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Slab construction in earthenware

Edward Myron McEndarfer

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Thesis Proposal for the Master of Fine Arts
College of Fine and Applied Arts
Rochester Institute of Technology

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Date: May 1969

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Approved by Graduate Committee: Date: Chairman:
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INTRODUCTION

In my work during the past two years, I have been concerned with the development and application of earthenware glazes and the design of clay forms which I felt to be compatible with these glazes. Early in this work I found that building primarily with slabs leads to pots of a character which is enhanced by the colorful glazes that are available in the range of temperature from cone 08 to cone 04.

Clay has been worked in for so long that seemingly all the problems have been solved, but this does not say that all the solutions have been found. To set up a design problem on a functional approach, or any other approach which has been often or recently used, is to in part dictate the solutions, to immediately be involved with the very solutions which are already around and which are being avoided. One can find himself deciding in favor of forms simply because they are not being used. No approach is free from the carry over from experience and judgements made in the past, but consideration of an approach which is fresh to the individual and least laden with current solutions with which to be distracted can lead to involvement with fresh forms.

Primarily, my concern has been with covered jars, although the nature of slab building lends itself to other forms. In keeping with my initial approach, that of working toward forms and images that suit the medium selected, I have tended to let function be a factor which follows the character of the work in importance. To as great an extent as possible I have tried to let the techniques and the medium itself suggest the objects to be built. Since I began with no preconception of what objects might lend themselves to the glazes I was developing, it seemed arbitrary if not confusing to limit the work to a single function.
For low temperature red and yellow, a good formula was available using Thompson's red and yellow glaze frits. This glaze is a primary red color, and although the yellow alone is a bit weak, blends of the two give a range of reds and oranges with a blend of equal parts resulting in medium orange. The red alone is rather deep, tending toward maroon, so that a blend of eighty parts red to ten parts yellow was used for bright red. This glaze was fired to cone 08; it is the only glaze used at cone 08.

**Red or Yellow Glaze**

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thompson's Frit</td>
<td>90</td>
</tr>
<tr>
<td>1310A-yellow</td>
<td></td>
</tr>
<tr>
<td>1210A-red</td>
<td></td>
</tr>
<tr>
<td>Frit G-14</td>
<td>15</td>
</tr>
<tr>
<td>Whiting</td>
<td>10</td>
</tr>
<tr>
<td>Bentonite</td>
<td>3</td>
</tr>
<tr>
<td>Petalite</td>
<td>2</td>
</tr>
</tbody>
</table>

*added for matness when desired*

The use of uranium as a red colorant was tested at cone 04, resulting in a good red or red-orange glaze beginning with the molecular formula:

\[
\begin{align*}
0.935 \text{ PbO} & \\
0.031 \text{ K}_2 \text{O} & \quad 0.156 \text{ Al}_2 \text{O}_3 \quad 1.372 \text{ SiO}_2 \\
0.03 \text{ ZnO} & \quad 0.019 \text{ SnO}_2
\end{align*}
\]

This formula was approximated using the available materials, resulting in the following batch:

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Keystone Feldspar</td>
<td>11.1</td>
</tr>
<tr>
<td>Frit P545</td>
<td>47.3</td>
</tr>
<tr>
<td>White Lead</td>
<td>41</td>
</tr>
<tr>
<td>Zinc Oxide</td>
<td>0.6</td>
</tr>
<tr>
<td>Sodium Uranate</td>
<td>24</td>
</tr>
<tr>
<td>Bentonite</td>
<td>3</td>
</tr>
</tbody>
</table>

which has a molecular formula of:

\[
\begin{align*}
0.917 \text{ PbO} \\
0.05 \text{ K}_2\text{O} \\
0.0125 \text{ Na}_2\text{O} \\
\text{.115 Al}_2\text{O}_3 \\
1.372 \text{ SiO}_2 \\
0.03 \text{ ZnO}
\end{align*}
\]

The color seems to be produced in a crystal and is best when white lead is used rather than frit. Addition of flint to the glaze results in streaking. With additions of kaolin up to 16%, little effect on the color was observed. In the presence of sodium, the color is yellow. Addition of lithium even in small amounts produces brown, while zinc tends to make the color lighter. The color seems to pass from yellow or brown to orange very fast with the addition of zinc. Use of very small amounts of zinc produce the best red. A true red color was seen only when the glaze was very thickly applied over a red clay body; otherwise a warm red-orange is a better description of the color.

