attempting to transmit my thoughts through the medium of Chinese or Arabic these letters would not prove adequate to the task; for these latter are a visual representation of sounds, and the basic sounds of the Chinese Language and English language are dissimilar.

The apparently simple letters which children learn in school are far from being an instantaneous invention, indeed they represent a long struggle to fulfil man's desire to find a non verbal way of communication with others; a struggle which has produced dismal failures, partial successes, and apparently successful solutions. In many cases no solution at all has been found and there are many languages in the world to-day which have no written form. Let us who possess an alphabet, very often because of our familiarity with it, tend to take it very much for granted, and even treat it with contempt to such an extent that it was once held 'that a legible hand was the mark of bad breeding'.

Familiarity with lettering is rather a modern phenomenon for when one compares the length of time during which letters have existed with the length of time that man has roamed the face of the earth one finds that the advent of letters is very recent, yet today, we live in a world where letters exist everywhere we look - in the pages of books, in newspapers, magazines, on hoardings, shop signs, house names, on T.V. & Cinema Screens, on buses, vans and lorries - in so many places that the eye tends to become blind to them, but still they continue to communicate and influence us. When it is realised that letters record our entry into this world, our progress, mould our ideas, facilitate our business, contribute to our entertainment, enhance or damage our environment and record our departure amongst other things; it becomes obvious that merely learning to make a recognisable squiggle and know its sound is a very inadequate approach to the whole world of letters, rather does it appear far more reasonable to ask what is a letter? How did it evolve? With what may it be made? How can it be used?



What is its influence? Once we begin to ask these questions we discover the great amount of knowledge hidden behind each letter. We discover, for example, that in tracing the development of letters we are tracing the history of mankind itself and looking at the political, moral and aesthetic philosophies of different societies; nor is this all, for we must consider also the letter itself as an object because as John K. Biggs put it in 'Letter Forms and Lettering' letters are both working tools and objects of joy and contemplation. As tools they may be measured and tested, by physiology, psychology and optics; as objects d'art they are no more measurable than any other work of art'. In learning how to make these tools if we try to rise above the level of barely adequate squiggles we discover that drawing a letter is as much a discipline as any other form of drawing, developing dexterity and improving the co-ordination of hand and eye. Letters involve, the same consideration of line, shape, colour, texture, spacial relationships, form, as does any other art form 'and even' as Edward Johnston says 'the strict utilitarian could not fail to value the benefits that might some day come to man if children learn to appreciate the beauty of carefullness'. One great benefit which would obviously come would be an improvement in the condition of an urban environment where now letters very often add to the squalor rather than enhancing the beauty of the buildings or spaces in which they are displayed. This hope was also expressed in the 'Athenaeum' of February 3rd 1906 as follows:-

"if once the names of Streets and Houses, and, let us hope, even the announcements of advertisers were executed in beautifully designed and well spaced letters, the eye would become so accustomed to good proportion in these simple and obvious things that it would insist on similar qualifications in more complex and difficult matters."

This aspiration still remains an aspiration even after a lapse of seventy-one years partly because lettering is still looked upon in schools as dull and boring, and indeed as a pedantic branch of art. The introduction of modern writing tools also seem to have a damaging influence as do some of the new materials from which outdoor display signs are made.

Wide and influential as the world of calligraphy and hand-drawn letters undoubtedly is, the world of the printed page is even more influential especially in our present Century when the vast bulk of communication is carried out through the medium of print. Modern improvement in printing machines and in the handling of movable type have contributed greatly to the growth of the art of typography which is no longer limited to the traditional bookish way of setting type to convey its message. to-day new typefaces come into use frequently, and it is estimated that at any one time there are at least 3,000 different faces available to printers, which they are using in new and creative ways. Herbert Spencer says "the roots of modern typography are entwined with those of the 20th Century painting, poetry and architecture. Photography, technical changes in printing, new reproduction techniques, social changes and new philosophical attitudes have also helped to erase the frontiers between the graphic arts, poetry and typography, and have encouraged typography to become more visual, less linguistic and less purely linear." On a more mundane level these same skills combine with the skills of the business world to produce the typography for Advertising, for packages, for Industrial Design



Architecture, Television and so forth - typography designed not only to influence our judgment but to activate us into doing something that the Advertiser requires of us. While it may be distasteful for us to admit that an art which can uplift the human spirit can also be used for more nefarious purposes it never the-less behoves us to seek to understand it in all its guises.

The apparent complexities of lettering are an inhibiting factor for many people; for how on earth can anyone find a way through the maze of ever changing type faces which constantly confront us and how can anyone understand the complexities of an individual letter, its construction, its use, and its influence? Is a study of letters any longer a valid worthwhile activity? Is it not true that modern technological development has resulted in the advent of the "transfer" letter putting an instant perfect letter at the disposal of everyone? Does this not make the study of lettering - or at least acquiring the skill to make a letter - totally unnecessary? The answer to all these doubts is a very definite 'Not so' for the demands made by business houses for personalised trademarks, business names etc. is greater than ever as is the demand for special typefaces to meet new requirements such as clarity on a television screen or legibility in a situation where the letter must be read by a machine as well as by the human eye. Even if the demand for creators of letters were not so great the fact that a transfer instant letter is available to everybody means that now, more than ever, the basic skills of typography are more vitally necessary for everybody than at any time in the past.

It is my contention then that a study of letters in all their aspects from the historical through the aesthetic to the practical craft aspects could be made the core of a study of art serving to firmly link all parts of the subject together and most importantly to link it immediately with environmental background of the individual student (there is no doubt that we become more aware as our attention is directed to aspects of our environment) thereby making the subject more relative and easily understandable.

The best art has always been produced by men who have concentrated on the objective aspects of their job - function and technique - and who pay little attention to its subjective aspects, imagination and the formal qualities which are its natural effect, and lettering always has a definite function and embraces a variety of techniques, as well as all other aspects of art. One might say that lettering is the practical art and therefore holds a particular place of value in art education.

