THE ORIGIN OF THE SERIF

BRUSH WRITING & ROMAN LETTERS

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Shadows

Strength generally triumphs not only in the arena of action but in the region of ideas. That is, in any union or confrontation, it is usually the stronger that prevails. The traits of the dominant tend to overshadow those of the sub-dominant. In the realm of ideas the more readily understood characteristics of either of two related ideas tend to color both. Suggest one and you call the other to mind with the result that the attributes and prerogatives of both are apt to be inter-mixed.

It is difficult to disassociate stone-cut lettering from sculpture. Both crafts work on stone, using much the same techniques with common tools and methods — mallets and chisels, forgings and sharpenings. The usual notion is that there is an inseparable bond between the two, and that what is true of one is true of the other. The union of crafts is further strengthened by the knowledge that the most widely publicized stone-letterer of our century, Eric Gill, was a fine stone sculptor.

Stone-lettering, today, is an arcane craft (even to most calligraphers whose business is making letters) whereas the craft of sculpture is widely and easily understood. But stone sculpture, above all, is 3-dimensional and this characteristic tends to attribute to incised letters a like quality. This transference of traits, without doubt, has had a disruptive influence both without and within the craft of stone-cut lettering.

One consequence, plainly evident in our time, is that too much value is assigned to the chiselled V-cut so that the 3-dimensional V-cut becomes an end in itself. To be sure the V-cut is necessary, but only as a means. A craftsman making only the V-cut may be likened to the sign painter who, having made the outlines of letters, looks at them, sees that they are visually weak, and proceeds to fatten the outlines to bring

the letter out — instead of filling-in the outlines so that the *whole letter* will bear the burden of legibility.

Stone-cut lettering, having unwittingly assumed sculpture's 3-dimensional character, gravitates towards the third dimension of light and shade. Shadows become important and hence it is natural to emphasize them. But, unfortunately, when chisel cutting is made an end, stone letterers tend to see their stone-cut letters as solid, 3-dimensional quantities having lights and shadows. The demand then is for deeper V-cuts in order to bring out heavier shadows. This attitude has not been helped by those calligraphic theorists who write lettering books. Witness the following quotations:

•

. . . the shadow cast by the upper portions of the swells would add to the apparent weight of the curves . . .

Frederic W. Goudy, *The Capitals from the Trajan Inscription in Rome,* p. 9.

•

. . . the hair-line of the bowl at top is lighter in D as the cutter feared the greater length of line would gather too much shadow . . .

Ibid., p. 31.

•

To make their letter carry by shadows, the Roman stone cutters sometimes cut their outlines very wide.

Thomas Wood Stevens, *Lettering,* p. 28.

•

And because you cannot draw a V-shaped incision in stone to a square end that will define itself by its shadow, as a monumental letter must do . . .

Ibid., p. 27.

•

. . . this letter [Trajan] was cut with V section in marble and placed in a situation where strong sunlight would produce high lights and strong shadows . . .

John R. Biggs, *The Craft of Lettering* (London: Blandford Press, 1961), p. 6.

It is true that V-cut letters, lacking the definition of paint, are contrasted in their parts by the lights and shadows of the V-cuts. In that case since the shadow bears the responsibility for the inscription's legibility it is clear why the letterer, in order to get strong shadows, must make deep V-cuts. But is this enough? No respectable sign painter would think of attaching wooden, block-letters to a sign board, leaving both board and letters in their natural, wood color, for this would put the burden of legibility entirely on the shadows cast by the block-letters. Yet much the same thing occurs when the stone cutter considers his sunken