The black uranium oxide gives a slightly lighter color than sodium uranate. Using the uranate, the color was fairly constant at above 18% additions, so 20% was used in the working formula in the interest of economy, even though a bit deeper red can be had using 24-26% sodium uranate. Two usable glazes were found as variations on the original formula tested; the second, UBF2, is of a slightly darker color. Both glazes are smooth mats.

<table>
<thead>
<tr>
<th>UBB1 Stone Orange - cone 04</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kingman Feldspar 11.1</td>
</tr>
<tr>
<td>White lead 98</td>
</tr>
<tr>
<td>Zinc Oxide 1</td>
</tr>
<tr>
<td>Kaolin 16</td>
</tr>
<tr>
<td>Sodium Uranate 20</td>
</tr>
</tbody>
</table>
UBF2 Vermillion Matt – cone 04
Kingman Feldspar 13
White Lead 92
Kaolin 16
Zinc Oxide 4
Sodium Uranate 18

The CLith glaze, which is discussed in the next section, was altered slightly by reducing the lead and was then found to be a pleasing smooth matt, tending to a stiff pebbly surface when thinly applied. Colors in this glaze tend to have a flat paint-like quality. The glaze was used extensively in several colors, and taking advantage of both smooth and rough surface possibilities.

DLith Glaze
White Lead 20
Lithium Carbonate 7.4
Whiting 15
Kaolin 18.7
Flint 20

Yellow
Yellow stain 9
#4659

Deep Yellow
Yellow stain 9
#4659
Tin Oxide 4

Red Brown
Iron Chromate 1
Tin Oxide 4

Pink
Iron Chromate 0.25
Tin Oxide 4

Olive Green
Iron Chromate 1
Zircopax 8
Grey
Nickel Oxide  1.33
Blue stain 4B  0.5
Tin Oxide  5

Bronze Green
Copper Carbonate  3
Manganese Carbonate  1

A test series was run testing the relative characteristics of the various fluxes available at cone 04 using the DLITH formula in which the various fluxes were substituted for lithium. Of these, one glaze, D Ba, had an intriguing luminous surface quality, similar to that found in the 3H glaze which is discussed in the following section.

D Ba A
White Lead  25.8
Whiting  10
Barium Carbonate  24
Kaolin  15
Flint  20
Cupric Oxide  2

This glaze was never found to be satisfactory, tending to blister where thick. After some attempt at correcting this fault using lithium up to 10%, the glaze was abandoned.

The sodium glaze resulting from this comparative series was found to be a pleasing smooth matt which is more reliable when using cryolite rather than soda ash as a source of soda. This glaze was used for dark green with copper as the colorant.

D NaC 1
White Lead  25.8
Whiting  10
Cryolite  8
Kaolin  18.7
Flint  28
Cupric Oxide  2.5
For use at cone 1, a stoneware glaze was adjusted and found to be an adequate opaque smooth white.

<table>
<thead>
<tr>
<th>Cone 1 White</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Petalite</td>
<td>25</td>
</tr>
<tr>
<td>Dolomite</td>
<td>30</td>
</tr>
<tr>
<td>Kaolin</td>
<td>40</td>
</tr>
<tr>
<td>Frit P626</td>
<td>55</td>
</tr>
<tr>
<td>Tin Oxide</td>
<td>5</td>
</tr>
</tbody>
</table>
In the early period of the thesis work, testing was carried out looking for a glaze which would produce matt blues or greens and would react with an underglaze slip with no change in surface character and with contrasting tones of blue.

A standard bright, fluid glaze was used for an intense chrome green. Over the slip C3, whose formula will be discussed below, this glaze is a deep oily black. It was necessary to keep the chrome to the minimum necessary to produce opaque green in order to reduce boiling and blistering over the slip.