A cursory glance at the history of Lettering will reveal that, as I have already said, the development of lettering was a very slow process but that in the last Century it has celebrated its maturity with a positive explosion of letters - all being produced in answer to a need, or as a better answer to a need. We are living at a period which is really at the beginning of the real development of letters rather than at the end, which makes a study of letters in the schools of particular relevance at this time. In order that this point may be appreciated the following list is given:-



The Development of lettering:-

1. Pictograms: Picture writing - modern version; road signs.
2. Idiograms: Symbols - meaning associated with pictures.
3. Phonograms: Symbols representing sounds - letters.
4. Roman Capitals - 1st Century.
5. Square Capitals - as Roman but made with a pen. 4th Cent. A.D.
6. Rustic Capitals: 5th Cent. A.D. Early Christian - pen written, based on square capitals. Characterised by narrowness.
7. Roman Unicals - 5th Cent. A.D. Pen written - rounded style.
8. National variations: 10th Cent. many national styles. Irish half unicals. Small letters begin to appear.
9. Carolingian 10th Cent.: One of the most important developments as it gave a full range of small letters and brought about a re-awakening of Capital letters which assisted in the growth of our method of using capital and small letters together.
10. Early Gothic: 13th Cent. Based on Carolingian letters, but having a pointed character in North Europe and a more rounded form in the South.
11. Textura 15th Cent.: (Black letter) mostly upright, adapted for printing with wooden type. Makes use of straight lines rather than curves.
12. Printed Textura: 15th Cent./ A printed version of the hand written.
13. Humanistic 15th Cent.: Developed during the Renaissance from the Carolingian hand.
14. Humanistic cursive. 18th Cent.: With the development of lead type forms became more static. Handwriting kept alive the spirit of lettering and the two met in engraved lettering which gave rise to copperplate based on humanistic letters.
15. Fat Face letters. 19th Cent. Victorian work. Letters made very heavy and often decorative & decorated.
16. Art Nouveau 20th Cent. Organic, growing forms were used.
17. Twenties 20th Cent. Geometric. Letters which were a reaction to the decorated styles - cable.
18. Thirties comic : Robust, cheerful, balloon like styles, cartoons.



19. Computer: 20th Cent. Mechanical concept made up of units.
20. Permissive 20th Cent. Freely devised lettering in brash colours often deliberately ugly.

A brief perusal of this list will show that the first three stages of the development took almost 50,000 years to complete as some of the earliest records have been dated around that period. During the next seventeen hundred years only twelve distinct developments took place, the year 1440 when Johann Guttenburg invented his system of moveable types acting as a watershed, on one side of which letters were developed for prescriptive or pen lettering purposes, and on the other the effort to comply with the ever increasing demand for new typefaces. Since the beginning of our present Century more new type faces have been designed than in all the previous centuries put together.

The period of greatest exploration and invention started with Marinetti's Figaro Manifesto in 1909 and continued with the early 'twenties' when it began to consolidate its position after a period of exuberance brought about by the increase in advertising following the rapid growth of industrialisation and of mass production. The opportunity was given to men from outside the printing industry to contribute their ideas and this resulted not only in a profusion of new type faces but in a departure from the old book-style layout since they brought with them philosophies of the new art movements.







## Chapter 2.

## TYPOGRAPHY.

By far the largest quantity of the letters which we come across daily are those which reach us through the printed page and which, at one time, would have been exclusively produced from lead type, but which now may be produced with equal success by some of the more recent type setting innovations. In the early days of printing in the years after Johann Guttenberg invented his system of moveable type at Mainz, Germany about 1440 there was little difficulty in recognising a typeface i.e. the appearance of a particular letter became by and large based on the Gothic letter which was then in common use amongst the scribes, and with which people were familiar. Indeed the early designers of type were at pains to ensure that these type designs looked as much like the handwritten ones as possible. The advent of the industrial revolution, in particular, gave a tremendous impetus to printing by creating a need for printed matter of all kinds, and consequently designers began to produce more and more typefaces to meet all sorts of needs, until at the present time, there are so many letters of different appearance in existence that difficulties can be experienced in recognising them. Indeed the art of typography came into existence through the need to manage the various characteristics of the types in use, their effect on the printed page, and the effect of the printed page on the reader.

A look at a newspaper or a magazine will, however, quickly show that the printing contained in it is used for one of two purposes, either to help the reader read the matter contained therein more easily or to catch his eye and direct his attention to something. The latter form of printing is usually in the advertisements, but may also be in the banners or headlines. In addition to newspapers and magazines there are other forms of printing which need eye-catching letters. Realising this we may then classify letters firstly according to the uses to which they are put. We then find that there are three main classes according to purpose:-

1. To catch a person's attention in order to sell him something. These letters occur in advertisements, posters etc. and are often novel. Their secondary aim is to project the character of the advertisers goods or services.
2. To produce a printed job for an occasion. These letters occur in invitations, Certificates, legal & other documents, invoices etc. Their function is to catch the mood relevant to the occasion.
3. To convey information or make reading easier. These letters occur in books and magazines and their function is to avoid catching the eye.

Since there is a certain similarity between the purposes of classes 1 & 2 we may amalgamate them into one class and so we see that all types may be divided for recognition purposes into two classes:-

1. Special class (the amalgamated group)
2. Standard class (book type)

The word 'Display' could be substituted for 'special' as a heading for all those typefaces whose function it is to catch the eye and



and draw attention to itself.

Each of these broad classifications of type can be subdivided until a letter will fall into a class with others which display constructional characteristics similar to its own. The subdivision of the standard faces is relatively easy; but the special faces present a little more difficulty; however, as all letters must conform to certain basis formulae in order to remain recognisable and acceptable it is possible to subdivide the special faces also.

## 1. Roman or Standard types. (small serif)

This group of letters are book letters and their function is to assist reading. They all have 'Serifs' that is they are all given a thin line at the ends of their stems - an idea derived by the Creators from the letters which were incised into stone monuments particularly the letters on the Trajan Column in Rome, which are considered the perfect Roman -proportioned letter and still used as a model for the designers. The earliest form of this letter is the Venetian roman and one the first was produced by Nicholas Jenson in 1470. Its chief characteristics were a slight contrast between the main stems of the letter 'blobby' form of serif and diagonal emphasis to the swells in the rounded letters. The bar of the lower case 'E' is tilted. The comments made about the construction of venetian letters indicates the method used to distinguish typefaces and differentiate between them - compare the parts of the letter.