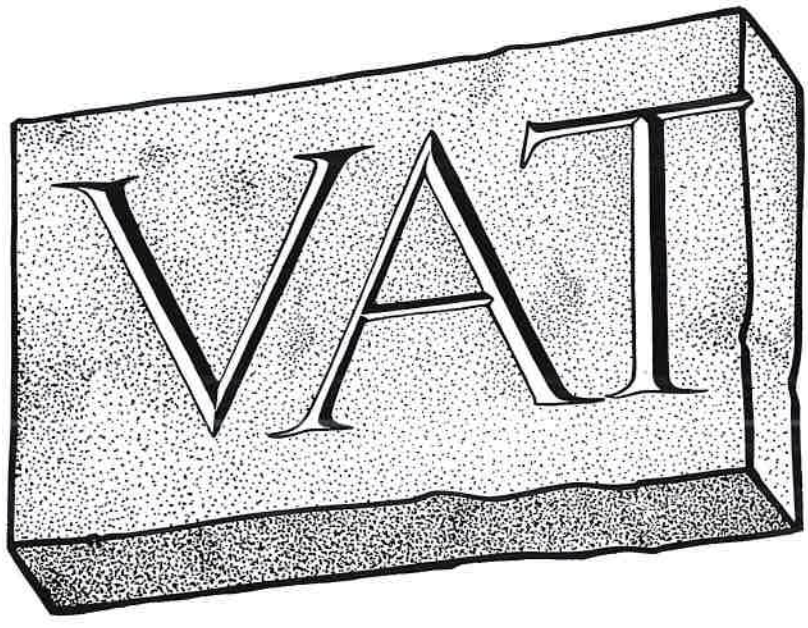

Fig. 72. Optimum V-cut shadows.

letters finished (though neither painted nor gilded), and thus having the necessary contrast for quick and easy reading of the inscription.

Light conditions vary. Under some conditions it is possible to have optimum light from the correct angle giving a favorable contrast of shadow and light. But some inscriptions are so placed, even in good light, as never to get the correct light angle for viewing the shadows of their letters.

The best orientation for chiselled V-cut letters would provide a strong light from above and the side, say in the noon sun. In such a position and time the high-lighted side, opposite the shadow side, would also have a value contrast from the face of the stone which receives a slanted, and therefore less, light. Even so placed, however, early morning, late afternoon, and cloudy days will produce weak shadows detrimental to legibility. When the light source is directly in front of the inscription, both sides of the V-cut will receive equal lighting, thus reducing still further the contrast needed for legibility. Considering the variables in lighting, it would seem that too great a burden is placed on cast shadows.

Quite often the lighted side of the letter's V-cut has practically the same color and value as the face of the stone, since both receive the same amount of light. The dark or shaded side of the V-cut is then the chief means contrasting the cut letter with the remainder of the stone. Since the shaded side is but *one-half of the whole V-cut* it is apparent that letters must be fattened to achieve normal readability. This is the reason why many contemporary letterers design and cut "chubby" Roman letters in which thin parts are thicker than they need be.

• • •

> . . . as they [Trajan letters] make their effect by light and shade, they were cut more widely than appears. All incised letters are treated thus.
>
> Allen W. Seaby, *The Roman Alphabet and its Derivatives* (London: B. T. Batsford, Ltd., 1925), p. 4.

• • •

> In stone-cut letters, on the other hand, where the shadows rather than the outlines themselves reveal the forms, different limitations govern the problem. The thin lines of a letter to be V-sunk should generally be made slightly thicker in proportion to the wide lines than is the case with pen-drawn letters . . .
>
> Frank Chouteau Brown, *Letters & Lettering* (Boston: Bates & Guild Co., 1921), p. 10.

This concern for shadows reveals why cutters, here and abroad, in order to make their incised letters legible, find it necessary to cut very deep V-cuts of sixty or more degrees and to thicken normally thin letter parts.

