1965

Evolving Creative Thrown Pottery Vessels from Basic Forms

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EVOLVING CREATIVE THROWN POTTERY VESSELS FROM BASIC FORMS

A Thesis

Presented to

the Graduate Faculty

Central Washington State College

In Partial Fulfillment

of the Requirements for the Degree

Master of Arts

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by

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December 1965

APPROVED FOR THE GRADUATE FACULTY

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ACKNOWLEDGMENTS

I wish to express my appreciation to the thesis committee: Professor Richard R. Fairbanks, Chairman, for his inspiration, guidance and recommendations on the laboratory studies and pottery series basic to the thesis; Dr. Louis A. Kollmeyer for his encouragement and assistance in the development and organization of the thesis; and Professor E. Frank Bach who shared in the definition and evaluation. And to my wife, Penny, I express my special thanks for her understanding and help in completing the study.

TABLE OF CONTENTS

LIST OF PLATES

CHAPTER I

THE PROBLEM AND LIMITATIONS OF THE STUDY

I. THE PROBLEM AND PURPOSE

This study presents a variety of pottery forms that can be evolved from specific basic form ideas. The form of pottery is a constant problem to the potter, who often finds that his work does not realize his design objectives. His work may have excellent lines and form suggestions, but these fragmentary expressive elements have not been refined to a complete statement. By progressively varying the design elements of the silhouette, many different pottery forms can be evolved. By employing this approach, the potter can completely explore his theories of design and find the better proportion and placement of all elements of his forms. This is a good method for creating a more complete statement in pottery and yields a number of well designed forms.

II. LIMITATIONS OF THE STUDY

The forms explored in this study are thrown covered containers of usable size with the mouth of the vessel smaller than the greatest diameter of the vessel. These vessels can be used for the storage of foods, such as cereals, cookies, sugar, and so forth. The covered vessel

has been chosen as a topic because it offered challenging problems in form variation and in relating the cover to the container. Another consideration was to evolve pottery forms that are whole statements in themselves. The possibility of creating a complete form, even with the lid of the vessel removed, has also been considered. These forms will be devoid of decoration, including modifications of the circular form, with the exception of glaze effects. It is not the purpose of this study to include such modifications.

CHAPTER II

PHILOSOPHY OF POTTERY

This section involves my philosophy of art and is derived primarily from my study of pottery. The instructors with whom I have studied, have been the major influence in the development of this philosophy, although the general thoughts and ideas of the Chinese potters obtained from reading and observations have also contributed to the formation of these principles.

As a product of nature, clay must reveal its characteristic properties when transformed into pottery. The finished wares and the natural material are bound together by their origins: clay to nature, pottery to clay. To sustain this relationship, the potter is required to maintain a constant vigil over the design of his wares. The potter does his best to fashion the clay into usable objects and then must wait for the intense red-heat of the kiln to transform the clay pieces into pottery. The potter can control the processes of forming the clay to a great degree, but as the pottery is being fired, the potter loses total control and is at the mercy of nature. It appears that the potter is in a constant confrontation with nature to produce his work.

Pottery, to be honest to its materials, must express the characteristics of its components (1:105). Clay has certain properties that make it suitable for pottery making, such as plasticity, mass, hardness when fired, chemical stability, and others, and these should be utilized in pottery in determining an object's formation. The potter must treat all facets of his work with equal care and judgment, so the details of the object do not overwhelm the concept of the whole. Nothing must detract from the form. Details and innovations should enhance and complete the total form.

In attaining this relationship between clay, as a natural material, and pottery, as a functional object, the potter is obligated to remember the utilitarian aspects of pottery. Pottery has always been basically utilitarian; a specific use was the basis for pottery in times past. A pitcher looked and functioned as a pitcher, and the form of a wine bottle or bowl suited its intended purpose. This is clearly observed in two great pottery cultures: Greek and Chinese. The Greek culture had definite forms for each specific purpose and rarely deviated from these styles as seen in such forms as the kylix and the krater styles. They believed that they had found the best possible pottery forms for their purpose (10:10-12). The Chinese also had definite thoughts concerning form and use, although not nearly as

rigid as the Greek tradition (11:29-42). Every type of vessel or object had a specific utilitarian intention which determined its basic form, such as the bulb bowls, vases, and storage jars. Although several pieces of a specific category of pottery were not identical, each had characteristics common to its use. The potters of these cultures never forgot that their pottery had a useful function as well as an aesthetic and ornamental quality (1:101).