The history of the development of this group really consisted of (1) an increase in the contrast between the thick and the thin stems (2) the change from diagonal to vertical stress in the round letters (3) the decrease in size of the serifs (in the round letters) and more emphasis on a bracketed form of serif with sharper points (4) Apex of 'A' becoming clipped and pointed again. To make this clear compare the typeface 'Centaur' which is based on the Venetian style with 'Garamond' which is an 'old style' and compare that with 'Baskerville' a transitional style and 'Scotch Roman' and English modern style. These faces may be found in the majority of printers type books.

The serif does, in fact, provide a very good clue to the identity of a letter and even to the identity of its originator and its period. There are now many kinds of serif which we can group as follows:- (a) small serif. (b) hairline. (c) Semi serif. (d) Split. (e) wedge (f) rounded (g) graced (h) concave etc.

There are, of course, other serifs but these are more associated with special faces rather than the book faces in which the serif is used to help lead the reader's eye and prevent the letters from becoming obtrusive as well as preserving the unity of the word. The names given to particular typefaces are either the names of their inventors or the function, purpose, or character of a letter or, again, the the name of its foundry. e.g. 'Garamond' from Claude Garamond, Caslon from William Caslon and 'Bodoni' from Gianbattista Bodoni. All the book faces were made in one weight only.

## 2. The Egyptians.

The 19th Century ushered in a period of distortion and decoration and letters were produced in great profusion during this time. Many of the faces have been discarded but the Egyptian family has



been revived and is available in all sizes. The principal feature of these letters is that they display a broad slab serif which joins the stem of the letter at right angles. This slab reminded people of the large slabs associated with the Pyramids and Egyptian architecture generally, hence the name. They are based on the older English letter forms. The weight is evenly distributed throughout the letter - there are no thick and thin strokes in the letter.

The Clarendon letters are also included in this group, having slab serifs; but these are distinguished from the Egyptians in that their slab serifs are attached to the main stems by brackets (a filling-in of the angle) and they retain the variation in weight between strokes. All the families in this category are made in all weights. Examples: Rockwell & Consort Bold.

### 3. Sans Serif Letter.

All letters without serifs are called sans serif (Sans - without) and are essentially modern renderings of the basic letter forms of the Roman Alphabet. Their design was the answer to the question often asked after the Industrial Revolution "How can art be reconciled with the machine?" How can the new ideas of the machine age be expressed in letter form?"

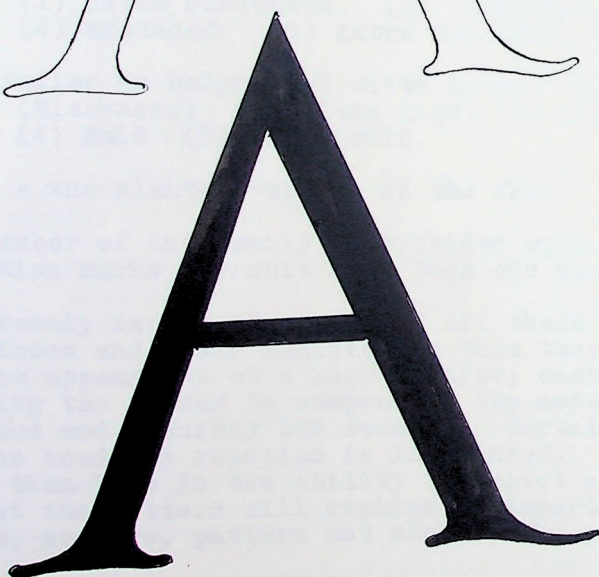
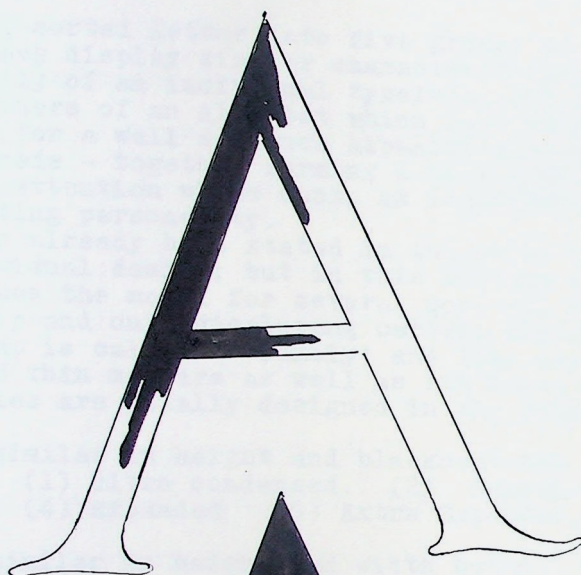
A characteristic of the earlier forms of this letter was a total lack of serifs and in addition, each part of the letter was uniform in thickness. The first sans serif face was shown in 1816 by William Caslon IV and he called it 'Egyptian'. Letters of a similar kind were called by a variety of names such as 'Grotesque', 'Gothic', 'San Serif' (which caused some confusion). The name Grot-Gothic is gaining acceptance as a label for this class. In 1925 Paul Renner designed a face for general and book use which he called 'Futura' and this is like the other sans serif letters except that it displays some subtle alterations in weights to improve its legibility and the term Grot-Gothic' is most often applied to this face and its descendants.

4. Cursive letters in this group are all the letters that lead the eye of flow in a particular direction. Indeed the word 'Cursive' is adapted from the word course as in a river course to indicate that flow, and they were based on the roman every-day hand. Italic letters and script letters in which the letters are joined are two well-known letter forms.

### 5. Display Letters.

This group of letters are of very recent origin and came into being when industry began to demand special letters to promote a variety of goods and services, and they are the letters which demand the attention of most Designers today. Business firms require that their name or the name given to their goods must be instantly recognisable, their Trade Marks must be unique and their sales messages must be set in emotive letters, which brings about a proliferation of new faces of which the best are retained. Thorner's 'Fat Face' a version of the modern style of Bodoni was the first of these, and since then they have appeared as three-dimensional letters, facsimile letters etc.







their names usually give a guide to their character and function, and the reverse is also true. Examples are: Alpine, Ornate, Rustic, Flirt, Eccentric. However, no matter how much these letters have been pulled, twisted, mangled or ornamented they still retain the traditional basic shape.