One suspects that commercial considerations, in good measure, underlie today's sandblasted lettering technique. Sandblasting has one good point. The technique produces an uneven bottom in the channel

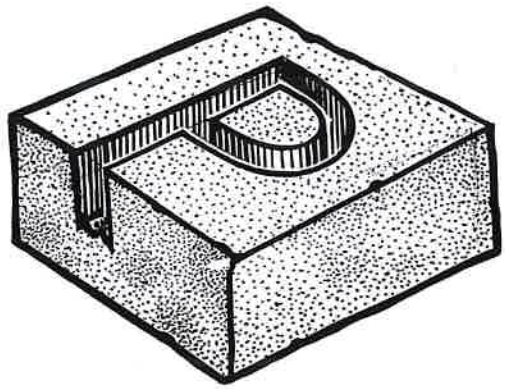

Fig. 73. Sandblasted letter.

blasted out. In order to conceal this unevenly blasted bottom, letters are purposely deeply bitten — so deeply that the bottom can be seen only on close inspection. The sides of the channel are perpendicular to the face of the stone and there is no V-cut to catch the light. Despite the

wretched quality of the stencils, the letters have the merit of greater contrast because the depth of the sandblasted cut gives a full, dark, letter shadow. But the tombstone sandblasters like the hand-letterers do not,