<table>
<thead>
<tr>
<th>LF</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Frit P-658</td>
<td>89</td>
<td></td>
</tr>
<tr>
<td>Kaolin</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>Chromium Oxide</td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

Using zinc in this glaze, a soft matt olive green was found which, in combination with deep blue over the slip, was more like the subtle contrasts which had been intended.

<table>
<thead>
<tr>
<th>1HE5</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Frit P-658</td>
<td>89</td>
<td></td>
</tr>
<tr>
<td>Kaolin</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>Zinc Oxide</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Flint</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Chromium Oxide</td>
<td>0.5</td>
<td></td>
</tr>
<tr>
<td>Cupric Oxide</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

For the slip, red clay was initially used, as the pottery at that time was being done in red clay. Various frits were tried as fluxes, but white lead was soon accepted as the best for reacting strongly with the glaze. Cobalt was used as the principle colorant, and eventually the only colorant in the slip, although one early slip was later found to be useful under an iron-tin red glaze which will be discussed later. This relatively weak slip was well suited for use under the thin coat of glaze required by the glaze formula.
Slip A2
Redart Clay 65
Flint 10
White Lead 12
Cupric Oxide 4
Manganese Dioxide 5

The white slip which was used at times was the standard SAC white.

For use under the zinc matt glazes, cobalt was found to give the best results, and a larger amount of lead was required for reaction with the glaze. Small amounts of additional colorants in the slip had little effect on the intense cobalt blue which is so well suited for use as an underglaze colorant. The slip which was eventually used under the zinc glazes was based on ball clay, and could be applied to either leather hard or bisque clay.

Slip C3
Kentucky Special 35
Ball Clay
White Lead 30
Flint 10
Cobalt Oxide 5

A zirconium silicate glaze was also tested in this work on blue colors.

#3 Glaze
Frit G-23 32.4
Frit G-24 32.4
White Lead 7.45
Flint 1.15
Magnesium Zirconium 4.6
Silicate
Kaolin 6.5

This glaze, with 4% cupric oxide, overloaded to a good gunmetal black when applied over red clay, while producing a transparent green over white slip. The glaze was adjusted for fit over the red clay body, and zinc was added for mattness and its effect on the copper
blue. Magnesium and zinc zirconium silicates were tested as alternate sources of zirconium, but no effect on color or surface character was observed. For colorants, small amounts of chrome, manganese, or yellow stain were added to cupric oxide for a slight alteration of the copper blue color. A very pleasant color contrast between light and dark shades of nearly the same blue was found using the following formula over slip C3; this base glaze is a soft, opaque white and was used for white throughout the thesis work.

<table>
<thead>
<tr>
<th>#3H Glaze Base</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Frit G-23</td>
<td>32.4</td>
</tr>
<tr>
<td>Frit G-24</td>
<td>32.4</td>
</tr>
<tr>
<td>Flint</td>
<td>20</td>
</tr>
<tr>
<td>Kaolin</td>
<td>9</td>
</tr>
<tr>
<td>Zinc oxide</td>
<td>22</td>
</tr>
<tr>
<td>Zircopax</td>
<td>15</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3H2A Light Blue</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Cupric oxide</td>
<td>2</td>
</tr>
<tr>
<td>Yellow stain</td>
<td>4</td>
</tr>
<tr>
<td>4659</td>
<td></td>
</tr>
</tbody>
</table>

When zinc was added to the glaze for mattness and effect on the copper color, a luminous matt quality was found on some tests where the glaze was very thick and crystallization was not complete; this effect was never found to be consistent when the glaze was applied to large areas. It appeared most often using a formula similar to 3H2A with only 20 parts of zinc oxide. The effect was considered to be caused by minute gaps between the crystals on the surface of the glaze revealing the bright transparent glass underneath. The intriguing quality disappeared when the glaze was adjusted so that mattness was total. In a barium matt glaze tested later, DBa above, the luminous quality was found again at times; but again the quality diminished when the mattness was unbroken. Unless crystallization is so complete as to cover the entire surface of the glaze,
there appears to be no way to induce crystals to spread themselves evenly over the surface for a nearly total opaque glaze which is lit, in a sense, from behind by the reflected light admitted to the clear area beneath the surface. If some way could be found to induce nearly total mattness without a tendency for clear patches to appear, this luminous quality might result consistently.