### The Family of Type:-

Having sorted letter into five groups so that the letters in each group display similar characteristics we can now look at the family of an individual typeface, and by typeface I mean all the letters of an Alphabet which have been designed to 'go' together; for a well designed Alphabet should be like an Army unit on parade - together forming a unit with no single member attracting attention while each, as individuals, should display an interesting personality.

As has already been stated in the early days type was made in an individual design; but in this century a good type face often becomes the model for several more all having a close relationship and only displaying certain minor differences. Such a group is called a 'Family' and like any human family has its fat and thin members as well as its heavy and light ones. type families are usually designed in the following variants:-

- (1) Faces similar in height and blackness but not in width.  
Widths (1) Ultra condensed. (2) Condensed (3) Medium  
 (4) Expanded (5) Extra Expanded.
- (2) Faces similar in height and width but not in weight.  
Weights (Blackness) (1) Ultra light (2) Light (3) Medium  
 (4) Bold (5) Ultra Bold.
- (3) Italics - the slanted version of the face.

Each member of the family is provided with its own figures; but punctuation marks may suit more than one member.

An extremely important result of all these differences both in the typefaces and their families is that they have a great effect on the appearance of a page of type; each face or variant while allowing the reader to comprehend the message can drastically alter its mood and possibly its meaning. Certainly in advertising displays, the reader's reaction is influenced. The skill of the typographer then lies in the ability to select appropriate type faces so that the letters will combine to impart a predetermined colour, tone, texture, pattern and mood to the page of type.

### Measurement of Type:-

The unit of measurement of type is the 'point' which is  $1/72$ " and the standard measure in the 'Pica' which is 12 point. Point sizes refer to all sizes below '72' and over that the type is measured in 'lines'.

To close this section and as further aid in identification the following list of parts of a letter is appended. Each of these parts can be varied to produce distinctive letters:-



Parts of a Letter:-

1. Stem: Stroke running from top to bottom of letter.
2. Arm: Horizontal or diagonal limb.
3. Bar: An arm which joins two parts together.
4. Curve: A curved shape
5. Bowl: A continuous shape
6. Serif: A shape to end off stems, bars, arms and curves: small serif, hairline, half-bracketed, semi serif, triangular, concave, flared, split, sharp, heavy serif, flat, slab, wedge, rounded, graced, sloped etc.
7. Stress: Thickening in a curved stroke.
8. Counter: Fully or semi-enclosed space within a letter.
9. Loop: Distinguished from bowl as a flourish rather than a necessary part of a letter.
10. Spine: Main curved section of 'S'.
11. Ascender: Part of lowercase letter having X- line.
12. Descender: Part of Lowercase letter below base line.
13. Both parts together.
14. Final: Non serif ending added to the end of a stroke; ball, swash, hook and spur.
15. Terminal: Free ending of a stroke with self contained treatment: straight, sheared, acute, grave, convex, concave, hooked, flared and pointed.
16. Vortex: Down-pointing junction of two stems.
17. Apex: Up pointing junction of two stems.
18. Crotch: Pointed space where arm or arc meets stem.
19. Tail: Downward sloping short stroke starting from a stem.
20. Cross: Short stroke cutting across a stem.
21. Link: Stroke connecting bowl and loop.

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Handwritten musical notation on a single staff, featuring large, stylized, black ink notes and stems, characteristic of a musical score or manuscript.



## Chapter 3.

Calligraphy and the  
built up Letter.

In the previous section we attempted to indicate a way for grouping the various type styles so as to reduce the problem of recognition to one of manageable proportions because, at the present time we almost automatically think of printing when the subject of lettering comes up. Just as the Romans would have thought of carved inscriptional letters or mediaeval people would have thought of pen-written letters, now-a-days we refer to any carefully hand-drawn letter as 'printing'. However, if we really are to know letters it is not sufficient if we merely recognise them; because we can only know a letter if we understand it and we can only understand it if we do it. There are, however, two limitations to our activities, which we must always keep in mind and the first of these is the function of the letter, which is to be read. A letter is a combination of legible strokes legibly arranged, in other words it is a combination of strokes which a literate person will recognise as a symbol of a sound and therefore capable of being an instrument of the transference of thought. Although letter forms can be manipulated, abused, or mangled as many modern letters are, they remain functional letters as long as their components maintain a legible arrangement. However, in the study of letters abuses which go as far as destroying letters are valid as long as the results are part of a study and not ends in themselves.

The second limitation is that letters are things which work together and being made up of strokes they also have voids in and about them, which are important to legibility. Letters are best thought about as related forms because their strokes and voids will assist legibility if there is a certain similarity between them. Letters must be uniform and act in a uniform way as an orderly group and not as a rabble of individuals, and yet they must be distinguishable from each other as individuals; because on this factor does legibility depend. They must display a nice balance between unity and diversity and between likeness and un-likeness.

Letters must also be thought about as things - as objects which impinge on the eye, and like every other object the letter is a form made up of lines, shapes, textures, tones, and some possess volume either implied or actual, and these elements must be taken into consideration as they would be in any other branch of art. Finally the letter must be executed in a material, with a tool which must be guided by the hand under the influence of an informed mind, and because of this it becomes an ideal instrument for developing co-ordination between the hand and the eye.

Ingredients of a Letter.

Quality of Line: That line is an important element in a letter is apparent to anyone who regards his own handwriting and who compares it with that of someone else. He will find that he produces a line when he writes which turns and twists across the page and this the other person also does; but it also becomes obvious that the lines so produced have a different appearance and effect, - they take on and reflect the writers personality.



the line in letters other than those which are handwritten also display very distinct qualities which often arise from the tools and materials used; the lines of an incised letter, for example, often have the quality of grandeur, impersonality, depth, or authority about them. In calligraphic letters the quality is more often one of gracefulness, warmth, humanity - the line, especially when written with a pen showing sometimes a two-dimensional front view merging into a three dimensional view as the pen moves.