Good pottery should not be determined by size, shape, and color alone, but also by its appropriateness to its utilitarian intention (1:103). Pottery's most important aspect is the relationship between form and use, to create a unified and aesthetically complete object. It is important to remember that although pottery is made to be used, it in no way simplifies the problem of artistic expression; there can be no fullness or complete realization of utility without aesthetic pleasure (6:13). A utilitarian attitude toward pottery is an important idea, but not a complete doctrine, as this leads to dull and uninteresting forms, such as some commercial tea pots. The potter should deviate from this utilitarian concept at times to free himself from useless repetition of forms previously made. New and different approaches should be employed to reveal untried form possibilities. These should be further amplified and modified and joined with the utilitarian requirements of

pottery. The potter must explore and expand his thoughts to continue to function as an artist. Pottery, like all other forms of art, reflects human values and is inevitably the projection of the mind of its creator (6:13).

Pottery is, and always has been, steeped in the traditions of the clay vessel. This traditional approach to materials should be upheld and employed by the potter in his work. If these traditions are outdated, they should be re-examined for their value; still their basic thoughts should be maintained and continued. As Marguerite Wildenhain states:

> First and foremost, let us give to the younger generation all that we still have of a living tradition, and let us also take from the machine all the ideas and suggestions of form. Let us admire the pottery of former ages and countries not blindly but seeingly, and let us learn to discern what qualities make them beautiful (13:19).

The theory that pottery should free itself from the yoke of tradition and utility and emerge as a new art form has little merit (12:31-37). It does give the potter the possibility of new experimentation, but if he pursues these thoughts, which neglect the essential utilitarian qualities of a vessel, his work may cease to be pottery and become either ceramic painting or sculpture.

CHAPTER III

EQUIPMENT AND TECHNICAL PROCEDURES

I. TOOLS, CLAYS AND GLAZES

The pottery tools used in this study were commercially manufactured, although a few were home-made for specific purposes. These tools were especially useful in the finishing stages of the throwing process: elephant-ear sponge, copper forming rib, bamboo cutting tools, potters knife, dissecting needle, metal trimming tool, nylon cutting wire, and round Japanese brushes.

The potters wheels used were of the electric and kick-wheel types. All throwing was done on a Skutt electric wheel with plaster bats used to facilitate removing the finished pottery from the wheel. The trimming of the vessels' foot rims was done on a kick-wheel, fabricated by the candidate to fit specific considerations, in order to obtain more direct control over the work.

The clay body used was a stoneware composed primarily of fire clays. The formula appears in Appendix A. This clay body is quite plastic and easily formed on the potters wheel. The combined drying and firing shrinkages are approximately 12 1/2 per cent and are quite uniform. When fired to maturity, the clay body burns to a reddish brown color.

Five high-fire base glazes were developed for this study. These are of the feldspathic variety, with the surfaces ranging from glossy to soft satin matt. These glazes were calculated from the candidate's own emperical formulas. The use of the emperical method gives no assurance of formulating perfect glazes, but gives the potter a greater possibility of obtaining good quality glazes. The base glazes developed for this study are numbered R14, R15, R16, R17A, and R18A, with both the emperical formulas and the batch recipes listed in Appendix B. Fifteen colorant additions were made to each base glaze to discover the color range possiblities of the glaze. A chart of the colorant additions is listed in Appendix B. Twelve glazes were selected for their suitability of colors and surface qualities. These glazes are very reliable, with four exceptions: R17A, when used without a colorant, has a tendency to crawl if applied too thickly; R15-6, a saturated iron-red glaze, becomes an unpleasant dark brown when fired above cone 9; R15-11 is a speckled gray glaze that has a rough texture at times; R15-7, a reduced copper red glaze fires transparent if applied too thinly, and will become very dull if exposed to the direct raw flame during the firing.