In order to find a more simple batch recipe for the 3H glaze, and one without free lead, a similar glaze was developed from the molecular formula.

\[
\begin{align*}
\text{KNaO} & \quad 0.0496 \\
\text{PbO} & \quad 0.163 \\
\text{CaO} & \quad 0.0266 \\
\text{ZnO} & \quad 0.312 \\
\text{Al}_2\text{O}_3 & \quad 0.035 \\
\text{B}_2\text{O}_3 & \quad 0.13 \\
\text{SiO}_2 & \quad 0.653
\end{align*}
\]

The resulting glaze omitted the soda and potassium, using slightly more boric oxide to make up for this lack of flux.

\textbf{4A2 Glaze Base}

\text{Gerstley Borate} 17 \\
\text{Zinc Oxide} 25.2 \\
\text{Frit P-545} 34 \\
\text{Kaolin} 6.7 \\
\text{Flint} 25.4

Used with 1% cobalt oxide, this glaze gives a very opaque but intense ultramarine blue. With 2% cobalt and 4% ferric oxide, it produces an asphalt-like black.

In testing the #3 glaze with iron, it was found to give a marked contrast between iron red over the red clay and a weak tan over white slip. The tan was supplemented with yellow stain giving a better yellow over the slip and brightening the red somewhat. The glaze still produced a medium cobalt blue over slip C3 with a smooth matt surface on all three colors.
The glaze was very difficult to apply, tending toward opaque yellow where thick. Several other iron-tin glazes were then tested in search of one which was more reliable and less sensitive to thickness. With the thin coats of glaze necessary to these glazes, the slip A2 was found to be sufficient to produce good blues. Although sensitive to thickness, 3J5A2 had the most matt surface of those tested; the others, including the lithium glaze to be discussed below, have a somewhat brighter character.

The lithium glaze which was tested was found to give satisfactory results, with a good iron red when fairly thinly applied, becoming bright yellow and somewhat less opaque when thicker, but less sensitive in this respect than the #3 glaze so that mottled red and yellow areas were occasionally produced.

At over 5%, the iron red tends toward maroon, but at small percentages the glaze goes to yellow except where very thin. The iron content had therefore to be balanced in a compromise between these two effects.
When used over a white clay body, 1.5% iron produces the yellow over the clay body while iron red occurs over a slip of Cedar Heights Redart clay.

A lithium slip was used under this glaze resulting in a good soft blue. Slip C3 resulted in too strong a blue for the pastel iron colors.

**Slip El**

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kentucky Special Ball Clay</td>
<td>35</td>
</tr>
<tr>
<td>Lithium Carbonate</td>
<td>35</td>
</tr>
<tr>
<td>Flint</td>
<td>10</td>
</tr>
<tr>
<td>Cobalt oxide</td>
<td>5</td>
</tr>
</tbody>
</table>

This slip did not react well under the #1 or #3 glazes, reacting weakly in the former case or turning the glaze clear in the latter.
For red earthenware, the SAC earthenware body was used. A red clay was also made from Cedar Heights Red-art Clay with an addition of 10% Kentucky Special Ball Clay.

Most of the thesis work was done in a white clay which had the capability of being fired to cone 1. The Barnard Clay has little effect on the white color in oxidation, but in reduction gives a light tan color to the clay.