In type the line has a peculiar quality of rightness, or permanence which is unlike anything produced by other means. All the other characteristics of a line are, of course present in letters. In letters made up of strokes, as in calligraphy the line has rhythm but this time not a flowing rhythm but one made up of verticals and horizontals. In our Latin Alphabet fifteen letters are composed of straight lines only, six are made up of horizontal and vertical lines, nine have diagonals as well as verticals and horizontals. Five are circles or nearly so and six have parts of circles with straight lines. Experiments should be conducted into the relationships between these lines. It is also of value to cut up well formed letters and re-assemble the parts in different ways to observe the inherent liveliness of the line in lettering.

### Shapes.

Although there are considerable differences in the shapes of letters all letter shapes must remain within definite limits in order to be recognised and legible. Once the point is passed the result may be a design or a decoration but it can no longer be regarded as a letter. As a corollary to this things which were designed for other purposes can often be reminiscent of letters if their shapes come within the limits recognised as a basic letter shape. The letter 'A' for example is basically a triangle, and the letter 'O' is obviously a circle, 'B' is a combination of two half circles. Experiments could be carried out covering the variety of shapes which could be arrived at while still retaining a recognisable letter. The voids between letters (negative shapes) can also be subdivided for decorative purposes. Letter contours offer another range of shapes for experimentation.

### Tones.

Apart from the tonal quality of the page given by the blackness or lightness of the type faces used, individual letters can be given additional personality and power by varying the tone in the letter by treating parts of the letter as solids, half-lining other parts etc. Once more the contours as well as crossing lines suggest many possibilities. The introduction of mechanical tints facilitate experiments in this direction, and they may be also used to express textures, as the letters themselves may be used to give texture to a page.

### Personality.

Each letter has its own personality and this should be rostered carefully.



When subdividing letter faces in the previous section it would also have been reasonable to have divided them into 'male' and 'female' according to their dominant personalities. A letter like 'Cooper Black' could be said to have the male qualities of strength, weight, forcefulness etc. while one like 'Madonna' could be said to display characteristics of gracefulness, softness, modesty, etc. associated with the female personality. Inside these very broad categories we have letters which express joy, sorrow, speed, determination, solidity etc.

#### Relation of Letter Form.

As has already been stated, letters are not designed in isolation. They are related to each other in the Alphabet. The height which each letter must possess presents little difficulty as it is normally dictated by outside forces, but the width of each letter does present a problem and one to which no agreed solution has been found. However, several systems with slight differences have been proposed such as the one which follows, and in which letters are grouped in relation to the square.

- O, Q, A, V, which occupy the full square;
- U, D, H, N, T, Z, C, G, which occupy  $\frac{4}{5}$ ths of the width;
- W, & M, which occupy  $\frac{1}{5}$ th more than the whole width;
- E, F, S, B, L, P, which occupy  $\frac{3}{4}$ ths of the width and
- I, & J, which are based on the line.

In dealing with other problems such as the spacing between letters, the distribution of weights in a particular letter, the proportions between the various parts of a letter etc. no hard and fast rules can be found, because the solutions to these problems is the business of the individual designer, who must draw on his knowledge and experience and must submit the result to his intuition. John Howard Benson and Arthur Cary in their work 'Elements of Lettering' say "The use of reason and Will in Art is obvious. The Artist reasons what he is going to do, and does it. He turns the intuitive part of his mind towards the result. He learns that some parts are beautiful and some ugly. He gets to work again on the ugly parts with his reason, and makes corrections. When he submits the results to his intuition."

A moment's thought will indicate that there are very many ways in which the letter 'E', for example, can be formed, and even if one chooses to base the letter on a circle there are still many ways of placing the cross bar: it can be a straight line across the middle of the letter; it can be above or below this point; or tilted either in an upward or downward direction. Possibly it may not even be allowed to cross the whole width of the opening, but made to stop short. The problem of optical illusion can enter in at this time and must be taken into consideration. In considering all these problems the Artist uses reason to assist him to reach a conclusion; but the success of his final solution depends on that intangible quality, his artistic sensibilities which allows him to 'know' when his solution is right.



Renner's Futura on the face of it looks a very 'Geometrical' letter; but to make it look so he deliberately avoided being uniform. He thinned his curves where they meet the stems to prevent them from looking too thick, and he made his 'O' go above the line and the vortex of the 'V' go below it so that both letters should appear to be the same height as all the others. This whole face is a very good example of the Artist's 'optical judgment' and other qualities which contribute to making the face look even. These then, are the qualifications that the Athenaeum prizes - that the eye should become accustomed so that it may demand similar qualifications in other matters.

A new arena of educational possibilities opens up when we turn to the area of the single stroke letter by which I mean letters written with a pen, or a broad pointed pencil, or a brush. This area of study includes ordinary handwriting, formal script-writing, illumination and Heraldry. Once again of course, one has to go back into history for a real understanding of the development of letters through from the Roman Capital on which all sorts of letters are based to the direct ancestors of script such as the Rustic Capitals of the 5th Century A.D. the Roman unicals and Half unicals, or through the national variations up to the introduction of moveable type. This area of study has a particular fascination for the Irish Student for in the 'Book of Kells' Ireland made her greatest contribution to the world of Art.

The script letter forms represent the final development of Calligraphy in the Western world and reached its height during the 17th and 18th Centuries in the hands of the European masters. Three specific styles were in use during the 17th Century: Ronde, Lettre Italienne and Coulee. Ronde was a formal script which exhibited extended ascenders and descenders as well as elaborately flourished capitals. As its name implies it was a round script based on the Gothic cursives. Lettre Italienne or Italian hand was written with a pointed pen using a forward slanted stroke of 70 - 80 deg. and was a flowing, connected script with fine rounding of letters and long ascenders and descenders. It probably influenced the development of the English script, which eventually became the dominant one. Coulee was a French version and is a combination of the first two styles, being semi-formal with a less pronounced angle to the strokes. The demands of commerce in England gave an impetus to the creation of the English round hand which was derived from the Italian and which exhibited a great writing angle of 54 deg. - the greatest angle of all. From this time to the middle of the 18th Century many books on handwriting and Pen Lettering were produced and the English hand spread all over the world as her Empire & Commerce expanded. The greatest use and consequent misuse of flourishes and of ornamentation which decreased the legibility of the letters, in addition to the idiosyncracies of individual hands which could be almost impossible to decipher caused a gradual decline. The recent revival of the Italian hand together with the broad nibbed pen has given Calligraphy a new lease of life and Calligraphers are often required to create illuminated Addresses and Monograms as well as other manuscript works. One of the great educational values of Calligraphy is its close association with language and literature - not in the cold and impersonal way of type; but



but in a warm, more personal and more empathetic manner. Nothing surpasses the fine script letter in the translation of poetry into visual form. An extremely beautiful example of the English roundhand script is a letter to George Bickham dated 1738 by Joseph Bland for inclusion in Bickham's book on penmanship and one which could be used as a model by any student.