The liquid glaze was applied to the bisque fired pots by dipping, pouring, or spraying. A wet sponge was used to dry-foot the wares; that is, to remove the glaze from the

foot rims. In the glaze firing, all the covered pots were fired with the lids in place, the glaze having been removed from the edge of the lid and mouth in the same manner as from the foot rim so the lid would not be fused to the pot. The lids were fired in place on the vessels in order to insure a proper fit of the lid, since when vessels are fired with the lids removed, the lids usually do not fit properly when finished because hand thrown pottery tends to warp somewhat when highly fired.

II. KILNS AND FIRINGS

All pottery in this study was fired in a sixteen cubic foot Alpine updraft forced air natural gas kiln for both the bisque and glaze firings. The pottery was bisque fired to cone 010 (1641 degrees F.) in an oxidation atmosphere and glaze fired to cone 9 (2336 degrees F.) in a reducing atmosphere. The Alpine kiln is very reliable, with consistently even firings, although the heat in the upper part of the kiln advances at a faster rate than in the lower part of the kiln chamber. However, this uneveness can be controlled by regulating the gas-air ratio. The firing schedules vary slightly with each firing, but are approximately the same as listed in Appendix C for bisque and glaze firings. A minimum of twelve hours must be allowed for

cooling, but sixteen hours of cooling is preferred because it gives the kiln a longer usable life.

For each glaze firing, the kiln shelves were painted with kiln wash (one part kaolin, one part silica, mixed with water to brushing consistency) to prevent pots with glaze runs from sticking to the shelf. This was not done for the bisque firings. The stacking procedures differ between bisque and glaze firings. In the bisque firing, wares are stacked very compactly with small pieces placed inside larger wares. In the glaze firing, the wares cannot be in contact with each other. At least one-eighth of an inch must separate the wares to prevent them from fusing together.

The bisque firing does not need to be very accurate as the pottery will still be porous if fired higher or lower than cone 010. One pyrometric cone (010) is placed directly behind the bottom peep hole and the kiln is shut off when this cone deforms. The glaze firing, however, must be very accurately controlled to insure proper glaze development with each firing. If cone 9 (2336 degrees F.) is not reached, the glazes will be rough and dull appearing, but if the firing is hotter than cone 10 (2381 degrees F.) most glazes will run. The pyrometric cones used for the glaze firing are Orton cones 010, 5, 6, 7, 8, 9, and 10, at both the top and bottom peep holes. Two sets of cones are used

to observe the temperature advancement at the top and bottom of the kiln to insure even firings. (See Appendix C for firing schedules)

CHAPTER IV

EVOLVING CREATIVE POTTERY FORMS FROM BASIC THEMES

In an effort to present a great variety of pottery form possibilities, shapes ranging from roundly spherical to harsh and severe cylinders were explored. Six series with a total of 52 pieces, were developed and are presented and discussed by terms that describe their basic characteristics. In size, the finished forms ranged from 6 to 13 inches in height. These shapes are: (1) Spherical; (2) Cylinder and cone; (3) Hyperbolic; (4) Cone and Sphere; (5) Hemisphere; (6) Contingent.

THE SIX BASIC FORMS

#6 #1 #4 #2 #3 #5

To begin the study, a variety of covered vessels was thrown as random to explore some form possibilities. Most of these containers were destroyed later as their shapes did not display enough good qualities as basic form ideas to warrant their expansion into definite series. Of these first wares, two were retained for use in this study. Both

are basically spherical in form "from which all other forms might be said to deviate," and served as the basis for the first series (9:57).

To expand these idea forms, concentration was placed on varying the proportion of the characteristic elements of each form. This was accomplished by varying the portion of the shape that is the primary visual emphasis of that vessel. With this process, the evolution of many different forms is possible, with each still retaining a family resemblance to the basic form. The part of a vessel that is the area of primary visual emphasis is that portion of a pot that is first observed by a viewer. All parts of the vessel must relate to and balance with this area of primary visual emphasis.