<table>
<thead>
<tr>
<th>White Clay cone 08 - cone 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>XX Sagger Clay</td>
</tr>
<tr>
<td>Kentucky Special Ball Clay</td>
</tr>
<tr>
<td>Talc</td>
</tr>
<tr>
<td>Frit 3110</td>
</tr>
<tr>
<td>North American Fire Clay</td>
</tr>
<tr>
<td>Grog</td>
</tr>
<tr>
<td>Barnard Clay</td>
</tr>
</tbody>
</table>

This clay has a shrinkage at cone 1 of 11% and a percentage of water absorption at cone 1 of 0.8. At cone 04 the absorption is 14%.
In beginning to think about designing for earthenware glazes, it became apparent that, to a great extent, functional thrown pottery was thought of as stoneware. In order to do justice to the problem at hand without being unduly influenced by the preconceptions with which wheelthrown pottery was involved, it was felt that another forming process should be used. To an extent, one knows what it is that is appealing about a wheelthrown pot; the surface character and the form itself relate to the forming method in a pleasing way. As a fresh approach to pottery, with a fresh group of glazes, it was thought best to work with slabs of clay, simple surfaces, which are formless and dictate little to the range of forms which can be considered. The obviously necessary circular character, the horizontally inscribed surface which results from throwing, were thought to be limitations which should be disregarded in approaching the design problem. By working in hand building techniques, it was thought that work could be done with as little as possible in mind besides the character of the surfaces and colors to be used. Later, an approach to wheel work was found which was consistent with the character of the design solution that evolved from slab work, and more will be said of that in the next section. The initial approach to designing for a group of glazes which were not familiar and which, indeed, were not fully in being, was made using slab construction.

Having abandoned the limitations of the circular wheelthrown form, two new preconceptions presented themselves as inherent in slab work; one being the rectangular box, the other the form made by rolling a slab around a pipe or cardboard cylinder. Both these construction methods were used extensively, the basic form then being paddled, cut into, or added to in order to produce the desired form. At the beginning of the work, all surface character resulting from the work of joining and forming was left on the piece, as it was felt that as
long as the surface was marked deftly, the marks added more than detracted from the overall appearance. In a wheelthrown form it is felt that some of the suppleness of the curves is due to the surface texture, which, even if the throwing is done with ribs, still relates visually to the construction method. It is difficult in hand building to achieve this balance of form with surface character, or decoration, which comes so naturally from the wheel. Slab construction necessitates a great deal of handling and propping during the forming and drying which can result in a pot whose surface has lost all the tension which it might have had when first put together. On the other hand, smoothing the whole piece down with a rib or other tool after the form is finished can be as disastrous to the over-all effect as it can be to smooth off a wheelthrown pot. As skill developed in the techniques involved, and the forms began to be more clearly in mind, it was found that a considerable amount of reworking could be done on the surface without losing the fresh quality. It was still felt, however, that the initial indications of how the clay was handled and joined tended to add interest to the surface and to act in counterpoint with the form in a more subtle and direct way than any applied texture could.

Slab construction in clay lacks the immediacy of working on the wheel. The work is necessarily protracted by the drying process necessary to stiffen slabs so that they can be used. The day's work begins with the preparation of a supply of slabs by one method or another, after which the potter must occupy himself with other work until, after an hour or two, the slabs have stiffened sufficiently so that they will stand on edge without collapsing. Naturally, this stiffness or state of dryness is a relative thing depending on the clay body, the thickness of slab being used, the scale of the work and the relative humidity. After a certain amount of experience a feel is developed for this, and a scale of work is naturally evolved which suits the
qualities of the particular clay being used and the working rate of the potter. Most of the work done for this thesis is under a foot in height, being of a size which can be worked relatively swiftly and directly. It was found that working on a scale much larger than this gave rise to so much more trouble in supporting the wet piece, in drying evenly, and in handling larger slabs, that very few pieces could be made and many more problems were involved. It was convenient to work in a size that could be turned over and otherwise handled by one man alone while the clay was soft, and without too much danger of collapse.