Calligraphy induces care and a justifiable pride in one's work and is an Art form where many tools are not required, putting it within the compass of everyone and in addition to carefulness it also builds up in the individual the same sensitivity as does the study of any other branch of letters. Indeed Edward Johnson claims in the preface of his book 'Writing, illuminating and Lettering' that illumination properly associated with writing is, of all the many ways of acquiring a knowledge of the elements of design and decoration the most simple and the most complete.

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## Chapter IV.

Lettering tools  
& Materials. Practicals.

Reading and making an Academic study of the history of lettering and its development alone will not make a competent lettering artist nor a typographer. A study of history, optics and even psychology will help; but since lettering is essentially a practical art, requiring a very high degree of co-ordination between hand and eye as well as a great deal of manual dexterity and since it is functional it should be done as far as possible in real situations. A letter which lacks a function is one which lacks a spirit and in consequence has an air of unreality about it. There should be another person involved, one who sets the limitations, and whose requirements must be satisfied. Ideally the work should go out into the competitive world, there to be judged by its users; for until we know what use it is we will not know what good it is. Over-concern with the theoretical aspects may well inhibit freedom which is a most desirable asset to the Letterer. However, since it is not possible always to be engaged in practical jobs it is well to simulate them with the teacher providing the outside influence. It is held by many that the greatest works of Art were not created by Artists who were completely free agents, but by those who had to accommodate themselves to the wishes of their patrons, as well as to the physical properties of the location and condition of the surfaces upon which they worked. The attempt to design and execute letters under these conditions will present problems which cannot be set aside and ignored, and it is in the solution of these design problems that the greatest strides forward are made.

Lettering has to be created either in or on a material or by manipulating a material with a tool and each material and tool can have a profound influence on the result. When the word 'Lettering' enters the mind of most people they immediately think in terms of a pencil, brush, or pen and of letters painted or drawn on a surface; forgotten are the other materials and methods which could be profitably used.

Pen Lettering: The making of letters represents a synthesis of the skills of drawing and of design promoting as it does observation of subtle relationships and the ability to apply this to practical ends. Since the letters are made with a broad tipped pen or pencil, the lines of which they are composed will exhibit a characteristic swelling and thinning which will reflect the angle at which the pen is held, so that it is possible to produce numerous letters of different appearance, each of which will be very satisfactory; always providing that whatever pen angle is chosen is retained throughout the work. Control of the letters requires the use of a T-square and set squares so that horizontal and vertical guide lines are accurate. The horizontal lines required are:-

- (1) the base line on which all the letters are set.
- (2) the body or X-line which is the height of the body of the minuscule letters.
- (3) ascender line to ensure that all ascenders are of equal height.
- (4) descender line, a line below the baseline to control length of descenders.
- (5) capital line: a line above the baseline which determines the heights of the capitals.



Pen Letter

Reed Letter

Lollipop  
Stick



One of the great reasons for this careful lining is that although the eye perceives perpendiculars, the hand naturally inclines the line either to the right or the left, and it requires regular practice to correct this. The basic strokes are acquired and then added together in the study of model Capital and Minuscule letters. Kinæsthetic and visual relations will be built up. Letter spacing, legibility and colour, line spacing and sentence structure must be studied.

built-up Letters. Letters drawn in outline with a pencil and filled in with a brush offer an excellent opportunity of acquiring precision in the use of a brush which must be able to make clean edges and sharp curves. In small sizes these letters can provide useful exercises in poster work etc., but work done for outdoor use in the field of sign-writing can provide other useful opportunities, firstly a ground must be prepared, primed and given the necessary grounds etc. The house-painters techniques gained in this way can be of great value to a student. Secondly it requires that the student gives due regard to the location in which his work is to be set, and its influence on the environment must be considered.

Incised Letters: To understand the structure of the Roman incised letter it is most sensible to incise letters in suitable materials such as battleship lino, plaster and wood. The method of working should be the same as that used by the Roman Artists, that is the letter being painted on the surface before carving. Apart from giving experience of the use of new tools which produce characteristic effects, the incised letter reacts to intensity of light and changed appearance and, possibly, its legibility with the density of the shadow in its depths. This study allows the student to see for himself the reason for the introduction of the serif which had such effect in the whole history. Lettering in this manner provides a link between the student and the craftsmen who use such letters in their everyday work.

#### Letters in Polystyrene, Wood and Perspex.

These letters give a great opportunity of experimenting with three-dimensional forms which require careful planning in their construction, because of the nature of the materials themselves - apart altogether from considerations which may be demanded by the function and use of the letters. In making these three-dimensional letters the student will acquire a skill in the use of both a hot wire and a saw as a drawing instrument and develop an attitude towards the tools which will allow a more imaginative use of them in other areas of endeavour. The opportunity is also present for a comparison of materials and for a realization of the limitations imposed by a material and its influence on the final appearance of the job.

Printed Letters. Silk Screen provides the letterer/typographer with a medium for printing which is flexible in the extreme. On the one hand letters can be drawn directly onto the silk with the same freedom as is possible on paper. The print is then a reproduction of the hand drawn letter. Paper stencils with loose contours can also be used and will demonstrate how the method as well as the material used can pose certain problems. The photo-stencil combined with the transfer letter moves this process closer to the area of letterpress and lithography and will allow the student to observe how the inaccuracies of the hand-drawn letter can add a certain charm to a work different altogether from the feeling inspired by good letterpress.