Relating the parts of a container to the total form is probably one of the most difficult problems in making covered vessels. For example, it is quite easy to lose sight of the total form while fashioning the knob on a lid. In some forms, a protruding knob detracts from the form by seeming to extend the line of the form upward and out of proportion and balance with the form. The whole concept of a covered container seems dependent upon the vessel's lid. The lid must be easily removable to facilitate the removing of the vessel's contents, or the vessel may not function adequately as a utilitarian object. A simple cord fastened

to the lid of a vessel will serve as a lifting device, but may fail to enhance and complete the form of the container. Relating the knob to the pot can be accomplished by repeating the lines of the vessel in the knob on a smaller scale. This tends to bring the top portion of the vessel to an ending without any harshness or strangeness, and without forcing primary attention to this portion of the vessel.

Moreover, contrasting relationships between the knob and the body of the vessel can be a very effective way of evolving complete total pottery forms. The knob can become a point of interest in a vessel or an accenting form to emphasize other parts of the container. There is no rule that states that the knob of a covered vessel must be subdued or uninteresting. But, to create totally complete forms, the knob of the vessel should not overwhelm the whole form.

There is a tendency in contemporary American pottery to create covered containers in which the lifting device on the lid seems to be the major statement of the vessel. With such importance placed on the decorative treatment of the knob, the remainder of the form may become much less significant, since all emphasis is on the knob and the remainder of the vessel can become little more than a base for the lid.

The relationship of the hand to pottery should be a constant consideration. Focillon believes that between the

hand and pottery, begins an association that will endure forever, and that one communicates to the other its living warmth and continually affects it, as the pot is never finished (2:69). The potter is concerned with the movement of his hands while he forms the pot. At the same time, he must consider the eventual use of the vessel. Some pots, such as covered jars and teapots, should be able to be picked up and carried, and the lids of both should only require one hand for removal from the pot. In the case of a jar, the opening should be large enough for a hand to reach in and remove its contents. Some vessels could have smaller mouths and still be completely functional by using a dipper to remove their contents. Also, the small neck would offer a convenient handle for dispensing liquids or pourable solids, such as grains. There can be many uses for a single vessel, and the potter should concern himself with these future uses as he forms the vessel.

COVERED VESSELS BEING GLAZED

CHAPTER V

ANALYSIS AND PRESENTATION OF POTTERY

I. SPHERICAL

This first group, the spherical, composed of eleven vessels, ranges from almost cylindrical to round and was the first group completed. Of the six basic forms, this shape is the easiest to vary and still relate to the basic spherical form with the most distinguishing variation found in the neck and lid of the vessel. The spherical shape can be lengthened or flattened and still retain its characteristic roundness because there is no definite focal point to a uniformly curved line.

With the extension of the neck upwards, more emphasis is given to the spherical quality of the vessel. The type of lid may also serve to emphasize the roundness of a vessel. A domed lid will create a more definite appearance of roundness by continuing the curvature from one side of the vessel to the other. A flat set-in lid will end this movement and still give a successful appearance or roundness, but can also work against itself by detracting from the spherical unity. With the flat set-in lid, the lid takes on added importance in showing a transition between the flat line of the lid and the curve of the body.

The glazes used have great importance in giving emphasis to the spherical quality of these vessels. The use of a light colored glaze on the lower portion of the vessel gives the appearance of mobility, while a dark glaze in this area seems to hold the vessel down and anchor it to its setting.

As a group, these vessels would probably be best used as storage containers, cooking utensils such as bean pots, or for serving, although on some pots the knob is too high to be easily used in an oven. Several vessels in this series have a light colored glaze on the inside of the pot which would facilitate cleaning. In contrast to this, some foods would be enhanced by the use of a dark glaze on the inside which would absorb the light instead of reflecting it.