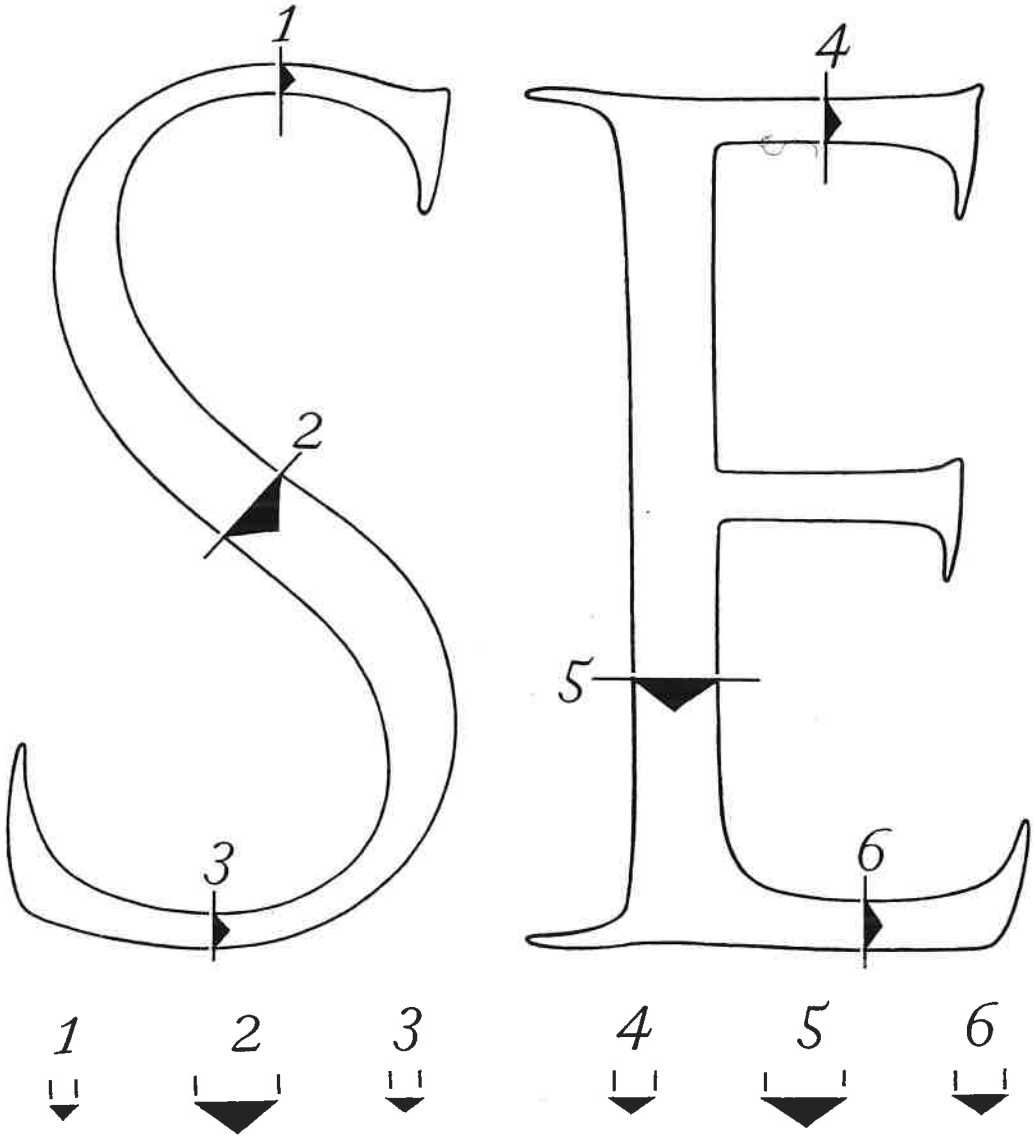

Fig. 74. The depth of V-cuts in the first two letters of the Trajan Inscription. Full size.

for the most part, paint or gild their cuts.

An examination of better ancient letters readily demonstrates that their makers did not depend on shadows. They designed their letters and thought of them as 2-dimensional, linear, shapes, even though *accidentally* these letters are preserved to us in 3-dimensional V-cuts. The first proof is derived from the shallowness of ancient V-cut lettering. In figure 74 are some cross sections showing depth of V-cut in the first two letters of the Trajan Inscription. The letters, and depth of V-cut, are full size.

A second proof is brought to light by the nature of the root in V-cuts of the Trajan and other Imperial letters. That is, the V-cut angle is constant so that narrow letter parts have shallow roots and wide letter parts

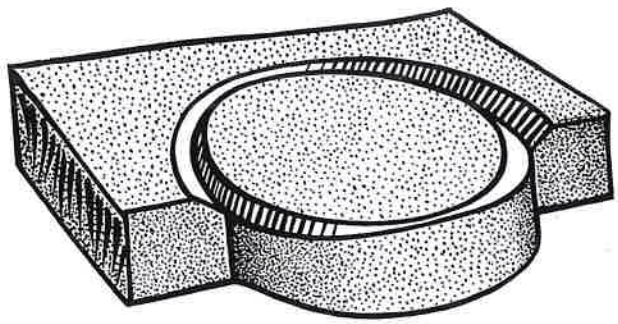

Fig. 75. The root of a Trajan letter O is a 3-dimensional space curve, not a 2-dimensional oval.

have deep V-cut roots. Thus the root of Trajan letter O, with its two thick and two thin curves, is a 3-dimensional space curve and not a 2-dimensional oval (Fig. 75).

The resultant shadows in Imperial letters, particularly at stroke junctures and ends, militate against "shadow" interpretation. Had Imperial cutters intended shadows to bear the burden of legibility it is inconceivable that they would have permitted the junctures and endings shown, for example, in figure 76. Indeed all upper angular joinings of