It also brings him closer to the world of Commerce in observing Posters - pictures in the great outdoor gallery of our day.

### Letter Press.

Small flat-bed table top letterpress machines bring this Craft into the orbit of everyone, and offer a great field for creative activity particularly once the basics have been mastered and when one becomes aware of the work of modern Artists such as van Doesburg, Moholy-Nagy, Leige, Zwart and others. Setting from moveable lead type does tend towards more old-style central and linear typography but this tendency does not at all arise when using transfer letters and photo-setting. Simple offset litho machines give a very great scope for expression. A number of methods of producing letters have been mentioned but this in no way exhausts the list and one can range the whole way through from embroidered samplers to engraving and etching.

Studying letters, making letters, printing letters inevitably leads us out into the Street to look at letters at work, and here we quickly become aware of the beautiful and the ugly, and attractive and the repulsive, the appropriate and the inappropriate. We start with the latter, since this is probably the most obvious starting point. Shops engage in certain specialised areas of trade, each having a definite image at any given period - the image might change by the way over a certain period of time and at the moment the conservative chemist seems to be changing and becoming more like his American counterpart, the Druggist, or so it would appear if one compares the prim signwriting once chosen to the huge brash fascias which are coming into common use. This statement points to something which has been always true - that lettering not only suits the architecture of the day but more than anything else expresses the values of society with accuracy; for when we are faced with a clutter of ill-designed signs & shopfronts we need not ask further about the values of that neighbourhood - they are self evident!

It is a useful exercise to compare the designs of letter in common use with the style of Architecture in use during the same period. In doing so one is struck by the similarity of character, in say, a spire Gothic letter and a Gothic Cathedral. The angularity of a Greek letter and a Greek temple, the roundness of a Roman arch and of a Roman letter, and the severity of modern day buildings and letters. Where two arts are wedded the result is one of great beauty proving the wisdom of Architect Walter Gropius who in his Manifesto of April 1919 said "The complete building is the final aim of the visual arts .... Architects, painters, sculptors must recognise anew the composite character of a building as an entity - the Artist is an exalted craftsman ... proficiency in his craft is essential to every Artist. Therein lies the source of creative imagination".

Other very instructive areas of study lie in transport advertising for here letters contend amongst other things with the problem of remaining legible and carrying their message to unheeding people in exposure times sometimes as short as two seconds. The letters which can successfully do this are those which conform to all our physical and psychological limitation. Their designers have taken into account such things as the satisfaction we receive from the sensation created by our eye travelling over an undulating line or the distress we experience when our eye is forced to do something contrary to its nature



or to the habits it has formed. The letter 'S' in reverse is one that can set up a stress in us. Further experiments have been carried out to ensure maximum legibility under all circumstances. Letters have been reduced to the shortest length of stroke and curve necessary to retain the letters clarity, and comparisons have been made in the legibility of letters when parts of them are covered. These psychological experiments and many others not mentioned are an informative study. One might also examine the Town Planning Acts, especially the English Act and consider how our environment would look if the attempts to control lettering were to succeed.

### Exercises in Lettering.

1. Observation:-making a note of the lettering in a shop, a street, a Railway Station, a Fun Fair, on transport.
2. History: Visit Museums and Libraries to look for historic examples of the maps, coins, carvings and manuscripts. Visit Cemeteries also.
3. Lettering terms. Look for examples of the terms used. Magazines, Newspapers, Photographs good sources. Make sketches.
4. Equipment: Visit shops and stores and look at available lettering equipment. Collect advertisements.
5. Materials: (a) Oil-paint (house) wood stain, indian ink, poster paint, watercolour, coloured inks, felt-tip pens aerosol spray.  
(b) Expanded polystyrene, paper, card, hardboard, plywood, blockboard, metal, plastics - make notes on the advantages of each.
6. Pen letter: Experiment with small twig instead of pen. Try out different nibs, compare ink with watercolour. Make pens from dried-out flower stems, - sunflower, wild parsley, reed etc.
7. Brush lettering: Use fingers instead of brush, make fairly free letter shapes. Try out strokes with different brushes and compare them. Draw up built-up letters and paint them with different paints.
8. Cut-out letters. Tear out large letters from paper and neaten them with scissors. Cut out letters from magazines and make a collage of them. Cut letter shapes out of thin card, using knife and straight edge - drawing them up first. They could be used in a mobile.
9. Spacing: Space the following correctly using 1" high letters and a space unit of  $\frac{1}{2}$ " :- Random, lucid, lower; Otter, minimum, late.



10. Spacing: Space the following using  $\frac{1}{2}$ " high letters, a spacing unit of  $\frac{1}{4}$ " between letters and a unit of  $\frac{5}{8}$ ths between words:-  
"The Four Seasons",; The Merchant of Venice; house and Garden; the World Cup. Cut out several headlines and arrange them on a background to give each one equal emphasis compared with the next.
11. Style & Form. : Collect examples of interesting letters forms and keep a scrap book of them for reference.
12. Layout: Take copies of posters and showcards and re-design their layout. Collect examples of good layout from magazines.
13. Colour: Paint a colour scheme for:- A Church Sign-board; A Dance poster, a Boutique price ticket, the fascia of a Travel Agent's office. Collect paint manufacturers colour charts.
14. Alphabets: Find a word printed in large type, and try to decide how the other letters in the alphabet should look.
15. Emotive line: Considering letters as line decide what kind of line e.g. smooth, undulating, jagged, etc. would give the feeling of 'Peace', Anger, Joy, Restlessness, Motion, Living.
16. Emotive Shape: Considering letters as shapes, decide what letters would suit:- Soft, Melting, Leaning, Deflated, rigid, Speedy.
17. Fitness for purpose: Draw each of the following in what you think should be the appropriate alphabet :- 'Stretched', 'Museum', 'Dainty', 'Garden', 'Droopy', 'Festival', 'Henry V', 'Church', 'Zoo', 'Operation', 'Gold'.
18. Memory test: A geometrical motif or a free one is painted on a large sheet (Trade symbol is suitable for this) This is displayed to Students who are asked to draw and analyse it from memory.
19. Letter form College: Capital and lower case letters should be cut out of paper with no preliminary drawing and assembled on a background. Use a wide selection of styles, weights and widths.
20. Alphabet Design: Choose one letter and design remainder of the alphabet. Using shapes 'O' and 'I' design:- lower case alphabet from these units, noting corrections in width and optical illusions.
21. Development projects: Illustrations and reports to show how lettering styles of different periods have reflected attitudes and fashion trends in other fields of design.