II. CYLINDER AND CONE

This group of severely shaped covered containers, consisting of thirteen vessels, probably shows the greatest variety of all of the series in form relationship. The primary variation used was the point at which the cone shape merges with the cylindrical form. This break has varied emphasis within this series which helps to strengthen the vessels' relationship to each other.

On most pieces here, the lid is an accenting feature. The vessel functions quite well with or without the lid on the vessel. This is the result of strong emphasis in the lip by reversing the cone shape to allow space to support the lid. In this group, the lid is quite easy to relate to the body since the form is complete in itself. Simplified

glaze application seems to have a better relationship to the vessel since the form is strong enough, but the color of the glaze has little relation to this. Any color will function well, but the glaze application should be controlled in its simplicity.

This series has a variety of utilitarian possibilities, since they function as complete vessels with or without a lid. Without the lid, they could be used quite well as vases. With the lid in place, they become adaptable for storage containers: tobacco humidors, cookie-jars, grain or cereal containers. Some, however, are limited in their functional possibilities by the small size of the mouths since a hand could not be removed if grasping an object, although liquids or some solids could be poured out of such a vessel. Because these vessels would not be used for serving, the glaze color on the inside of the vessel was not a consideration. The foods stored within would not cause problems in cleaning and as such was not a factor in determining the glaze color or surface for the inside of the vessels.

III. HYPERBOLIC

The hyperbolic series, consisting of seven vessels, is somewhat limited in form variation, although the separate vessels show changes in proportion. As a group, these vessels are not too successful in representing complete statements in form although a few individual pieces succeed more than others. This series could have been expanded to a greater degree by more variation in the lid and lip treatments as well as greater form modifications. The two inward curving lines that form the silhouette of the vessel are so definite that with further study and development a better relationship between vessel forms could easily be accomplished.

The functional possibilities of these vessels are much the same as others. It is possible that they could be used in unique functional situations, but as a group they are best suited for the storage of dry foods. The interiors of the pots were glazed with the same color used on the exteriors of the vessels. Some vessels, glazed dark on the inside, could cause cleaning problems because the form makes some areas difficult to see.

IV. CONE AND SPHERE

Eight vessels comprise the cone and sphere group, which is seen as a transitional form between the spherical and cylinder-cone series, although this was not the original intention. Many of the characteristics of both series appear in this group, which helps to make it more flexible.

Most of the actual shapes are quite similar, but the emphasis is varied from vessel to vessel by proportion and glaze treatment.

A few vessels in this group can function without a lid, but are more successful as covered vessels. The glaze treatment can be varied successfully from random application to controlled application without detracting from the vessel.

This series has the functional possibilities of either storage vessels or as vases. The lid is easily removed by grasping or by sliding two fingers under the lip of the knob and lifting it off. The neck is large enough for easily removing the contents and as such, would satisfy the utilitarian requirements for storing either liquids or solid materials. Because of their height, they would probably not be used as serving vessels other than as cookie-jars.

Most of these vessels have a dark glaze on the interior, but this should not cause difficulties in cleaning since the shape has no hard-to-reach areas on the inside. The dark glaze would contrast with the food in the vessel and would present a more appetizing effect.

V. HEMISPHERE

The hemisphere group of six vessels is a tightly related series that shows a surprising amount of form variation. The smallness of the vessels aids this close relationship as the discernable proportion of variation is limited by the small size. The primary variation in form appears in the neck of the vessel. This transitional area between the hemispherical lower portion and the lip was lengthened or shortened to vary the emphasis of the basic shape.

These vessels appear to have two primary utilitarian functions, that of cooking-serving wares and storage containers for liquids or pourable solids. Most of the vessels are of good size for baking casseroles, and would easily fit

into an oven. The knobs are fairly low to the lid and should not cause difficulties in setting in or removing from a hot oven. In two of the vessels, the neck forms a convenient handle for lifting or pouring and is quite functional in this way.

On most pieces, a light colored glaze is more appropriate for the lower portion of the vessel because this brings more attention to this area and helps to give the vessel the appearance of greater size. The interiors of most vessels here have a light colored glaze to facilitate cleaning since they might be used for cooking, although a dark glaze might better present the food when the vessel is used for serving.