Perhaps the most direct method of making slabs is the simple process of throwing a lump of clay to the floor at an angle so that the impact stretches the clay flat. Fortunately, potter's shops normally have dusty floors, so that the clay does not adhere on impact. By lifting the clay gently by one edge in both hands and flipping it over, and repeating this process a few times, a slab of clay is made in a few seconds which varies slightly in thickness, being tapered toward the edges. With the last flip the slab is laid on a piece of cloth or a cloth covered board so that it can be carried to a table. If an even thickness is desired, the slab can be rolled out further with a rolling pin, using slats as guides if necessary. It was found that larger slabs are best made by throwing clay onto a canvas board a handful at a time, then pounding or stamping the clay down with the heel of the hand or foot and cutting the surface plane with a potter's harp. A harp was designed for this purpose (fig. 1) which cuts an even thickness of slab using wooden dowels as guides attached to the arms of the harp so that slats were not needed. This harp makes a slab three eighths of an inch thick, which is about as thin as was found to be practical. Plexiglas clips can be put on the guides to make a thicker slab when needed.

Another device for slab building was designed which
is excellent for production work (fig. 2). The box consists of a board base with two solid but detachable ends with flanges which hold the hardwood slats that form the other two sides. The box is held together with threaded rods secured by wing nuts. After putting it together it is pounded full of clay, the top surface is cut off with a harp, and the solid ends of the box are then removed. After taking one slat from each side, the first slab is cut off with the harp and lifted to a table by one edge clamped between two stickes with both hands. The size of the box was dictated by the size of slab which can easily be handled in this way without tearing. The whole block of clay, with the slats in place on two sides, can be covered with plastic when not needed. The box was kept on a dolly and was shoved under a table for storage. By using wider slats than were employed for this box, a much higher stack would be stable, and a correspondingly larger lump could be made. Using the slab box eliminates the laborious process of rolling or pounding out slabs one at a time, making a relatively large production feasible for an individual. On the other hand, the slats stay in place partly by adhering to the clay on one side, so that after a few days when the surface of the clay dries a little and the wood becomes damp, it is difficult to hold the stack together when drawing a harp across them. The box was only used during the most productive periods of the thesis work when all the slabs could be cut within two or three days.
Design for earthenware was not approached as a medium distinct from other ceramic temperature ranges, but as a fresh and perhaps broadening approach to design in clay. In defining the problem, the approach was kept as much as possible in the area which was new to the individual. Working in dark red clay with clear glaze and engobes was a possibility, as was majolica, but both these combinations, although they represent a part of the possibilities available in earthenware, were rejected after some trial as not being responsive to the ideas that were being developed.

A white clay, heavy with grog, was settled on, partly because it tends to enhance brightly colored glazes, and partly because it could be fired to a dense strong material at cone 1. With the relatively porous and weak ceramic at low temperatures, it is a necessary and sensible thing to assume that glaze will cover the surface entirely, thus rendering the object capable of containing liquids, and more resistant to wear. It was found to be difficult to adapt ones thinking to large areas of bright, high lead glazes after having been involved with the restrained stoneware palette. For this reason, the early work required a clay which could be fired for a pleasing unglazed surface character, and bits of color were then added.

In the beginning it was difficult not to think in terms of humorous or cartoon-like objects, and much of the early work in coming to grips with the problem appeared frivolous. This drool character continued to be present throughout the work. Broad areas of bright, highly colored glazes seem to lend this quality to any object just as some stoneware glazes tend to lend dignity to a form, and as slip glazes tend to evoke feelings of the folk or peasant tradition. The initial approach, therefore, was thinking in terms of a light, dense clay surface, finely textured, and with small areas of brightly colored glazes applied to it. The term earth-
eneware then had to be defined as a ceramic medium which includes the possibility of glazes in the earthenware range, or as ceramics at a temperature range of cone 08-cone 1.

It was felt that the design solution should be an integration of surface with form, and that the work should be direct and crisp and fresh. Rectangular pots were made, added to or cut into for alteration of the form. The work was first fired to cone 1 for strength and body color, then areas were glazed in a premeditated way. Coils or bits of clay for texture were used visually the same as color, for accents or decorative areas on the surface of the pots. At times a stiff dark glaze, 3H, was used to cover the clay, retaining the same contrast as the clay itself had with areas of red or yellow.