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Finger  
Letter



## Conclusion.

Having ranged over several facets of the art of letters in order to convey the breadth and scope of the subject one must come back to the central point of our theme which is that lettering, being essentially a practical subject can often appear far more relevant and satisfying to a student than other branches of fine Art. It is part of his environment; something he lives with every day, something which belongs in the street and which conveys messages to him continuously. His attempts to include it in his own work, in posters, for example, can often be unrestricted and exuberant and can become, on occasion a dismal and dispiriting failure. That this is so very often stems from the 'painters' approach. of the teacher who sometimes fails to recognise the vast possibilities of progress through channelling ideas into restricted and more disciplined processes a student, particularly in the early stages, cannot easily handle total freedom and becomes lost; but tied to practical things where there is always a down-to-earth problem to be solved; a problem about which information can be obtained, and upon which all subsequent decisions regarding tools materials and methods can be based, and which by providing an anchor can actually help in the formulation of ideas.

All exercises which involve lettering should as far as possible, be 'real' jobs; notices for use in the School, and in youth Clubs, in the Sports Halls, or in the local shops. Many voluntary organizations would appreciate posters etc. done on their behalf. This approach can be used with advantage from the very early stages, even when the student has no experience at all. Simple block letters constructed to a simple formula using T-squares, rullers and compasses will not only help to introduce lettering but help to develop an expertise with these tools which will have a 'carry-over' into other subjects.

Often now-a-days when students have been allowed an unrestricted use of paints and brushes and other materials one finds a resistance to the discipline imposed by these tools, and a consequent reluctance to use them. As a corollary to this total dependence on instruments can be inhibiting; but this will not happen if they are only used as a means to an end, which is how they will be viewed if the job is practical. When smaller letters are needed which would be beyond the ability of the student to construct these can be cut from printed work which would have two beneficial side effects: Firstly it would help the student, particularly the slow learner to develop his reading ability and recognition of letters and it would also establish the basis of typographical knowledge which would be of value to the student when he begins to study graphics seriously.

Calligraphy should be introduced early and used in the study of the characteristics of a line - for example - without making such an abstract concept the obvious subject of a lesson. Sign-writing and ticket writing will come naturally into the subject at this stage together with the first of the outside school associations.

A further by-product of this study is the possibility of meaningful mathematical exercises which will be involved when costing is considered. As the student advances the costing should become more detailed, until eventually a senior student should be able to make a reasonable estimate of the cost of producing a booklet by one of the appropriate reproduction processes. This, of course, means that the study of letters has grown into the wider study of Graphics,



a study which still has a practical bias.

In modern Schools, Silk Screen, Block Printing, Litho, Photographic Processes are becoming common but letterpress & typography have not found such ready acceptance, even though there are available machines ideally suited to school use. A properly set up Graphics room, centered on Letters could prove very advantageous to a student in his future career, no matter what that will be.

Because Printing is such an all important part of our modern Society that everyone finds himself responsible for ordering printed matter at some time in his life, a knowledge of type results in more appropriate printing. Learning about type assists our appreciation of an Art form and trains the eye to be perceptive. It also provides much aesthetic satisfaction to the knowledgeable observer, and in addition provides a sound basic training in the field of communication; a field in which Students might explore career opportunities.

A knowledge of typography and Calligraphy is vitally necessary for people involved in occupations such those of Printer, type Director, Production Manager, type Designer, Art Director, Film & Television Graphics Managers, Sign Writers, Advertisement Managers. Indeed, all efficient business man, whose expensive Advertising messages are very often totally dependent for their effectiveness on the visual impact created by the printed word, will require to be familiar with letters in order to evaluate the Specialists work before sanctioning it. There are other occupations which are not directly involved with direct communication in which a knowledge of letters plays a useful part and these occupations include, Architecture, Exhibition Design, Retail Store Display, Teaching (other than Art), Town Planning, Local Government. The possibilities opened up by a study of Letters can also serve as a base for some interesting hobbies, which are becoming so necessary now to the continued well-being of retired people and others who are benefiting from shorter working weeks as a result of automation, and as a mental therapy to people suffering from boredom stemming from repetitive work, with no job satisfaction. Here are some of the principal hobby activities.:-

Type Lore itself: Continuing in the areas of study indicated in this thesis and being paralleled by the compilation of a Library of Books on the subject.

Collecting Specimen Sheets:- Type specimen sheets are available from particular type foundries and printers. Some of the early sheets are now valuable Collector's items and Museum treasures.

Collecting Type:- Metal and wood, especially antique types. Collecting 'pin marks' - the identifying symbols which old time foundries cast into the sides of their type is a sub-hobby.

Calligraphy: Learning calligraphic styles in order to produce beautiful 'handwritten' work.

Type Designing: Developing new ideas for typefaces, either for private use or for photo-setting companies. J. Ben Lieberman says of the Art of Type designing that 'designing a good face takes the mind of a chess player, a jig-saw puzzle enthusiast, an acrostics fan, and a mathematician - plus of course, true artistic talent'.



Type Casting: Becoming a more popular hobby.

Wood & Stone incising. There is a revival of interest here, partly because of the use of automatic lettering copying machines in the stone-cutters trade and partly because of the durability of the materials used.

Bookbinding: Making and printing of short runs.

Printing: Associated with the foregoing activity.

This then, is the argument for giving the art of lettering a more prominent part in the education of the young, for making it a central feature of their education: a seed from which many other things grow. It is an argument for removing lettering from the subsidiary role which it now plays and elevating it to a new importance. It is an argument also for the benefits which would accrue from the more structured and systematic approach which lettering with its disciplines and its practical applications imposes.

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