VI. CONTINGENT

The contingent series is formed of seven vessels very loosely related to each other. The shapes vary in treatment of the lid, proportion, and concept of basic elements. The most common characteristic is size. All the vessels of this group are small with the main part of the body quite low, which forms the loose but basic shape. This common factor is probably the only reason they function as a related group. The lightness or darkness of glaze has little relation to this group since the forms are strong enough without requiring added emphasis from glazes.

As functional vessels, this group is limited by the long small neck which prohibits entry of a hand for retrieving contents or for cleaning. The neck can be grasped, but

the lip would cause difficulties for pouring. Two vessels could be used as baking-serving wares, but the knobs are not appropriate for oven use because they are much too high for convenience. A light colored glaze was used on the interiors of most of these vessels to assist in cleaning since there are some areas of the interior that are difficult to observe and a dark glaze would complicate the cleaning process.

CHAPTER VI

SUMMARY AND CONCLUSIONS

I. SUMMARY

It was the chief purpose of this study to develop a variety of related pottery vessels from basic forms. The number of forms that can be derived from a basic form seems to be endless. There are six separate series in this study with the wares placed in an order that would show a consistent progression in form from the spherical to the contingent group. This progression seems to imply that although certain shapes are more appropriate for a particular utilitarian situation, many varied forms may be used for the same purpose, as established in this study. All of the vessels shown could be used in several utilitarian situations, ranging from cookie-jars to tobacco humidors. These vessels were formed with the idea that each would have a particular utilitarian function when completed. The size of a hand in relation to the mouth of the vessel was a consideration, as well as the height and shape of the knob as related to the hand.

The speed of execution of the vessels was a factor in the relationship of one to another. The faster the vessels were produced, the more detached the relationship became. In some cases, such as with the contingent group, this proved

helpful in creating a group of pots that, while quite different individually, showed some relationship of form when grouped together.

One problem that arose in the study was the relationship of the glaze to the vessel. As the study progressed, the two major considerations were: (1) the evolving of forms that were complete in themselves and that were still related to each other in their own series, and (2) the creating of forms that were complete either with or without a lid. There was a tendency in the process of applying the glaze to become involved with a single vessel and to lose sight of the total relationship of form and glaze, and, also, to become involved in over-decoration or unrelated decoration. This might have been caused in some part by the basic human feeling of "horror vacui," the psychological necessity for ornamentation (9:22). Both of the above considerations were handicapped by this problem which seemed to be solved satisfactorily by working with a single technique, that of double glazing and relying on the form of the vessel to be the major statement.

II. CONCLUSIONS

Evolving groups or families of pots from a basic form has value in finding more appropriate forms for specific utilitarian situations. This process could be applied to

any type of vessel: plates, bottles, bowls, and others. Modifications of this approach could result in either tightly controlled wares or very loosely related wares, and still end with the same result; i.e., the process of using the best parts of a form idea and incorporating them in another vessel. A parallel approach could be the manipulation of another part of a vessel other than the area of primary visual emphasis, such as the area of decorative treatments, textures, or variations of the horizontal circular form.

The concept of the total form is most important in determining the shape of a vessel. No one portion of a vessel must be allowed to dominate the form. The elements of the form must combine to present a complete and unified form. There may be points of interest or emphasized areas, but they should relate and add to the form and not detract from the complete statement of the vessel.

The problem of creating a form that is a complete statement in itself while still maintaining a relationship with other vessels does not end with the silhouette of the form. The application of the appropriate glazes is of utmost importance in completing the form so that it becomes a unified whole. It is probable that more good pottery is ruined by poor glazing than by any other factor in pottery making. The potter must restrain himself in the glazing

process and not attempt to cover the pot with meaningless decoration. The glaze should add to and complement the form, and not detract or dominate the form. It is not necessary to glaze the entire vessel since the color and texture of the clay exposed in some areas can add to the aesthetic quality of the form. The exposed areas of the raw clay body around the lid and lip of covered vessels presents a pleasing contrast to the glaze in most cases, and demonstrates that the lid is removable. The interiors of all the vessels were glazed to unify them with the exterior of the pot and assist in cleaning.