As a means of getting away from the rectangular form, boxes were made using round slabs for sides which were bent and pushed out from within to fatten the pot, resulting in an approximation of a spherical form. The corners were filled with coils applied casually and pressed and joined from the inside so that their outer surface remained intact. A variety of character was obtained by varying the lids and knobs. Some of these pieces looked well after having been fired to cone 1 and were left unglazed, or glazed inside only.

During the making of these pieces, platters were also made taking advantage of the decorative character of whatever scraps of clay were left over on the work table. These platters had a casual character which was pleasing, and working with them led to an attitude or method of approaching design in clay which effected the work from then on. It seemed for a while that in taking advantage of accidental texture and form, one's only function was to watch what was happening in the clay and to direct it by assembly and juxtaposition of various elements until the result was felt to be homogeneous.

At this time the smooth monochromatic glazes were beginning to develop, and gradually a degree of freedom
was achieved from the rigid application of glazes to predetermined areas. The new attitude of approach to plastic clay coupled with finally feeling at home with a group of glazes led to forms which arose unexpectedly from the work itself. Cylindrical forms were being used with coiled knobs and handles, but soon these little details of scattered color accent and busy surface texture were no longer necessary. The involvement was beginning to be with form itself, and with surface as defining form.

The technique of handling slabs had developed considerably, and now the cylinder or box was used as a beginning volume. The form was paddled and scraped, distorted considerably into an amorphic shape, and color was thought of as broad, casually applied areas of smooth matt glaze. The question of applied detail was approached as a challenge to the form; if an application was felt to be wanted, the object was studied carefully for some possible change in shape which would make a detail unnecessary. The resulting unity of these objects allowed a free approach to glazing. The use of bright colors seemed to echo the fruit-like organicism of the form. It was felt that ways had now been found to use brightly colored glazes in conjunction with the organic surface of reduced clay, and the visual vocabulary had been expanded to include some earthenware aspects.

It was found after this work that wheelthrown forms could be integrated into this series without the surface character or symmetry of the wheel intruding. A closed form was thrown, and then trimmed in a bisque bowl, then the form was reoriented slightly in the bowl and smoothed with a flexible metal rib. After turning and smoothing the form from several different angles, a spheroid resulted which was not oriented symmetrically and which had the same amorphic surface character as the hand built object.

Some of these pots were fired in raku, and the resulting accidental effects challenged a new approach to the forms which had been evolved in the thesis work. The challenge and continuation of the work lies in manipulating
the ideas further to incorporate the balance produced by accidental effects into the form itself. With this challenge in mind, the glazing of the final series was approached as a time for reevaluating the form and color relationships which had already been decided upon. Color was brushed on in some cases, correcting balance and design character. Although many of the pots stood adequately with simple monochromatic treatment, the impact of surface detail in glazing, either accidental or deliberate, was tremendous. Analysis of these corrections also led to new insight into the forms, suggesting new variations.

Using the approach proposed in the thesis, it was felt that a deep involvement with design had been developed. As in the initial tentative endeavors, concentration in the design process is placed upon seeing the medium itself in one aspect, and devoid of preconceptions. The development of an idea comes through the process of the medium and its variety as a means of viewing the developing idea from continually different aspects. Starting with the selection of scraps of clay seems arbitrary, and can be; but these scraps often represented the negative space discarded from a form which had been created deliberately, and were therefore inaccurate but concrete records of ideas. Seeing the idea in this aspect leads to a reconcentration, and another approach to stimulating the design sense. Taking advantage of each surprise, of which many are inherent in the ceramic process, aesthetic decisions can be made from the stimulus of the medium itself and the impact of the medium upon the idea.
Literature Abstracts of Ceramic Glazes
Koenig, John Henry, ed.
Philadelphia College Offset Press
1951
FIGURE 1
DETAILED HARP ARM
NO SCALE
EM
1/2 PLAN

SIDE VIEW INSIDE

1/4 x 1 1/2 x 3 5/8"

ELEVATION

1/4" ALL THREAD

8 1/2"

26"

3 1/2"

FIGURE 2
SLAB BOX
1/4" = 1"

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