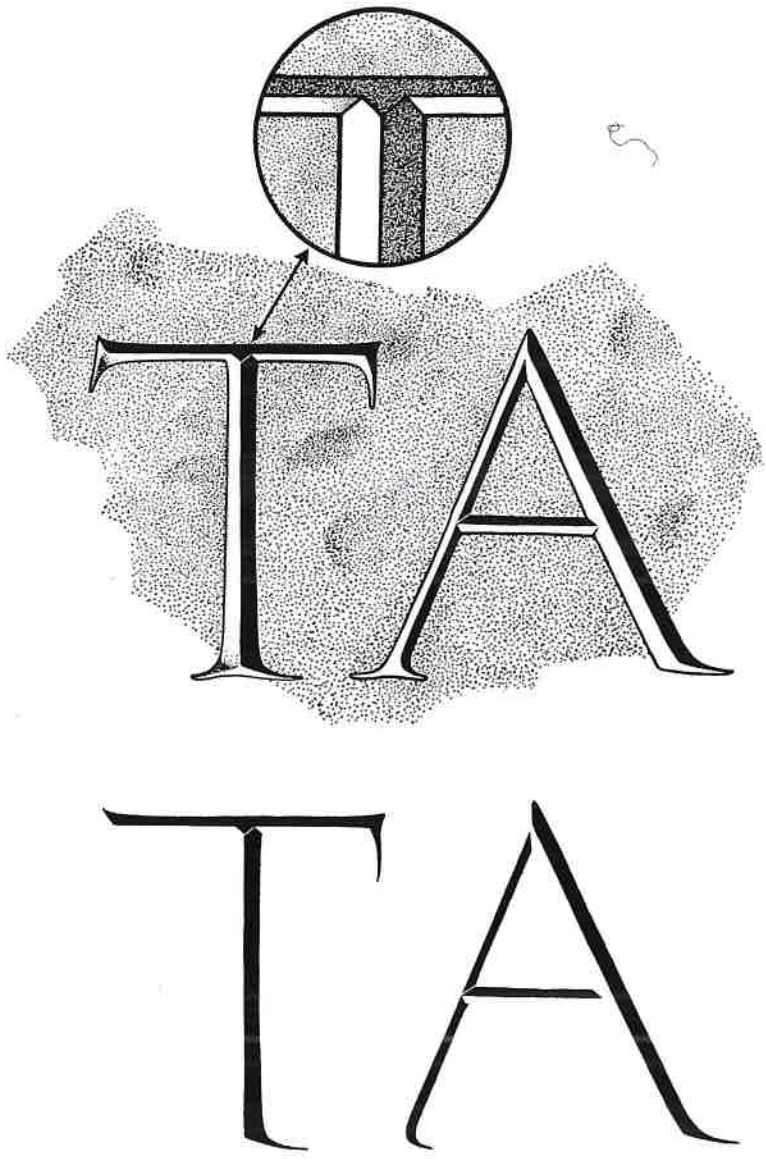

Fig. 76. The angular junctures of thick and thin strokes in Imperial letters having a constant V-cutting angle, and below, the shadows these letters make.

thick and thin letter parts (for example, in B, E, F, R, etc.) will be similar to the right juncture of bar and thick oblique of letter A in figure 76. The plain fact is that had the ancients really sought both shadows and a constant cutting angle they would have made deep rather than shallow V-cuts.

A much better solution, if shadows had been desired, would have been to make the roots of all V-cuts lie in the same plane below the stone's surface. Such a position would be analogous to 3-dimensional letters above the surface — in which the apex (inverted root) of all letter parts would be the same distance above the surface of the stone. In fact I am convinced that authors not familiar with stone-lettering

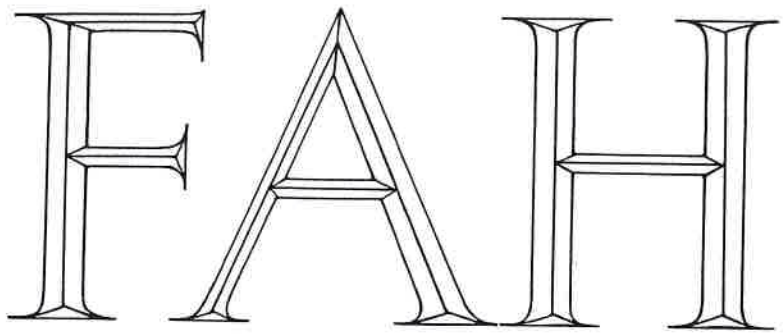

Fig. 77. 'Architectural' letters with thick and thin V-cut roots lying in the same plane.

think of incised letters as the reverse of raised letters in which the root of the V-cuts for thick and thin letter parts lies in a plane parallel to the surface of the stone. One need only to refer to lettering and architectural manuals showing Roman alphabets intended as models for inscriptional use on buildings. Figure 77, for example, shows letters F A H so designed.

There is no tradition or literary reference even remotely suggesting that letters were regarded as 3-dimensional.[5] Bronze letters, though solid, were meant to be read from the front like other letters. There was no

reason why the scribe, traditionally thinking of and making letters as linear, 2-dimensional, graphic marks in every context, should suddenly decide, when cutting inscriptions, that his letters should then become 3-dimensional and that he therefore should be concerned about their shadows.