The true value of this study is dependent upon a person's philosophy of pottery. For the potter who does not adhere to a utilitarian concept in his work, there is no need to concentrate on evolving forms from basic themes since he is not interested in finding the best relationship between form and use which was a basic consideration of the present investigation. The utilitarian potter is obligated to involve this relationship in his work and it becomes quite beneficial in perfecting his wares into complete statements of utilitarian pottery.

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APPENDIX A

STONEWARE CLAY BODY

Clay Formula:

100	lb.	Mason's Blend Fire Clay
20	scoops*	Denver Fire Clay
10	"	Silica flour
10	"	Kentucky Ball Clay; OM #4
10	"	Custer Feldspar
8	"	White Silica sand
6	"	Buff Grog, 40 mesh

* One scoop equals approximately one dry gallon.

APPENDIX B

GLAZE FORMULAS

Formulas:

R14:	KNaO	.3	Al_2O_3	.35	SiO_2	4.0
	CaO	.4				
	BaO	.3				

Kingman Feldspar	1650 gm.
Whiting	400 gm.
Barium Carbonate	591 gm.
Kaolin	129 gm.
Flint	1260 gm.

R15:	KNaO	.3	Al_2O_3	.35	SiO_2	4.0
	CaO	.6				
	MgO	.1				

Kingman Feldspar	1650 gm.
Dolomite	184 gm.
Whiting	500 gm.
Kaolin	129 gm.
Flint	1260 gm.

R16:	KNaO	.4	Al_2O_3	.45	SiO_2	5.0
	BaO	.3				
	CaO	.2				
	ZnO	.1				

Kingman Feldspar	2200 gm.
Barium Carbonate	591 gm.
Whiting	200 gm.
Zinc Oxide	81 gm.
Kaolin	129 gm.
Flint	1500 gm.

R17A:	KNaO	.3	Al_2O_3	.35	SiO_2	3.5
	MgO	.4				
	CaO	.3				

Kingman Feldspar	1650 gm.
Talc	378 gm.
Dolomite	184 gm.
Whiting	200 gm.
Kaolin	129 gm.
Flint	720 gm.

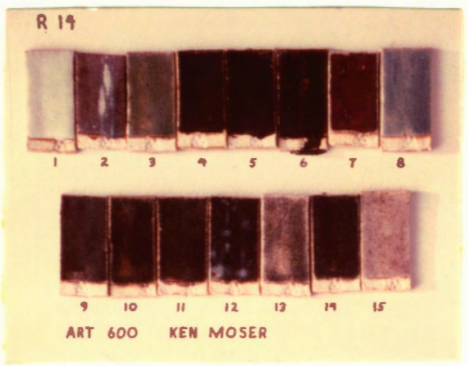
R18A: KNaO .2 Al_2O_3 .4 SiO_2 3.0
MgO .3
CaO .5

Kingman Feldspar	1100 gm.
Dolomite	552 gm.
Whiting	200 gm.
Kaolin	516 gm.
Flint	840 gm.

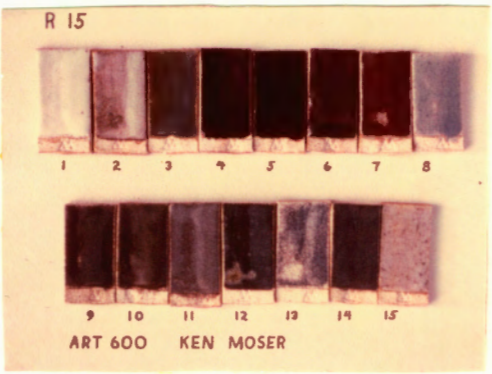
Colorant oxides:

1.	Ultrox	10%
2.	Rutile	5%
3.	Iron Oxide	2%
4.	Iron Oxide	6%
5.	Iron Oxide	8%
6.	Iron Oxide	15%
7.	Copper Carbonate	1/2%
	Tin Oxide	2%
	Iron Oxide	1%
8.	Cobalt Carbonate	1/8%
9.	Copper Oxide	2%
10.	Iron Chromate	3%
11.	Nickel Oxide	3%
12.	Vanadium Pentoxide	3%
13.	Granular Rutile	6%
14.	Cobalt Carbonate	1/4%
	Copper Carbonate	3%
15.	Manganese Dioxide	3%

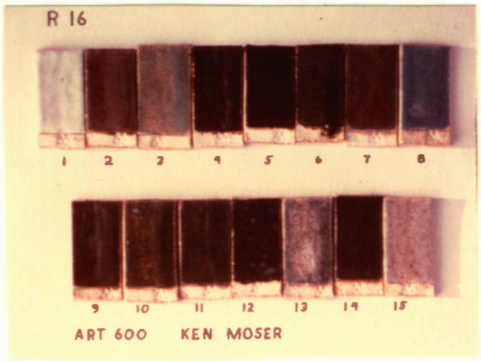
GLAZE TEST CHARTS



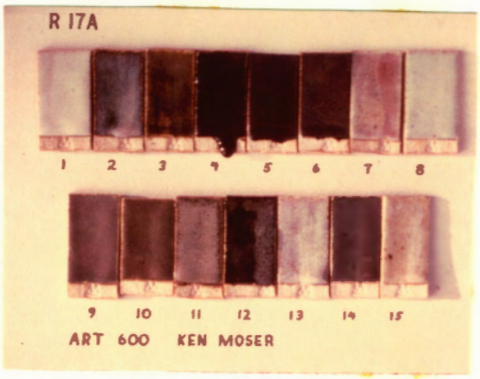
R 14



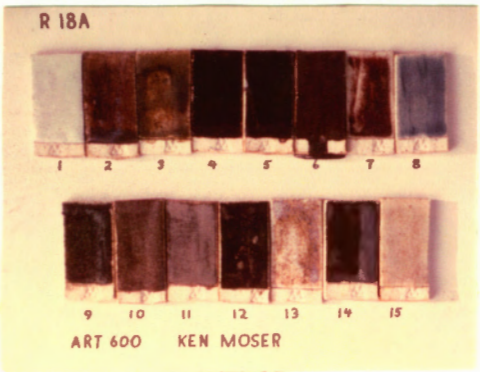
R 15



R 16



R 17A



R 18A

APPENDIX C

K I L N L O G

DATE:

KILN: HF - 16

STACKED BY: Ken Moser

TYPE OF FIRING: C/9 R

FIRED BY: Ken Moser

CONES, UPPER: 5-6-7, 010-8-9-10

LOWER:

TIME	GAS	AIR	ADJUSTMENTS AND OBSERVATIONS	
16:00	3/4"	30	Stack and start on low range over-night	
9:20 2nd day	4½"	60	C/010's down; set high range and adjust dampers for reduction	
11:43	5 "	60	TOP	BOTTOM
			C/6 3:00	C/6 3:00
			C/7&8 soft	C/7&8 soft
11:52	5 "	60	C/7&8 1:00	C/7&8 1:00
12:12	5 "	60	C/8 down	C/8 up
			C/9 up	C/9 up
12:33	5 "	60	C/9 down	C/9 down
			C/10 soft	C/10 soft
			Shut off kiln and open dampers.	
10:00 3rd day			Open kiln and unstack	

K I L N L O G

DATE:

KILN: HF-16

STACKED BY: Ken Moser

TYPE OF FIRING: C/010 Bisque

FIRED BY: Ken Moser

CONES, UPPER:

LOWER: C/010

TIME	GAS	AIR	ADJUSTMENTS AND OBSERVATIONS
14:00 1st day			Stack Kiln
15:00	pilot	-	Dry out moisture in kiln
17:00	3/4"	30	Low range over-night
9:00 2nd day	4½"	80	Bright red color; C/010 up
9:30	4½"	80	C/010 down: shut off kiln
9:00 3rd day	-	-	Open kiln and unstack

Typed by SHAN MILLER